LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

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Longhorn Army Ammunition Plant

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KARNACK, TEXAS
ADMINISTRATIVE RECORD - CHRONOLOGICAL INDEX

VOLUME 23
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A. Title: Rpt - Draft Final Tenth Annual Remedial Action Operation Report, LHAAP-50 Former Sump Water Tank, Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas

Author(s): PCI-Bhate JV
Recipient: Environmental Protection Agency and Texas Commission on Environmental Quality

Date: May 21, 2025
Bate Stamp: 1331008-1331648

B. Title: Rpt - Level IV DoD File No. 1 Lab Rpt to Final Tenth Annual Remedial Action Operation Report, LHAAP-50 Former Sump Water Tank, Longhorn Army Ammunition Plant LHAAP Karnack Texas

Author(s): PCI-Bhate JV
Recipient: Environmental Protection Agency and Texas Commission on Environmental Quality

Date: Ma 21, 2025
Bate Stamp: 1331649-1332667

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

May 21, 2025

SUBJECT: Draft Final Tenth Annual Remedial Action Operation Report, LHAAP-50 Former Sump Water Tank, Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, May 2025

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/Shared%20Documents/Forms/AllItems.aspx). An electronic copy of this letter and download instructions for the electronic file have been sent via email. Review comments are requested by June 06, 2025.

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 (210) 793-7900, or by email at: Kelly.U.Norwood.civ@army.mil.

Sincerely,

NORWOOD.KELLY.U.1473777050

Digitally signed by NORWOOD.KELLY.U.1473777050
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Kelly Norwood, Geologist
ESM, West and Pacific Division
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May 21, 2025

SUBJECT: Draft Final Tenth Annual Remedial Action Operation Report, LHAAP-50 Former Sump Water Tank, Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, May 2025

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/Shared%20Documents/Forms/AllItems.aspx). An electronic copy of this letter and download instructions for the electronic file have been sent via email. The document includes revisions based upon the Environmental Protection Agency's (EPA) comments on the draft version received on March 17, 2025, and the Texas Commission on Environmental Quality's (TCEQ) comments received on February 20, 2025. 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 (210) 793-7900, or by email at: Kelly.U.Norwood.civ@army.mil.

Sincerely,

NORWOOD.KELLY.U.1473777050 Digitally signed by NORWOOD.KELLY.U.1473777050 Date: 2025.05.09 13:59:39 -05'00'

Kelly Norwood, Geologist
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Response to Comments on
Draft Tenth Annual Remedial Action Operation Report, LHAAP-50, Former Sump Water Tank, Longhorn Army Ammunition Plant, Karnack, Texas, January 2025

Document Date: January 30, 2025
Comment Date: March 17, 2025

Reviewers: Brian Follin - USEPA
Respondent: Aaron Williams - 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

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
Reviewer #1:						
1	Section 1.2, p. 1-2	1st paragraph, 2nd sentence	The word "performing" is misspelled as "preforming."	C	The misspelled word will be corrected	
2	Section 1.2, p. 1-3	2nd bullet, 1st sentence	The word "overtime" should be split into 2 words ("over time").	C	The word will be split into two words – "over time".	
3	Section 1.4, p. 1-6	1st complete paragraph, 1st sentence	1) The word "conducted" should be corrected to "collected." 2) The text "the shallow water-bearing zone" should be revised to "shallow groundwater zone" or "shallow zone." 3) Recommend splitting sentence into 2 sentences— clarity/readability would be substantially improved by creating a new sentence using the part after "50WW20" describing groundwater flow. 4) Units of measure for hydraulic gradient should be in f**oo**t per foot, not f**ee**t per foot because gradient value is less than 1.	C	1) The word will be changed from "conducted" to "collected". 2) The text will be revised to "shallow groundwater zone". 3) The sentence will be split into two sentences and will state "Based on groundwater data collected in October 2022, groundwater in the shallow groundwater zone ranges from 18.25 feet bgs at 50WW28 to 25.00 feet bgs at 50WW20. Groundwater flows to the north within most of the LUC boundary, but to the northeast and east-northeast	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
					across most of the plume area, with a hydraulic gradient of 0.002 foot per foot." 4) The units of measurement will be updated to "foot per foot".	
4	Section 1.4, p. 1-6	1st complete paragraph, 2nd sentence	More appropriate to use "groundwater elevation" instead of "potentiometric surface elevation." A potentiometric surface is an imaginary surface constructed using groundwater elevations measured in various wells. Per the report, the hydraulic gradient was calculated using groundwater elevations measured in these 2 wells, not 2 locations without wells located on the potentiometric-surface map. Also note that table 3 uses "groundwater elevation."	C	The text will be updated to "groundwater elevation" instead of "potentiometric surface elevation".	
5	Section 1.4, p. 1-6	2nd paragraph, 2nd sentence	The "in November 2019" text at the end of sentence is redundant because the sentence begins with "in November 2019."	C	The reference to November 2019 will be removed from the end of the paragraph.	
6	Section 2.2.1, p. 2-2	1st paragraph, 1st sentence	1) Statement that the groundwater levels at the site varied "throughout the year" by the amounts described is misleading. The amount of variation for a given well throughout the year is unknown because water levels were not continuously measured/recorded. These values are simply the differences in groundwater elevations measured in the wells at 2 different times of year (October 2023 and May 2024). Given that, it could be stated that these measurements represent the times of year when groundwater level elevations typically are the highest or lowest, if that happens to be the case. That info would provide the proper context for these reported elevation ranges. 2) Would be preferable (i.e., more specific) to use "groundwater elevations" instead of "groundwater levels."	C	1) The text will be revised to remove "throughout the year" reference. 2) The text will be revised to state "groundwater elevations" instead of "groundwater levels". 3) The text will be revised to say "groundwater elevations within the 26 wells measure varied by…" 4) Text will be added to clarify that the May 2024 groundwater elevations were higher than elevations measured in October 2023 for all wells.	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
			3) Should indicate this range is for 26 wells with water-level measurements available for both measurement dates (also see #4 immediately below). 4) For the 26 wells in which a comparison could be made, it would be helpful to more clearly indicate whether all or some of the groundwater elevations measured in May 2024 were higher than elevations measured in October 2023.			
7	Section 2.2.1, p. 2-2	1st paragraph, 3rd sentence	Sentence should be relocated immediately after the next 2 sentences that introduce the potentiometric-surface maps for the October 2023 and May 2024 sampling events.	C	The sentence which references Table 3 will be moved directly after the sentence which introduces Figures 5 and 6.	
8	Section 2.2.1, p. 2-2	1st paragraph, 3rd sentence	1) Would be more appropriate to describe groundwater flow as "generally northward" or "generally to the north" instead of "north" in this sentence because groundwater-flow directions within the LUC boundary are to the northeast, east-northeast, and northwest (in the northeastern part of the LUC during October 2023). 2) Would be helpful to describe the differences in groundwater-flow directions between the October 2023 and May 2024 potentiometric-surface maps. Additionally, it would be helpful to explain why groundwater-flow directions are not well defined for a substantial part of the LUC area in October 2023 (as shown on the potentiometric-surface map).	C	1) The text will be updated to state "generally to the north". 2) Text will be added to the report to discuss differences in flow direction between May 2024 and October 2023 and to indicate why groundwater-flow direction is not well defined for a substantial part of the LUC area in October 2023 due to dry wells.	
9	Section 2.2.1, p. 2-2	1st paragraph, 6th sentence	The text "the saturated zone" at the end of sentence should be corrected to "the shallow zone" (i.e., "… that were fully penetrating the shallow zone.").	C	The text will be updated to "shallow zone" as opposed to "the saturated zone".	
10	Section 2.2.2, p. 2-3	4th and 5th paragraphs	Should discuss cis-1,2-DCE and vinyl chloride in these report sections as was done in the equivalent	C	Text will be added to discuss cis-1,2-DCE and vinyl chloride results within	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
			sections of previous LHAAP-50 RAO reports. For the October 2023 sampling event, cis-1,2-DCE was detected above the MCL in 2 wells —50WW08 (77 micrograms per liter [µg/L]) and 50WW13 (430 µg/L); vinyl chloride was detected above the MCL in 1 well (50WW13, 3.2 µg/L). For the May 2024 sampling event, cis-1,2-DCE was detected above the MCL in 2 wells—50WW05 (120 µg/L) and 50WW08 (93 µg/L); vinyl chloride was not detected above the MCL in any wells.		the discussion of the October 2023 and May 2024 semiannual sampling results.	
11	Section 2.4, p. 2-4 to 2-5	2nd paragraph	Perhaps worth noting in this paragraph that retention of these wells makes them available for groundwater-level measurements. Additional groundwater elevation measurements can be used to improve the potentiometric-surface maps, and thus, improve understanding of groundwater flow at the site and broader LHAAP-50 LUC area.	C	Text will be added to discuss the value of maintaining the monitoring wells for groundwater level measurements.	
12	Section 3, p. 3-1	1st paragraph, 5th sentence	1) The sentence indicating the year 8 RA-O report "ceased" DHC analysis should be revised because a report obviously cannot "cease analyses." 2) Need to cite two report sections at end of sentence because TOC is discussed in greater detail in section 3.2.6 of the cited report. Thus, the last parenthetical of the sentence should be "(discussed in sections 2.2.3 and 3.2.6").	C	1) The text will be updated to say the analysis was "suspended" and not "ceased". 2) A reference to section 3.2.6 will be added to the last parenthetical of the sentence.	
13	Section 3, p. 3-1	2nd paragraph, 2nd sentence	The word "the" is missing before "upper shallow zone" (i.e., While the RA-O monitoring network includes wells in **the** upper shallow zone…").	C	The word "the" will be added prior to "upper shallow zone".	
14	Section 3, p. 3-1	2nd paragraph, last sentence	At the beginning of sentence, the word "While" should be corrected to "Wells."	C	The word "While" will be corrected to "Wells".	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
15	Section 3.1.1, p. 3-2	1st paragraph, 1st complete sentence	To improve sentence readability/clarity, recommend adding the text "were evaluated" between the words "trends," and then deleting the text "were calculated" at the end of sentence (i.e., "…, trends were evaluated using the 2019 baseline and post-injection data").	C	The sentence will be restated to "…trends were evaluated using the 2019 baseline and post-injection data."	
16	Section 3.1.1, p. 3-2	2nd paragraph, 5th sentence	Recommend revising the text "COC that contained a concentration above…" to the following: "COC with a concentration above...".	C	The text will be revised to state "COC with a concentration above...".	
17	Section 3.1.1, p. 3-2	2nd paragraph, 7th sentence	Sentence listing trends testing results for the year 10 RA-O is partially incomplete—table 8 and appendix E indicate that TCE and cis-1,2-DCE concentrations are "decreasing" in well 50WW05.	C	Clarification. The sentence discussing trends intends to highlight the "increasing" or "probably increasing" concentrations. The text will be updated to include the "decreasing" trend to the list at the beginning of the sentence and will state "…the Year 10 RA-O were "stable", "no trend", "probably decreasing", or "decreasing" except…".	
18	Section 3.1.1.1 (well 50WW05), p. 3-2	2nd paragraph, last sentence	I think the authors intended for the word "definite" to be "direct" (i.e., "direct correlation")?	C	The text will be updated to state "direct correlation".	
19	Section 3.1.1.1 (well 50WW05), p. 3-2	2nd paragraph, last sentence, and fig. 11a	Disagree with the conclusion that there does not seem to be any direct or inverse correlations between concentrations and groundwater elevations at well 50WW05: 1) For the post-ISB time period, fig. 11a indicates that TCE concentrations and groundwater elevations were inversely correlated for 9 of 12 (75%) samples, including the 4 samples collected during the Year 9 and 10 RA-Os. 2) The relation between concentrations and elevations during the post-ISB time period is more complicated for cis-1,2-DCE. Of the 11 post-ISB samples, the first 6 samples were inversely correlated with groundwater	C	Additional discussion will be added on the relationship between TCE and cis-1,2-DCE and groundwater elevation.	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
			elevations, whereas the last 5 samples were directly/positively correlated with elevations.			
20	Section 3.1.1.2 (well 50WW06), p. 3-2 to 3-3	1st paragraph, and fig. 11b	In this paragraph/section, it is important to note the frequent, large (~1–2+ orders of magnitude) changes in post-ISB perchlorate concentrations from one sample to another (fig. 11b). In comparison, sample-to-sample changes in TCE concentrations are substantially smaller during the same time period.	C	Additional discussion on the large changes in perchlorate concentrations between sampling events and smaller changes in TCE concentrations will be added.	
21	Section 3.1.1.2 (well 50WW06), p. 3-2 to 3-3	1st paragraph, 4th sentence, and fig. 11b	Disagree with statement that TCE and PCE concentrations in 50WW06 fluctuated above and below the MCL/PCL in years 1 and 2 as currently written. It mischaracterizes a substantial part of the post-ISB period during which these COC concentrations were consistently below the MCL/PCL (for 5 quarterly sampling events in a row: second two quarters for year 1 sampling and 1st three quarters for year 2 sampling [1/28/21 to 1/6/22]) before increasing to concentrations above the MCL/PCL in the year 2 fourth quarter samples (collected 4/6/22).	C	The statements will be restated to appropriately characterize the post-ISB period and COC concentrations since ISB injection.	
22	Section 3.1.1.2 (well 50WW06), p. 3-3	2nd paragraph, 4th sentence, and fig. 11b	Fig. 11b indicates perchlorate concentrations/fluctuations "track/parallel" TCE concentrations/fluctuations, so the sentence should be modified to indicate both TCE and perchlorate concentrations show strong inverse correlations with groundwater elevations for parts of the period of record.	C	Perchlorate will be added to the discussion on correlation between COCs and groundwater elevations.	
23	Section 3.1.1.2 (well 50WW06), p. 3-3	2nd paragraph, last sentence, and fig. 11b	1) Use of the word "significant" should be reserved for discussions of statistics or statistical results. "Substantial" would be an appropriate replacement. 2) For the post-ISB time period, fig. 11b indicates that both TCE and perchlorate concentrations were strongly inversely correlated with groundwater elevations. Specifically, TCE concentrations were inversely correlated with elevations for 10 of 13 (~77%) post-ISB samples. Similarly,	C	1) The word "significant" will be replaced with "substantial". 2) Perchlorate will be added to the discussion on correlation between COCs and groundwater elevations. 3) Text will be added to suggest the remedy may be stalled at 50WW06.	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
			perchlorate concentrations were inversely correlated with elevations for 10 of 12 post-ISB samples. 3) Does this indicate a stalled remedy?			
24	Section 3.1.1.3 (well 50WW08), p. 3-3	1st paragraph, 1st sentence	For the text "PCL/ MCLs" near the beginning of the sentence, there is an extra space between the slash symbol ("/ ") and the word "MCLs."	C	Extra space will be removed.	
25	Section 3.1.1.3 (well 50WW08), p. 3-3	1st paragraph, 1st sentence, and fig. 11c	Post-ISB treatment, changes (increases and decreases) in TCE and cis-1, 2-DCE concentrations mostly track one another. This is an important note when discussing potential dechlorination.	C	Text will be added to reference the fluctuations of TCE and cis-1,2-DCE along with discussion of limited dechlorination in the area.	
26	Section 3.1.1.3 (well 50WW08), p. 3-3	1st paragraph, 6th sentence	Sentence should be revised to indicate the TCE concentrations increased significantly, not the trend analyses.	C	The sentence will be restated to indicate TCE concentrations are increasing.	
27	Section 3.1.1.3 (well 50WW08 subsection), p. 3-3	1st paragraph, 7th sentence	Disagree with conclusion that TCE concentrations do not seem to be correlated to changes in groundwater elevations. For the post-ISB time period, fig. 11c indicates post-ISB TCE concentrations were directly correlated with groundwater elevations for 8 of 12 (~67%) post-ISB samples.	C	The sentence will be updated to suggest a correlation between TCE levels and groundwater levels.	
28	Section 3.1.1.3 (well 50WW08), p. 3-3	1st paragraph, last sentence	The commas after "50WW08" at both locations in the sentence are extraneous.	C	Commas after referenced wells will be removed from this sentence.	
29	Section 3.1.1.3 (well 50WW08), p. 3-3	2nd paragraph, last sentence	Second part of the sentence indicating post-ISB perchlorate concentrations are inversely correlated with groundwater elevations is incorrect. Fig. 11c indicates that post-ISB perchlorate concentrations were more commonly directly correlated with than inversely correlated with groundwater elevations. Specifically, perchlorate concentrations in 7 of 12 (~58 %) post-ISB samples were inversely correlated with groundwater elevations.	C	The sentence will be revised to suggest the perchlorate concentrations are directly correlated with groundwater elevations.	
30	Section 3.1.1.3 (well	3rd paragraph, 1st sentence	The comma after "sampling event" is extraneous.	C	The comma after "sampling event" will be deleted.	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
	50WW08), p. 3-3					
31	Section 3.1.1.3 (well 50WW08), p. 3-4	1st paragraph, last sentence	Should clarify if the statement "limited biodegradation is occurring" is meant to refer only to the area near 50WW08 or to the entire areal extent of the TCE plume.	C	Text will be added to clarify that limited biodegradation is occurring in the area near 50WW08.	
32	Section 3.1.1.4 (well 50WW09), p. 3-4	1st paragraph, last sentence	1) Table 4 (p. 17) indicates the cis-1,2-DCE concentration value of 0.64 µg/L should be J-qualified. 2) Sentence reports the cis-1,2-DCE concentration for the May 2024 sample (0.64 µg/L J), but not for the November 2023 sample (1.2 µg/L).	C	1) The J qualifier will be added to the value with an explanation that it represents an estimated quantity. 2) The November 2023 data will be added to the discussion.	
33	Section 3.1.1.4 (well 50WW09), p. 3-4	2nd paragraph, last 2 sentences	Regardless of what is stated in these two sentences, the relations between the COC (TCE **and** cis-1,2-DCE) concentrations and groundwater elevations for the 6 post-ISB samples from well 50WW09 are clear. Specifically, fig. 11d indicates TCE and cis-1,2-DCE concentrations in 5 of 6 (~83%) post-ISB samples were inversely correlated with groundwater elevations. The only exception was during November 2022 (year 9 RA-O), when concentrations of both COC's were directly correlated with groundwater elevations. Both sentences should be revised accordingly.	C	The sentences will be deleted and text added to state there is an inverse correlation between COC concentrations and groundwater elevations.	
34	Fig. 11d (well 50WW09)	Fig. 11d title	The parenthetical indicating well 50WW09 is a lower shallow zone well is missing (should be similar to fig. 11b for well 50WW06).	C	The parenthetical indication well 50WW09 is a lower shallow zone well will be added.	
35	Section 3.1.1.6 (well 50WW12), p. 3-5	2nd paragraph, 3rd sentence	"October 2022" should be corrected to "October 2023."	C	The text will be updated to "October 2023".	
36	Section 3.1.1.6 (well 50WW12), p. 3-5	2nd paragraph, last sentence	Near the end of the sentence, a space is missing between "5 µg/L" and the words "and was"	C	A space will be added.	
37	Section 3.1.1.6 (well		1,2-DCA and 1,1-DCE. What degradation pathway from TCE can lead to 1,2-DCA. Do the MNA parameters back up this pathway of dechlorination?		Clarification – 1,2-DCA is not discussed as part of the degradation pathway from TCE. 1,2-DCA is a	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
	50WW12), p. 3-5				COC measured at well 50WW12 which shows a direct correlation with the increases and decreases of groundwater elevation and thus supports the suggestion that a residual source mass may be present.	
38	Section 3.1.1.6 (well 50WW12), p. 3-5	3rd paragraph, 2nd sentence	Sentence posits that direct correlation of high perchlorate concentrations in well 50WW12 with seasonally elevated groundwater elevations provides evidence of possible "residual source mass" near the well; however, no explanation is provided to indicate how/why this might be the case beyond the brief discussion in the next sentence. Furthermore, it should be noted that the same pattern applies to the other COCs shown on fig. 11f—do those correlations between concentrations and groundwater elevations also provide evidence of potential residual source mass for TCE as well?	C	Additional language will be added to state how long the correlation has been consistent for perchlorate, TCE, 1,1-DCE, and 1,2-DCA.	
39	Section 3.1.1.7 (well 50WW13), p. 3-6	3rd paragraph (only one sentence; begins with "Fig. 11-g shows…)	The word "indirect" in the first sentence should be "inverse." However, it would be beneficial to revise this sentence to more clearly describe the relation between COC concentrations and groundwater elevations at well 50WW13 evident in fig. 11g (e.g., "Figure 11g indicates post-ISB COC concentrations in well 50WW13 were strongly inversely correlated with groundwater elevations.").	C	The sentence will be revised to "Figure 11-g indicates post-ISB COC concentrations in well 50WW13 were strongly inversely correlated with groundwater elevations during the Year 4 post-ISB injections RA-O."	
40	Section 3.1.1.8 (well 50WW14), p. 3-6	2nd paragraph, 2nd sentence	Sentence indicates that groundwater elevations were directly correlated with TCE concentrations in well 50WW14 from 2016 to 2019 is incorrect. There were 7 samples collected during this time period (5/16 to 11/19)—TCE concentrations in 3 of 7 samples are inversely correlated with groundwater elevations (samples collected in 5/16, 11/16, 11/19) and TCE concentrations in 4 of 7 samples are directly correlated with elevations (samples collected in 11/17, 5/18, 11/18, and 5/19). As a result, it would be more accurate to state that TCE concentrations were	C	The text will be updated to suggest the TCE concentrations and groundwater elevations were directly correlated from late 2017 to mid-2019.	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
			directly correlated with groundwater elevations from late 2017 to mid-2019.			
41	Section 3.1.1.8 (well 50WW14), p. 3-6	3rd paragraph, 3rd sentence	This sentence incorrectly states there was no correlation between the groundwater elevations and TCE concentrations in well 50WW14 during 2020 and 2021. Fig. 11h clearly shows that TCE concentrations were inversely correlated with groundwater elevations during 2020 and 2021 (all 6 quarterly samples from this period, including those collected in 7/20, 10/20, 1/21, 4/21, 7/21, and 10/21).	C	The text will be updated to suggest the TCE concentrations and groundwater elevations were inversely correlated in 2020 and 2021.	
42	Section 3.1.1.8 (well 50WW14), p. 3-6	2nd paragraph, 4th/last sentence	Fig. 11h indicates this sentence is only partially correct for well 50WW14. For the year 9 RA-O, TCE concentrations are directly correlated with groundwater elevations during the first sampling event (10/22) and inversely correlated with elevations during the second sampling event (5/23). For the year 10 RA-O, TCE concentrations and groundwater elevations were inversely correlated during both sampling events (11/23 and 5/24). For the entire post-ISB time period, concentrations were inversely correlated with groundwater elevations much more frequently (9 of 12 samples, or 75%) than directly correlated with groundwater elevations (3 of 12 samples, or 25%).	C	The text will be updated to point out the inverse correlation between TCE concentration and groundwater elevation during Year 9 and 10 RA-O Reports.	
43	Fig. 11h (well 50WW14)	Fig. 11h title	The parenthetical indicating well 50WW14 is a lower shallow zone well is missing (should be similar to fig. 11b for well 50WW06).	C	The parenthetical indication well 50WW14 is a lower shallow zone well will be added.	
44	Section 3.1.2, p. 3-7	1st paragraph, 1st sentence	Because this report discusses redox conditions in relation to COC concentrations, the terms “reduced,” “reducing,” or “reduction” should be reserved for characterization of geochemical conditions. Suitable replacements include the words “decreasing” or “decreased.”	C	The work “reducing” will be changed to “decreasing”.	
45	Section 3.1.2, p. 3-7	2nd paragraph, 1st sentence (2 locations in this sentence)	See previous comment.	C	The work “reducing” will be changed to “decreasing”.	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
46	Section 3.1.2, p. 3-7	2nd paragraph, last sentence	As was noted in comment #31 and is applicable to this sentence, should clarify if the conclusion "limited biodegradation is occurring" is referring only to the area near 50WW08 or to the entire extent (or partial extent) of the LHAAP-50 plume(s). Limited to no biodegradation appears to be happening. MK trends are all over and might not be the best indicator. The ratios between source and daughter products do not match up for biodegredation. Migration is still a concern. Is there additional source to identify?	C	Language will be added to clarify that limited biodegradation is occurring in the area of 50WW08. Clarification. The conclusions portion of the report suggests additional investigations due to the increasing concentrations near 50WW08 to determine if a residual source is present upgradient. The next contract will likely include this investigation.	
47	Section 3.1.3.3, p. 3-8	1st paragraph	It would be helpful to state in this paragraph that TCE concentrations at many LHAAP-50 wells are strongly directly or inversely correlated with groundwater elevations, and then note the implications of this finding to trends testing results.	C	A statement about the relationship between TCE concentrations and groundwater elevations will be added to this paragraph.	
48	Section 3.1.3.3, p. 3-8	1st paragraph, 3rd sentence	At the end of the sentence, a space is missing between the words "and" and "50WW12."	C	A space will be added.	
49	Section 3.1.3.3, p. 3-8	2nd paragraph, 2nd sentence	Sentence somewhat mischaracterizes year 8 RA-O report statement regarding plume movement towards 50WW12. Importantly, the year 8 RA-O report noted that the TCE plume **core** might be migrating toward well 50WW12, not the plume itself because the plume was already at the well.	C	Text will be added that the core of the plume might be migrating, not the plume itself.	
50	Section 3.1.3.3, p. 3-8	2nd paragraph, 2nd sentence	The year 8 RA-O trend result for TCE in 50WW12 was "probably increasing," not "increasing."	C	The text will be updated to state the trend was "probably increasing".	
51	Section 3.1.3.3, p. 3-8	2nd paragraph, last sentence	An explanation should be provided for why the correlation between TCE concentrations and groundwater elevations indicates there may be a residual source mass near this well. This would be helpful, in part, because TCE concentrations and groundwater elevations are strongly directly correlated or inversely correlated at most wells at this site.		Clarification. This sentence is in reference to the direct correlation at 50WW12 only. Because 50WW12 is known to be within the TCE plume and marks the furthest downgradient well, it follows that increases in groundwater elevation which correlate with increases in TCE concentrations may be indicative of residual source mass.	
52	Section 3.1.3.3, p. 3-8	4th paragraph, 1st sentence	Description of well 50WW13 location as "center of the plume" is not correct—figs. 9 and 10 show that	C	The text will be updated to state well 50WW13 is located in the east-central portion of the plume.	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
			the well is located more in the east-central part of the TCE plume.			
53	Section 3.1.3.4, p. 3-9	3rd paragraph, 1st sentence	The word "plume" after the text "the farthest downgradient" should be corrected to "well"(i.e., "… is the farthest downgradient well in the…").	C	The text will be updated to "…farthest downgradient well in the perchlorate plume."	
54	Section 3.1.3.4, p. 3-9	3rd paragraph, 2nd sentence	Sentence should be revised to more clearly indicate that this is the highest perchlorate concentration ever measured in this well.	C	The text will be updated to clarify the April 2022 concentration was the highest ever measured at this well.	
55	Section 3.1.4, p. 3-10	2nd paragraph, 1st and last sentences	Should not use the words "skew" and "skewing" in the manner used in these two sentences. Both words have explicit statistical meaning that differs from the usage here. As a result, strongly recommend replacing the word "skewed" with "affected" and the word skewing" with "affecting."	C	The text will be updated to change "skewed" and "skewing" to "affected" and "affecting".	
56	Section 3.1.4, p. 3-10	2nd paragraph, second to last sentence	The text "Year 8" in the parenthetical at the end of the sentence should be corrected to "Year 10."	C	The text will be updated to "Year 10".	
57	Section 3.1.4, p. 3-10	2nd paragraph, last sentence	The text "MW5011" should be corrected to "50WW11."	C	The text will be corrected to "50WW11".	
58	Section 3.2 (and previous section 3 subsections)		It would be helpful if tables similar to those developed to summarize COC/degradation products and geochemical indicators in the final LHAAP-16 year 4 RA-O report (e.g., table 3-1) were constructed and included in this report. The addition and integration of current and historical data into one location would help substantially with the various COC and geochemical parameter evaluations, as it would eliminate the need for readers to search through various parts of the report, including, text, tables, and figures in this and earlier reports to gather the relevant data.	D	Noted. Tables will be prepared to summarize COCs, degradation products, and geochemical parameters into one location for future RAO Reports starting with the 2025 Annual RAO Report.	
59	Sections 3.2.1 and 3.2.2		Should cite relevant report tables containing DO and ORP data discussed in these sections—tables containing these data are not currently cited in these two report sections, unlike the other geochemical parameter subsections in section 3.2.	C	Citations will be added to the text where appropriate to cite tables where DO and ORP data are reported.	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
60	Section 3.2.1, p. 3-11	1st paragraph, last sentence	The word "are" should be changed to "were" (i.e., "… outside the treatment area **were** conducive to…").	C	The text will be updated to"…were conducive…".	
61	Sections 3.2.2 and 3.2.4, p. 3-11	Entire paragraph/section	May 2024 ORP and sulfate results (second sampling event) are described in these paragraphs, but the October 2022 results (first sampling event) are not described.	C	October 2023 results will be added to the discussion for ORP and sulfate.	
62	Section 3.2.2, p. 3-11	1st paragraph, 3rd sentence	Should also indicate that ORP was measured at a value of -52 mV in the first year 10 RA-O sampling event (October 2023).	C	The text will be updated to include discussion on the -52 mV measurement within the first semiannual sampling event.	
63	Section 3.2.3, p. 3-11	1st paragraph, 3rd sentence	1) Should specify whether this is referring to nitrate results for all wells or only for wells within the treatment area. 2) The word "are" should be replaced. Additionally, the part of the sentence after the comma should be revised to improve readability/clarity. 3) Need to specify that the nitrate concentration value (0.231 J mg/L) is a duplicate result.	C	1) Text will be added to clarify nitrate was near or below the laboratory reporting limit for all wells. 2) The word "are" will be replaced and the sentence will be rewritten for additional clarity. 3) The terms "duplicate result" will be added after the concentration value for clarity.	
63	Section 3.2.5, p. 3-12	1st paragraph, last sentence	1) Awkwardly constructed sentence. Additionally, note that the word "performing" is misspelled. Furthermore, note that description of methanogenesis as a result of microorganisms "performing methanogenesis" is a unusual description of this biotic degradation processes. 2) While DO and sulfate conditions are in range to support methanogenesis, the ORP might not be low enough for methanogenesis to be supportive. pH is also not in the optimal range.	C	This sentence will be removed in response to comment from TCEQ.	
64	Section 3.2.6, p. 3-12	1st paragraph, 1st sentence	It is unclear what is meant by the phrase "organic carbon is a required source of reduced hydrogen."	C	The sentence will be restated to add clarity on organic carbon as an essential source of reduced hydrogen.	

Number	Section/Page	Paragraph/Line	Comment	C,D	Response	A,D
65	Section 3.2.8, p. 3-13	1st paragraph, second to last sentence	It is unclear if this sentence is referring only to ethene results for well 50WW13 or for all wells sampled for this constituent.	C	Text will be added to clarify ethene was non-detect at all wells.	
66	Section 3.2.9, p 3-14		There is limited evidence at 50WW12 shows methanogenesis has occurred post injections, but more recent trends do not necessary show this. 2021 saw increase in VC and ethane but also a steep increase in TCE. Injections might have completed some degradation, but it also moved source into migration.	C	Noted. This line of thinking also follows with the suggestion that residual mass may be present at the surrounding area. The last sentence of Section 3.2.9 will be updated to suggest limited methanogenesis is occurring at 50WW12.	
66	Section 4.1 and 4.2 (Summary and Conclusions, and Conclusions		These sections reproduce/summarize information presented earlier in the report. Consequently, all comments made for previous report sections should be applied to these two sections.	C	The text will be updated to reflect changes based on comments from previous reports.	
67	Section 4.2 (Conclusions), p. 4-3	1st and 2nd paragraphs	Agree with the assertions that it may be necessary to conduct additional investigation work near wells 50WW08 and 50WW12. What is the recommended duration for continued monitoring at each of these locations before any recommendations are made?	C	Additional investigation and additional injections will be included in the next contract.	
68	Section 4.2 (Conclusions), p. 4-3	3rd paragraph	The report shows that the plumes might be stable but it would appear that the remedy has stalled and a new remedy might need to be considered.	C	Additional investigation and additional injections will be included in the next contract.	

Response to Comments on
Draft Tenth Annual Remedial Action Operation Report, LHAAP-50, Former Sump Water Tank, Longhorn Army Ammunition Plant, Karnack, Texas, January 2025

Document Date: January 30, 2025
Comment Date: February 20, 2025

Reviewers: April Palmie - TCEQ
Respondent: Aaron Williams - 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

Number	Section/Page	Comment	C,D	Response	A,D
1	General	For future reports, when revising accepted language please check against the prior year RTCs. Several of the comments below are repeats of comments on the Year 9 draft. Several other comments are requests to change language back to the approved language in the prior year reports.	C	Concur. Future documents will be checked against the Draft Final versions and previous years RTCs.	
2	1.2, 1-2	LUCs bullet – Please revise as shown below. LUCs have been implemented for the impacted area as described in the Final 2016 RACR (AECOM, June 2016) to ensure the protection of human health by restricting the use of groundwater within the LUC boundary. The LUC boundary is described in the Final 2016 RACR (AECOM, June 2016) and will remain in place until the COCs in the soil and groundwater allow unrestricted use and unlimited exposure.	C	Concur. The LUCs bullet will be revised.	
3	1.4, 1-6	Sentence beginning “Based on groundwater” - Revise to replace “conducted” with “collected” – “Based on groundwater data collected in October 2022” or it could be revised to “Based on groundwater measurements collected in October 2022”	C	Concur. The sentence will be revised to “Based on groundwater data collected in October 2022…”. This language was previously approved in the Year 9 Draft Final Report.	
4	General – wells and zone	I noticed many occurrences where “zone” was deleted between “shallow” and “well”. I also noticed many occurrences where “monitoring” was deleted before “well”. Please replace these important clarifying words throughout the report.	C	Concur. Clarifying words will be replaced throughout the document.	

Number	Section/Page	Comment	C,D	Response	A,D
5	2.1.1, 2-1	1st paragraph - Please revise as shown below. The objectives of the LUCs at LHAAP-50 are to prohibit residential land-use, to prevent human health exposure to groundwater contamination presenting an unacceptable risk to human health, and to ensure that there is no withdrawal or use of groundwater beneath the site for any purpose other than environmental monitoring and testing until the cleanup levels are attained (AECOM, June 2013). 2nd paragraph - This statement is not true – "Notices of the groundwater restrictions are posted around the bounds". This paragraph was revised from the language in the last report, which was accurate. The prior language for that paragraph was: The LUC boundary at LHAAP-50 is 77.19 acres and contains the areas with shallow zone groundwater VOCs and perchlorate contamination. A metes and bounds survey of the LUC boundary and notices of the groundwater use restrictions accompany all property transfer documents and were recorded at the Harrison County Courthouse in June 2015 in accordance with the Texas Administrative Code Title 30, Section 335.566. The survey plat, legal boundary, and description of the groundwater restriction, in conjunction with a locator map, were provided to the Texas Department of Licensing and Regulation in June 2015.	C	Concur. Language within the 1st and 2nd paragraphs will be updated as suggested.	
6	2.2.2, 2-2	1st paragraph– 2.2 indicates 14 wells were sampled in the first event. Revise this paragraph to include the additional wells. "Ferrous iron" sentence, the language added after "field screening method"- it isn't necessary to explain the iron field test, this process is covered in the IWWP. 3rd paragraph – Please remove "Subsequent" before "Quality Control Summary Reports".	C	Clarification. The eight wells referenced in Section 2.2.2 are the eight wells used to evaluate the ISB remedy via performance monitoring. Historically, sampling of these wells takes place semi-annually, whereas an additional six wells are sampled annually (during the October semiannual event) as part of the RA-O event. The reference in Section 2.2.2 is accurate in stating that eight monitoring wells were sampled as	

Number	Section/Page	Comment	C,D	Response	A,D
				part of the monitoring of the ISB remedy. Concur. The unnecessary language will be removed describing the ferrous iron field test. Concur. The term "subsequent" will be removed from before "Quality Control Summary Reports".	
7	2.3, 2-4	1st sentence – Remove "of a" between "potential" and "groundwater", it should be written "potential groundwater to surface water pathway".	C	Concur. The terms "of a" will be removed from the first sentence.	
8	3	In several places "line of evidence" was reduced to "line", replace "of evidence" after "line". 2nd paragraph, 2nd sentence - after "not likely to", change "have drastic changes in COC concentration levels" back to "be influenced by the ISB treatment". From Year 9 report: While the RA-O monitoring network includes monitoring wells in the upper shallow zone, lower shallow zone, and upgradient/cross gradient monitoring wells, the upgradient/cross gradient monitoring wells that lie outside of the treatment area are not likely to be influenced by the ISB treatment.	C	Concur. Sentences will be updated to state "line of evidence" throughout. Concur. Language will be updated to reflect the previously approved language from the Year 9 Report.	
9	3.2.5	1st sentence, replace the qualifier before "reducing conditions". From the source reference "The presence of methane in ground water is indicative of strongly reducing conditions." Add back "highly" or "strongly" to "reducing conditions". Last sentence – Is this sentence necessary? I think the prior sentences for 50WW12 are sufficient. If the last sentence is not deleted, revise the sentence, and replace "preforming". Note that it would not be accurate to say the microorganisms are performing methanogenesis to remediate the COCs.	C	Concur. First two sentences of Section 3.2.5, will be revised to state "Reducing conditions generally occurs after oxygen, nitrate, and sulfate have been depleted. Methane levels above 500 µg/L are considered indicative of strongly reducing conditions (USEPA, September 1998)". Concur. The last sentence will be removed.	

Number	Section/Page	Comment	C,D	Response	A,D
10	4.1, 4-2	1st paragraph, next to last sentence beginning "Perchlorate levels were below the PCL at downgradient well 50WW29" – should this sentence be corrected to "the plume has not migrated"?	C	Concur. The second to last sentence will be revised to state "the plume has not migrated".	
11	4.2	Agree that additional injections should be considered. Will this be included in the next contract? Prior to injections, soil borings for source area assessment near 50WW12 would also be beneficial, given the recent very high perchlorate results.	C	Noted. Additional injections will be included in the next contract. A Pre Design Investigation Work Plan will be prepared which will establish the recommended additional areas of assessment.	
12	Figures and Tables	Add the figure and table titles to the adobe bookmarks.	C	Concur. Figure and table titles will be added to the adobe bookmarks.	
13	Tables 4 & 5	Please adjust so the table takes up more space on the pages, which will result in font being larger.	C	Concur. The page layout and font size for Tables 4 & 5 will be adjusted resulting in larger font	
14	Appendix B	Add bookmarks for each event's photo log and well inspection forms.	C	Concur. Bookmarks will be added for each event's photo log and well inspection form.	
15	Appendix C	Add bookmarks for each well's sample collection form.	C	Concur. Bookmarks will be added for each well's sample collection form.	
16	Appendix D	I noticed year 9 RAO included Level IV data packages, but year 10 includes Level II.		Clarification. Year 10 also included Level IV data packages. Level IV data packages will be added to the Year 10 Report.	
17	Appendix E	Thank you for adding the Quality Control Summary Reports. Add bookmarks for each report. In Section 1.1 Please revise the text. In both reports, the objective of sampling is probably to monitor the groundwater impacts, or something similar. Table 2 June 2024 report, check the reason column for all noted with "field duplicate". Should the reason for qualification be due to field precision/RPD limits exceeded?	C	Concur. Bookmarks will be added for each report. Concur. The text will be updated within both QCSRs to state the objective was to "monitor the groundwater impact of remedial activities." Concur. Table 2 June 2024 Report will be updated "Reason for Qualification" to state "field	

Number	Section/Page	Comment	C,D	Response	A,D
				precision” and not “field duplicate”.	

DRAFT FINAL

2024 ANNUAL REMEDIAL ACTION OPERATION REPORT

LHAAP-50 FORMER SUMP WATER TANK

LONGHORN ARMY AMMUNITION PLANT

KARNACK, TEXAS

May 2025

Prepared For:

Longhorn Army Ammunition Plant
Karnack, Texas

Under Contract To:

U.S. Army Corps of Engineers
Tulsa District
Tulsa, Oklahoma

Contract Number: W912BV23C0007

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ACRONYMS AND ABBREVIATIONS

>	Greater than
<	Less than
%	Percent
µg/L	micrograms per liter
AECOM	AECOM Technical Services, Inc.
AST	Aboveground storage tank
Bgs	below ground surface
Bhate	Bhate Environmental Associates, Inc.
COC	contaminant of concern
DCA	Dichloroethane
DCE	Dichloroethene
DHC	*Dehalococcoides*
DO	dissolved oxygen
DPT	direct push technology
ESD	Explanation of Significant Differences
ISB	in situ bioremediation
J	Qualifier denoting an estimated result
Jacobs	Jacobs Engineering Group, Inc.
LHAAP	Longhorn Army Ammunition Plant
LLC	Limited Liability Company
LUC	land use control
MCL	maximum contaminant level
mg/L	milligrams per liter
MNA	monitored natural attenuation
mV	Millivolts
No.	Number
ORP	oxidation-reduction potential
PBJV	Poarch Creek Indians, Government Servies, LLC/Bhate Environmental Associates, Inc. Joint Venture
PCE	Tetrachloroethene
PCL	Protective concentration level
QCSR	Quality Control Summary Report
RA-O	Remedial Action Operation

RACR	Remedial Action Completion Report
RAWP	Remedial Action Work Plan
RD	Remedial Design
ROD	Record of Decision
TCE	Trichloroethene
TCEQ	Texas Commission on Environmental Quality
TOC	total organic carbon
U.S.	United States
USACE	U.S. Army Corps of Engineers
U.S. Army	U.S. Department of the Army
USEPA	U.S. Environmental Protection Agency
VC	vinyl chloride
VOC	volatile organic compound
USFWS	U.S. Fish and Wildlife Service

1 INTRODUCTION

The Poarch Creek Indians, Government Services, Limited Liability Company [LLC]/Bhate Environmental Associates, Inc. Joint Venture (PBJV), was awarded a contract, under United States Army Corps of Engineers (USACE) contract number (No.) W912BV23C0007, to conduct environmental restoration at multiple sites at the former Longhorn Army Ammunition Plant (LHAAP) in Karnack, Texas. PBJV is performing groundwater and surface water monitoring as part of Remedial Action Operation (RA-O) for the Monitored Natural Attenuation (MNA) groundwater remedy at LHAAP-50.

The purpose of this Tenth Annual RA-O Report is to discuss the progression of remedial activities at LHAAP-50 and recommend the next steps towards achieving site closure. LHAAP-50 is slated for transfer from the United States (U.S.) Army to the U.S. Fish and Wildlife Service (USFWS), so it can be incorporated as a part of the Caddo Lake National Wildlife Refuge.

LHAAP is located in east-central Texas, in the northeastern corner of Harrison County between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake (**Figure 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 the former LHAAP installation to the north and east. The eastern fence is 3.5 miles from the Texas-Louisiana state border.

The initial selected remedy for LHAAP-50 is described in Section 2.9.1 of the Record of Decision (ROD) (USACE, September 2010). The remedy included the excavation of contaminated soil, MNA of contaminants of concern (COCs) in groundwater, and the implementation of Land Use Controls (LUCs). Groundwater COCs include perchlorate, tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (DCE), 1,2-dichloroethane (DCA), cis-1,2-DCE, and vinyl chloride (VC). The remedies were implemented and documented in the Final 2016 Remedial Action Completion Report (RACR) (AECOM Technical Services, Inc. [AECOM] June 2016). The Draft Final Third Annual RA-O Report concluded that MNA was ineffective and implementation of a contingency remedy would be appropriate (Bhate Environmental Associates, Inc. [Bhate], July 2018). A Final Explanation of Significant Differences (ESD) was submitted in July 2019 for changes to the ROD to implement the in-situ bioremediation (ISB) contingency remedy (USACE, July 2019). The U.S. Environmental Protection Agency (USEPA) signed the ESD, and the Texas Commission on Environmental Quality (TCEQ) concurred with the USEPA approval in September 2019. The Remedial Design (RD)/Remedial Action Work Plan (RAWP) for the contingency remedy was submitted in December 2019 and approved by USEPA in December 2019 and TCEQ in January 2020 (USACE, December 2019). The Year 6 RA-O sampling event in November 2019 was used as the baseline, prior to the ISB treatment. The ISB injections for the contingency remedy were completed in March 2020 and included injection of the emulsified vegetable oil carbon source (Electron Donor Solution – Extended Release™ from Tersus Environmental, LLC), microbial nutrient (diammonium phosphate), and dechlorinating culture (SDC-9™). The implementation of

the ISB contingency remedy was reported in the Draft Final RACR for Contingency Remedy in September 2020 (Bhate, November 2020).

This Tenth Annual RA-O Report represents the fourth-year, post-ISB contingency remedy implementation and summarizes the results of the LUC inspection (October 2023) and sampling activities conducted between July 2023 and June 2024. The tenth year RA-O activities consisted of two semiannual sampling events conducted in October 2023 and May 2024. In accordance with the Contingency Remedy RD/RAWP (USACE, December 2019), a remedy evaluation of the ISB injections is included in this report.

1.1 Remedial Action Objectives

The remedial action objectives for LHAAP-50, consistent with the reasonably anticipated future use as a national wildlife refuge, are as follows:

- Protection of human health and environment by preventing contaminated groundwater from migrating into nearby surface water.
- Protection of human health by preventing further potential degradation of groundwater and surface water from contaminated soil.
- Protection of human health by preventing human exposure to the contaminated groundwater.
- Return of groundwater to its potential beneficial uses as drinking water, wherever practicable.

1.2 Performance Objectives

Per the Remedial Action RAWP, RA-O monitoring of the ISB contingency remedy was completed quarterly for two years from July 2020 to March 2022, along with annual MNA monitoring. After the two years of ISB monitoring data were reviewed, it was determined that the ISB remedy was not performing as anticipated. In turn, it was decided that semiannual RA-O monitoring be continued for a third year to evaluate the impact of the ISB remedy and seasonal fluctuations on volatile organic compounds (VOCs) and perchlorate concentrations. Below are detailed descriptions of the current remedy components at LHAAP-50.

- **LUCs.** LUCs have been implemented for the impacted area as described in the Final 2016 RACR (AECOM, June 2016) to ensure the protection of human health by restricting the use of groundwater within the LUC boundary. The LUC boundary is described in the Final 2016 RACR (AECOM, June 2016) and will remain in place until the COCs in the soil and groundwater allow unrestricted use and unlimited exposure.

- **ISB.** In areas where the highest concentrations of COCs were observed, the ISB contingency remedy was implemented. These areas include the upper and lower shallow groundwater near monitoring wells 50WW11 and 50WW13 and the shallow groundwater near 50WW12. The ISB remedy involved injecting amendments including microbial cultures, electron donor sources, and nutrients into the subsurface to remove contaminant mass by enhancing microbial populations that will utilize the contaminants in groundwater during respiratory or metabolic activities. The implementation of the ISB is described in the Contingency Remedy RACR (Bhate, November 2020).
- **MNA.** MNA consists of natural processes that decrease concentrations of COCs over time. Natural attenuation processes include biodegradation, dispersion, dilution, sorption, and volatilization (USEPA, September 1998). Since MNA alone was not effective in reducing the concentrations of COCs, the ISB contingency plan was added to the RA-O. Monitoring of MNA is also a part of the RA-O.
- **RA-O Monitoring.** Evaluation of the effectiveness of the MNA and ISB remedies is conducted through RA-O monitoring. Data from performance monitoring are used to evaluate whether the ISB and MNA remedies are effectively reducing COCs and confirm that the TCE and perchlorate plumes are stable and will not migrate to nearby surface water at levels that may present an unacceptable risk to human health and the environment. The first ISB injection event occurred in March 2020. RA-O monitoring was then conducted quarterly for the first two years post injection. Using the data from the two-year long quarterly sampling, cleanup times for the COCs were calculated. Based on this data, it was recommended in the Year 8 RA-O Report that RA-O monitoring needed to continue to be conducted semi-annually during the Year 9 RA-O monitoring period to evaluate the impact of the ISB remedy and seasonal groundwater fluctuations on VOC and perchlorate concentrations. Following that recommendation, the first year of semiannual RA-O monitoring (Year 3 of ISB performance monitoring) occurred during the Year 9 RA-O monitoring period. While the second year of semiannual RA-O sampling (Year 4 of ISB performance monitoring) occurred during this Year 10 RA-O monitoring period.

The Contingency Remedy RD/RAWP (USACE, December 2019) contains the performance monitoring program and the LUC inspection program. The performance objectives for the operation of the selected remedy are as follows:

- LUC performance objectives to be achieved via annual inspections and maintenance:
  - Prohibit access to the contaminated groundwater, except for environmental monitoring or testing.
  - Restrict land use to nonresidential.
- ISB treatment areas remedy performance objectives:

- Achieve and maintain plume stability as measured by declining/decreasing concentrations of COCs in the performance wells relative to the baseline (November 2019 sampling event) and/or historical concentrations.
- Achieve and maintain geochemical conditions conducive to natural attenuation of COCs in the shallow and intermediate groundwater zones.
- Demonstrate MNA processes are occurring by calculating the attenuation rate, daughter COC product concentrations, and microbial culture counts.

Performance objective evaluations for the ISB treatment areas will be based on two lines of evidence presented in Section 5.3.1 of the Contingency Remedy RD/RAWP (USACE, December 2019). The performance MNA remedy will continue to be evaluated outside of the treatment areas using the criteria in the Final 2016 RACR (AECOM, June 2016).

1.3 Site Description

LHAAP-50 (former sump water tank) is in the north-central portion of LHAAP and covers an area of approximately 1 acre (**Figure 1**). The site is an open area of grass and brush that is bounded by South Crocket Avenue to the northeast, a drainage ditch to the west, a railroad spur to the south, and Goose Prairie Creek to the north (**Figure 2**). Runoff from the northeastern portion of the site is generally toward the northeast. Runoff is collected by a drainage ditch to the northeast that runs parallel to South Crockett Avenue and eventually joins Goose Prairie Creek. Runoff from the southwestern portion of the site is collected to the west by a drainage ditch that carries the runoff north into Goose Prairie Creek. Goose Prairie Creek eventually empties into Caddo Lake.

When operational, LHAAP-50 contained a 47,000-gallon capacity aboveground storage tank (AST) which received industrial wastewater from various industrial waste production sumps throughout LHAAP between 1955 and 1988. After the solids were filtered, the storage tank contents were discharged into Goose Prairie Creek upstream of the Goose Prairie Creek bridge on South Crockett Avenue, south of 51st Street (**Figure 2**). The flow in the creek was sufficient to dilute the water to safe levels (Jacobs Engineering Group, Inc. [Jacobs], January 2002). If natural flow in the creek was considered insufficient, clean water was reportedly pumped into the creek to dilute the contents. The AST is no longer present.

The LUC area associated with the groundwater use restriction at LHAAP-50 extends beyond the northern, southern, eastern, and western historical site boundaries and encompasses a total of approximately 77.19 acres (**Figure 2**). The nearest significant surface water body to LHAAP-50 is Goose Prairie Creek, located approximately 80 feet north of the site, which eventually flows into Caddo Lake. LHAAP-50 has no known areas of archaeological or historical importance.

1.4 Conceptual Site Model

Investigations into LHAAP-50 contamination occurred from 1992 to 2010. On-site contaminants were found to most likely be present due to AST releases from the sump water tank on-site.

Aboveground spills are the likely source of perchlorate and VOCs found in soils and adjacent surface water.

COCs at LHAAP-50 include perchlorate, PCE, TCE, 1,1-DCE, 1,2-DCA, cis-1,2-DCE, and VC in groundwater. Perchlorate was also found in the soil until 183 cubic yards of contaminated soil was removed in September 2013 (AECOM, June 2016). The standards for soil clean up are the Texas Risk Reduction Rules Standard No. 2 industrial medium-specific concentrations. Groundwater cleanup standards are the USEPA maximum contaminant levels (MCLs) for the chlorinated volatile organic compounds. Perchlorate's cleanup level falls under the Texas Risk Reduction Program groundwater residential protective concentration level (PCL).

The perchlorate contamination levels in the soil at LHAAP-50 were not found to pose an unacceptable risk to human health; however, perchlorate was found above the PCL in groundwater. The area of this contamination is in the shallow groundwater (upper and lower zones) and poses an unacceptable carcinogenic risk and noncarcinogenic hazard to a future maintenance worker under an industrial exposure scenario (USACE, September 2010). The only other exposure pathway would be through the use of groundwater as a drinking source. However, shallow water is not used as drinking water at the refuge and the LUCs in place for the site prohibit groundwater use. Thus, the potential exposure is eliminated.

In previous documents, the site hydrogeology was represented as consisting of a shallow zone (approximately 0 to 30 feet below ground surface [bgs]) and an intermediate zone (approximately 35 to 60 feet bgs). Drilling activities, performed during implementation of the remedial action (AECOM, November 2016), revealed only a shallow unconfined aquifer extending from ground surface to approximately 60 feet bgs across the site. Since the First Annual RA-O Report (AECOM, November 2016), the former shallow zone is referred to as the "upper shallow" zone (0 to 30 feet bgs), the former intermediate zone is referred to as the "lower shallow" zone (30 to 60 feet bgs), and the former deep zone is referred to as the "intermediate" zone (greater than [>] 100 feet bgs).

The intermediate groundwater zone was found at 100 feet bgs underlying a dry unit of clay with some interbedded sands. Across the site, a layer of clay was the first unit encountered at approximately 60 feet bgs. An intermediate groundwater zone well (50WW10) was found to have a depth to water of 22.55 feet bgs. Based on the screened interval at 50WW10 (approximately 100 – 110 feet bgs), this indicates that there are confined conditions present in the intermediate groundwater zone well.

Due to the thickness of the shallow zone (60 feet), it was determined that more research needed to be done to test for variations in the nature and extent of contamination between the upper and lower portions of the shallow zone. From 2000 to 2002, 27 monitoring wells were installed to evaluate the nature and extent in the shallow zone. Eighteen wells were installed to monitor the lower portion of the shallow zone, and six wells were installed to monitor the upper portion of the shallow zone, and three wells (50WW17, 50WW19, and 50WW20) were installed with

screens that covered the entire length of the saturated shallow zone. To delineate the downgradient edge of the plume beyond 50WW12, an additional upper shallow zone monitoring well (50WW29) was installed in August 2019 (Bhate, December 2019). See **Figure 2** for monitoring well locations.

Based on groundwater data collected in October 2022, groundwater in the shallow groundwater zone ranges from 18.25 feet bgs at 50WW28 to 25.00 feet bgs at 50WW20. Groundwater flows to the north within most of the LUC boundary, but to the northeast and east-northeast across most of the plume area, with a hydraulic gradient of 0.002 foot per foot. The hydraulic gradient is calculated by dividing the difference of the groundwater elevation of 50WW28 and 50WW20 by the distance between the two monitoring wells.

TCE and perchlorate are the most widespread COCs in shallow groundwater. In November 2019 prior to the ISB contingency remedy, the highest perchlorate concentration was detected in the upper shallow zone well 50WW12 at 47,000 micrograms per liter (µg/L), and the highest TCE concentration was detected in the center of the plume at the upper shallow zone well 50WW13 at 7,300 µg/L (**Figure 3**).

2 SITE ACTIVITIES AT LHAAP-50

2.1 Annual LUC Compliance Inspection, Monitoring, and Repair

2.1.1 Annual LUC Compliance Inspection

The objectives of the LUCs at LHAAP-50 are to prohibit residential land-use, to prevent human health exposure to groundwater contamination presenting an unacceptable risk to human health, and to ensure that there is no withdrawal or use of groundwater beneath the site for any purpose other than environmental monitoring and testing until the cleanup levels are attained (AECOM, June 2013). The ESD for LHAAP-50 will remain in effect until the COC concentrations in the soil and groundwater allow unrestricted use and unlimited exposure (USACE, July 2019).

The LUC boundary at LHAAP-50 is 77.19 acres and contains the areas with shallow zone groundwater VOCs and perchlorate contamination. A metes and bounds survey of the LUC boundary and notices of the groundwater use restrictions accompany all property transfer documents and were recorded at the Harrison County Courthouse in June 2015 in accordance with the Texas Administrative Code Title 30, Section 335.566.The survey plat, legal boundary, and description of the groundwater restriction, in conjunction with a locator map, were provided to the Texas Department of Licensing and Regulation in June 2015.

The Land Use Control Implementation Plan was finalized in the 2016 Final RACR (documenting the previous soil removal action and implementation of the MNA remedy) for LHAAP-50 (AECOM, June 2016). The Comprehensive LUC Management Plan [U.S. Department of the Army (U.S. Army), October 2019] provides a repository for LUC plans for sites throughout the former LHAAP. The LUC Plan for LHAAP-50 can be found within the Comprehensive LUC Management Plan, including blank copies of the Inspection and Maintenance Checklist and the LUC Compliance Inspection Form.

A LUC compliance inspection conducted on 02 October 2023 found that no compliance issues, changes in land use, or concerns were noted during the annual inspection. The Annual LUC Compliance Certification Documentation Form for the Year 10 Annual RA-O period is included in **Appendix A.**

2.1.2 Well Field Operation Maintenance

Monitoring wells at LHAAP-50 are inspected during each sampling event and observations are recorded on well inspection forms. Photographs of each monitoring well are taken and stored in a photo log. The photo log and well inspection forms can be found in **Appendix B**. Monitoring wells were in good condition, based on the inspections completed on 02 and 04 October 2023 and 20 through 22 May 2024, during the tenth annual reporting period. The only maintenance required was routine mowing events prior to sampling the site.

2.2 Groundwater Monitoring

The Year 10 reporting period includes the period from October 2023 to May 2024 and encompasses the fourth year of semiannual RA-O monitoring of the ISB remedy and seasonal groundwater fluctuations on VOC and perchlorate concentrations. Fourteen monitoring wells were sampled as part of both sampling events (October 2023 and May 2024) during the Year 10 reporting period. **Table 1** and **Table 2** show a breakdown of the monitoring wells for each sampling event. Monitoring well locations are presented on **Figure 4**. It should be noted that eight of the monitoring wells sampled are to evaluate ISB via performance monitoring. Previously, the ISB Performance Monitoring sampling events have taken place semi-annually in both October and May, with the annual RA-O event occurring only in October. However, as mentioned above, the October 2023 and May 2024 sampling events included the sampling of site monitoring wells. **Table 1** and **Table 2** list the analytes sampled at each monitoring well.

The *Final Installation-Wide Work Plan* describes the sampling procedure and low-flow sampling technique used during the October 2023 and May 2024 sampling events (Bhate, May 2018). Depth to water and total depth of each monitoring well were recorded prior to pumping groundwater out of each well. As the water was pumped out of the ground, its quality was monitored until parameters stabilized within acceptable ranges determined in the Final Installation-Wide Work Plan. The water quality readings are recorded on Groundwater Sample Collection Forms that can be found in **Appendix C**. The samples were packaged and shipped on ice with a chain-of-custody to ALS Environmental in Houston, Texas. Copies of the chain-of-custody forms can be found in **Appendix D**.

2.2.1 Groundwater Elevations and Flow Direction

During the Year 10 RA-O sampling events, groundwater elevations within the 26 wells measured varied by 0.02 to 4.55 feet between the two sampling events, with the highest groundwater levels occurring in May 2024 within all wells. The flow of groundwater at LHAAP-50 was determined to be generally to the north within most of the LUC boundary but to the northeast and east-northeast across most of the plume area. **Figure 5** provides a potentiometric contour map for the October 2023 sampling event which shows a slightly more northward trend from the plume area than May 2024, and **Figure 6** provides a potentiometric contour map for the May 2024 sampling event. **Table 3** lists all groundwater elevations measured from July 2020 to May 2024. Development of the potentiometric contours came from the measurements from monitoring wells screened in the upper shallow zone or that were fully penetrating the shallow zone. Monitoring wells screened only in the lower shallow zone (50WW06, 50WW09, 50WW14, 50WW25, 50WW26, and 50WW27) were not used in creating the contour maps. Monitoring wells 50WW02, 50WW03, and 50WW04 were dry during the October 2023 sampling, which accounts for missing data within the October 2023 potentiometric map (**Figure 5**). Monitoring well 50WW04 was dry during the May 2024 sampling. Sitewide water levels were recorded during each sampling event.

2.2.2 Groundwater Analytical Results – Year 4 Post-ISB Injections

Year 4 RA-O monitoring of the ISB remedy consisted of the semiannual (October 2023 and May 2024) sampling of eight monitoring wells (**Table 1**). ISB direct push technology (DPT) points used during the March 2020 injections to remediate groundwater impacted with VOCs and perchlorate near 50WW13 and 50WW12 are shown on **Figures 2**, **3**, **9**, and **10**. The samples were analyzed for perchlorate according to USEPA Method 6850 and select VOCs according to USEPA Method 8260C. Five of these eight monitoring wells (50WW06, 50WW11, 50WW12, 50WW13, and 50WW14) were sampled for geochemical parameters (ferrous iron, anions, dissolved gases, and total organic carbon [TOC]). Ferrous iron was analyzed using a field screening method. Anions were analyzed per USEPA Method SW9056A, dissolved gasses (ethene, ethane, methane, and carbon dioxide) were analyzed per USEPA Method RSK-175, and TOC was analyzed per USEPA Method SM5310B.

The Year 10 annual RA-O event occurred in October 2023 and included the same eight monitoring wells that were sampled for the ISB remedy monitoring, plus six additional monitoring wells. The additional monitoring wells were sampled for perchlorate and VOCs using the same analysis methods used for the ISB remedy monitoring.

Analytical results for both events are presented in **Table 4** and in the laboratory analytical data package found in **Appendix D**. Quality Control Summary Reports (QCSRs) for each data package can be found in **Appendix E**. The QCSR documents that all data is usable. Analysis detected perchlorate above its PCL and TCE and cis-1,2-DCE above their respective MCLs during the Year 4 post-ISB injections semiannual RA-O sampling at multiple monitoring wells. 1,2-DCA and 1,1-DCE were detected above their respective MCLs at two monitoring wells (50WW11 and 50WW13) in October 2023 and only one monitoring well (50WW12) in May 2024. Analytical results are discussed in more detail in the following two paragraphs. Section 3.0 discusses the remedial performance based on the analytical results.

Year 4 Post-ISB Injections, October 2023 Semiannual Sampling Event. During the October 2023 the sampling event, TCE concentrations were detected above the MCLs at nine monitoring wells (50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14 and 50WW15). The maximum TCE concentration of 7,700 µg/L (duplicate sample) was detected at 50WW13. Perchlorate was detected above the PCL at five monitoring wells (50WW06, 50WW08, 50WW11, 50WW12, and 50WW13). The maximum perchlorate concentration of 17,900 µg/L was detected at 50WW12. Cis-1,2-DCE was detected above the MCL at 50WW08 (77 µg/L) and 50WW13 (430 µg/L). VC was also detected above MCL at one monitoring well (50WW13, 3.2 µg/L). As previously stated, concentrations of 1,2-DCA and 1,1-DCE were detected above their respective MCLs at 50WW11 and 50WW13. 1,2-DCA was detected at a concentration of 20 µg/L in 50WW11 and 43 µg/L (duplicate sample) at 50WW13. 1,1-DCE was detected at a concentration of 23 µg/L in 50WW11 and 18 µg/L in 50WW13.

Year 4 Post-ISB Injections, May 2024 Semiannual Sampling Event. During the May 2024 sampling event, TCE concentrations were detected above the MCLs at seven monitoring wells

(50WW05, 50WW06, 50WW08, 50WW11, 50WW12, 50WW13, and 50WW14). The maximum TCE concentration of 1,200 µg/L was detected at 50WW12. Perchlorate concentrations were detected above the PCL of 17 µg/L at four monitoring wells (50WW08, 50WW11, 50WW12, and 50WW13). The maximum perchlorate concentration of 443,000 J[1] µg/L was detected at 50WW12. Cis-1,2-DCE was detected above MCL at 50WW05 (120 µg/L) and 50WW08 (93 µg/L). VC was not detected above MCL at any monitoring wells during the May 2024 sampling event. As previously stated, concentrations of 1,2-DCA and 1,1-DCE were detected above their respective MCLs (5 and 7 µg/L) at 50WW12. The compound, 1,2-DCA, was detected at a concentration of 15 µg/L, and 1,1-DCE was detected at a concentration of 22 µg/L.

Figures 9 and 10 show the TCE and perchlorate plumes during October 2023 and May 2024 respectively. Historical COC concentrations can be found in **Table 5**.

2.2.3 Groundwater Monitoring Optimization

Sampling will be conducted semi-annually for the performance monitoring well locations and annually for the RA-O locations, as shown in **Table 6**.

Historically, concentrations of dechlorinating bacteria known as *Dehalococcoides* (DHC) were measured in order to monitor the degradation rates of COCs. However, it was determined in the Year 8 RA-O that there were not sufficient microbial populations present to support significant degradation via bacteria (Bhate, February 2023). Therefore, DHC sampling was not included in the fourth quarter Year 8 RA-O sampling or in Year 9 and Year 10 RA-O sampling.

2.3 Surface Water Sampling

Surface water sampling is conducted at LHAAP-50 to evaluate the potential groundwater to surface water pathway, as shown in **Table 7**. Goose Prairie Creek flows northeast and runs parallel to the northern LUC boundary border from the western LUC boundary border to the eastern LUC boundary border. It is located north of LHAAP-50 and the ISB DPT injection points. The closest monitoring well near Goose Prairie Creek is 50WW16. Per the RAWP (AECOM, June 2013), if water is found flowing in the creek and the groundwater elevation at 50WW16 is above the bottom of the creek elevation, then a surface water sample from the creek is required. During the Year 10 sampling period, there was no water flow in Goose Prairie Creek. Therefore, no surface water sample was taken. If the conditions are appropriate, there will be a surface water sample taken from the creek during the Year 11 RA-O.

Historically, GPW-1 and GPW-1A were also included as locations for surface water sampling. However, the two locations were discontinued from sampling after a recommendation in the Year 3 RA-O Report stating that the perchlorate levels were consistently detected below the PCL (Bhate, July 2018). The recommendation was approved by TCEQ and USEPA in July 2018.

[1] Qualifier denoting an estimated value.

2.4 Well Abandonment

The Year 2 and Year 3 RA-O Reports suggested the abandonment of 50WW03 and 50WW19 (AECOM, November 2016; Bhate, July 2018). The abandonment was approved by the USEPA and TCEQ; however, the monitoring wells have not been abandoned. The monitoring wells are being retained so that they are available for sampling, if needed. These monitoring wells are also available for groundwater level measurements which add to our understanding of the groundwater flow at LHAAP-50 and improve potentiometric surface maps. No monitoring wells are recommended for abandonment in this report.

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3 REMEDY EVALUATION

The evaluation of natural attenuation and ISB remedy are provided within two lines of evidence in this report. The first line of evidence describes the perchlorate and TCE plume stability at LHAAP-50 and will provide evaluation of natural attenuation at LHAAP-50. The second line of evidence describes the geochemical indicators that evaluate the ISB remedy. A third line of evidence may be used in order to establish adequate and conclusive evidence if the first two lines of evidence are deemed otherwise. A third line of evidence was not provided in this Year 10 RA-O Report due to the Year 8 RA-O Report suspending DHC analysis due to conditions becoming less favorable for reductive dechlorination and the remaining mass of TOC being less than 20 milligrams per Liter [mg/L] (Bhate, February 2023) (discussed in Section 2.2.3 and 3.2.6).

The monitoring wells that are evaluated have had detections of COCs above their respective PCL/MCLs and are found within the shallow aquifer zone. While the RA-O monitoring network includes monitoring wells in the upper shallow zone, lower shallow zone, and upgradient/cross gradient monitoring wells, the upgradient/cross gradient monitoring wells that lie outside of the treatment area are not likely to be influenced by the ISB treatment. In turn, the following wells will be used to evaluate the effectiveness of the ISB remedy since they lie within the treatment area: 50WW06, 50WW11, 50WW12, 50WW13, and 50WW14. Wells 50WW05, 50WW08, 50WW09, and 50WW15 will be used to evaluate the MNA remedy since they lie outside of the treatment area.

3.1 First Line of Evidence: Plume Stability

The Contingency Remedy RD/RAWP (USACE, December 2019) describes the first line of evidence as plume stability (plume concentrations declining in the performance wells and the plume not expanding in areal extent, as demonstrated by downgradient monitoring wells). The two parts of plume stability discussed below are: (1) change in COC concentrations with time and distance and (2) plume extent.

3.1.1 Change in COC Concentrations over Time and with Distance

Samples were collected from fourteen monitoring wells and analyzed for VOCs and perchlorate. As indicated in **Table 1**, eight of the fourteen monitoring wells are monitored for ISB performance, as is identified within the Contingency Remedy RD/RAWP (USACE, December 2019) for LHAAP-50. Fourteen wells were sampled in October 2023 and May 2024 as part of the ongoing annual RA-O network (**Table 2**). Perchlorate, TCE, 1,2-DCA, 1,1-DCE, and cis 1,2-DCE were detected above their respective PCL and MCLs.

Mann-Kendall statistical trend analysis was completed for nine impacted monitoring wells with COC concentrations above their PCL/MCLs (50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14, and 50WW15). For annual RA-O monitoring well 50WW09, the data set used for the analysis included the 2013 baseline samples and all subsequent RA-O

monitoring events because the data was insufficient for statistical analysis using only annual post-ISB data. For the monitoring wells that are used to monitor the performance of the ISB remedy, trends were evaluated using the 2019 baseline and post-injection data. The trend analysis results are presented in **Appendix F** in graphical format with statistical results presented below the Mann-Kendall analysis. The dates are presented on the x-axis of each graph, and the concentrations of COCs are presented on the y-axis in µg/L (**Appendix F**).

The Mann-Kendall Test is a nonparametric statistical test to assess trends and is especially suited for evaluation of concentration-time series data to establish if trends are present (Gilbert, January 1987). This is a general test to determine whether concentrations tend to increase or decrease with time. The GSI Mann-Kendall Toolkit was used to conduct the analysis. Half of the detection limit was used for non-detect results, where applicable. Field duplicate data were not used, only the original sample. The Mann-Kendall Test was conducted for each monitoring well and for each COC with a concentration above the MCL/PCL in the most recent sampling event. The Mann-Kendall trends for all COCs detected during the Year 10 RA-O were "stable," "no trend," "probably decreasing," or "decreasing" except for TCE and cis-1,2-DCE at monitoring well 50WW08, which have "increasing" trends, and 1,1-DCE at monitoring well 50WW12 which has a "probably increasing" trend. A summary of the Mann-Kendall results is presented in **Table 8**. The COC concentrations over time for selected monitoring wells at LHAAP-50 are shown on **Figure 11a** through **Figure 11i**.

3.1.1.1 Monitoring Well 50WW05

TCE was detected above the MCL in 50WW05 during both semiannual sampling events during Year 10 RA-O, whereas cis-1,2-DCE was detected above the MCL during the May 2024 event only. The TCE concentrations decreased from 180 µg/L (October 2023) to 150 µg/L (May 2024) during Year 10 RA-O sampling. The concentration of cis-1,2-DCE increased from 69 µg/L, slightly below the MCL of 70 µg/L, in October 2023 to 120 µg/L in May 2024. The presence of the TCE daughter product cis-1,2-DCE indicates that limited reductive dechlorination is taking place.

The Mann-Kendall trend analysis for monitoring well 50WW05 was conducted for TCE and cis-1,2-DCE (**Appendix F**). The Mann-Kendall results indicate a decreasing trend for TCE at a 99.9 percent (%) confidence factor. The results for cis-1,2-DCE indicate a decreasing trend at a 99.9 % confidence factor. The COC concentration trends are shown on **Figure 11-a,** along with groundwater elevations. There is an inverse correlation between TCE and groundwater elevations for the post-ISB time period in which 75% of the sampling events demonstrate this relationship. There does not seem to be a direct correlation between cis-1,2-DCE concentrations and fluctuations in groundwater elevations.

3.1.1.2 Monitoring Well 50WW06

Perchlorate was detected above the PCL during the first semiannual Year 4 post-ISB injections RA-O monitoring event (October 2023) in monitoring well 50WW06. The concentration of perchlorate during the Year 4 post-ISB injections RA-O period decreased from 554 µg/L in

October 2023 to below the PCL at 1.28 J µg/L during the second semiannual sampling in May 2024. The variation in perchlorate concentrations (~ 1-2 orders of magnitude) between semiannual events is consistent at 50WW06 since the injection in 2020. TCE, however, does not experience such fluctuations between events. In monitoring well 50WW06, the concentration of TCE decreased from 15 µg/L in October 2023 to 11 µg/L in May 2024. Historically, directly following ISB treatment, TCE and perchlorate concentrations decreased to concentrations below their MCLs/PCL (respectively). Both TCE and perchlorate concentrations remained below their MCL/PCL for 5 consecutive quarterly sampling events following ISB injections. Starting in the fourth quarter of year 2 RA-O sampling, concentrations began fluctuating above and below the MCLs/PCL. This continued fluctuation may indicate a stalled remedy at 50WW06.

The Mann-Kendall trend analysis for monitoring well 50WW06 was conducted for perchlorate and TCE (**Appendix F**). The results indicate no trend for both TCE and perchlorate with confidence factors of 70.5% and 52.4 %, respectively. TCE and perchlorate concentration trends are shown on **Figure 11-b**. There is a distinct inverse correlation between groundwater elevations and TCE and perchlorate concentrations from 2013 to late 2016. The correlation is less consistent through 2017 and 2018 and more substantial from 2019 through 2024.

3.1.1.3 Monitoring Well 50WW08

Perchlorate, TCE, and cis-1,2-DCE were detected above their respective PCL/MCLs in 50WW08 during both semiannual sampling events during the Year 10 RA-O monitoring period. TCE concentrations increased post ISB compared to baseline concentrations in November 2019. TCE increased from 420 µg/L in November 2019 to 610 µg/L in Year 1 Quarter 4 (April 2021) and continued to increase to 720 µg/L in Year 2 Quarter 4 (April 2022). However, in Year 3 Quarter 4 (May 2023) there was a decrease to 650 µg/L. The TCE concentration decreased to 610 µg/L for the first semiannual sampling event of Year 4 post-ISB injections (October 2023) and then increased to 820 µg/L in the second semiannual sampling event (May 2024). However, the Mann-Kendall trend analysis shows TCE significantly increasing with a 99.8% confidence factor. The increase in TCE concentrations correlates to changes in groundwater elevations (**Figure 11-c**). While the upgradient monitoring well 50WW02 to the west is dry, upgradient monitoring well 50WW22 to the south was non-detect for TCE in both October 2023 and May 2024, bounding the TCE plume upgradient.

Perchlorate concentrations also increased post ISB compared to baseline concentration (83 µg/L) in November 2019. The highest perchlorate concentration was detected at 682 µg/L in Year 2 Quarter 2 (October 2021), which then decreased to 83.4 µg/L in Year 2 Quarter 4 (April 2022), then decreased to the lowest detected concentration, 31.1 µg/L (lower than the baseline) in the first semiannual sampling event of Year 9 (October 2022). The concentration increased to 81.1 µg/L in the second Year 9 (May 2023) semiannual sampling event and continued to increase back up to 210 µg/L in the second Year 10 semiannual sampling event (May 2024). The drastic fluctuations in perchlorate concentrations have led to a Mann-Kendall trend analysis with no significant trend and a 61.7% confidence factor. It should be noted that although there is not a significantly decreasing trend for perchlorate at 50WW08, the baseline sample in 2013 detected

a concentration of 6,404 µg/L, which is an order of magnitude higher than the 210 µg/L measurement in May 2024 (Bhate, February 2023). The increase and decrease of perchlorate concentrations seem to generally be directly correlated with changes in groundwater elevations, as shown on **Figure 11-c**.

Cis-1,2-DCE concentrations have increased from 39 µg/L during the November 2019 baseline sampling event to 93 µg/L in the Year 10 second semiannual sampling event (May 2024). Mann-Kendall trend analysis results indicate a significantly increasing trend for cis-1,2-DCE at a >99.9% confidence factor. Although cis-1,2-DCE is a dechlorination product, the fluctuations of cis-1,2-DCE mirror that of TCE, which may suggest limited dechlorination in the area. Contaminant concentrations on the upgradient edge of the plume near 50WW08 indicate that limited biodegradation is occurring in the surrounding area.

3.1.1.4 Monitoring Well 50WW09

As stated in Section 3.1.1, the data set used for the Mann-Kendall analysis for 50WW09 included the 2013 baseline samples and all subsequent RA-O monitoring events because there is insufficient data for statistical analysis using only post-ISB data. Mann-Kendall trend analysis results indicate that there is no significant trend associated with concentrations of cis-1,2-DCE in 50WW09 with a confidence factor of 65.1%. However, the November 2023 sampling event detected concentrations of cis-1,2-DCE at 1.2 µg/L and the May 2024 sampling event detected concentrations of cis-1,2-DCE at 0.64 J µg/L (estimated quantity). Sampling events dating back to November 2017 all detected concentrations below 10 µg/L.

TCE concentrations were detected at 14 µg/L during the first Year 10 RA-O semiannual sampling event (October 2023) and at 4.7 µg/L during the second Year 10 RA-O semiannual sampling event. The Mann-Kendall trend analysis results indicate that there is a decreasing trend in TCE concentrations in 50WW09 with a confidence factor of 96.3%. **Figure 11-d** indicates that the fluctuations of COC concentrations (TCE and cis-1,2-DCE) and changes in groundwater elevations are generally inversely corelated.

3.1.1.5 Monitoring Well 50WW11

Perchlorate and TCE concentrations were detected above their respective PCL and MCLs at 50WW11 during both of the Year 4 post-ISB injections RA-O semiannual sampling events. Perchlorate concentration during the first semiannual sampling event of the Year 10 RA-O (October 2023) was detected at 5,110 µg/L (duplicate result). Concentrations then decreased to 268 µg/L during the second semiannual sampling event (May 2024). Likewise, TCE concentrations during the first semiannual sampling event of the Year 4 post-ISB injections RA-O were higher (2,400 µg/L) than the second semiannual sampling event (140 µg/L). The increases and decreases of the COC concentrations at 50WW11 have strong inverse correlations with the groundwater elevation data (see **Figure 11-e**). The Mann-Kendall trend analyses indicated a probably decreasing trend for perchlorate with a confidence factor of 91.8%. The Mann-Kendall trend analyses indicated a stable trend for TCE with a confidence factor of 83.2%.

During the fourth quarter of the Year 2 RA-O, concentrations of 1,2-DCA, cis-1,2-DCE, and 1,1-DCE were detected below their respective MCLs. Each COC concentration increased during the October 2023 sampling event with a detection of 20 µg/L for 1,2-DCA, 59 µg/L for cis-1,2-DCE, and 23 µg/L for 1,1-DCE. The concentrations then dropped back below their respective MCLs with a detection of 11 µg/L for cis-1,2-DCE, and below detection level for 1,2-DCA and 1,1-DCE. Once again, the increases and decreases of the COC concentrations are found to have strong correlations with the groundwater elevation data (see **Figure 11-e**). The Mann-Kendall trend analyses indicated stable trends for each COC with a confidence factor of 87.4% for 1,2-DCA, 64.0 % for cis-1,2-DCE, and 88.6% for 1,1-DCE.

3.1.1.6 Monitoring Well 50WW12

Perchlorate and TCE were detected above their respective PCL and MCLs during both of the Year 4 post-ISB injections semiannual sampling events. Perchlorate concentration during the first semiannual sampling event (October 2023) was detected at 17,900 µg/L. The concentration then increased to 443,000 J µg/L during the second year 10 semiannual sampling event (May 2024). A duplicate sample was also taken from this monitoring well (139,000 J µg/L). Likewise, the detected TCE concentration during the first semiannual sampling event of the Year 4 post-ISB injections RA-O (160 µg/L) was lower than the second semiannual sampling event (1,200 µg/L). Each COC was detected at a higher concentration than the November 2019 baseline event (47,000 µg/L for perchlorate and 280 µg/L for TCE) during the May 2024 sampling event, and at lower concentrations for each of the COC in the October 2023 sampling event.

1,1-DCE and 1,2-DCA were only detected above their respective MCLs during the second semiannual sampling event (May 2024) at concentrations of 22 µg/L and 15 µg/L respectively. The May 2024 concentrations were also higher than the November 2019 baseline concentrations (4.6 µg/L for 1,1-DCE and 2.7 µg/L for 1,2-DCA). However, both COCs were detected below their MCLs during the October 2023 sampling event. 1,1-DCE has an MCL of 7 µg/L and was detected at 5 µg/L, and 1,2-DCA has an MCL of 5 µg/L and was detected at 1.2 µg/L.

Figure 11-f shows a direct correlation with the increases and decreases of groundwater elevation and all four of the COC concentrations detected at 50WW12 during the Year 3 post-ISB injections RA-O. The relatively high perchlorate concentrations, with seasonal peaks during times with elevated groundwater levels, may suggest that residual source mass is present near this monitoring well. This direct correlation has been consistent for perchlorate and TCE since August 2013 and for 1,1-DCE and 1,2-DCA since May 2016. Additional support for this suggestion comes from the fact that concentrations downgradient remain non-detect and 50WW12 does not indicate a statistically increasing trend.

The Mann-Kendall trend analyses indicated no trend for perchlorate, TCE, and 1,2-DCA at 50WW12 with a confidence factor of 64.0% for perchlorate, 61.7% for TCE, and 74.5% for 1,2-DCA. For 1,1-DCE, the Mann-Kendall trend analysis shows a probably increasing trend with 91.8% confidence.

3.1.1.7 Monitoring Well 50WW13

Perchlorate and TCE were detected above their respective PCL and MCLs during both of the Year 4 post-ISB injections semiannual sampling events. Perchlorate concentration during the first semiannual sampling event (October 2023) was detected at 4,270 µg/L (duplicate result). Concentrations then decreased to 121 µg/L during the second semiannual sampling event (May 2024). Likewise, the detected TCE concentration during the first semiannual sampling event of the Year 4 post-ISB injections RA-O (7,700 µg/L (duplicate result)) was higher than the second semiannual sampling event (470 µg/L).

Cis-1,2-DCE, 1,1-DCE, 1,2-DCA, and PCE were only detected above their MCLs during the first semiannual sampling event (October 2023) at concentrations of 430 µg/L, 18 µg/L, 43 µg/L (duplicate result), and 14 µg/L (duplicate result) respectively. However, all four COCs were detected at or below their MCLs during the May 2024 sampling event. Cis 1,2-DCE has an MCL of 70 µg/L and was detected at 24 µg/L; 1,1-DCE has an MCL of 7 µg/L and was detected at less than (<)5 µg/L; 1,2-DCA has an MCL of 5 µg/L and was detected at <5 µg/L; PCE has an MCL of 5 µg/L and was detected at <5 µg/L. The November 2019 baseline concentrations were detected at 230 µg/L for cis-1,2-DCE, 17 µg/L for 1,1-DCE and 39 µg/L for 1,2-DCA.

Figure 11-g indicates post-ISB COC concentrations in monitoring well 50WW13 were strongly inversely correlated with groundwater elevations during the Year 4 post-ISB injections RA-O.

The Mann-Kendall trend analyses indicate a stable trend for all of the COCs at 50WW13 with a confidence factor of 78.2% for perchlorate, 74.5% for TCE, 54.8% for cis-1,2-DCE, 57.1% for 1,1-DCE, and 52.4% for 1,2-DCA.

3.1.1.8 Monitoring Well 50WW14

TCE was the only COC detected in 50WW14 above the MCL during the Year 10 RA-O. TCE concentrations decreased from 67 µg/L in October 2023 to 24 µg/L in May 2024. The concentrations have decreased overall from the 93.8 µg/L concentration measured in 2013. However, the Mann-Kendall analysis indicated a stable trend for TCE concentrations at 50WW14 with 72.5% confidence.

The fluctuations in TCE concentrations compared to groundwater elevation changes can be seen on **Figure 11-h**. A direct correlation between groundwater elevation and TCE concentration was indicated from late 2017 to mid-2019. From 2020 to 2021 there is an inverse correlation between the two. This inverse correlation between groundwater elevation and TCE concentration is prevalent during Years 9 and 10 RA-O monitoring periods as well.

3.1.1.9 Monitoring Well 50WW15

TCE has been the only COC detected above the cleanup level in 50WW15 since May 2015. TCE levels have continued to fluctuate with an overall decline since early 2015 but increased slightly from 2.3 µg/L in May 2019 to 7.2 µg/L in November 2019, and further increased to 8.4 µg/L in

October 2020 before reducing to below the MCL for the first time in October 2021 (**Figure 11-i**). In October 2022 of the Year 9 RA-O, TCE concentrations were also below the MCL at 4.9 µg/L. However, TCE concentration increased to 6.1 µg/L in May 2023. TCE concentrations remained above the MCL in October 2023 at 6.2 µg/L but dropped below the MCL at 4.8 µg/L in May 2024. Mann-Kendall analysis indicates a stable trend for the concentration levels with a confidence factor of 71.9%.

3.1.2 Overall LHAAP-50 Mann-Kendall Evaluation

The overall Mann-Kendall evaluation for monitoring wells with COCs exceeding the MCLs/PCL at LHAAP-50 indicates that the ISB remedy has decreasing contaminant concentrations within the treatment area (**Table 8**). Currently, stable conditions exist across most of the site indicating the ISB remedy is reaching a treatment plateau. The presence of degradation products cis-1,2-DCE and VC suggests that limited biological degradation has occurred; however, the primary MNA processes reducing concentrations may be abiotic.

The MNA remedy outside the treatment area may be decreasing contaminant concentrations in some portions of the plume, but this reduction in concentrations is likely to be mostly attributed to abiotic processes based on the marginal geochemical indicators discussed in Section 3.2. Additionally, increasing contaminant concentrations on the upgradient edge of the plume near 50WW08 indicate that limited biodegradation is occurring in the area. See excerpt from **Table 8** below.

Monitoring Well	Period of Record	Perchlorate	TCE	cis-1,2-DCE	1,1-DCE	1,2-DCA
50WW08	2019-2024	No trend	**Increasing**	**Increasing**	<MCL	<MCL

3.1.3 Plume Extent

Two plume maps were created using the October 2023 and May 2024 Year 4 post-ISB monitoring data and the Year 10 RA-O MNA monitoring data. A map for each of the semiannual events was created showing the TCE and perchlorate plumes present at LHAAP-50. **Figure 9** presents the plumes in October 2023 and **Figure 10** presents the plumes in May 2024. Additionally, a baseline TCE and perchlorate plume map is presented on **Figure 3**.

3.1.3.1 Plume Configuration

The Year 10 RA-O TCE and perchlorate plumes are elongated along the northeasterly groundwater flow path. The groundwater contaminants follow the pattern of groundwater flow to the northeast and east-northeast. The Year 10 RA-O TCE and perchlorate plumes have a smaller footprint than the November 2019 plume extents.

3.1.3.2 Associated Wells

Monitoring wells that had TCE/perchlorate detections greater than the MCL/PCL are included within the respective plume boundary. The November 2019 baseline TCE plume encompasses the following wells: 50WW05, 50WW06, 50WW08, 50WW09, 50WW10, 50WW11, 50WW12, 50WW14, 50WW15, and 50WW27 (**Figure 3**). The November 2019 baseline perchlorate plume is located slightly farther south than the TCE plume and encompasses the same wells except for 50WW05, 50WW15, and 50WW27 (**Figure 3**). The October 2023 TCE plume encompasses 50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14, and 50WW15 (**Figure 9**). The May 2024 TCE plume encompasses the same monitoring wells as the October 2023 TCE plume, minus 50WW09 and 50WW15 (**Figure 10**). The October 2023 perchlorate plume encompasses 50WW06, 50WW08, 50WW11, 50WW12, and 50WW13 (**Figure 9**). The May 2024 perchlorate plume encompasses the same monitoring wells as the October 2023 plume with the exclusion of 50WW06 (**Figure 10**).

3.1.3.3 TCE Plume

Based on the COC concentration data and the plume maps, the TCE plume is relatively stable. TCE concentrations at 50WW05 and 50WW09 show a decreasing trend. TCE concentrations at 50WW11, 50WW13, 50WW14, and 50WW15 all showed stable trends. No trend was indicated for TCE concentrations at 50WW06 and 50WW12. An increasing trend in TCE concentrations was shown at 50WW08. TCE concentrations seem to be strongly directly or inversely related to groundwater elevations, leading to large seasonal swings at many of the LHAAP-50 wells. This seasonal variation may affect the ability to accurately test trends in TCE concentrations.

50WW12, the farthest downgradient well within the TCE plume, showed an increasing trend during the Year 8 RA-O, but no trend during the Year 9 and 10 RA-O. The Year 8 RA-O Report stated that because of the probably increasing concentration levels of TCE at 50WW12, the TCE plume core might be migrating towards 50WW12. However, TCE concentrations at a further downgradient well (50WW29) remain non-detect, indicating that the plume does not extend far beyond 50WW12 (Bhate, February 2023). The Year 10 RA-O results further support the stability of the TCE plume since 50WW12 is no longer showing an increasing trend. As discussed in Section 3.1.1.6, there appears to be a direct correlation with the increases and decreases of groundwater elevation and TCE concentrations detected at 50WW12, suggesting that residual source mass may be present near this well.

50WW08 is an upper shallow zone monitoring well located within the LHAAP-50 site boundary on the far west side of the TCE plume and was the only monitoring well with an increasing TCE concentration. Cis-1,2-DCE concentrations also revealed an increasing trend at 50WW08, indicating that degradation of TCE is occurring. 50WW09 is located directly next to 50WW08 and monitors the lower shallow zone. 50WW09 had TCE concentrations that were an order of magnitude lower than those of 50WW08 and exhibits a decreasing trend. The analytical results at 50WW09 indicate that there is a decrease in concentration with depth in the shallow zone.

The highest concentration of TCE detected during the Year 10 RA-O was detected at 50WW13 (located in the east-central part of the plume) at 7,700 µg/L (duplicate result) during the October 2023 sampling event. This well has historically had the highest TCE concentrations and concentration levels remain stable according to Mann-Kendall trends. This stability analysis, along with the fact that the monitoring wells surrounding the TCE plume are non-detect for TCE, indicates that the TCE plume is relatively stable.

3.1.3.4 Perchlorate Plume

Based on the COC concentration data and the plume maps, the perchlorate plume is relatively stable. Perchlorate concentrations at 50WW11 show a probably decreasing trend and 50WW13 shows a stable trend. No trend was indicated for perchlorate concentrations at 50WW06, 50WW08, or 50WW12. No monitoring wells showed significant increases in perchlorate concentration trends during the Year 10 RA-O monitoring period. 50WW11 and 50WW13 are located on the plume border where the plume sinches in towards the south. 50WW15 and 50WW05 located just north of the plume, detected concentrations of perchlorate that were well below the PCL of 17 µg/L (less than or equal to 0.273 µg/L during both sampling events). This supports perchlorate plume stability.

While 50WW08 and 50WW06 did not show trends for perchlorate concentration levels, October 2023 concentrations were below the baseline sample concentration for each well and 50WW06 was below the baseline for May 2024 as well. Both monitoring wells are located on the edge of the perchlorate plume and are adjacent to monitoring wells outside of the plume (50WW05, 50WW16, and 50WW22) with October 2023 perchlorate concentrations at 0.273, 0.174, and 0.337 µg/L respectively, which are well below the PCL of 17 µg/L. Monitoring well 50WW06 was excluded from the plume in May 2024 when the perchlorate concentration dropped to 1.28 J µg/L, which further supports the plume stability.

Monitoring well 50WW12 is the farthest downgradient well in the perchlorate plume. It had the highest concentration level of perchlorate at 443,000 J µg/L in May 2024. The Year 8 RA-O Report noted that the concentration of perchlorate detected in April 2022 (141,000 J µg/L) at 50WW12 has been the highest perchlorate concentration ever measured at the well, indicating that there may be a residual source responsible for the high concentrations near downgradient well 50WW12 (Bhate, February 2023). The perchlorate concentration in May 2024 was higher than what was reported in April 2022. Regardless, perchlorate at 50WW12 is still reported as having no trend. Perchlorate levels were below the PCL at downgradient well 50WW29 at concentrations of 0.252 µg/L in October 2023 and in 0.606 J µg/L May 2024 which means the plume has not moved far past 50WW12. Thus, supporting perchlorate plume stability.

Year 8 and Year 9 RA-O Reports mentioned the absence or low-level detections of daughter products like cis-1,2-DCE and VC may be indicative of limited reductive dechlorination near 50WW12. It is possible that the high perchlorate concentrations are inhibiting the reductive dechlorination of TCE that would have been expected to occur (Bhate, February 2023). Reductive dechlorination may have also been inhibited for the same reason during the Year 10 RA-O

monitoring period as only 0.77 J µg/L of cis-1,2-DCE was detected at 50WW12 in October 2023 and the May 2024 concentration was < 10 µg/L. However, this low-level detection of cis-1,2-DCE indicates that there is some reductive dechlorination occurring.

3.1.4 Predictive Modeling

The RAWP (AECOM, June 2013) requires predictive modeling and the calculation of a natural attenuation rate to be conducted for COCs at monitoring wells that meet the following credentials: the concentration of the COC was greater than the MCL/PCL and the Mann-Kendall analysis trend for that COC was determined to be statistically decreasing over time based on the results of the RA-O monitoring period (**Appendix F**). Calculations of attenuation rates for qualifying wells can be found in **Appendix G**.

Table 8 summarizes the Year 10 Mann-Kendall analysis trend results for each of the wells that had COCs with exceedances over the MCL/PCL. 50WW05 showed decreasing trends and MCL exceedances for both TCE and cis-1,2-DCE concentrations. Therefore, the time-dependent attenuation rate was calculated. The first order rate constant for TCE was determined to be 0.0007 day^{-1} and 0.0005 day^{-1} for cis-1,2-DCE. It was estimated that it would take 13.3 years for TCE to reach its MCL of 5 µg/L and 3.0 years for cis-1,2-DCE to reach its MCL of 70 µg/L. The natural attenuation rates for TCE slightly increased from the Year 9 RA-O estimations of 12.8 years and decreased for cis-1,2-DCE from 3.4 years.

It should be noted that the current trends may not accurately predict future declines in COC concentrations due to the possibility of Mann-Kendall trends being affected by seasonal fluctuations in groundwater levels. The Mann-Kendall trends for the Year 10 RA-O results show decreasing trends in three monitoring wells for at least one COC that remains above MCLs. Two of the wells, 50WW05 and 50WW09, show decreasing trends for TCE and meet the credentials for predictive modeling (Bhate, February 2023). 50WW11, however, shows a “probably decreasing” trend with perchlorate concentrations that vary seasonably (see **Table 3** for groundwater level fluctuations). Over the past two reporting periods, Year 9 RA-O and Year 10 RA-O, the concentrations in October have been an order of magnitude greater than those in May. Moreover, year over year the Mann-Kendall concentration trend for perchlorate in 50WW11 has fluctuated between “stable” (Year 9 RA-O results) and “probably decreasing” (Year 10 RA-O results). The fluctuations in concentrations at 50WW11 is a prime example of seasonal variability affecting the Mann-Kendall trend analysis results.

3.2 Performance Monitoring of ISB: Geochemical Indicators

Table 1 identifies the wells that were chosen to evaluate the performance of the ISB remedy. Geochemical parameters are collected in the field and are recorded during sampling events for the monitoring wells. The field measured parameters for LHAAP-50 wells include dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, conductivity, turbidity, temperature, and ferrous iron. Groundwater samples were also analyzed for MNA parameters (nitrate, sulfate, chloride dissolved gases, and TOC).

The wells in the treatment area used to evaluate the ISB remedy are 50WW06, 50WW11, 50WW12, 50WW13, and 50WW14. These wells are more likely to be affected by the ISB injections than the wells outside of the treatment area. In turn, the wells outside of the treatment area (50WW05, 50WW08, 50WW09, and 50WW15) are used to evaluate the MNA remedy.

3.2.1 Dissolved Oxygen

Anaerobic bacteria generally cannot function at DO concentrations greater than approximately 0.5 mg/L, and biotic reductive dechlorination is not expected to occur at DO levels above that threshold. DO levels in the monitoring wells (inside and outside the treatment area) sampled during the first semiannual Year 10 RA-O monitoring event were below 0.5 mg/L, ranging between 0.02 and 0.07 mg/L (**Table 4**). The DO levels in wells outside the treatment area during the second semiannual Year 10 RA-O monitoring event ranged between 0.04 and 3.05 mg/L with detections greater than 0.5 mg/L found in three wells (50WW08, 50WW09, and 50WW15), as shown in **Table 4**. Inside the treatment area in the Year 10 second semiannual RA-O monitoring event, DO concentrations ranged from 0.17 to 1.97 mg/L with detections in two wells (50WW06 and 50WW11) greater than 0.5 mg/L. Based on the DO readings, the DO levels show favorable conditions during the first semiannual RA-O sampling event. However, the second semiannual sampling event measurements indicate that DO levels in only 40% of the wells in the treatment area and 50% of the wells outside the treatment area were conducive to reductive dechlorination.

3.2.2 Oxidation Reduction Potential

The ORP levels indicate how oxidative or reductive the groundwater is in the aquifer matrix and provide real-time data regarding whether conditions may be conducive for anaerobic biodegradation. ORP values less than 50 millivolts (mV) are indicative that anaerobic conditions are present and are conducive for the biological reduction of perchlorate, chlorinated ethenes, and ethanes. As shown in **Table 4**, three wells had ORP values below 50 mV, two within the treatment area and one outside of the treatment area during the October 2023 sampling event. Monitoring well 50WW14 had the lowest ORP value at -52 mV. During the May 2024 sampling event of the Year 10 RA-O, ORP was above 50 mV at all the wells measured in the treatment area, except 50WW14 where the ORP was -30 mV. Outside the treatment area, the ORP values were above 50 mV at all wells. The ORP values in the impacted wells indicate that oxidative conditions (not favorable for reductive dechlorination) are present in all wells except for 50WW14.

3.2.3 Nitrate

After DO has been depleted in the microbiological treatment zone, nitrate may be used as an electron acceptor for anaerobic biodegradation of perchlorate and chlorinated ethenes via denitrification. Nitrate levels above 1 mg/L may compete with the reductive pathway (USEPA, September 1998). Nitrate levels in LHAAP-50 groundwater were detected near or below the laboratory reporting limit of 0.1 µg/L during the Year 10 RA-O monitoring period at all wells except monitoring well 50WW12 in May 2024 which measured at 0.231 J mg/L (duplicate

result)(**Table 4**). Therefore, nitrate levels indicate that nitrate-reducing processes will not inhibit anerobic biodegradation of perchlorate or chlorinated ethenes.

3.2.4 Sulfate

After DO and nitrate have been depleted in the groundwater, sulfate may be used as an electron acceptor for anaerobic biodegradation. This process is termed "sulfate reduction" and results in the production of sulfide. Concentrations of sulfate greater than 20 mg/L may cause competitive exclusion of dechlorination. However, in many plumes with high concentrations of sulfate, reductive dechlorination still occurs (USEPA, September 1998). **Table 4** indicates that the sulfate concentrations were above 20 mg/L in all the wells in the treatment area during both semiannual events except 50WW06 in May 2024. Sulfate concentrations during the Year 10 RA-O ranged between 11.4 (duplicate) mg/L at 50WW06 and 847 J mg/L (duplicate result) at 50WW12, indicating that sulfate may compete as an electron acceptor with VOCs and perchlorate. Sulfate was not analyzed for any wells outside the treatment area.

3.2.5 Methane

Reducing conditions generally occurs after oxygen, nitrate, and sulfate have been depleted. Methane levels above 500 µg/L are considered indicative of strongly reducing conditions (USEPA, September 1998). **Table 4** indicates that methane measured at the five wells in the treatment area ranged between 1.32 µg/L at 50WW13 (May 2024) and 8,890 µg/L at 50WW12 (October 2023) during the Year 10 RA-O monitoring period. Methane concentrations indicate that methanogenesis is occurring at 50WW12, which is the farthest downgradient well (farthest east well) within the plume boundary. Note that the third highest TCE concentration detected during the Year 10 RA-O reporting period (1,200 µg/L) and the highest perchlorate concentration (443,000 J µg/L) were detected at 50WW12.

3.2.6 Total Organic Carbon

Regardless of the electron acceptor being used, organic carbon is essential as a source of reduced hydrogen and energy to sustain microbial degradation of contaminants. TOC concentrations greater than 20 mg/L are considered adequate to support microbial activity (USEPA, September 1998). All TOC concentrations measured during this monitoring period were found to be below 20 mg/L (**Table 4**). Therefore, TOC levels detected during the Year 10 RA-O monitoring period are not sufficient to support the reduction of perchlorate or VOCs.

3.2.7 pH

The pH of groundwater has an effect on the presence and activity of microbial populations in groundwater. Microbes capable of degrading chlorinated aliphatic hydrocarbons and petroleum hydrocarbon compounds generally prefer pH values varying from 6 to 8 standard units (USEPA, September 1998). The groundwater pH within the treatment area ranged between 6.32 and 6.87 standard units in the first semiannual monitoring event as part of the Year 10 RA-O; outside the treatment area, the pH ranged between 6.2 and 7.14 standard units in the first semiannual

monitoring event of Year 10 RA-O (**Table 4**). The annual RA-O sampling plan includes a longer list of wells sampled, and the pH levels for monitoring wells outside the treatment area during the second semiannual monitoring event of the Year 10 RA-O ranged between 6.29 and 7.57 standard units. The groundwater pH within the treatment area ranged between 5.9 and 7.07 standard units in the second semiannual monitoring event as part of the Year 10 RA-O. Optimal conditions for microbial populations were present throughout the entire Year 10 RA-O monitoring period, with the exception of well 50WW06. The groundwater pH at 50WW06 in May 2024 was lower than 6 standard units and is too acidic for microbial populations to thrive.

3.2.8 Ethane and Ethene

Ethane and ethene are the two end products of the reductive dechlorination pathways for chlorinated ethanes and ethenes. As shown in **Table 4**, in the Year 10 first semiannual monitoring event (October 2023) ethane was detected at 0.00104 µg/L (duplicate value) at 50WW13 and was otherwise non-detect (0.5 U µg/L, where U is non-detect). During the second semiannual monitoring event (May 2024), ethane was detected at 0.00082 J µg/L at 50WW14 and was otherwise non-detect (0.5 U µg/L). Ethene was detected at 0.000630 J µg/L and 0.000666 J µg/L (duplicate result) at 50WW13 respectively during the first semiannual monitoring event (October 2023). Ethene was not detected at all wells during the May 2024 monitoring event. Low levels of ethene and ethane detected at 50WW13 are indicative of complete degradation of chlorinated ethenes, though slow and limited.

3.2.9 Geochemical-Indicator and MNA Parameter Summary

The qualitative assessment of geochemical indicators in the shallow groundwater zone at LHAAP-50 indicates that conditions both inside and outside the treatment area were more conducive to biological degradation during the first semiannual sampling event (October 2023) than in the second semiannual sampling event (May 2024). Additionally, conditions were slightly more conducive to biological degradation inside the treatment zone than outside the treatment zone. However, overall conditions were only marginally conducive to biological degradation, except at monitoring well 50WW12 where limited methanogenesis may be occurring, at 50WW13 and 50WW14 where methane was detected, and at 50WW13 where ethene was detected.

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4 SUMMARY AND CONCLUSIONS

4.1 Summary

A LUC compliance inspection conducted 02 October 2023 found no compliance issues, changes in land use, or concerns. The use of the site is consistent with that mandated by the ROD.

No damage to bollards, well pads, or protective casings was observed during the October 2023 and May 2024 well inspections, and minimal encroachment of weeds or brush on the wells pads was observed.

VOC, perchlorate, and geochemical data were collected during both of the Year 10 RA-O semiannual sampling events at LHAAP-50 to evaluate effectiveness of the ISB remedy. A tiered approach assessing the three lines of evidence was used to evaluate the occurrence of natural attenuation in site groundwater.

TCE and perchlorate are the most widespread COCs in shallow groundwater at LHAAP-50. An assessment of the first line of evidence shows that both TCE and perchlorate plumes were relatively stable during the Year 10 RA-O monitoring. The plumes are bounded by downgradient well 50WW29, where the COCs were not detected.

Based on the COC concentration data and the plume maps, the TCE plume is relatively stable. TCE concentrations at 50WW05 and 50WW09 showed a decreasing trend. TCE concentrations at 50WW11, 50WW13, 50WW14, and 50WW15 showed stable trends. No trend was indicated for TCE concentrations at 50WW06, or 50WW12. An increasing trend in TCE concentration was shown at 50WW08, which is located on the far west side of the TCE plume. 50WW08 was the only monitoring well with an increasing TCE concentration. Cis-1,2-DCE concentrations also revealed an increasing trend at 50WW08, indicating that degradation of TCE is occurring at a direct rate with the rising TCE levels. However, large fluctuations in TCE and cis-1,2-DCE which mirror one another may suggest limited dechlorination in the area. The Year 8 RA-O Mann-Kendall trend analysis indicated that TCE trends at 50WW12 (the furthest downgradient monitoring well in the TCE plume) were increasing. However, there was no trend indicated during the Year 9 and Year 10 RA-O monitoring periods, further proving the plume's stability. The highest concentration of TCE detected during the Year 10 RA-O was detected at 50WW13 (located in the center of the plume) at 7,700 µg/L (duplicate result) during the October 2023 sampling event. This well has historically had the highest TCE concentrations and concentration levels remain stable. This, along with the fact that the monitoring wells surrounding the TCE plume are non-detect for TCE, indicates that the TCE plume is relatively stable.

Based on the COC concentration data and the plume maps, the perchlorate plume is relatively stable. Perchlorate concentrations at 50WW13 showed a stable trend. No trend was indicated for perchlorate concentrations at 50WW06, 50WW08, or 50WW12. A probably decreasing trend was indicated for perchlorate concentrations at 50WW11. No monitoring wells showed significant increases in perchlorate concentration trends. 50WW15 and 50WW05 located just

north of the plume, detected concentrations of perchlorate that were well below the PCL of 17 µg/L (less than or equal to 0.161 µg/L during both sampling events). This supports perchlorate plume stability. 50WW08 and 50WW06 did not show trends for perchlorate concentration levels and October 2023 concentrations were below the baseline sample concentration for each well with 50WW06 below baseline in May 2024 as well. Both monitoring wells are located on the border of the perchlorate plume and are adjacent to monitoring wells outside of the plume with perchlorate concentrations far below the PCL. 50WW06 was even excluded from the plume in May 2024 when the perchlorate concentration dropped to 1.28 J µg/L (below the PCL), which further supports that the plume is stable. Monitoring well 50WW12 is the farthest downgradient well in the perchlorate plume. It had the highest concentration level of perchlorate at 443,000 J µg/L in May 2024. The Year 8 RA-O Report noted that the concentration of perchlorate detected in April 2022 (141,000 J µg/L) at 50WW12 has been the highest detected since 2013, indicating that there may be a residual source responsible for the high concentrations near downgradient well 50WW12 (Bhate, February 2023). However, the May 2024 perchlorate concentration exceeded that of April 2022. Levels were reported below the baseline in October 2023 (17,900 µg/L). Perchlorate levels were below the PCL at downgradient well 50WW29 at concentrations of 0.252 µg/L in October 2023 and in 0.606 J µg/L May 2024 which means the plume has not migrated downgradient from 50WW12. Thus, the perchlorate plume is considered stable.

The qualitative assessment of geochemical indicators in the shallow groundwater zone at LHAAP-50 indicates that conditions both inside and outside the treatment area were more conducive to biological degradation during the first semiannual sampling event (October 2023) than in the second semiannual sampling event (May 2024). For example, the DO levels show favorable conditions during the first semiannual RA-O sampling event. However, the second semiannual sampling event measurements indicate that DO levels in only 40% of the wells in the ISB treatment area and 50% of the wells outside the ISB treatment area are conducive for reductive dechlorination. Additionally, the ORP values during both events in the impacted wells indicate that oxidative conditions (not favorable for reductive dechlorination) are present in all wells except for 50WW14. Overall, conditions were only marginally conducive to biological degradation.

Surface water samples to evaluate the performance of soil removal action (soil to surface water pathway) were not collected during the Year 10 RA-O monitoring period based on the recommendations in the Year 3 RA-O Report, which was approved in July 2018 (Bhate, July 2018). During the Year 10 RA-O monitoring period, there was no water flow in Goose Prairie Creek. Therefore, no surface water sample was collected.

According to the Year 8 RA-O Report, DHC analysis has since ceased due to conditions becoming less favorable for reductive dechlorination and there being no remaining mass of TOC > 20 mg/L present (Bhate, February 2023).

There are no additional proposed changes to the monitoring network for the Year 11 RA-O, and the sampling will be conducted semi-annually for the ISB performance monitoring wells and annually for the RA-O monitoring wells, as approved in the Contingency Remedy RD/RAWP

(USACE, December 2019). The wells are in good condition and do not require additional maintenance during the Year 11 RA-O.

4.2 Conclusions

In some portions of the plume, contaminant concentrations outside the MNA treatment area may be decreasing. This is most likely due to abiotic processes. Additionally, increasing contaminant concentrations on the upgradient edge of the plume near 50WW08, indicate that contaminant concentrations are not decreasing due to MNA as expected. If concentrations continue to show a steady increase near 50WW08, additional investigations should be conducted to determine if residual sources are present upgradient.

The direct correlation with seasonal fluctuations in TCE concentrations noted during the Year 9 RA-O Report was apparent during Year 10 RA-O reporting as well. Additional investigation near 50WW12 to determine the cause of the inter- and intra-annual groundwater elevation changes affecting COC concentration trends is recommended. As mentioned in the Year 9 RA-O, the absence of daughter products like cis-1,2-DCE and VC indicate that reductive dechlorination may be limited near 50WW12. It is possible that the high perchlorate concentrations are inhibiting the reductive dechlorination of TCE that would have been expected to occur. However, some reductive dechlorination is occurring. To evaluate if reductive dechlorination is occurring, monitoring should continue to be conducted during the Year 11 RA-O.

Based on the analytical results from this Year 10 RA-O reporting period, Year 11 RA-O groundwater sampling will follow the same sample plan as the Year 10 RA-O event. Due to geochemical data collected indicating marginal conditions for the degradation of perchlorate/VOCs within the treatment area, additional injections should be considered.

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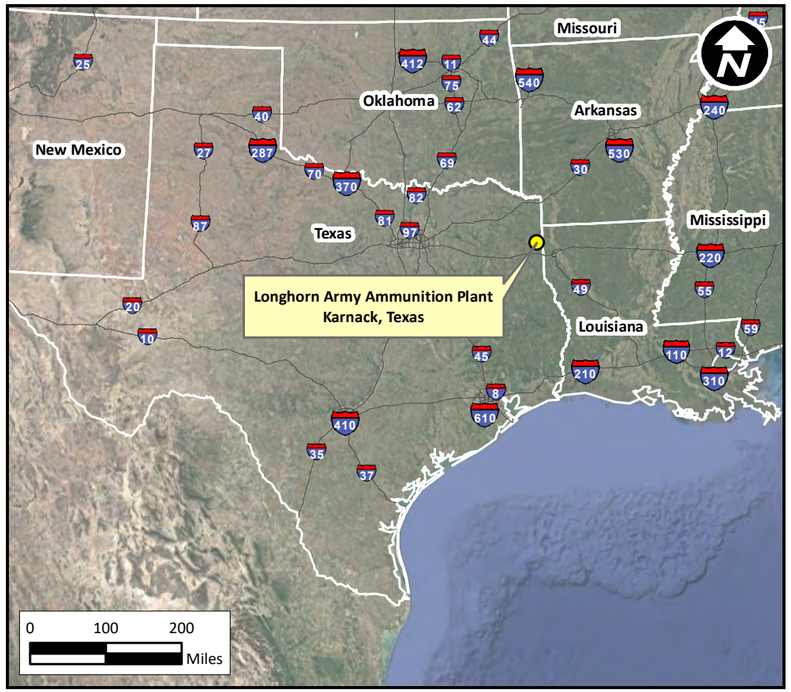
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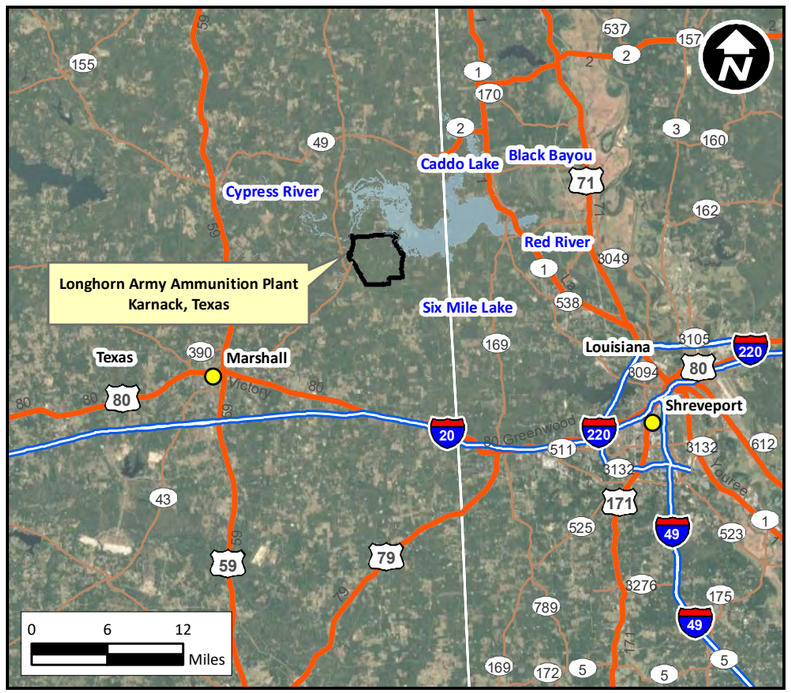
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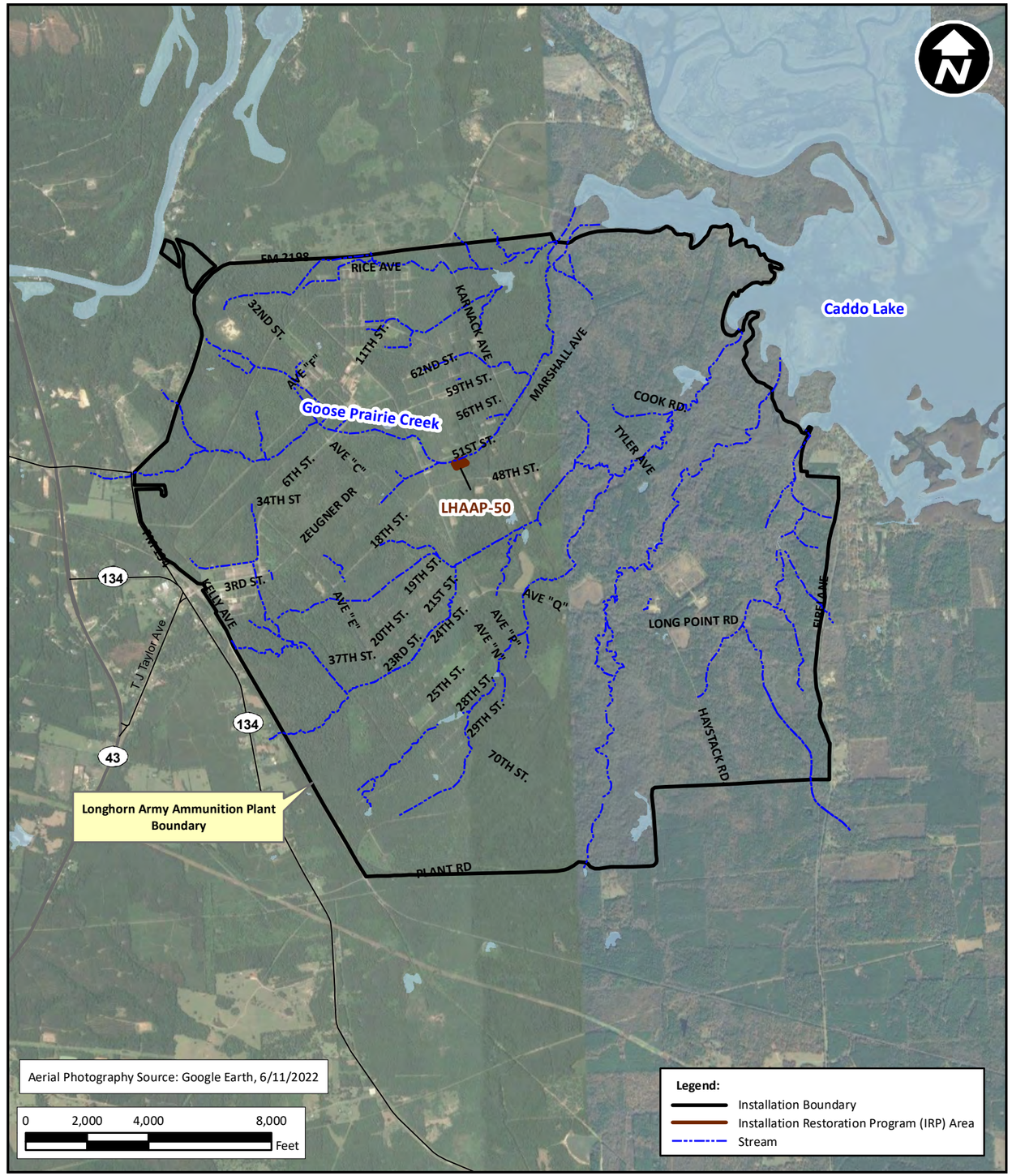
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FIGURES

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01331071

Longhorn Army Ammunition Plant
Location and Site Vicinity Map

Figure 1

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

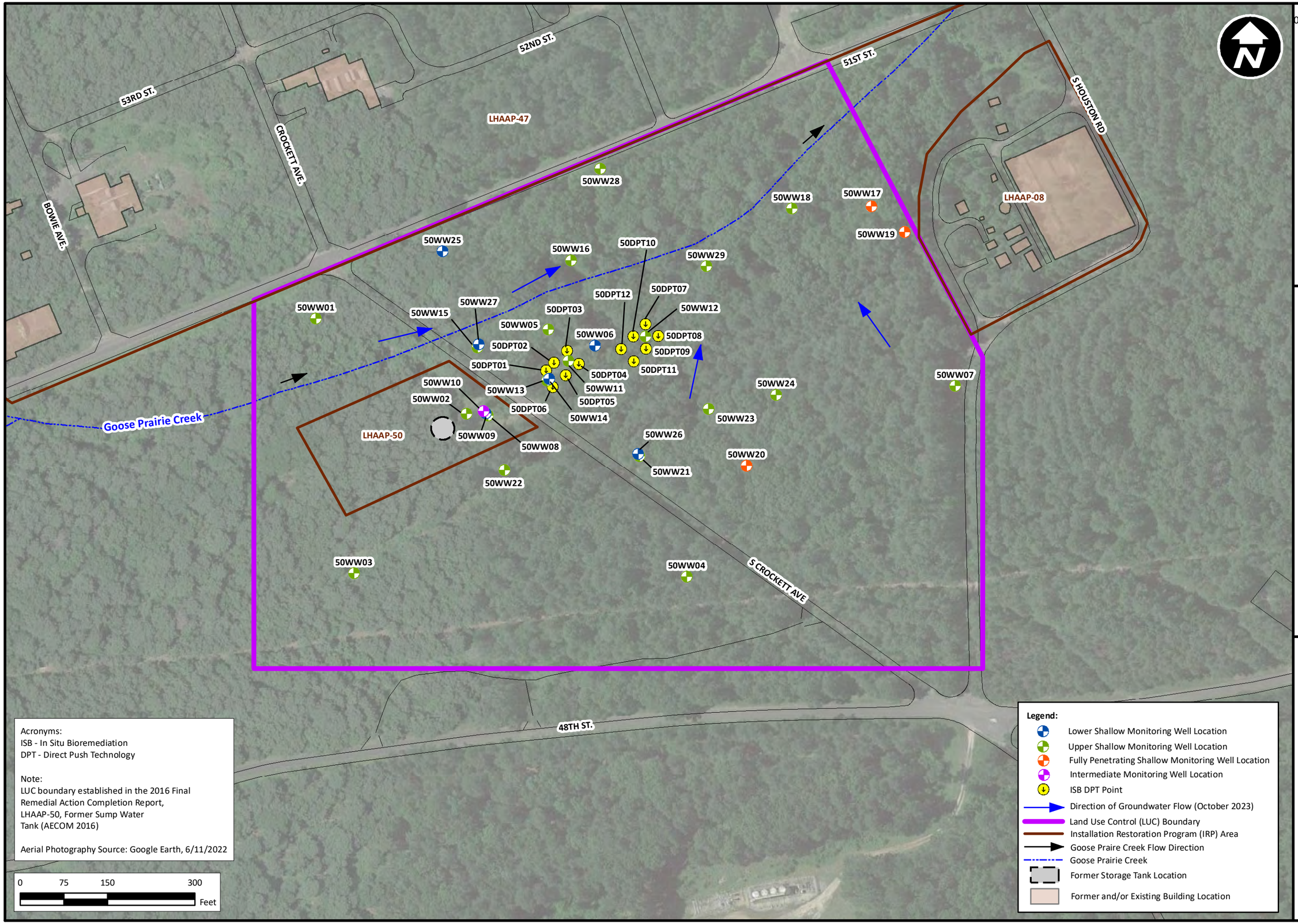
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DATE: 10/14/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0009.02

PCIbhate



Acronyms:
ISB - In Situ Bioremediation
DPT - Direct Push Technology

Note:
LUC boundary established in the 2016 Final Remedial Action Completion Report, LHAAP-50, Former Sump Water Tank (AECOM 2016)

Aerial Photography Source: Google Earth, 6/11/2022

0 75 150 300 Feet

Legend:

- Lower Shallow Monitoring Well Location
- Upper Shallow Monitoring Well Location
- Fully Penetrating Shallow Monitoring Well Location
- Intermediate Monitoring Well Location
- ISB DPT Point
- Direction of Groundwater Flow (October 2023)
- Land Use Control (LUC) Boundary
- Installation Restoration Program (IRP) Area
- Goose Praire Creek Flow Direction
- Goose Prairie Creek
- Former Storage Tank Location
- Former and/or Existing Building Location

01331072

Site Map

Figure 2

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

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DATE: 10/15/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0009.02

PCIbhate

01331073

Figure 3

Trichloroethene and Perchlorate Plumes
Baseline (November 2019)

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 10/15/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0009.02

PCIbhate

LHAAP-47
LHAAP-08
LHAAP-50
Goose Prairie Creek
53RD ST.
52ND ST.
51ST ST.
BOWIE AVE.
CROCKETT AVE.
S HOUSTON RD
S CROCKETT AVE
48TH ST.

50WW27 (2 U) (0.5 U)
50WW16 (1.6 J) (1.5)
50WW18 (2 U) (0.5 U)
50WW17 (2 U) (0.5 U)
50WW29 (2 U) (0.5 U)
50WW05 (2 U) (290)
50WW15 (2 U) (7.2)
50WW12 (47,000) (280)
50WW10 (2 U) (0.5 U)
50WW06 (4,300) (41)
50WW24 (2 U) (0.5 U)
50WW23 (2 U) (0.5 U)
50WW21 (2 U) (0.5 U)
50WW09 (6.6) (30)
50WW08 (83) (420)
50WW22 (2 U) (0.5 U)
50WW13 (4,900) (7,300)
50WW11 (8,000) (3,300)
50WW14 (2 U) (37)

Acronyms:
J - Estimated value
U - Result is less than the laboratory detection limit
ISB - In Situ Bioremediation
DPT - Direct Push Technology

Note:
LUC boundary established in the 2016 Final Remedial Action Completion Report, LHAAP-50, Former Sump Water Tank (AECOM 2016)

Aerial Photography Source: Google Earth, 6/11/2022

0 75 150 300 Feet

Legend:

- Lower Shallow Monitoring Well Location
- Upper Shallow Monitoring Well Location
- Fully Penetrating Shallow Monitoring Well Location
- Intermediate Monitoring Well Location
- ISB DPT Point
- (4,300) Perchlorate Concentration Reported in Micrograms per Liter (µg/L)
- Perchlorate Contour >17 µg/L
- (41) Trichloroethene Concentration Reported in Micrograms per Liter (µg/L)
- Trichloroethene Contour >5 µg/L
- Direction of Groundwater Flow (October 2023)
- Land Use Control (LUC) Boundary
- Installation Restoration Program (IRP) Area
- Goose Praire Creek Flow Direction
- Goose Prairie Creek
- Former Storage Tank Location
- Former and/or Existing Building Location

01331074

RA-O Monitoring Network

Figure 4

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

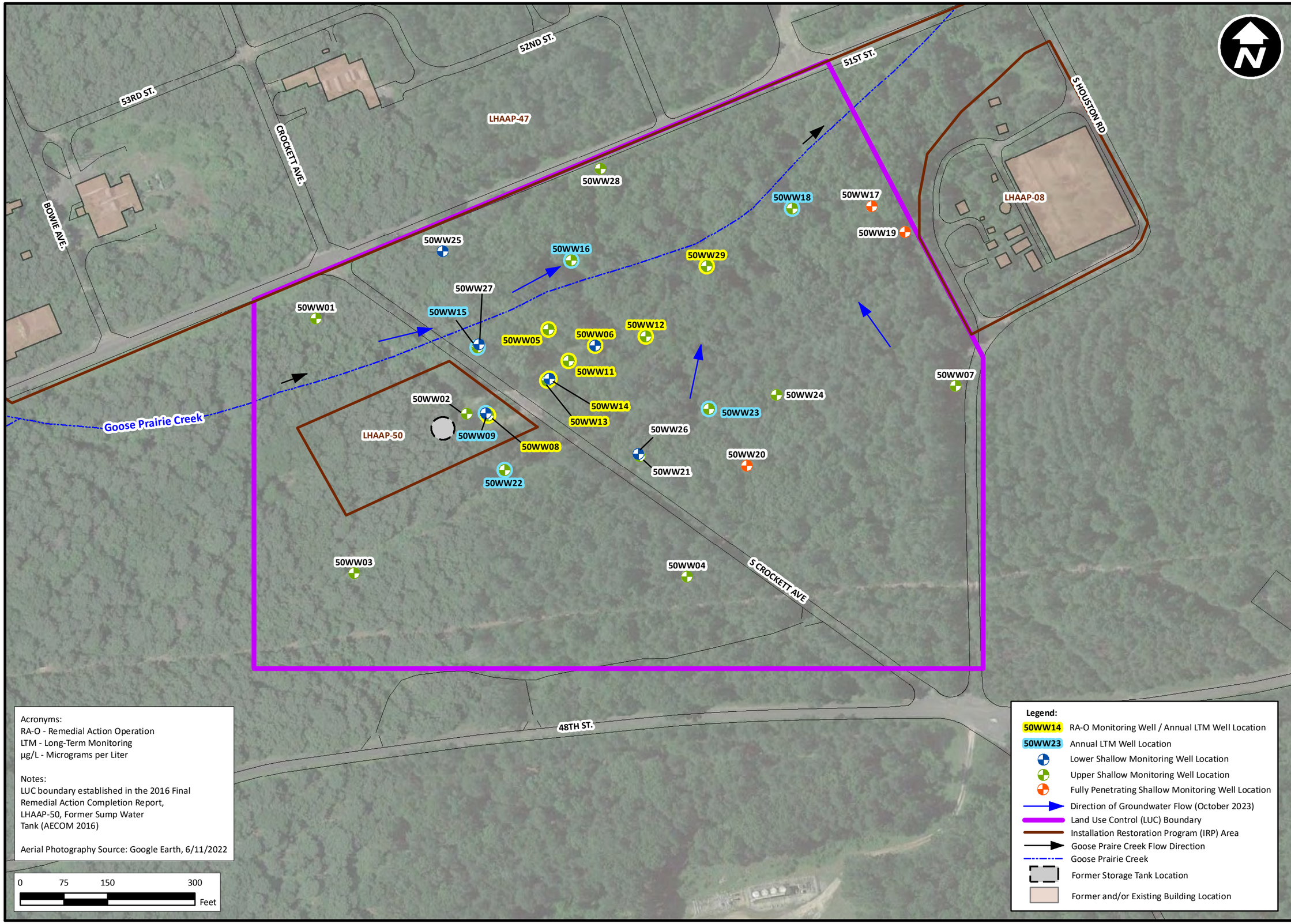
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DATE: 10/15/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0009.02

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Acronyms:
RA-O - Remedial Action Operation
LTM - Long-Term Monitoring
µg/L - Micrograms per Liter

Notes:
LUC boundary established in the 2016 Final Remedial Action Completion Report, LHAAP-50, Former Sump Water Tank (AECOM 2016)

Aerial Photography Source: Google Earth, 6/11/2022

0 75 150 300 Feet

Legend:

- 50WW14 — RA-O Monitoring Well / Annual LTM Well Location
- 50WW23 — Annual LTM Well Location
- Lower Shallow Monitoring Well Location
- Upper Shallow Monitoring Well Location
- Fully Penetrating Shallow Monitoring Well Location
- Direction of Groundwater Flow (October 2023)
- Land Use Control (LUC) Boundary
- Installation Restoration Program (IRP) Area
- Goose Praire Creek Flow Direction
- Goose Prairie Creek
- Former Storage Tank Location
- Former and/or Existing Building Location

01331075

Shallow Zone Potentiometric Map
1st Semiannual Sampling Event
(October 2023)

Figure 5

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

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DATE: 11/27/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0009.02

PCIbhate

52ND ST.
53RD ST.
51ST ST.
CROCKETT AVE.
BOWIE AVE.
S HOUSTON RD
S CROCKETT AVE
48TH ST.
Goose Prairie Creek
LHAAP-47
LHAAP-08
LHAAP-50

50WW28 (176.16)
50WW17 (175.95)
50WW18 (175.79)
50WW19 (176.19)
50WW29 (175.80)
50WW16 (176.31)
50WW01 (177.35)
50WW12 (176.49)
50WW05 (176.58)
50WW11 (176.62)
50WW15 (176.78)
50WW13 (176.72)
50WW02 (DRY)
50WW08 (176.78)
50WW22 (176.90)
50WW21 (176.84)
50WW23 (176.60)
50WW24 (176.73)
50WW07 (176.63)
50WW20 (177.10)
50WW03 (DRY)
50WW04 (DRY)

176.00
176.50
177.00
177.00

Note:
LUC boundary established in the 2016 Final Remedial Action Completion Report, LHAAP-50, Former Sump Water Tank (AECOM 2016)

Aerial Photography Source: Google Earth, 6/11/2022

0 75 150 300 Feet

Legend:

- Upper Shallow Monitoring Well Location
- Fully Penetrating Shallow Monitoring Well Location
- (176.90) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- Land Use Control (LUC) Boundary
- Installation Restoration Program (IRP) Area
- Goose Praire Creek Flow Direction
- Goose Prairie Creek
- Former Storage Tank Location
- Former and/or Existing Building Location

01331076

Shallow Zone Potentiometric Map
2nd Semiannual Sampling Event
(May 2024)

Figure 6

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 11/27/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0009.02

PCIbhate

LHAAP-47
LHAAP-08
LHAAP-50

53RD ST.
52ND ST.
51ST ST.
48TH ST.
BOWIE AVE.
CROCKETT AVE.
S HOUSTON RD
S CROCKETT AVE

Goose Prairie Creek

50WW01 (179.61)
50WW02 (179.29)
50WW03 (180.61)
50WW04 (DRY)
50WW05 (178.93)
50WW07 (178.21)
50WW08 (178.97)
50WW11 (178.87)
50WW12 (178.48)
50WW13 (178.87)
50WW15 (179.03)
50WW16 (178.68)
50WW17 (177.78)
50WW18 (177.79)
50WW19 (177.99)
50WW20 (178.73)
50WW21 (178.65)
50WW22 (178.83)
50WW23 (178.47)
50WW24 (178.41)
50WW28 (178.41)
50WW29 (177.92)

178.00
178.50
179.00
179.50
180.00
180.50

Note:
LUC boundary established in the 2016 Final Remedial Action Completion Report, LHAAP-50, Former Sump Water Tank (AECOM 2016)

Aerial Photography Source: Google Earth, 6/11/2022

0 75 150 300 Feet

Legend:

- Upper Shallow Monitoring Well Location
- Fully Penetrating Shallow Monitoring Well Location
- (178.83) Potentiometric Surface Elevation in Feet Above Mean Sea Level
- Potentiometric Surface Contour
- Direction of Groundwater Flow
- Land Use Control (LUC) Boundary
- Installation Restoration Program (IRP) Area
- Goose Praire Creek Flow Direction
- Goose Prairie Creek
- Former Storage Tank Location
- Former and/or Existing Building Location

Legend
J = Estimated value
U = Result is less than the laboratory detection limit
/ = Duplicate sample
COC = Contaminant of Concern
USEPA = United States Environmental Protection Agency
MCL = Maximum Contaminant Level
DCE = Dichloroethene
TCE = Trichloroethene
VC = Vinyl Chloride
Bold Red values exceed the USEPA MCL
All results and MCLs are reported in micrograms per liter (µg/L)

COCs shown on this figure	
COC	MCL
Perchlorate	17
TCE	5
cis-1,2-DCE	70
VC	2

50WW05	10/2/2023
COC	Result
Perchlorate	0.273
TCE	180
cis-1,2-DCE	69
VC	0.50 U

50WW16	10/2/2023
COC	Result
Perchlorate	0.174
TCE	0.50 U
cis-1,2-DCE	0.50 U
VC	0.50 U

50WW29	10/2/2023
COC	Result
Perchlorate	0.252
TCE	0.50 U
cis-1,2-DCE	0.50 U
VC	0.50 U

50WW18	10/2/2023
COC	Result
Perchlorate	0.237
TCE	0.50 U
cis-1,2-DCE	0.50 U
VC	0.50 U

50WW14	10/3/2023
COC	Result
Perchlorate	0.274
TCE	67
cis-1,2-DCE	4.6
VC	0.50 U

50WW15	10/2/2023
COC	Result
Perchlorate	0.161
TCE	6.2
cis-1,2-DCE	3.2
VC	0.63 J

50WW12	10/3/2023
COC	Result
Perchlorate	17,900
TCE	160
cis-1,2-DCE	0.77 J
VC	0.50 U

50WW23	10/2/2023
COC	Result
Perchlorate	0.159
TCE	0.50 U
cis-1,2-DCE	0.50 U
VC	0.50 U

50WW09	10/2/2023
COC	Result
Perchlorate	0.194
TCE	14
cis-1,2-DCE	1.2
VC	0.50 U

50WW08	10/2/2023
COC	Result
Perchlorate	62.9
TCE	610
cis-1,2-DCE	77
VC	0.56 J

50WW22	10/2/2023
COC	Result
Perchlorate	0.337
TCE	0.50 U
cis-1,2-DCE	0.50 U
VC	0.50 U

50WW13	10/3/2023
COC	Result
Perchlorate	4,170 / 4,270
TCE	7,100 / 7,700
cis-1,2-DCE	430 / 410
VC	3.2 / 3.2

50WW11	10/3/2023
COC	Result
Perchlorate	4,690 / 5,110
TCE	2,400 / 2,400
cis-1,2-DCE	59 / 58
VC	1.8 / 2.1

50WW06	10/3/2023
COC	Result
Perchlorate	554
TCE	15
cis-1,2-DCE	0.7 J
VC	0.50 U

52ND ST.
51ST ST.
48TH ST.
BOWIE AVE.
LHAAP-47
LHAAP-08
LHAAP-50
Goose Prairie Creek
S HOUSTON RD
S CROCKETT AVE

Note:
LUC boundary established in the 2016 Final Remedial Action Completion Report, LHAAP-50, Former Sump Water Tank (AECOM 2016)

Aerial Photography Source: Google Earth, 6/11/2022

0 75 150 300 Feet

Legend:
- Lower Shallow Monitoring Well Location
- Upper Shallow Monitoring Well Location
- Direction of Groundwater Flow (October 2023)
- Land Use Control (LUC) Boundary
- Installation Restoration Program (IRP) Area
- Goose Praire Creek Flow Direction
- Goose Prairie Creek
- Former Storage Tank Location
- Former and/or Existing Building Location

01331077

COC Concentrations in Groundwater
Year 4 Post-ISB Injections
1st Semiannual Sampling Event
(October 2023)

Figure 7

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM
DATE: 11/27/2024
SCALE: As Shown
PROJECT NO: JVPCIBH.0001.0009.02

PCIbhate

Legend
J = Estimated value
U = Result is less than the laboratory detection limit
/ = Duplicate sample
COC = Contaminant of Concern
USEPA = United States Environmental Protection Agency
MCL = Maximum Contaminant Level
DCE = Dichloroethene
TCE = Trichloroethene
VC = Vinyl Chloride
Bold Red values exceed the USEPA MCL
All results and MCLs are reported in micrograms per liter (µg/L)

COCs shown on this figure	
COC	**MCL**
Perchlorate	17
TCE	5
cis-1,2-DCE	70
VC	2

50WW05	5/21/2024
COC	**Result**
Perchlorate	0.0500 U
TCE	**150**
cis-1,2-DCE	**120**
VC	1.0 U

50WW16	5/20/2024
COC	**Result**
Perchlorate	0.120
TCE	1.0 U
cis-1,2-DCE	1.0 U
VC	1.0 U

50WW29	5/21/2024
COC	**Result**
Perchlorate	0.606 J
TCE	0.47 J
cis-1,2-DCE	1.0 U
VC	1.0 U

50WW18	5/20/2024
COC	**Result**
Perchlorate	0.100 U
TCE	1.0 U
cis-1,2-DCE	1.0 U
VC	1.0 U

50WW14	5/21/2024
COC	**Result**
Perchlorate	0.500 U
TCE	**24**
cis-1,2-DCE	4.7
VC	1.0 U

50WW15	5/20/2024
COC	**Result**
Perchlorate	0.220
TCE	4.8
cis-1,2-DCE	1.8
VC	1.0 U

50WW12	5/22/2024
COC	**Result**
Perchlorate	**443,000 J / 139,000 J**
TCE	**1,200 / 1,100**
cis-1,2-DCE	10 U / 10 U
VC	10 U / 10 U

50WW23	5/22/2024
COC	**Result**
Perchlorate	0.500 U
TCE	1.0 U
cis-1,2-DCE	1.0 U
VC	1.0 U

50WW09	5/22/2024
COC	**Result**
Perchlorate	0.450
TCE	4.7
cis-1,2-DCE	0.64 J
VC	1.0 U

50WW08	5/22/2024
COC	**Result**
Perchlorate	**210**
TCE	**820**
cis-1,2-DCE	**93**
VC	10 U

50WW22	5/20/2024
COC	**Result**
Perchlorate	0.694 J
TCE	1.0 U
cis-1,2-DCE	1.0 U
VC	1.0 U

50WW13	5/21/2024
COC	**Result**
Perchlorate	**121**
TCE	**470**
cis-1,2-DCE	24
VC	5.0 U

50WW11	5/21/2024
COC	**Result**
Perchlorate	**268**
TCE	**140**
cis-1,2-DCE	11
VC	1.0 U

50WW06	5/22/2024
COC	**Result**
Perchlorate	0.537 J / 1.28 J
TCE	**11 / 11**
cis-1,2-DCE	1.0 U / 1.0 U
VC	1.0 U / 1.0 U

Note:
LUC boundary established in the 2016 Final Remedial Action Completion Report, LHAAP-50, Former Sump Water Tank (AECOM 2016)

Aerial Photography Source: Google Earth, 6/11/2022

0 75 150 300 Feet

Legend:
- Lower Shallow Monitoring Well Location
- Upper Shallow Monitoring Well Location
- Direction of Groundwater Flow (May 2024)
- Land Use Control (LUC) Boundary
- Installation Restoration Program (IRP) Area
- Goose Praire Creek Flow Direction
- Goose Prairie Creek
- Former Storage Tank Location
- Former and/or Existing Building Location

01331078

COC Concentrations in Groundwater
Year 4 Post-ISB Injections
2nd Semiannual Sampling Event
(May 2024)

Figure 8

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

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DATE: 11/27/2024
SCALE: As Shown
PROJECT NO: JVPCIBH.0001.0009.02

PCIbhate

01331079

TCE and Perchlorate Shallow Zone Plumes
Year 4 Post-ISB Injections
1st Semiannual Sampling Event
(October 2023)

Figure 9

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 10/17/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0009.02

PCIbhate

52ND ST.
53RD ST.
51ST ST.
CROCKETT AVE.
BOWIE AVE.
S HOUSTON RD
S CROCKETT AVE
48TH ST.
LHAAP-47
LHAAP-08
LHAAP-50
Goose Prairie Creek

50WW15 (0.161) (6.2)
50WW05 (0.273) (180)
50WW16 (0.174) (0.50 U)
50WW18 (0.237) (0.50 U)
50WW29 (0.252) (0.50 U)
50WW12 (17,900) (160)
50WW09 (0.194) (14)
50WW11 (4,690 / 5,110) (2,400 / 2,400)
50WW06 (554) (15)
50WW23 (0.159) (0.50 U)
50WW08 (62.9) (610)
50WW22 (0.337) (0.50 U)
50WW14 (0.274) (67)
50WW13 (4,170 / 4,270) (7,100 / 7,700)

Acronyms:
U - Result is less than the laboratory detection limit
ISB - In Situ Bioremediation
DPT - Direct Push Technology
/ - Duplicate sample

Note:
LUC boundary established in the 2016 Final Remedial Action Completion Report, LHAAP-50, Former Sump Water Tank (AECOM 2016)

Aerial Photography Source: Google Earth, 6/11/2022

0 75 150 300 Feet

Legend:

- Lower Shallow Monitoring Well Location
- Upper Shallow Monitoring Well Location
- ISB DPT Point
- (554) Perchlorate Concentration Reported in Micrograms per Liter (µg/L)
- Perchlorate Contour >17 µg/L
- (67) Trichloroethene Concentration Reported in Micrograms per Liter (µg/L)
- Trichloroethene Contour >5 µg/L
- Direction of Groundwater Flow (October 2023)
- Land Use Control (LUC) Boundary
- Installation Restoration Program (IRP) Area
- Goose Praire Creek Flow Direction
- Goose Prairie Creek
- Former Storage Tank Location
- Former and/or Existing Building Location

01331080

TCE and Perchlorate Shallow Zone Plumes
Year 4 Post-ISB Injections
2nd Semiannual Sampling Event
(May 2024)

Figure 10

Tenth Annual Remedial Action Operation Report
LHAAP-50, Former Sump Water Tank
Longhorn Army Ammunition Plant
Karnack, Texas

DRAWN BY: MRM

DATE: 10/17/2024

SCALE: As Shown

PROJECT NO: JVPCIBH.0001.0009.02

PCIbhate

52ND ST.
53RD ST.
51ST ST.
BOWIE AVE.
CROCKETT AVE.
S HOUSTON RD
S CROCKETT AVE
48TH ST.
LHAAP-47
LHAAP-08
LHAAP-50
Goose Prairie Creek

50WW18 (0.100 U) (1.0 U)
50WW16 (0.120) (1.0 U)
50WW05 (0.0500 U) (150)
50WW29 (0.606 J) (0.47 J)
50WW15 (0.220) (4.8)
50WW12 (443,000 J / 139,000 J) (1,200 / 1,100)
50WW23 (0.500 U) (1.0 U)
50WW09 (0.450) (4.7)
50WW06 (0.537 J / 1.28 J) (11 / 11)
50WW11 (268) (140)
50WW08 (210) (820)
50WW22 (0.694 J) (1.0 U)
50WW13 (121) (470)
50WW14 (0.500 U) (24)

Acronyms:
J - Estimated value
U - Result is less than the laboratory detection limit
ISB - In Situ Bioremediation
DPT - Direct Push Technology
/ - Duplicate sample

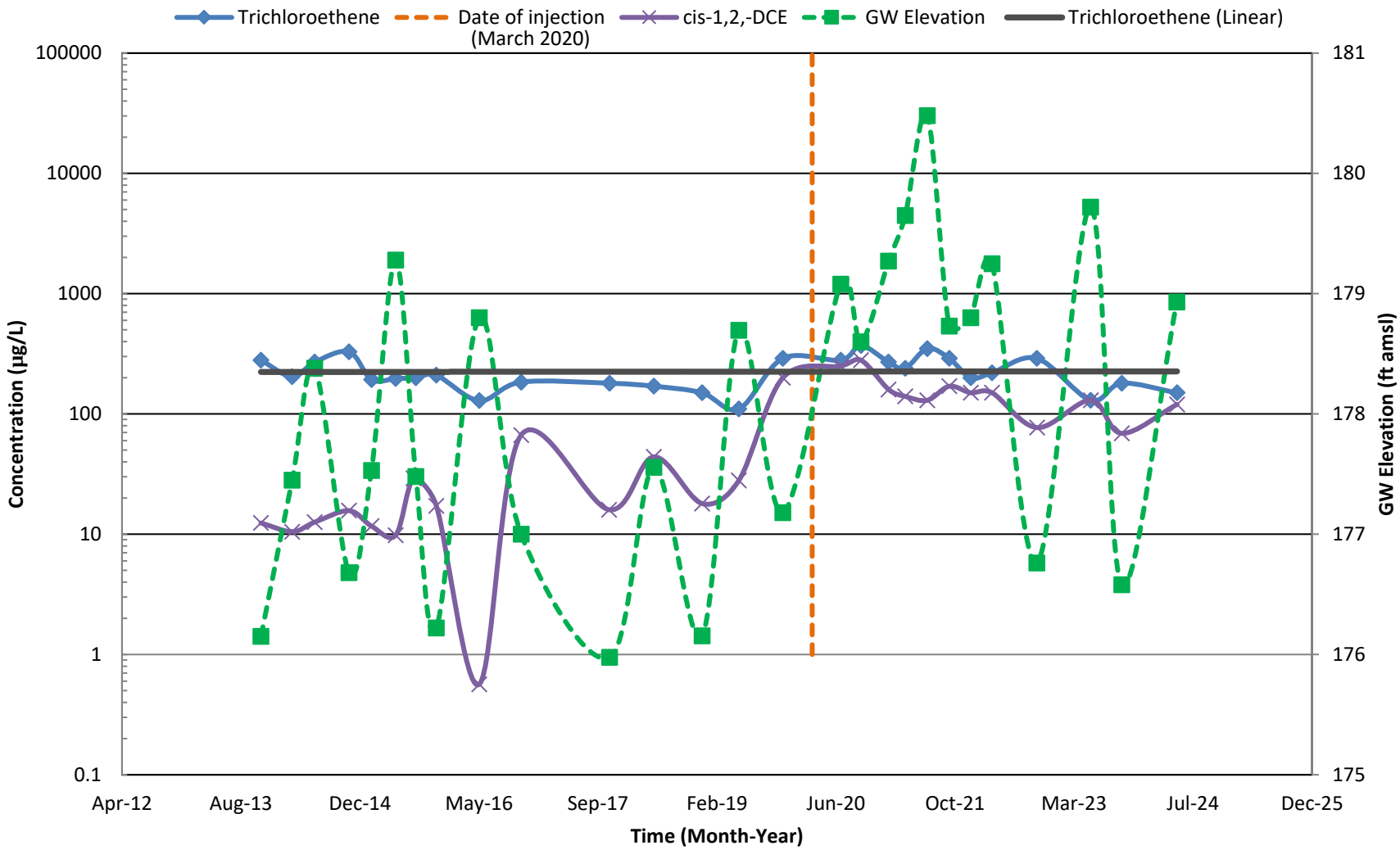
Note:
LUC boundary established in the 2016 Final Remedial Action Completion Report, LHAAP-50, Former Sump Water Tank (AECOM 2016)

Aerial Photography Source: Google Earth, 6/11/2022

0 75 150 300 Feet

Legend:
- Lower Shallow Monitoring Well Location
- Upper Shallow Monitoring Well Location
- ISB DPT Point
- (268) Perchlorate Concentration Reported in Micrograms per Liter (µg/L)
- Perchlorate Contour >17 µg/L
- (140) Trichloroethene Concentration Reported in Micrograms per Liter (µg/L)
- Trichloroethene Contour >5 µg/L
- Direction of Groundwater Flow (May 2024)
- Land Use Control (LUC) Boundary
- Installation Restoration Program (IRP) Area
- Goose Praire Creek Flow Direction
- Goose Prairie Creek
- Former Storage Tank Location
- Former and/or Existing Building Location

Figure 11-a: COC Concentration Trends, 50WW05



Note:
amsl - above mean sea level

Figure 11-b: COC Concentration Trends, 50WW06 (lower shallow)

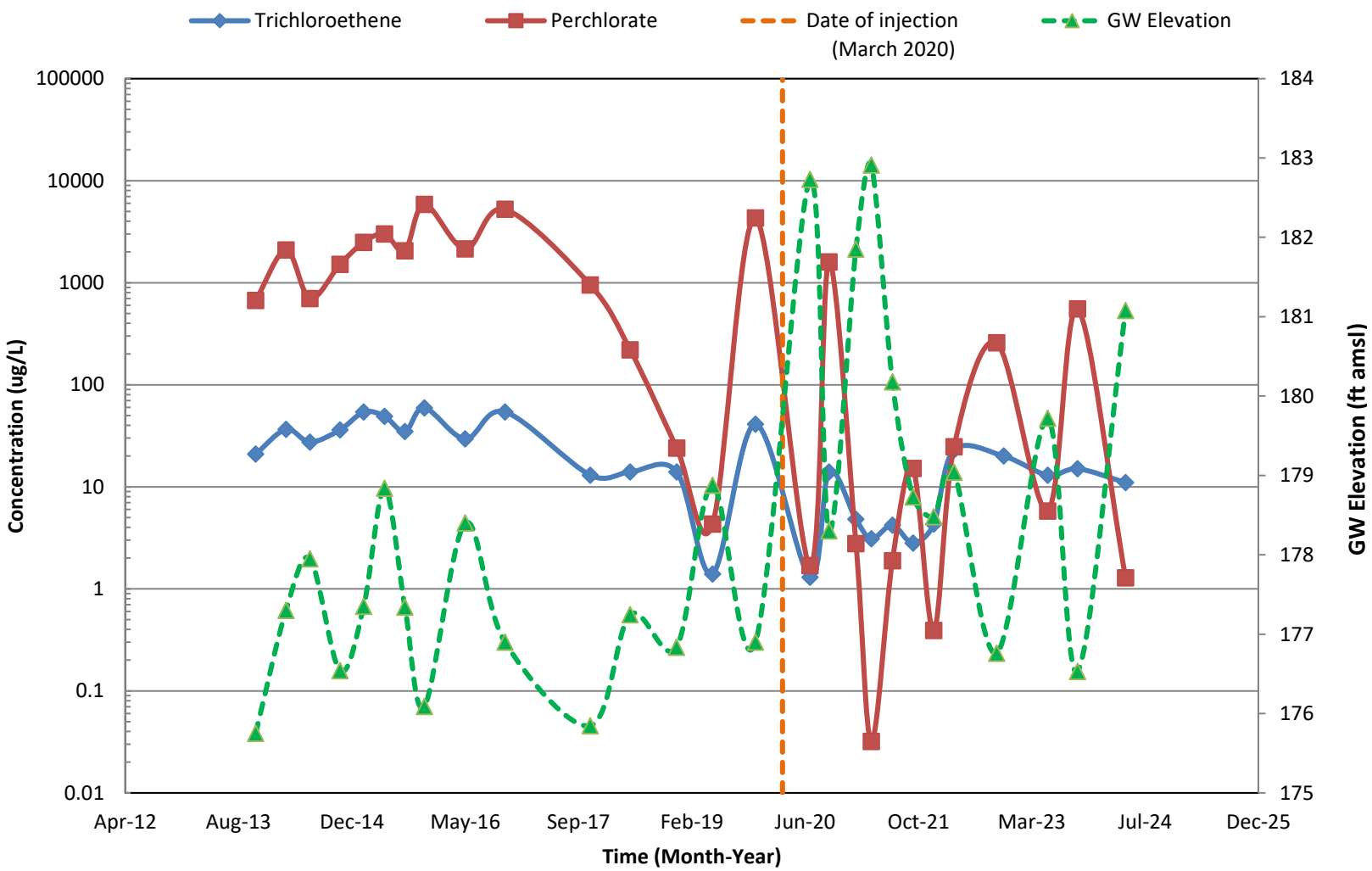


Figure 11-c: COC Concentration Trends, 50WW08

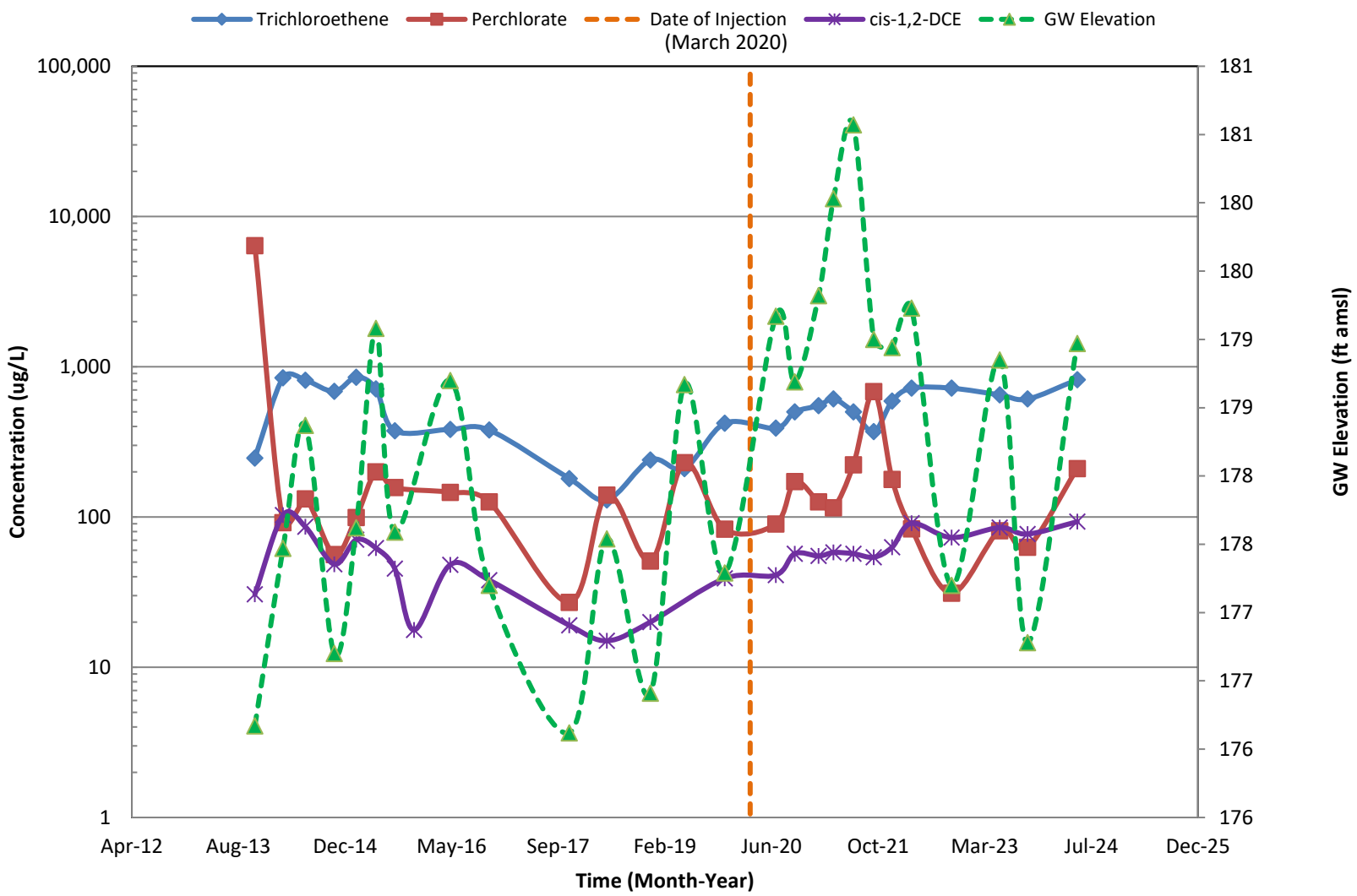


Figure 11-d: COC Concentration Trends, 50WW09 (lower shallow)

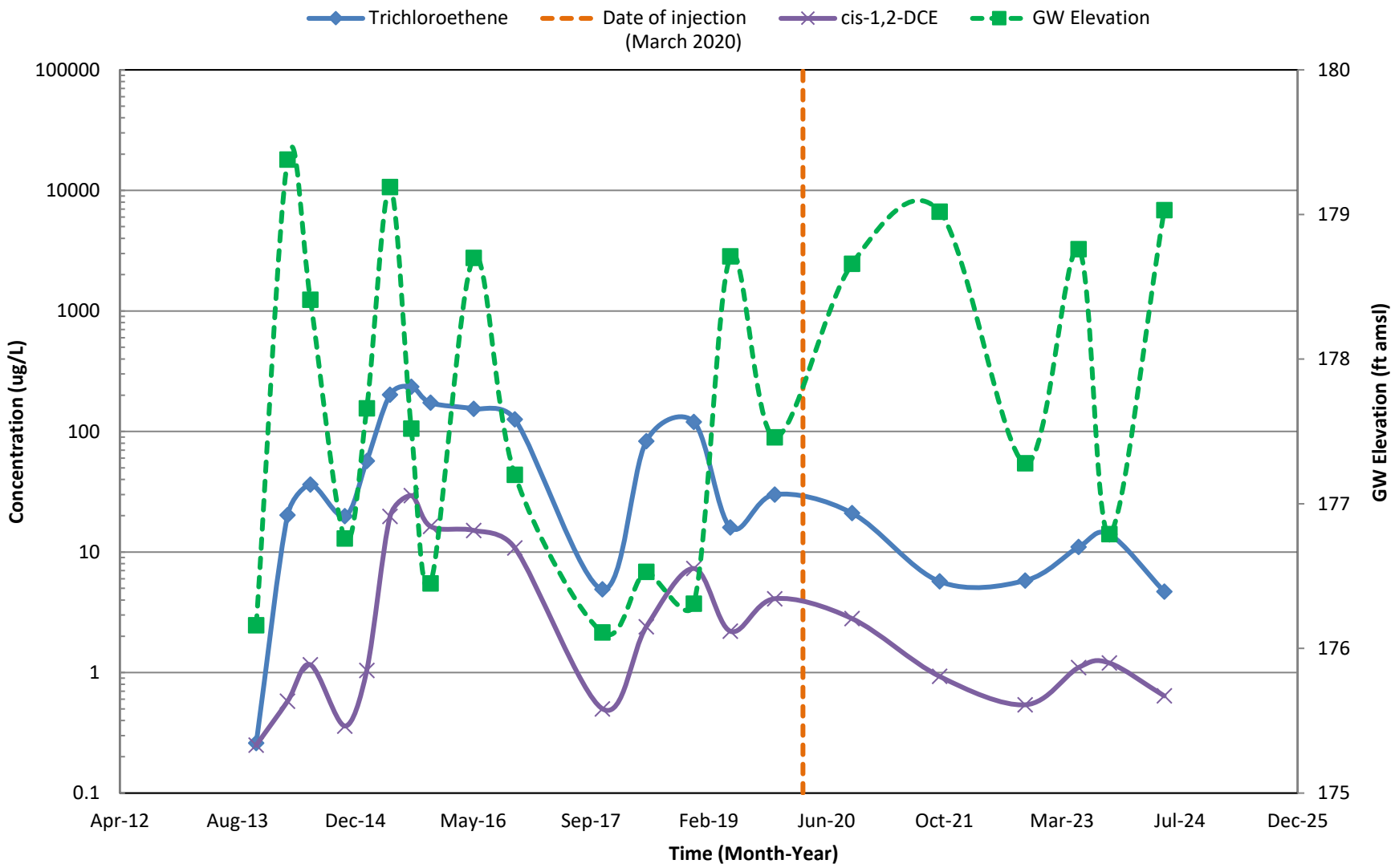


Figure 11-e: COC Concentration Trends, 50WW11

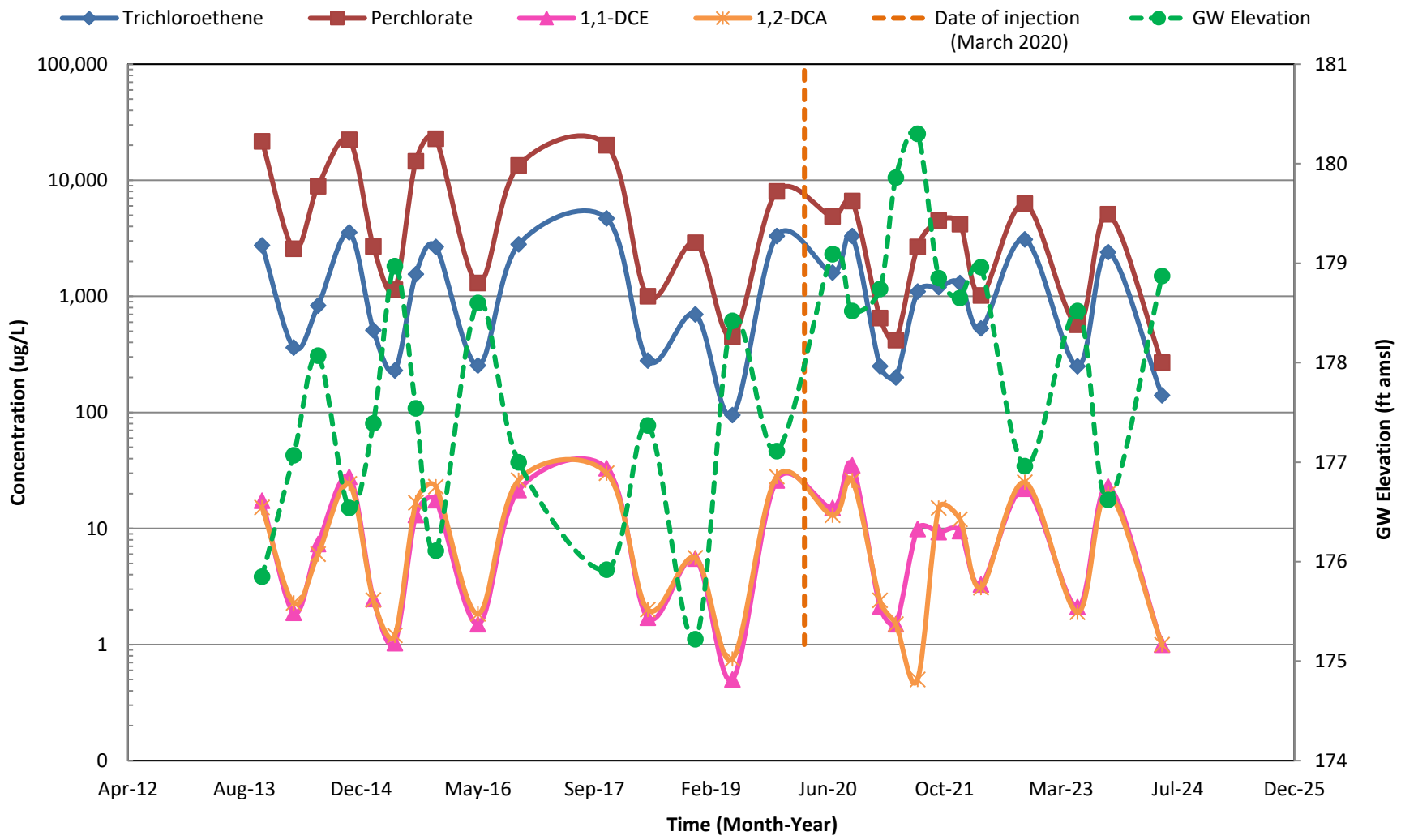


Figure 11-f: COC Concentration Trends, 50WW12

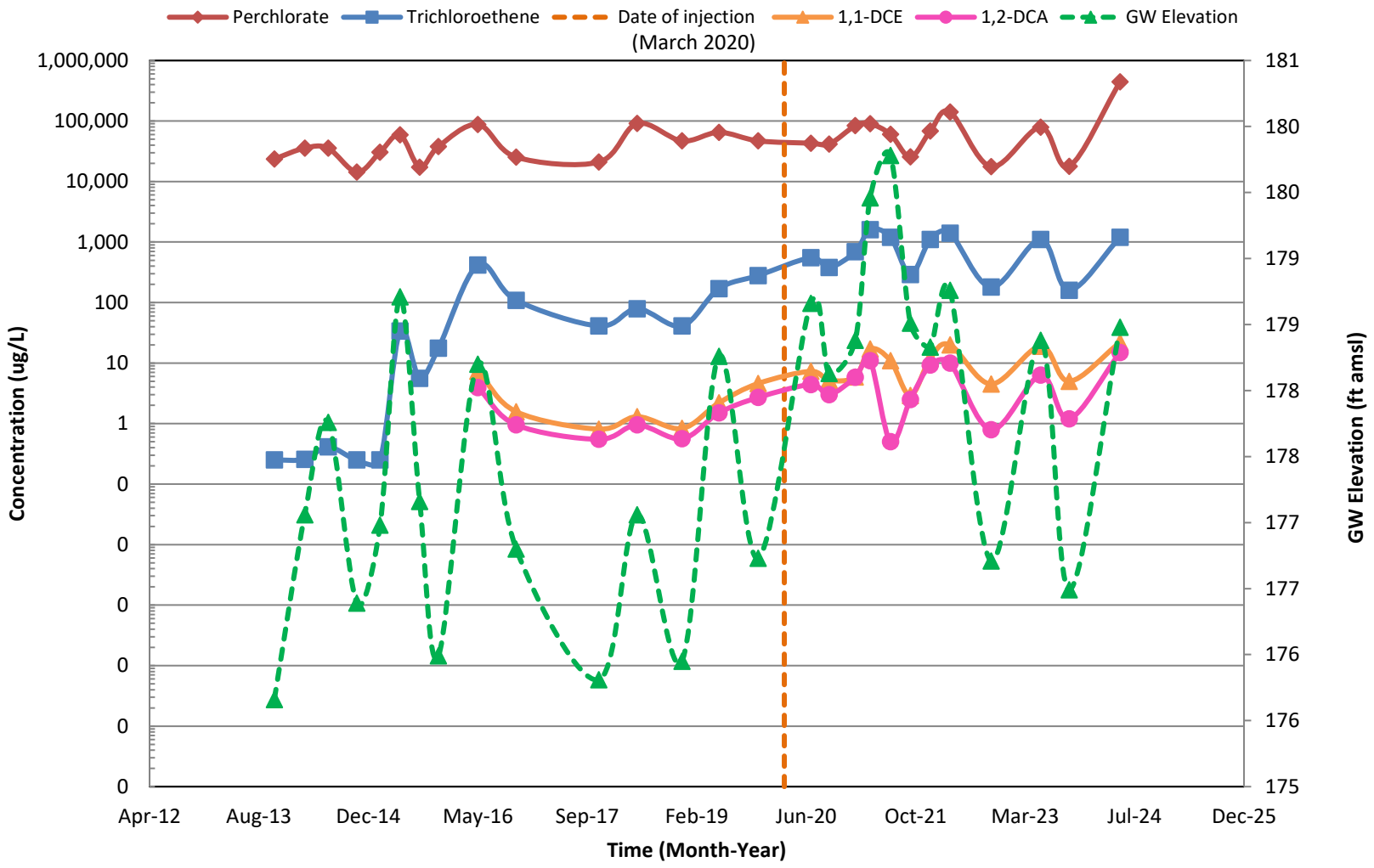


Figure 11-g: COC Concentration Trends, 50WW13

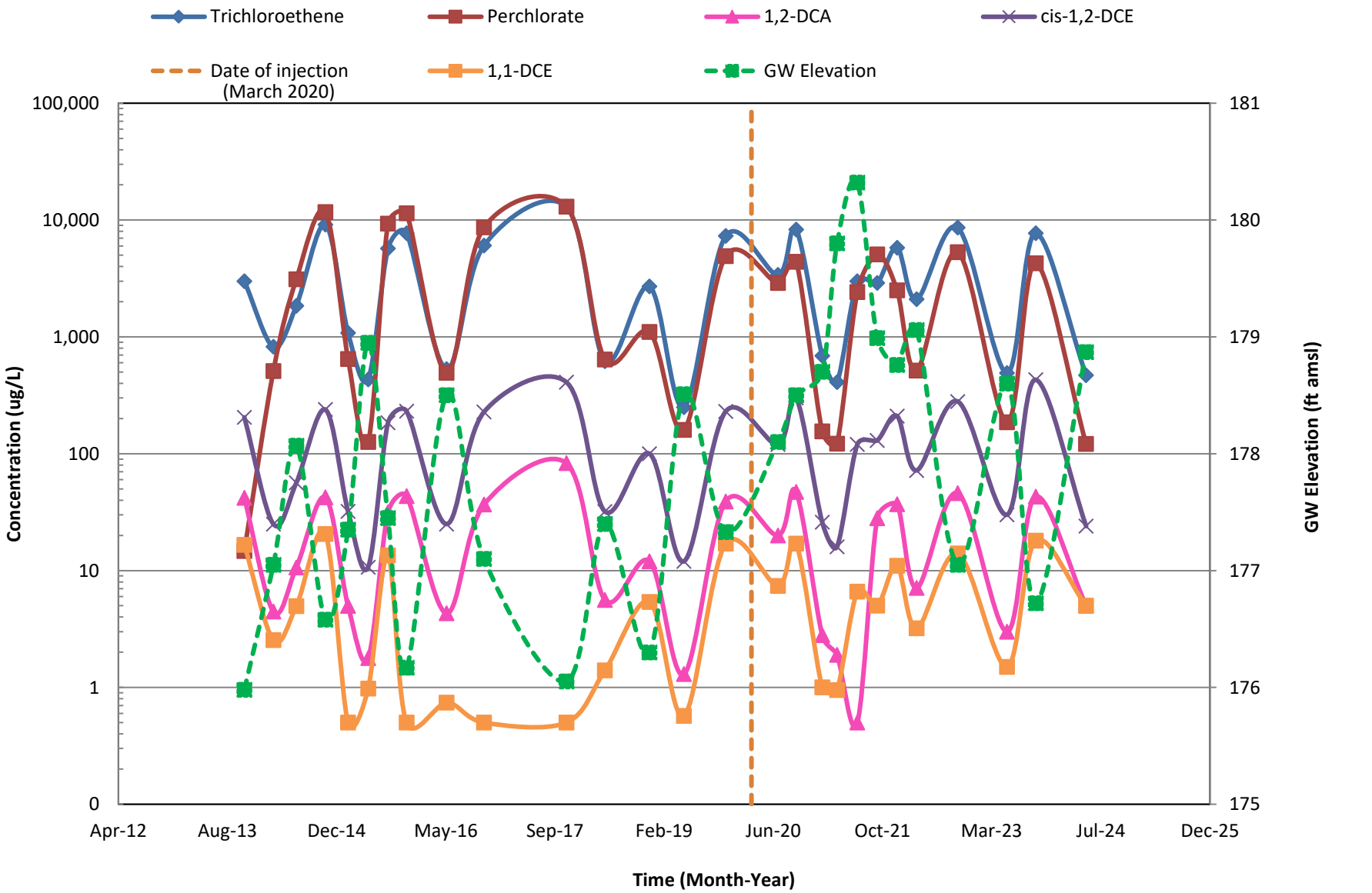


Figure 11-h: COC Concentration Trends, 50WW14 (lower shallow)

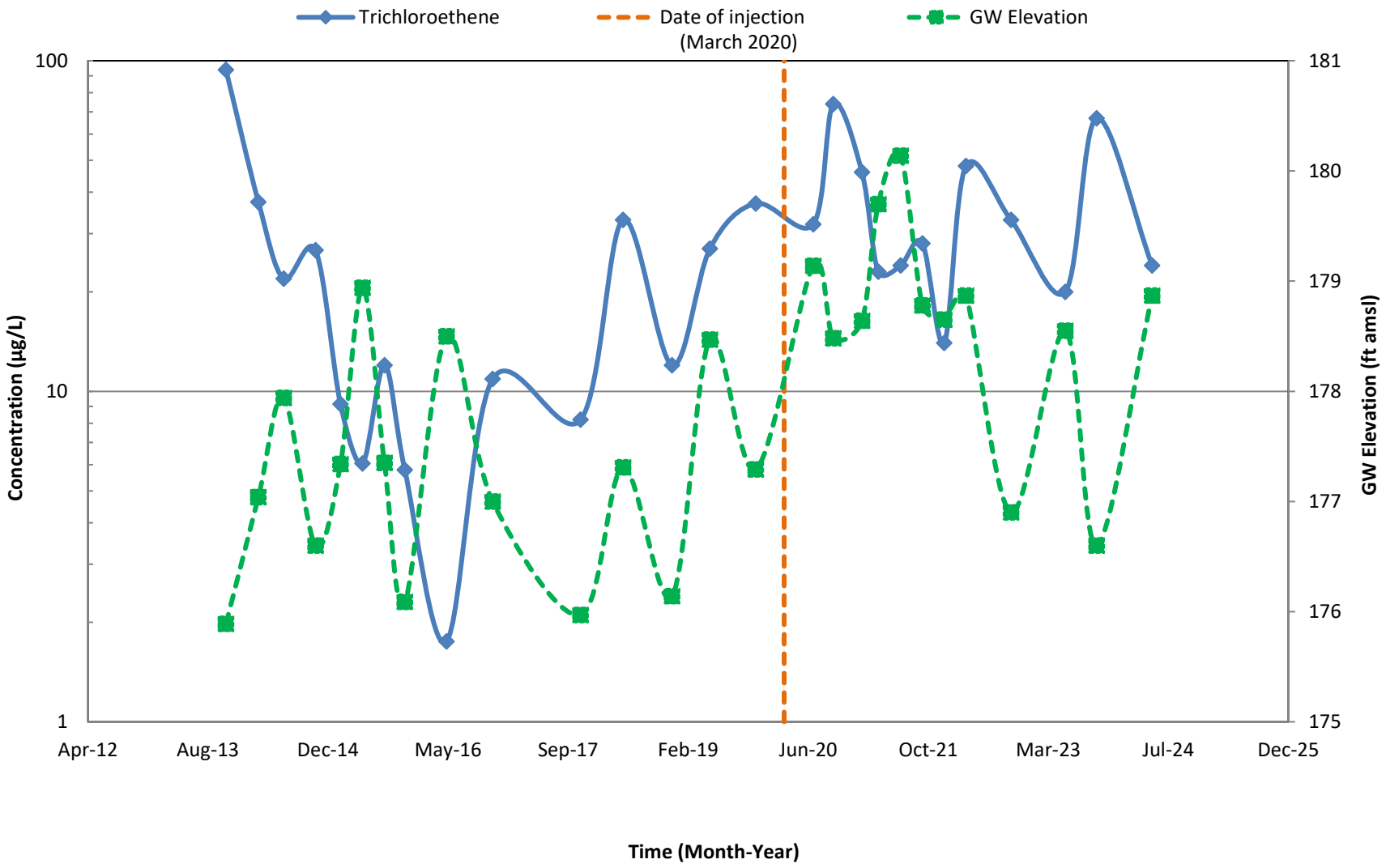
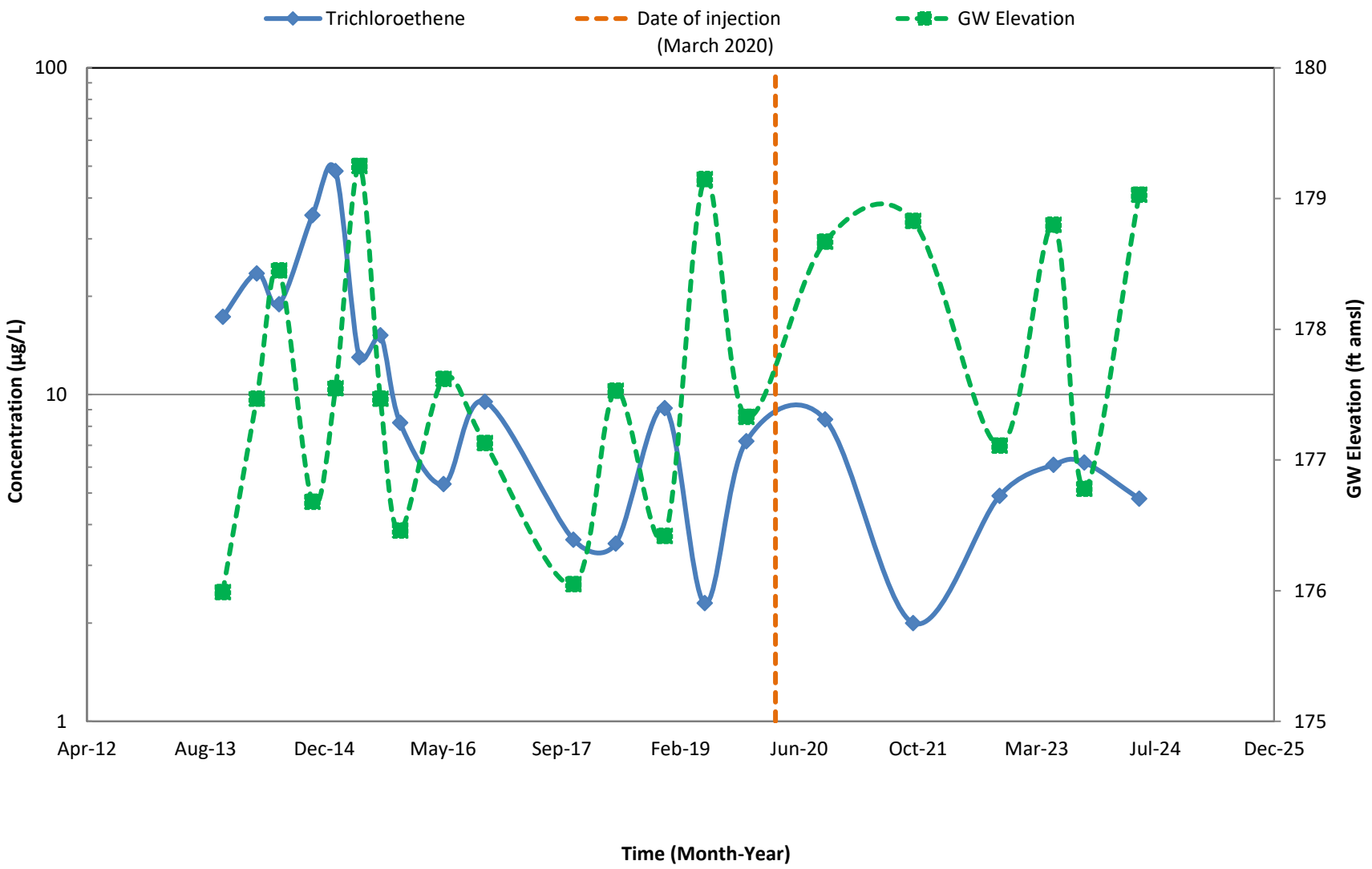


Figure 11-i: COC Concentration Trends, 50WW15



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TABLES

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Table 1
ISB Performance Monitoring Well Network Locations and Analyses
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

Monitoring Location	Well Location/Purpose	Performance – Years 1 and 2 (Quarterly); Year 3 and 4 (Semi-annually)								
		Perchlorate (6850)	VOCs (8260C)	DO (field reading)	ORP (field reading)	pH (field reading)	Ferrous Iron (field reading)	Anions (SW9056A)	Ethene, Ethane, Methane, & Carbon Dioxide (RSK-175)	TOC (SM5310B)
50WW08	Upgradient well	X	X	X	X	X				
50WW05	Cross-gradient well	X	X	X	X	X				
50WW06	Performance data within the plume	X	X	X	X	X	X	X	X	X
50WW11	Performance data within the treatment zone	X	X	X	X	X	X	X	X	X
50WW12	Performance data within the treatment zone	X	X	X	X	X	X	X	X	X
50WW13	Performance data within the treatment zone	X	X	X	X	X	X	X	X	X
50WW14	Performance data within the treatment zone	X	X	X	X	X	X	X	X	X
50WW29	Downgradient well	X	X	X	X	X				

Notes:
Anions include chloride, nitrate, and sulfate.

x - Indicates that sample was collected and analyzed for the listed analyte.
DO - dissolved oxygen
ISB - in situ bioremediation
ORP - oxygen-reduction potential
TOC - total organic carbon
VOC - volatile organic compound
RA-O - Remedial Action Operation

Table 2
Long-Term Monitoring Well Network
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

Parameters	VOCs (8260C)	Perchlorate (6850)	Field Parameters	TOC (SM5310B)	Anions (SW9056A)	Ethene, Ethane, Methane, and Carbon Dioxide (RSK-175)	Ferrous Iron (only field)
Well IDs							
50WW05	**X**	**X**	**X**				
50WW06	**X**	**X**	**X**	**X**	**X**	**X**	**X**
50WW08	**X**	**X**	**X**				
50WW09	**X**	**X**	**X**				
50WW11	**X**	**X**	**X**	**X**	**X**	**X**	**X**
50WW12	**X**	**X**	**X**	**X**	**X**	**X**	**X**
50WW13	**X**	**X**	**X**	**X**	**X**	**X**	**X**
50WW14	**X**	**X**	**X**	**X**	**X**	**X**	**X**
50WW15	**X**	**X**	**X**				
50WW16	**X**	**X**	**X**				
50WW18	**X**	**X**	**X**				
50WW22	**X**	**X**	**X**				
50WW23	**X**	**X**	**X**				
50WW29	**X**	**X**	**X**				

Notes:
The RA-O results from the November 2019 sampling event will be used for the baseline sampling event.
Field Parameters: DO, ORP, pH, specific conductivity, temperature.
Anions include chloride, nitrate, and sulfate.
ID - identifier
DO - dissolved oxygen
ORP - oxidation-reduction potential
RA-O - remediation action operation
TOC - total organic carbon
VOC - volatile organic compound

Table 3
Groundwater Elevation Data
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW01	Upper Shallow	7/9/2020	195.29	198.50	13.21	23.21	23.21	23.25	18.65	179.85	None
		10/6/2020	195.29	198.50	13.21	23.21	23.21	23.25	19.15	179.35	None
		1/28/2021	195.29	198.50	13.21	23.21	23.21	23.25	18.90	179.60	None
		4/5/2021	195.29	198.50	13.21	23.21	23.21	23.23	17.85	180.65	None
		7/7/2021	195.29	198.50	13.21	23.21	23.21	23.23	17.77	180.73	None
		10/11/2021	195.29	198.50	13.21	23.21	23.21	23.23	19.23	179.27	None
		1/4/2022	195.29	198.50	13.21	23.21	23.21	23.23	19.05	179.45	None
		4/5/2022	195.29	198.50	13.21	23.21	23.21	23.23	19.83	178.67	None
		10/10/2022	195.29	198.50	13.21	23.21	23.21	23.27	20.76	177.74	None
		5/24/2023	195.29	198.50	13.21	23.21	23.21	NM	NM	NM	NM
		10/4/2023	195.29	198.50	13.21	23.21	23.21	23.23	21.15	177.35	NM
		5/20/2024	195.29	198.50	13.21	23.21	23.21	23.25	18.89	179.61	NM
50WW02	Upper Shallow	7/8/2020	197.40	200.74	12.34	22.34	22.34	22.37	DRY	DRY	None
		10/6/2020	197.40	200.74	12.34	22.34	22.34	22.37	DRY	DRY	None
		1/28/2021	197.40	200.74	12.34	22.34	22.34	22.20	DRY	DRY	1.4
		4/5/2021	197.40	200.74	12.34	22.34	22.34	22.20	20.50	180.24	1.4
		7/7/2021	197.40	200.74	12.34	22.34	22.34	22.22	20.09	180.65	1.2
		10/11/2021	197.40	200.74	12.34	22.34	22.34	22.22	21.49	179.25	1.2
		1/4/2022	197.40	200.74	12.34	22.34	22.34	22.25	21.70	179.04	0.9
		4/5/2022	197.40	200.74	12.34	22.34	22.34	22.21	21.32	179.42	1.3
		10/10/2022	197.40	200.74	12.34	22.34	22.34	22.21	DRY	DRY	1.3
		5/24/2023	197.40	200.74	12.34	22.34	22.34	NM	NM	NM	NM
		10/4/2023	197.40	200.74	12.34	22.34	22.34	22.20	DRY	DRY	NM
		5/20/2024	197.40	200.74	12.34	22.34	22.34	22.20	21.45	179.29	NM
50WW03	Upper Shallow	7/8/2020	199.88	202.94	13.06	23.06	23.06	23.20	DRY	DRY	None
		10/6/2020	199.88	202.94	13.06	23.06	23.06	23.20	DRY	DRY	None
		1/28/2021	199.88	202.94	13.06	23.06	23.06	22.98	DRY	DRY	0.8
		4/5/2021	199.88	202.94	13.06	23.06	23.06	23.00	21.45	181.49	0.6
		7/7/2021	199.88	202.94	13.06	23.06	23.06	23.04	20.85	182.09	0.2
		10/11/2021	199.88	202.94	13.06	23.06	23.06	23.00	21.84	181.10	0.6
		1/4/2022	199.88	202.94	13.06	23.06	23.06	23.00	22.00	180.94	0.6
		4/5/2022	199.88	202.94	13.06	23.06	23.06	23.01	21.84	181.10	0.5
		10/10/2022	199.88	202.94	13.06	23.06	23.06	23.00	DRY	DRY	0.6
		5/24/2023	199.88	202.94	13.06	23.06	23.06	NM	NM	NM	NM
		10/4/2023	199.88	202.94	13.06	23.06	23.06	22.98	DRY	DRY	NM
		5/20/2024	199.88	202.94	13.06	23.06	23.06	22.93	22.33	180.61	NM

Table 3
Groundwater Elevation Data
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW04	Upper Shallow	7/8/2020	201.64	204.51	12.87	22.87	22.87	23.20	DRY	DRY	None
		10/6/2020	201.64	204.51	12.87	22.87	22.87	23.20	DRY	DRY	None
		1/28/2021	201.64	204.51	12.87	22.87	22.87	23.20	DRY	DRY	None
		4/5/2021	201.64	204.51	12.87	22.87	22.87	23.22	DRY	DRY	None
		7/7/2021	201.64	204.51	12.87	22.87	22.87	23.18	22.95	181.56	None
		10/11/2021	201.64	204.51	12.87	22.87	22.87	23.16	DRY	DRY	None
		1/4/2022	201.64	204.51	12.87	22.87	22.87	23.17	DRY	DRY	None
		4/5/2022	201.64	204.51	12.87	22.87	22.87	23.18	23.01	181.5	None
		10/10/2022	201.64	204.51	12.87	22.87	22.87	23.15	DRY	DRY	None
		5/24/2023	201.64	204.51	12.87	22.87	22.87	NM	NM	NM	NM
		10/4/2023	201.64	204.51	12.87	22.87	22.87	23.16	DRY	DRY	NM
		5/20/2024	201.64	204.51	12.87	22.87	22.87	23.18	DRY	DRY	NM
50WW05	Upper Shallow	7/8/2020	195.20	197.60	14.34	24.34	25.34	25.35	18.60	179.00	None
		10/6/2020	195.20	197.60	14.34	24.34	25.34	25.30	19.00	178.60	None
		1/28/2021	195.20	197.60	14.34	24.34	25.34	25.31	18.33	179.27	None
		4/5/2021	195.20	197.60	14.34	24.34	25.34	25.31	17.95	179.65	None
		7/7/2021	195.20	197.60	14.34	24.34	25.34	25.32	17.12	180.48	None
		10/11/2021	195.20	197.60	14.34	24.34	25.34	25.30	18.87	178.73	None
		1/4/2022	195.20	197.60	14.34	24.34	25.34	25.30	18.80	178.80	None
		4/5/2022	195.20	197.60	14.34	24.34	25.34	25.31	18.35	179.25	None
		10/10/2022	195.20	197.60	14.34	24.34	25.34	25.30	20.63	176.97	None
		5/25/2023	195.20	197.60	14.34	24.34	25.34	25.30	18.95	178.65	None
		10/2/2023	195.20	197.60	14.34	24.34	25.34	25.29	21.02	176.58	NM
		5/20/2024	195.20	197.60	14.34	24.34	25.34	25.30	18.67	178.93	NM
50WW06	Lower Shallow	7/9/2020	192.99	195.35	47.35	57.35	60.35	58.00	12.62	182.73	None
		10/1/2020	192.99	195.35	47.35	57.35	60.35	58.05	17.05	178.30	None
		1/28/2021	192.99	195.35	47.35	57.35	60.35	58.10	13.50	181.85	None
		4/6/2021	192.99	195.35	47.35	57.35	60.35	58.11	12.44	182.91	None
		7/8/2021	192.99	195.35	47.35	57.35	60.35	58.02	15.17	180.18	None
		10/7/2021	192.99	195.35	47.35	57.35	60.35	58.02	16.66	178.69	None
		1/6/2022	192.99	195.35	47.35	57.35	60.35	58.10	16.87	178.48	None
		4/6/2022	192.99	195.35	47.35	57.35	60.35	58.06	16.31	179.04	None
		10/11/2022	192.99	195.35	47.35	57.35	60.35	58.12	18.59	176.76	None
		5/24/2023	192.99	195.35	47.35	57.35	60.35	57.98	15.63	179.72	None
		10/3/2023	192.99	195.35	47.35	57.35	60.35	58.00	18.82	176.53	NM
		5/22/2024	192.99	195.35	47.35	57.35	60.35	58.13	14.27	181.08	NM

Table 3
Groundwater Elevation Data
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW07	Upper Shallow	7/9/2020	199.88	202.55	21.67	31.67	31.67	31.81	24.12	178.43	None
		10/6/2020	199.88	202.55	21.67	31.67	31.67	31.81	24.20	178.35	None
		1/28/2021	199.88	202.55	21.67	31.67	31.67	31.81	23.97	178.58	None
		4/5/2021	199.88	202.55	21.67	31.67	31.67	31.82	23.68	178.87	None
		7/7/2021	199.88	202.55	21.67	31.67	31.67	31.80	22.97	179.58	None
		10/11/2021	199.88	202.55	21.67	31.67	31.67	31.80	24.05	178.50	None
		1/4/2022	199.88	202.55	21.67	31.67	31.67	31.57	23.95	178.60	1.0
		4/5/2022	199.88	202.55	21.67	31.67	31.67	31.82	23.86	178.69	None
		10/10/2022	199.88	202.55	21.67	31.67	31.67	31.79	24.28	178.27	None
		5/24/2023	199.88	202.55	21.67	31.67	31.67	NM	NM	NM	NM
		10/4/2023	199.88	202.55	21.67	31.67	31.67	31.80	25.92	176.63	NM
		5/20/2024	199.88	202.55	21.67	31.67	31.67	31.57	24.34	178.21	NM
50WW08	Upper Shallow	7/8/2020	197.16	199.67	17.11	31.71	32.26	32.71	20.50	179.17	None
		10/5/2020	197.16	199.67	17.11	31.71	32.26	32.72	20.98	178.69	None
		1/25/2021	197.16	199.67	17.11	31.71	32.26	32.73	20.35	179.32	None
		4/5/2021	197.16	199.67	17.11	31.71	32.26	32.72	19.64	180.03	None
		7/7/2021	197.16	199.67	17.11	31.71	32.26	32.75	19.10	180.57	None
		10/11/2021	197.16	199.67	17.11	31.71	32.26	32.72	20.67	179.00	None
		1/5/2022	197.16	199.67	17.11	31.71	32.26	32.71	20.73	178.94	None
		4/6/2022	197.16	199.67	17.11	31.71	32.26	32.74	20.44	179.23	None
		10/10/2022	197.16	199.67	17.11	31.71	32.26	32.70	22.47	177.20	None
		5/24/2023	197.16	199.67	17.11	31.71	32.26	32.70	20.82	178.85	None
		10/2/2023	197.16	199.67	17.11	31.71	32.26	32.70	22.89	176.78	NM
		5/22/2024	197.16	199.67	17.11	31.71	32.26	32.71	20.70	178.97	NM
50WW09	Lower Shallow	7/8/2020	197.06	199.41	46.75	61.25	61.85	62.42	20.05	179.36	None
		10/6/2020	197.06	199.41	46.75	61.25	61.85	62.42	20.75	178.66	None
		1/28/2021	197.06	199.41	46.75	61.25	61.85	62.42	21.57	177.84	None
		4/5/2021	197.06	199.41	46.75	61.25	61.85	62.42	19.47	179.94	None
		7/7/2021	197.06	199.41	46.75	61.25	61.85	62.47	18.89	180.52	None
		10/11/2021	197.06	199.41	46.75	61.25	61.85	62.40	20.39	179.02	None
		1/4/2022	197.06	199.41	46.75	61.25	61.85	62.42	20.52	178.89	None
		4/5/2022	197.06	199.41	46.75	61.25	61.85	62.45	20.29	179.12	None
		10/10/2022	197.06	199.41	46.75	61.25	61.85	62.40	22.13	177.28	None
		5/24/2023	197.06	199.41	46.75	61.25	61.85	62.32	20.65	178.76	None
		10/2/2023	197.06	199.41	46.75	61.25	61.85	62.40	22.62	176.79	NM
		5/22/2024	197.06	199.41	46.75	61.25	61.85	62.42	20.38	179.03	NM

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Groundwater Elevation Data
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Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW10	Intermediate	7/8/2020	196.72	199.25	101.43	110.93	111.53	111.25	20.37	178.88	None
		10/6/2020	196.72	199.25	101.43	110.93	111.53	111.23	23.38	175.87	None
		1/28/2021	196.72	199.25	101.43	110.93	111.53	111.25	22.95	176.30	None
		4/5/2021	196.72	199.25	101.43	110.93	111.53	111.37	22.55	176.70	None
		7/7/2021	196.72	199.25	101.43	110.93	111.53	111.26	22.61	176.64	None
		10/11/2021	196.72	199.25	101.43	110.93	111.53	111.25	20.77	178.48	None
		1/4/2022	196.72	199.25	101.43	110.93	111.53	111.25	23.03	176.22	None
		4/5/2022	196.72	199.25	101.43	110.93	111.53	111.06	22.68	176.57	None
		10/10/2022	196.72	199.25	101.43	110.93	111.53	111.10	23.47	175.78	None
		5/24/2023	196.72	199.25	101.43	110.93	111.53	NM	NM	NM	NM
		10/4/2023	196.72	199.25	101.43	110.93	111.53	111.18	23.82	175.43	NM
		5/20/2024	196.72	199.25	101.43	110.93	111.53	111.72	23.03	176.22	NM
50WW11	Upper Shallow	7/9/2020	194.72	197.07	22.55	37.05	37.65	37.78	17.98	179.09	None
		10/1/2020	194.72	197.07	22.55	37.05	37.65	37.80	18.55	178.52	None
		1/28/2021	194.72	197.07	22.55	37.05	37.65	37.80	18.33	178.74	None
		4/6/2021	194.72	197.07	22.55	37.05	37.65	37.80	17.21	179.86	None
		7/8/2021	194.72	197.07	22.55	37.05	37.65	37.79	16.77	180.30	None
		10/7/2021	194.72	197.07	22.55	37.05	37.65	37.80	18.22	178.85	None
		1/6/2022	194.72	197.07	22.55	37.05	37.65	37.77	18.42	178.65	None
		4/6/2022	194.72	197.07	22.55	37.05	37.65	37.78	18.11	178.96	None
		10/11/2022	194.72	197.07	22.55	37.05	37.65	37.75	20.11	176.96	None
		5/24/2023	194.72	197.07	22.55	37.05	37.65	37.80	18.55	178.52	None
		10/3/2023	194.72	197.07	22.55	37.05	37.65	37.77	20.45	176.62	NM
		5/21/2024	194.72	197.07	22.55	37.05	37.65	37.76	18.20	178.87	NM
50WW12	Upper Shallow	7/9/2020	193.26	195.66	22.50	37.00	37.60	37.92	17.00	178.66	None
		10/1/2020	193.26	195.66	22.50	37.00	37.60	37.92	17.53	178.13	None
		1/28/2021	193.26	195.66	22.50	37.00	37.60	37.92	17.28	178.38	None
		4/6/2021	193.26	195.66	22.50	37.00	37.60	37.84	16.20	179.46	None
		7/8/2021	193.26	195.66	22.50	37.00	37.60	37.91	15.88	179.78	None
		10/7/2021	193.26	195.66	22.50	37.00	37.60	37.91	17.15	178.51	None
		1/6/2022	193.26	195.66	22.50	37.00	37.60	37.90	17.33	178.33	None
		4/6/2022	193.26	195.66	22.50	37.00	37.60	37.92	16.90	178.76	None
		10/11/2022	193.26	195.66	22.50	37.00	37.60	37.84	18.95	176.71	None
		5/25/2023	193.26	195.66	22.50	37.00	37.60	37.87	17.28	178.38	None
		10/3/2023	193.26	195.66	22.50	37.00	37.60	37.83	19.17	176.49	NM
		5/22/2024	193.26	195.66	22.50	37.00	37.60	37.85	17.18	178.48	NM

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Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW13	Upper Shallow	7/9/2020	195.01	197.45	22.44	36.94	37.54	37.63	19.35	178.10	None
		10/1/2020	195.01	197.45	22.44	36.94	37.54	37.63	18.95	178.50	None
		1/28/2021	195.01	197.45	22.44	36.94	37.54	37.65	18.75	178.70	None
		4/6/2021	195.01	197.45	22.44	36.94	37.54	37.65	17.65	179.80	None
		7/8/2021	195.01	197.45	22.44	36.94	37.54	37.63	17.13	180.32	None
		10/7/2021	195.01	197.45	22.44	36.94	37.54	37.60	18.46	178.99	None
		1/6/2022	195.01	197.45	22.44	36.94	37.54	37.60	18.69	178.76	None
		4/6/2022	195.01	197.45	22.44	36.94	37.54	37.62	18.39	179.06	None
		10/11/2022	195.01	197.45	22.44	36.94	37.54	37.60	20.40	177.05	None
		5/24/2023	195.01	197.45	22.44	36.94	37.54	37.63	18.85	178.60	None
		10/3/2023	195.01	197.45	22.44	36.94	37.54	37.60	20.73	176.72	NM
		5/24/2024	195.01	197.45	22.44	36.94	37.54	37.62	18.58	178.87	NM
50WW14	Lower Shallow	7/9/2020	195.14	197.52	45.78	60.28	60.88	60.70	18.38	179.14	None
		10/1/2020	195.14	197.52	45.78	60.28	60.88	60.70	19.04	178.48	None
		1/28/2021	195.14	197.52	45.78	60.28	60.88	60.67	18.88	178.64	None
		4/6/2021	195.14	197.52	45.78	60.28	60.88	59.95	17.82	179.70	None
		7/8/2021	195.14	197.52	45.78	60.28	60.88	59.70	17.38	180.14	None
		10/7/2021	195.14	197.52	45.78	60.28	60.88	60.70	18.74	178.78	None
		1/6/2022	195.14	197.52	45.78	60.28	60.88	59.70	18.87	178.65	None
		4/6/2022	195.14	197.52	45.78	60.28	60.88	60.66	18.65	178.87	None
		10/11/2022	195.14	197.52	45.78	60.28	60.88	60.63	20.62	176.90	None
		5/25/2023	195.14	197.52	45.78	60.28	60.88	60.75	18.97	178.55	None
		10/3/2023	195.14	197.52	45.78	60.28	60.88	60.63	20.92	176.60	NM
		5/21/2024	195.14	197.52	45.78	60.28	60.88	59.68	18.65	178.87	NM
50WW15	Upper Shallow	7/9/2020	193.95	196.30	22.25	36.75	37.75	37.90	17.00	179.30	None
		10/1/2020	193.95	196.30	22.25	36.75	37.75	37.88	17.63	178.67	None
		1/28/2021	193.95	196.30	22.25	36.75	37.75	37.90	17.33	178.97	None
		4/6/2021	193.95	196.30	22.25	36.75	37.75	37.90	16.34	179.96	None
		7/8/2021	193.95	196.30	22.25	36.75	37.75	37.88	15.80	180.50	None
		10/7/2021	193.95	196.30	22.25	36.75	37.75	37.85	17.47	178.83	None
		1/6/2022	193.95	196.30	22.25	36.75	37.75	37.65	17.42	178.88	None
		4/6/2022	193.95	196.30	22.25	36.75	37.75	37.88	17.21	179.09	None
		10/10/2022	193.95	196.30	22.25	36.75	37.75	37.62	19.19	177.11	None
		5/25/2023	193.95	196.30	22.25	36.75	37.75	37.69	17.50	178.80	None
		10/2/2023	193.95	196.30	22.25	36.75	37.75	37.78	19.52	176.78	NM
		5/20/2024	193.95	196.30	22.25	36.75	37.75	37.84	17.27	179.03	NM

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Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW16	Upper Shallow	7/9/2020	194.10	196.66	22.66	37.16	37.76	37.90	17.63	179.03	None
		10/5/2020	194.10	196.66	22.66	37.16	37.76	38.04	18.50	178.16	None
		1/28/2021	194.10	196.66	22.66	37.16	37.76	38.04	18.29	178.37	None
		4/5/2021	194.10	196.66	22.66	37.16	37.76	38.02	16.95	179.71	None
		7/7/2021	194.10	196.66	22.66	37.16	37.76	37.45	16.69	179.97	None
		10/11/2021	194.10	196.66	22.66	37.16	37.76	37.90	18.19	178.47	None
		1/4/2022	194.10	196.66	22.66	37.16	37.76	38.05	18.27	178.39	None
		4/5/2022	194.10	196.66	22.66	37.16	37.76	38.02	17.98	178.68	None
		10/10/2022	194.10	196.66	22.66	37.16	37.76	38.02	20.00	176.66	None
		5/25/2023	194.10	196.66	22.66	37.16	37.76	37.90	18.27	178.39	None
		10/2/2023	194.10	196.66	22.66	37.16	37.76	37.88	20.35	176.31	NM
		5/20/2024	194.10	196.66	22.66	37.16	37.76	37.90	17.98	178.68	NM
50WW17	Shallow	7/9/2020	192.73	195.13	22.30	66.80	67.40	64.63	17.07	178.06	4.9
		10/6/2020	192.73	195.13	22.30	66.80	67.40	64.63	17.48	177.65	4.9
		1/28/2021	192.73	195.13	22.30	66.80	67.40	64.63	17.17	177.96	4.9
		4/5/2021	192.73	195.13	22.30	66.80	67.40	64.55	16.50	178.63	5.1
		7/7/2021	192.73	195.13	22.30	66.80	67.40	66.27	16.88	178.25	1.2
		10/11/2021	192.73	195.13	22.30	66.80	67.40	64.68	17.25	177.88	4.8
		1/4/2022	192.73	195.13	22.30	66.80	67.40	64.38	17.38	177.75	5.4
		4/5/2022	192.73	195.13	22.30	66.80	67.40	64.41	17.19	177.94	5.4
		10/10/2022	192.73	195.13	22.30	66.80	67.40	64.70	18.89	176.24	4.7
		5/24/2023	192.73	195.13	22.30	66.80	67.40	NM	NM	NM	NM
		10/4/2023	192.73	195.13	22.30	66.80	67.40	64.55	19.18	175.95	NM
		5/20/2024	192.73	195.13	22.30	66.80	67.40	64.32	17.35	177.78	NM
50WW18	Upper Shallow	7/9/2020	192.57	194.84	22.37	36.87	37.47	37.65	16.88	177.96	None
		10/5/2020	192.57	194.84	22.37	36.87	37.47	37.65	17.21	177.63	None
		1/28/2021	192.57	194.84	22.37	36.87	37.47	37.65	16.95	177.89	None
		4/5/2021	192.57	194.84	22.37	36.87	37.47	37.44	17.21	177.63	None
		7/7/2021	192.57	194.84	22.37	36.87	37.47	37.03	17.29	177.55	None
		10/11/2021	192.57	194.84	22.37	36.87	37.47	37.63	17.02	177.82	None
		1/4/2022	192.57	194.84	22.37	36.87	37.47	37.63	17.15	177.69	None
		4/5/2022	192.57	194.84	22.37	36.87	37.47	37.52	16.94	177.90	None
		10/10/2022	192.57	194.84	22.37	36.87	37.47	37.50	18.78	176.06	None
		5/25/2023	192.57	194.84	22.37	36.87	37.47	37.51	17.15	177.69	None
		10/2/2023	192.57	194.84	22.37	36.87	37.47	37.48	19.05	175.79	NM
		5/20/2024	192.57	194.84	22.37	36.87	37.47	37.50	17.05	177.79	NM

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Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW19	Shallow	7/9/2020	193.71	195.96	21.35	65.85	66.45	64.90	17.75	178.21	2.1
		10/6/2020	193.71	195.96	21.35	65.85	66.45	64.88	18.11	177.85	2.2
		1/28/2021	193.71	195.96	21.35	65.85	66.45	64.88	17.87	178.09	2.2
		4/5/2021	193.71	195.96	21.35	65.85	66.45	65.00	17.10	178.86	1.9
		7/7/2021	193.71	195.96	21.35	65.85	66.45	65.00	16.71	179.25	1.9
		10/11/2021	193.71	195.96	21.35	65.85	66.45	64.90	17.77	178.19	2.1
		1/4/2022	193.71	195.96	21.35	65.85	66.45	65.00	17.97	177.99	1.9
		4/5/2022	193.71	195.96	21.35	65.85	66.45	64.81	17.80	178.16	2.3
		10/10/2022	193.71	195.96	21.35	65.85	66.45	65.22	19.50	176.46	1.4
		5/24/2023	193.71	195.96	21.35	65.85	66.45	NM	NM	NM	NM
		10/4/2023	193.71	195.96	21.35	65.85	66.45	64.93	19.77	176.19	NM
		5/20/2024	193.71	195.96	21.35	65.85	66.45	64.90	17.97	177.99	NM
50WW20	Shallow	7/8/2020	200.30	202.54	20.54	55.04	55.54	57.80	23.42	179.12	None
		10/6/2020	200.30	202.54	20.54	55.04	55.54	57.80	23.83	178.71	None
		1/28/2021	200.30	202.54	20.54	55.04	55.54	55.83	23.80	178.74	None
		4/5/2021	200.30	202.54	20.54	55.04	55.54	55.84	23.00	179.54	None
		7/7/2021	200.30	202.54	20.54	55.04	55.54	55.85	21.41	181.13	None
		10/11/2021	200.30	202.54	20.54	55.04	55.54	55.78	23.45	179.09	None
		1/4/2022	200.30	202.54	20.54	55.04	55.54	55.80	23.48	179.06	None
		4/5/2022	200.30	202.54	20.54	55.04	55.54	55.84	23.34	179.20	None
		10/10/2022	200.30	202.54	20.54	55.04	55.54	55.80	25.00	177.54	None
		5/24/2023	200.30	202.54	20.54	55.04	55.54	NM	NM	NM	NM
		10/4/2023	200.30	202.54	20.54	55.04	55.54	55.75	25.44	177.10	NM
		5/20/2024	200.30	202.54	20.54	55.04	55.54	55.85	23.81	178.73	NM
50WW21	Upper Shallow	7/8/2020	197.68	200.14	22.36	36.86	37.46	37.67	21.17	178.97	None
		10/6/2020	197.68	200.14	22.36	36.86	37.46	37.67	21.60	178.54	None
		1/28/2021	197.68	200.14	22.36	36.86	37.46	37.63	27.70	172.44	None
		4/5/2021	197.68	200.14	22.36	36.86	37.46	37.65	20.51	179.63	None
		7/7/2021	197.68	200.14	22.36	36.86	37.46	37.64	20.03	180.11	None
		10/11/2021	197.68	200.14	22.36	36.86	37.46	37.62	21.20	178.94	None
		1/4/2022	197.68	200.14	22.36	36.86	37.46	37.62	21.35	178.79	None
		4/5/2022	197.68	200.14	22.36	36.86	37.46	37.61	21.28	178.86	None
		10/10/2022	197.68	200.14	22.36	36.86	37.46	37.61	22.83	177.31	None
		5/24/2023	197.68	200.14	22.36	36.86	37.46	NM	NM	NM	NM
		10/4/2023	197.68	200.14	22.36	36.86	37.46	37.60	23.30	176.84	NM
		5/20/2024	197.68	200.14	22.36	36.86	37.46	37.60	21.49	178.65	NM

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Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW22	Upper Shallow	7/8/2020	199.93	202.10	21.97	36.57	37.17	37.82	23.03	179.07	None
		10/5/2020	199.93	202.10	21.97	36.57	37.17	37.82	23.42	178.68	None
		1/28/2021	199.93	202.10	21.97	36.57	37.17	37.80	23.22	178.88	None
		4/5/2021	199.93	202.10	21.97	36.57	37.17	37.80	22.25	179.85	None
		7/7/2021	199.93	202.10	21.97	36.57	37.17	37.82	21.72	180.38	None
		10/11/2021	199.93	202.10	21.97	36.57	37.17	37.79	22.90	179.20	None
		1/4/2022	199.93	202.10	21.97	36.57	37.17	37.79	23.10	179.00	None
		4/5/2022	199.93	202.10	21.97	36.57	37.17	37.78	22.98	179.12	None
		10/10/2022	199.93	202.10	21.97	36.57	37.17	37.77	24.80	177.30	None
		5/24/2023	199.93	202.10	21.97	36.57	37.17	37.80	23.37	178.73	None
		10/2/2023	199.93	202.10	21.97	36.57	37.17	37.74	25.20	176.90	NM
		5/20/2024	199.93	202.10	21.97	36.57	37.17	37.80	23.27	178.83	NM
50WW23	Upper Shallow	7/8/2020	198.33	200.75	22.42	36.92	37.52	37.82	22.00	178.75	None
		10/5/2020	198.33	200.75	22.42	36.92	37.52	37.82	22.30	178.45	None
		1/28/2021	198.33	200.75	22.42	36.92	37.52	37.82	22.24	178.51	None
		4/5/2021	198.33	200.75	22.42	36.92	37.52	37.84	21.45	179.30	None
		7/7/2021	198.33	200.75	22.42	36.92	37.52	37.82	20.87	179.88	None
		10/11/2021	198.33	200.75	22.42	36.92	37.52	37.79	21.88	178.87	None
		1/4/2022	198.33	200.75	22.42	36.92	37.52	37.81	22.05	178.70	None
		4/5/2022	198.33	200.75	22.42	36.92	37.52	37.82	21.93	178.82	None
		10/10/2022	198.33	200.75	22.42	36.92	37.52	37.79	23.57	177.18	None
		5/25/2023	198.33	200.75	22.42	36.92	37.52	37.80	22.30	178.45	None
		10/2/2023	198.33	200.75	22.42	36.92	37.52	37.78	24.15	176.60	NM
		5/22/2024	198.33	200.75	22.42	36.92	37.52	37.81	22.28	178.47	NM
50WW24	Upper Shallow	7/8/2020	199.37	201.63	22.66	37.16	37.76	38.02	22.92	178.71	None
		10/6/2020	199.37	201.63	22.66	37.16	37.76	38.00	23.05	178.58	None
		1/28/2021	199.37	201.63	22.66	37.16	37.76	37.96	23.07	178.56	None
		4/5/2021	199.37	201.63	22.66	37.16	37.76	38.02	22.48	179.15	None
		7/7/2021	199.37	201.63	22.66	37.16	37.76	38.02	22.83	178.80	None
		10/11/2021	199.37	201.63	22.66	37.16	37.76	37.97	22.80	178.83	None
		1/4/2022	199.37	201.63	22.66	37.16	37.76	37.97	22.95	178.68	None
		4/5/2022	199.37	201.63	22.66	37.16	37.76	38.01	22.82	178.81	None
		10/10/2022	199.37	201.63	22.66	37.16	37.76	37.97	24.49	177.14	None
		5/24/2023	199.37	201.63	22.66	37.16	37.76	NM	NM	NM	NM
		10/4/2023	199.37	201.63	22.66	37.16	37.76	37.96	24.90	176.73	NM
		5/20/2024	199.37	201.63	22.66	37.16	37.76	38.00	23.22	178.41	NM

Table 3
Groundwater Elevation Data
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW25	Lower Shallow	7/9/2020	193.48	195.98	47.50	56.90	57.50	57.81	16.91	179.07	None
		10/6/2020	193.48	195.98	47.50	56.90	57.50	57.80	17.67	178.31	None
		1/28/2021	193.48	195.98	47.50	56.90	57.50	57.80	17.39	178.59	None
		4/5/2021	193.48	195.98	47.50	56.90	57.50	57.82	16.13	179.85	None
		7/7/2021	193.48	195.98	47.50	56.90	57.50	56.67	17.73	178.25	2.4
		10/11/2021	193.48	195.98	47.50	56.90	57.50	57.82	17.70	178.28	None
		1/4/2022	193.48	195.98	47.50	56.90	57.50	57.80	17.62	178.36	None
		4/5/2022	193.48	195.98	47.50	56.90	57.50	57.81	17.28	178.70	None
		10/10/2022	193.48	195.98	47.50	56.90	57.50	56.77	19.04	176.94	None
		5/24/2023	193.48	195.98	47.50	56.90	57.50	NM	NM	NM	NM
		10/4/2023	193.48	195.98	47.50	56.90	57.50	57.75	19.48	176.50	NM
		5/20/2024	193.48	195.98	47.50	56.90	57.50	57.80	17.12	178.86	NM
50WW26	Lower Shallow	7/8/2020	197.68	200.07	47.49	61.99	62.59	62.80	21.25	178.82	None
		10/6/2020	197.68	200.07	47.49	61.99	62.59	62.80	21.31	178.76	None
		1/28/2021	197.68	200.07	47.49	61.99	62.59	62.77	22.57	177.50	None
		4/5/2021	197.68	200.07	47.49	61.99	62.59	62.85	20.55	179.52	None
		7/7/2021	197.68	200.07	47.49	61.99	62.59	62.80	20.00	180.07	None
		10/11/2021	197.68	200.07	47.49	61.99	62.59	62.80	21.15	178.92	None
		1/4/2022	197.68	200.07	47.49	61.99	62.59	62.83	21.31	178.76	None
		4/5/2022	197.68	200.07	47.49	61.99	62.59	62.71	21.21	178.86	None
		10/10/2022	197.68	200.07	47.49	61.99	62.59	62.78	22.85	177.22	None
		5/24/2023	197.68	200.07	47.49	61.99	62.59	NM	NM	NM	NM
		10/4/2023	197.68	200.07	47.49	61.99	62.59	57.57	23.30	176.77	NM
		5/20/2024	197.68	200.07	47.49	61.99	62.59	62.80	21.40	178.67	NM
50WW27	Lower Shallow	7/8/2020	193.84	196.22	45.28	59.78	60.38	59.95	16.91	179.31	None
		10/6/2020	193.84	196.22	45.28	59.78	60.38	59.93	17.57	178.65	None
		1/28/2021	193.84	196.22	45.28	59.78	60.38	59.94	17.05	179.17	None
		4/5/2021	193.84	196.22	45.28	59.78	60.38	59.93	16.35	179.87	None
		7/7/2021	193.84	196.22	45.28	59.78	60.38	59.95	15.73	180.49	None
		10/11/2021	193.84	196.22	45.28	59.78	60.38	59.92	17.70	178.52	None
		1/4/2022	193.84	196.22	45.28	59.78	60.38	59.93	17.40	178.82	None
		4/5/2022	193.84	196.22	45.28	59.78	60.38	60.01	17.18	179.04	None
		10/10/2022	193.84	196.22	45.28	59.78	60.38	59.92	19.14	177.08	None
		5/24/2023	193.84	196.22	45.28	59.78	60.38	NM	NM	NM	NM
		10/4/2023	193.84	196.22	45.28	59.78	60.38	59.90	19.48	176.74	NM
		5/20/2024	193.84	196.22	45.28	59.78	60.38	59.92	17.18	179.04	NM

Table 3
Groundwater Elevation Data
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

Monitoring Well	Zone	Date	Ground Surface Elevation (ft MSL)	Top of Casing Elevation (ft MSL)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Constructed Well Depth (ft BGS)	Measured Well Depth (ft BTOC)	Depth to Water (ft BTOC)	Groundwater Elevation (ft MSL)	Screened Interval Siltation (%)
50WW28	Upper Shallow	7/8/2020	192.04	194.71	16.57	26.57	26.97	27.10	16.03	178.68	None
		10/6/2020	192.04	194.71	16.57	26.57	26.97	27.10	16.72	177.99	None
		1/28/2021	192.04	194.71	16.57	26.57	26.97	27.10	16.49	178.22	None
		4/5/2021	192.04	194.71	16.57	26.57	26.97	27.10	15.31	179.40	None
		7/7/2021	192.04	194.71	16.57	26.57	26.97	27.05	13.31	181.40	None
		10/11/2021	192.04	194.71	16.57	26.57	26.97	27.08	16.52	178.19	None
		1/4/2022	192.04	194.71	16.57	26.57	26.97	27.09	16.65	178.06	None
		4/5/2022	192.04	194.71	16.57	26.57	26.97	27.29	16.45	178.26	None
		10/10/2022	192.04	194.71	16.57	26.57	26.97	27.30	18.25	176.46	None
		5/24/2023	192.04	194.71	16.57	26.57	26.97	NM	NM	NM	NM
		10/4/2023	192.04	194.71	16.57	26.57	26.97	27.05	18.55	176.16	NM
		5/20/2024	192.04	194.71	16.57	26.57	26.97	27.28	16.30	178.41	NM
50WW29	Upper Shallow	7/8/2020	192.18	195.63	23.45	38.45	38.45	37.90	17.69	177.94	3.7
		10/1/2020	192.18	195.63	23.45	38.45	38.45	38.10	18.03	177.60	2.3
		1/25/2021	192.18	195.63	23.45	38.45	38.45	38.10	17.18	178.45	2.3
		4/5/2021	192.18	195.63	23.45	38.45	38.45	37.90	16.93	178.70	3.7
		7/7/2021	192.18	195.63	23.45	38.45	38.45	38.10	16.27	179.36	2.3
		10/7/2021	192.18	195.63	23.45	38.45	38.45	38.09	17.75	177.88	2.4
		1/4/2022	192.18	195.63	23.45	38.45	38.45	37.90	17.75	177.88	3.7
		4/5/2022	192.18	195.63	23.45	38.45	38.45	37.91	17.16	178.47	3.6
		10/11/2022	192.18	195.63	23.45	38.45	38.45	38.08	19.43	176.20	2.5
		5/24/2023	192.18	195.63	23.45	38.45	38.45	38.10	17.90	177.73	2.3
		10/2/2023	192.18	195.63	23.45	38.45	38.45	38.08	19.83	175.80	NM
		5/21/2024	192.18	195.63	23.45	38.45	38.45	38.08	17.71	177.92	NM

Notes:
% - percentage
ft BGS - feet below ground surface
ft BTOC - feet below top of casing
ft MSL - feet below mean sea level
NM - no measurement
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331105

	Location Code		50WW05 (Upper Shallow)															
	Sample ID		50WW05-191108		50WW05-200708		50WW05-201001		50WW05-210125		50WW05-210405		50WW05-210707		50WW05-211007		50WW05-220105	
	Sample Date		11/8/2019		7/8/2020		10/1/2020		1/25/2021		4/5/2021		7/7/2021		10/7/2021		1/5/2022	
	Sample Purpose		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
DHC																		
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA		NA		NA	
FIELD TESTS																		
Dissolved oxygen	mg/L	NV	0.02		0.12		0.37		0.05		0.32		0.76		0.34		0.95	
Ferrous Iron	NA	NV	NM		NM		NM		NM		NM		NM		NM		NM	
Oxidation Reduction Potential	mV	NV	58		99		105		94		159		102		120		195	
pH	pH_units	NV	6.75		7.07		6.71		7.02		6.78		6.30		6.06		5.79	
Specific conductivity	µmhos/cm	NV	1.15		1.45		1.44		1.75		1.60		1.79		0.779		1.54	
Temperature	deg. C	NV	16.78		21.76		20.30		19.52		17.50		19.03		23.18		17.74	
Turbidity	NTU	NV	0.7		0		0		0		0.2		3.3		0		0	
DISSOLVED GASES																		
Carbon dioxide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
GENERAL CHEMISTRY																		
Chloride	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
PERCHLORATE																		
Perchlorate	µg/L	17	< 2	U	3.08		0.621		< 0.05	U	< 0.05	U	0.059	J	0.252	J	< 0.2	U
VOLATILES																		
1,1,1,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	0.41	J	NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	4.8		4.9		7		4.4		4.7		3.6		4.8		2.3	
1,1-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	2.7		2.4		3.1		2		1.6		< 0.5	U	2.6		2.1	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	50WW05 (Upper Shallow)															
		Sample ID	50WW05-191108		50WW05-200708		50WW05-201001		50WW05-210125		50WW05-210405		50WW05-210707		50WW05-211007		50WW05-220105	
		Sample Date	11/8/2019		7/8/2020		10/1/2020		1/25/2021		4/5/2021		7/7/2021		10/7/2021		1/5/2022	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
1,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	< 2	U	NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	**200**		**250**		**280**		**160**		**140**		**130**		**170**		**150**	
cis-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

	Location Code		50WW05 (Upper Shallow)															
	Sample ID		50WW05-191108		50WW05-200708		50WW05-201001		50WW05-210125		50WW05-210405		50WW05-210707		50WW05-211007		50WW05-220105	
	Sample Date		11/8/2019		7/8/2020		10/1/2020		1/25/2021		4/5/2021		7/7/2021		10/7/2021		1/5/2022	
	Sample Purpose		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
p-Isopropyltoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	1.2		< 1	U	0.75	J	0.86	J	< 1	U	0.61	J	0.89	J	< 1	
Toluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**290**		**280**		**370**		**270**		**240**		**350**		**290**		**200**	
Trichlorofluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
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	

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331108

	Location Code		50WW05 (Upper Shallow)										50WW06 (Lower Shallow)					
	Sample ID		50WW05-220405		50WW05-221010		50WW05_052523		50WW05-100223		50WW05-052124		50WW06-201001		50WW06-210128		50WW06-210406	
	Sample Date		4/5/2022		10/10/2022		5/25/2023		10/2/2023		5/21/2024		10/1/2020		1/28/2021		4/6/2021	
	Sample Purpose		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
DHC																		
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		0.2	J	0.6		0.4	J
FIELD TESTS																		
Dissolved oxygen	mg/L	NV	0.3		0.34		0.06		0.04		0.04		0.06		0.09		1.39	
Ferrous Iron	NA	NV	NM		NM		NM		NM		NM		NM		1.11		0.45	
Oxidation Reduction Potential	mV	NV	183		20		38		37		61		95		107		263	
pH	pH_units	NV	6.27		7.36		7.21		6.96		7.57		6.31		5.67		5.04	
Specific conductivity	µmhos/cm	NV	1.4		1.43		1.88		1.58		1.65		0.385		0.130		0.076	
Temperature	deg. C	NV	21.41		19.25		19.73		22.31		19.41		19.27		12.00		16.62	
Turbidity	NTU	NV	10		0		0		3.8		27.2		0		2.9		5.9	
DISSOLVED GASES																		
Carbon dioxide	µg/L	NV	NA		NA		NA		NA		NA		93,000		45,000	J	88,000	J
Ethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.47	U	< 0.47	U	< 0.47	U
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		< 0.55	U	< 0.55	U	< 0.55	U
Methane	µg/L	NV	NA		NA		NA		NA		NA		3.8		< 1	U	2.6	
GENERAL CHEMISTRY																		
Chloride	mg/L	NV	NA		NA		NA		NA		NA		41.8		3.06		3.42	
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		< 0.1	U	0.212		< 0.1	U
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		17.9		8.29		10.9	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA		6.09		1.55		1.57	
PERCHLORATE																		
Perchlorate	µg/L	17	< 0.05	U	0.109		0.13		0.273		<0.0500	U	**1,660**		2.78		0.032	J
VOLATILES																		
1,1,1,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	3.6		3.3		3.1		2.6		3.1		< 0.5	U	< 0.5	U	< 0.5	U
1,1-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	1.9		1.7		1.2		0.93	J	< 1.0	U	< 0.5	U	< 0.5	U	< 0.5	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331109

		Location Code	50WW05 (Upper Shallow)										50WW06 (Lower Shallow)					
		Sample ID	50WW05-220405		50WW05-221010		50WW05_052523		50WW05-100223		50WW05-052124		50WW06-201001		50WW06-210128		50WW06-210406	
		Sample Date	4/5/2022		10/10/2022		5/25/2023		10/2/2023		5/21/2024		10/1/2020		1/28/2021		4/6/2021	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	**150**		**77**		**130**		69		**120**		< 0.5	U	< 0.5	U	< 0.5	U
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331110

	Location Code		50WW05 (Upper Shallow)										50WW06 (Lower Shallow)					
	Sample ID		50WW05-220405		50WW05-221010		50WW05_052523		50WW05-100223		50WW05-052124		50WW06-201001		50WW06-210128		50WW06-210406	
	Sample Date		4/5/2022		10/10/2022		5/25/2023		10/2/2023		5/21/2024		10/1/2020		1/28/2021		4/6/2021	
	Sample Purpose		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
p-Isopropyltoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	0.67	J	1.2		0.65	J	0.89	J	0.79	J	< 0.5	U	< 1	U	< 1	U
Toluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**220**		**290**		**130**		**180**		**150**		**14**		4.8		3.1	
Trichlorofluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U	< 0.5	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331111

		Location Code	50WW06 (Lower Shallow)																		50WW08 (Upper Shallow)			
		Sample ID	50WW06-210708		50WW06-211007		50WW06-220106		50WW06-220406		50WW06-221011		50WW06_052423		50WW06-100323		50WW06-052224		50WW06-052224-a		50WW08-191112		50WW08-200708	
		Sample Date	7/8/2021		10/7/2021		1/6/2022		4/6/2022		10/11/2022		5/24/2023		10/3/2023		5/22/2024		5/22/2024		11/12/2019		7/8/2020	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG		FD		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
DHC																								
Dehalococcoides	cells/mL	NV	1		2		0.7		NA		NA		NA		NA		NA		NA		NA		NA	
FIELD TESTS																								
Dissolved oxygen	mg/L	NV	0.91		0.19		0.44		5.4		0.08		3.76		0.07		1.97		1.97		0.14		0.09	
Ferrous Iron	NA	NV	0.39		2.35		3.77		0.08		NM		0.06		0.05		0.13		0.13		0.09		NM	
Oxidation Reduction Potential	mV	NV	148		29		228		187		166		191		91		213		213		153		212	
pH	pH_units	NV	6.59		4.84		3.72		6.2		6.51		6.37		6.32		5.9		5.9		6.99		7.23	
Specific conductivity	µmhos/cm	NV	0.235		0.184		0.518		0.121		0.355		0.37		0.393		0.135		0.135		2.23		2.26	
Temperature	deg. C	NV	19.93		19.00		16.77		19.62		19.33		20.69		20.3		21.36		21.36		16.17		21.38	
Turbidity	NTU	NV	10.9		4.3		20.2		9		0		0		26.2		44.1		44.1		72.7		0	
DISSOLVED GASES																								
Carbon dioxide	µg/L	NV	170,000	J	541,000	J	44,500		36,400	J	72,000		30,000		56,000		160,000		170,000		69,000		NA	
Ethane	µg/L	NV	< 0.47	U	< 2	UJ	< 0.5	U	2.09		< 0.5	UJ	< 0.5	U	< 0.000500	U	< 0.000500	U	< 0.000500	U	< 0.47	U	NA	
Ethylene	µg/L	NV	< 0.55	U	< 1	UJ	0.992	J	< 0.5	U	3.13	J	< 0.5	U	< 0.000500	U	< 0.000500	U	< 0.000500	U	< 0.55	U	NA	
Methane	µg/L	NV	0.68	J	7.3	J	27.6	J	3.1		49.1		0.821		216		2.08		1.86		3		NA	
GENERAL CHEMISTRY																								
Chloride	mg/L	NV	3.31		42.6		69.2		10.4		72.7		3.89		53.6		3.1		3.35		361		NA	
Nitrate	mg/L	NV	0.11	UB	< 0.1	U	0.0881	J	0.46		0.133		0.144		< 0.100	U	0.108	J	0.110	J	0.118		NA	
Sulfate	mg/L	NV	13.4		22.9		30.4		11.8		31.5		12.1		21.3		11.2		11.4		304		NA	
Total organic carbon	mg/L	NV	2.23		5.32		7.96		1.61		2.42		1.83		3.27		3.71		4.3		0.83		NA	
PERCHLORATE																								
Perchlorate	µg/L	17	1.89	J	15.1	J	0.39		**24.7**		**257**		5.79		**554**		0.537	J	1.28	J	**83**		**89.8**	
VOLATILES																								
1,1,1,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,1,1-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		1.6		NA	
1,1,2-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,1-Dichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		1		NA	
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 0.5	U	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 1.0	U	1.2		0.95	J
1,1-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2,3-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2,3-Trichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2,4-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2,4-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2-Dibromoethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 1.0	U	2.2		1.5	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331112

		Location Code	50WW06 (Lower Shallow)																		50WW08 (Upper Shallow)			
		Sample ID	50WW06-210708		50WW06-211007		50WW06-220106		50WW06-220406		50WW06-221011		50WW06_052423		50WW06-100323		50WW06-052224		50WW06-052224-a		50WW08-191112		50WW08-200708	
		Sample Date	7/8/2021		10/7/2021		1/6/2022		4/6/2022		10/11/2022		5/24/2023		10/3/2023		5/22/2024		5/22/2024		11/12/2019		7/8/2020	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG		FD		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 2	U	NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	< 0.5	U	0.74		< 0.5	U	1.0		< 0.5	U	0.7	J	< 1.0	U	< 1.0	U	39		41	
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331113

		Location Code	50WW06 (Lower Shallow)																		50WW08 (Upper Shallow)			
		Sample ID	50WW06-210708		50WW06-211007		50WW06-220106		50WW06-220406		50WW06-221011		50WW06_052423		50WW06-100323		50WW06-052224		50WW06-052224-a		50WW08-191112		50WW08-200708	
		Sample Date	7/8/2021		10/7/2021		1/6/2022		4/6/2022		10/11/2022		5/24/2023		10/3/2023		5/22/2024		5/22/2024		11/12/2019		7/8/2020	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG		FD		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
sec-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Styrene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
tert-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Tetrachloroethene	µg/L	5	< 1	U	< 1	U	< 1		< 1	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 1.0	U	1.3		1.4	
Toluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
trans-1,2-Dichloroethene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
trans-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Trichloroethene	µg/L	5	4.2		2.8		4.3		**23**		**20**		**13**		**15**		**11**		**11**		**420**		**390**	
Trichlorofluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 1.0	U	< 0.5	U	< 0.5	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code										50
		Sample ID	50WW08-201005		50WW08-210125		50WW08-210405		50WW08-210707		50WW08-211011	
		Sample Date	10/5/2020		1/25/2021		4/5/2021		7/7/2021		10/11/2021	
		Sample Purpose	REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
DHC												
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA	
FIELD TESTS												
Dissolved oxygen	mg/L	NV	3.17		0.08		0.66		1.37		0.26	
Ferrous Iron	NA	NV	NM		NM		NM		NM		NM	
Oxidation Reduction Potential	mV	NV	220		186		151		143		200	
pH	pH_units	NV	6.02		6.12		6.57		6.08		5.79	
Specific conductivity	µmhos/cm	NV	2.36		2.61		2.51		2.28		1.34	
Temperature	deg. C	NV	18.27		19.13		16.96		20.09		19.49	
Turbidity	NTU	NV	0		17		18.3		32.3		12.9	
DISSOLVED GASES												
Carbon dioxide	µg/L	NV	NA		NA		NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA		NA		NA	
GENERAL CHEMISTRY												
Chloride	mg/L	NV	NA		NA		NA		NA		NA	
Nitrate	mg/L	NV	NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA	
PERCHLORATE												
Perchlorate	µg/L	17	**172**		**126**		**115**		**222**		**682**	
VOLATILES												
1,1,1,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	1		0.82	J	1.3		0.72	J	0.56	J
1,1-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	2.2		2.3		1.8		1.9		3.2	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code										
		Sample ID	50WW08-201005		50WW08-210125		50WW08-210405		50WW08-210707		50WW08-211011	
		Sample Date	10/5/2020		1/25/2021		4/5/2021		7/7/2021		10/11/2021	
		Sample Purpose	REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	57		55		58		57		54	
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code										
		Sample ID	50WW08-201005		50WW08-210125		50WW08-210405		50WW08-210707		50WW08-211011	
		Sample Date	10/5/2020		1/25/2021		4/5/2021		7/7/2021		10/11/2021	
		Sample Purpose	REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
p-Isopropyltoluene	µg/L	NV	NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA	
Styrene	µg/L	NV	NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	1.4		1.4		1.6		1.3		0.9	J
Toluene	µg/L	NV	NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**500**		**550**		**610**		**500**		**370**	
Trichlorofluoromethane	µg/L	NV	NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U

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Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	NW08 (Upper Shallow)											
		Sample ID	50WW08-220105		50WW08-220406		50WW08-221010		50WW08_052423		50WW08-100223		50WW08-052224	
		Sample Date	1/5/2022		4/6/2022		10/10/2022		5/24/2023		10/2/2023		5/22/2024	
		Sample Purpose	REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
DHC														
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA	
FIELD TESTS														
Dissolved oxygen	mg/L	NV	0.59		0.2		0.2		0.72		0.07		1.17	
Ferrous Iron	NA	NV	NM		NM		NM		NM		NM		NM	
Oxidation Reduction Potential	mV	NV	184		176		109		151		88		180	
pH	pH_units	NV	6.09		6.58		7.56		7.01		7.05		7.01	
Specific conductivity	µmhos/cm	NV	2.41		2.37		2.35		2.83		2.45		2.46	
Temperature	deg. C	NV	17.69		19.49		17.4		19.71		19.64		19.99	
Turbidity	NTU	NV	11		21		0		398		23		65.2	
DISSOLVED GASES														
Carbon dioxide	µg/L	NV	NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA		NA		NA		NA	
GENERAL CHEMISTRY														
Chloride	mg/L	NV	NA		NA		NA		NA		NA		NA	
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA		NA	
PERCHLORATE														
Perchlorate	µg/L	17	**178**		**83.4**		**31.1**		**81.1**		**62.9**		**210**	
VOLATILES														
1,1,1,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	0.98		1.1		1		1.1		1.1		< 10	U
1,1-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	1.5		1.7		1.1		1.5		1.1		< 10	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	NW08 (Upper Shallow)											
		Sample ID	50WW08-220105		50WW08-220406		50WW08-221010		50WW08_052423		50WW08-100223		50WW08-052224	
		Sample Date	1/5/2022		4/6/2022		10/10/2022		5/24/2023		10/2/2023		5/22/2024	
		Sample Purpose	REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	63		**91**		**73**		**85**		**77**		**93**	
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

			Location Code	MW08 (Upper Shallow)											
			Sample ID	50WW08-220105		50WW08-220406		50WW08-221010		50WW08_052423		50WW08-100223		50WW08-052224	
			Sample Date	1/5/2022		4/6/2022		10/10/2022		5/24/2023		10/2/2023		5/22/2024	
			Sample Purpose	REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**		**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
p-Isopropyltoluene	µg/L	NV		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5		1.2		1.7		1.8		1.8		1.4		< 10	U
Toluene	µg/L	NV		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5		**590**		**720**		**720**		**650**		**610**		**820**	
Trichlorofluoromethane	µg/L	NV		NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2		< 0.5		< 0.5	U	< 1	U	< 0.5	U	0.56	J	< 10	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331120

	Location Code		50WW09 (Lower Shallow)															
	Sample ID		50WW09-191111		50WW09-191111-		50WW09-201005		50WW09-211011		50WW09-221010		50WW09_052423		50WW09-100223		50WW09-052224	
	Sample Date		11/11/2019		11/11/2019		10/5/2020		10/11/2021		10/10/2022		5/24/2023		10/2/2023		5/22/2024	
	Sample Purpose		REG		FD		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
DHC																		
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA		NA		NA	
FIELD TESTS																		
Dissolved oxygen	mg/L	NV	0.25		0.25		0.43		0.18		0.27		0.71		0.06		1.47	
Ferrous Iron	NA	NV	NM		NM		NM		NM		NM		NM		NM		NM	
Oxidation Reduction Potential	mV	NV	116		116		219		202		1		173		85		183	
pH	pH_units	NV	6.62		6.62		6.20		5.36		7.32		6.31		6.2		6.29	
Specific conductivity	µmhos/cm	NV	1.68		1.68		2.08		0.894		2.28		1.02		2.3		0.977	
Temperature	deg. C	NV	18.80		18.80		18.43		21.69		18.64		19.65		19.95		20.2	
Turbidity	NTU	NV	290		290		113		11.2		4.1		217		141		183	
DISSOLVED GASES																		
Carbon dioxide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
GENERAL CHEMISTRY																		
Chloride	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA	
PERCHLORATE																		
Perchlorate	µg/L	17	6.6		7.4		< 0.5	U	0.167	J	0.118		0.712	J	0.194		0.450	
VOLATILES																		
1,1,1,2-Tetrachloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U
1,1-Dichloropropene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

	Location Code	50WW09 (Lower Shallow)															
	Sample ID	50WW09-191111		50WW09-191111-		50WW09-201005		50WW09-211011		50WW09-221010		50WW09_052423		50WW09-100223		50WW09-052224	
	Sample Date	11/11/2019		11/11/2019		10/5/2020		10/11/2021		10/10/2022		5/24/2023		10/2/2023		5/22/2024	
	Sample Purpose	REG		FD		REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
1,2-Dichloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	< 2	U	< 2	U	NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	4.1		4		2.8		0.93	J	0.54	J	1.1		1.2		0.64	J
cis-1,3-Dichloropropene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

	Location Code	50WW09 (Lower Shallow)															
	Sample ID	50WW09-191111		50WW09-191111-		50WW09-201005		50WW09-211011		50WW09-221010		50WW09_052423		50WW09-100223		50WW09-052224	
	Sample Date	11/11/2019		11/11/2019		10/5/2020		10/11/2021		10/10/2022		5/24/2023		10/2/2023		5/22/2024	
	Sample Purpose	REG		FD		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
p-Isopropyltoluene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U
Toluene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**30**		**30**		**21**		**5.7**		**5.8**		**11**		**14**		4.7	
Trichlorofluoromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331123

		Location Code	50WW11 (Upper Shallow)																			
		Sample ID	50WW11-191112		50WW11-200709		50WW11-200709-		50WW11-201001		50WW11-201001-		50WW11-210128		50WW11-210406		50WW11-210406-		50WW11-210708		50WW11-210708-	
		Sample Date	11/12/2019		7/9/2020		7/9/2020		10/1/2020		10/1/2020		1/28/2021		4/6/2021		4/6/2021		7/8/2021		7/8/2021	
		Sample Purpose	REG		REG		FD		REG		FD		REG		REG		FD		REG		FD	
Analyte	**Units**	**MCL/PCL**	**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**
DHC																						
Dehalococcoides	cells/mL	NV	NA		0.5		NA		4		NA		1.4		0.9		NA		3		NA	
FIELD TESTS																						
Dissolved oxygen	mg/L	NV	0.71		1.88		1.88		1.12		1.12		0.03		1.16		1.16		1.79		1.79	
Ferrous Iron	NA	NV	0.64		0.51		0.51		NM		NM		1.91		0.74		0.74		0.67		0.67	
Oxidation Reduction Potential	mV	NV	145		131		131		94		94		72		200		200		137		137	
pH	pH_units	NV	6.39		6.69		6.69		6.70		6.70		5.60		5.70		5.70		5.98		5.98	
Specific conductivity	µmhos/cm	NV	1.96		1.93		1.93		2.10		2.10		2.32		1.96		1.96		1.85		1.85	
Temperature	deg. C	NV	14.64		21.79		21.79		19.05		19.05		15.42		18.11		18.11		19.63		19.63	
Turbidity	NTU	NV	116		43.6		43.6		20		20		73.3		60.3		60.3		53.2		53.2	
DISSOLVED GASES																						
Carbon dioxide	µg/L	NV	270,000		85,000		80,000		74,000		79,000		380,000	J	310,000	J	300,000	J	730,000	J	570,000	J
Ethane	µg/L	NV	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U
Ethylene	µg/L	NV	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U
Methane	µg/L	NV	6.8		< 1	U	0.93	J	4.6		5.1		4.4		1.1	J	1.7	J	2.2	J	3.2	J
GENERAL CHEMISTRY																						
Chloride	mg/L	NV	294		306		300		305		301		295		295		283		285		281	
Nitrate	mg/L	NV	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U
Sulfate	mg/L	NV	351		391		388		475		403		261		304		294		358		354	
Total organic carbon	mg/L	NV	1.49		1.18	J	1.16	J	1.82		1.86		1.98		1.65		1.62		1.9		1.81	
PERCHLORATE																						
Perchlorate	µg/L	17	**8,000**		**4,880**		**4,960**		**6,630**		**7,940**		**651**		**421**		**482**		**2,670**		**2610**	
VOLATILES																						
1,1,1,2-Tetrachloroethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	**26**		**15**		**15**		**35**		**34**		2.1	J	1.5		2		**9.9**		**9.7**	
1,1-Dichloropropene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	**28**		**13**		**13**		**26**		**25**		2.4	J	1.5		1.8		< 0.5	U	< 0.5	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331124

		Location Code	50WW11 (Upper Shallow)																			
		Sample ID	50WW11-191112		50WW11-200709		50WW11-200709-		50WW11-201001		50WW11-201001-		50WW11-210128		50WW11-210406		50WW11-210406-		50WW11-210708		50WW11-210708-	
		Sample Date	11/12/2019		7/9/2020		7/9/2020		10/1/2020		10/1/2020		1/28/2021		4/6/2021		4/6/2021		7/8/2021		7/8/2021	
		Sample Purpose	REG		REG		FD		REG		FD		REG		REG		FD		REG		FD	
Analyte	**Units**	**MCL/PCL**	**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**
1,2-Dichloropropane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	< 10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	< 10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	< 20	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	< 10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	58		29		29		**74**		**74**		6.7	J	5.3		5.7		20		19	
cis-1,3-Dichloropropene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	< 10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	< 10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	< 10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	< 10	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331125

		Location Code	50WW11 (Upper Shallow)																			
		Sample ID	50WW11-191112		50WW11-200709		50WW11-200709-		50WW11-201001		50WW11-201001-		50WW11-210128		50WW11-210406		50WW11-210406-		50WW11-210708		50WW11-210708-	
		Sample Date	11/12/2019		7/9/2020		7/9/2020		10/1/2020		10/1/2020		1/28/2021		4/6/2021		4/6/2021		7/8/2021		7/8/2021	
		Sample Purpose	REG		REG		FD		REG		FD		REG		REG		FD		REG		FD	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	< 5	U	2.4		2.7		**6.8**		**7.1**		0.87	J	< 1	U	< 1	U	1.7		1.9	
Toluene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**3,300**		**1,600**		**1,500**		**3,300**		**3,500**		**250**		**200**		**230**		**1,100**		**1,100**	
Trichlorofluoromethane	µg/L	NV	< 5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 5	U	1.1		1.1		**3.4**		**3.5**		< 0.5	U	< 0.5	U	< 0.5	U	0.6	J	0.62	J

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
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UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331126

		Location Code	50WW11 (Upper Shallow)																	
		Sample ID	50WW11-211007		50WW11-211007-		50WW11-220106		50WW11-220406		50WW11-221011		50WW11_052423		50WW11-100323		50WW11-100323-a		50WW11-052124	
		Sample Date	10/7/2021		10/7/2021		1/6/2022		4/6/2022		10/11/2022		5/24/2023		10/3/2023		10/3/2023		5/21/2024	
		Sample Purpose	REG		FD		REG		REG		REG		REG		REG		FD		REG	
Analyte	**Units**	**MCL/PCL**	**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**
DHC																				
Dehalococcoides	cells/mL	NV	1.5		NA		2		NA		NA		NA		NA		NA		NA	
FIELD TESTS																				
Dissolved oxygen	mg/L	NV	0.27		0.27		0.43		6.9		0.37		0.14		0.02		0.02		1.22	
Ferrous Iron	NA	NV	0.57		0.57		1		0.18		NM		0.36		0.33		0.33		NM	
Oxidation Reduction Potential	mV	NV	135		135		169		12		64		111		74		74		83	
pH	pH_units	NV	5.54		5.54		5.57		6.76		7.31		6.75		6.75		6.75		6.97	
Specific conductivity	µmhos/cm	NV	1.06		1.06		2.04		1.89		2.05		2.28		2.13		2.13		2.03	
Temperature	deg. C	NV	18.01		18.01		16.83		20.25		18.93		20.68		19.75		19.75		19.8	
Turbidity	NTU	NV	49.1		49.1		192		22		104		23		83.1		83.1		79.1	
DISSOLVED GASES																				
Carbon dioxide	µg/L	NV	450,000		417,000		150,000		61,400	J	74,000		42,000		54,000		53,000		62,000	
Ethane	µg/L	NV	< 2	UJ	< 2	UJ	< 0.5	U	< 0.5	U	< 0.5	UJ	< 0.5	U	< 0.000500	U	< 0.000500	U	< 0.000500	U
Ethylene	µg/L	NV	< 1	UJ	< 1	UJ	1.21	J	3.4		103	J	< 0.5	U	< 0.000500	U	< 0.000500	U	< 0.000500	U
Methane	µg/L	NV	3	J	4.3	J	4.67	J	5.29		484		4.07		1,330		1,360		720	
GENERAL CHEMISTRY																				
Chloride	mg/L	NV	275		279		274		294		308		335		287		282		344	
Nitrate	mg/L	NV	< 0.1	U	< 0.1	U	0.0439	J	0.0429	J	0.0498	J	< 0.05	U	< 0.100	U	< 0.100	U	< 0.0500	U
Sulfate	mg/L	NV	356		365		354		302		389		324		406		405		317	
Total organic carbon	mg/L	NV	2.93		2.64		2.82		0.896	J	1.78		1.5		1.88		2.06		4.76	
PERCHLORATE																				
Perchlorate	µg/L	17	**4500**		**4,700**		**4,200**		**1,020**		**6,280**		**570**		**4,690**		**5,110**		**268**	
VOLATILES																				
1,1,1,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	**9.3**		**11**		**9.5**		3.3		22		2.1		**23**		**23**		< 1.0	U
1,1-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	**15**		**16**		**12**		3.1		25		1.9		**20**		**19**		< 1.0	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	50WW11 (Upper Shallow)																	
		Sample ID	50WW11-211007		50WW11-211007-		50WW11-220106		50WW11-220406		50WW11-221011		50WW11_052423		50WW11-100323		50WW11-100323-a		50WW11-052124	
		Sample Date	10/7/2021		10/7/2021		1/6/2022		4/6/2022		10/11/2022		5/24/2023		10/3/2023		10/3/2023		5/21/2024	
		Sample Purpose	REG		FD		REG		REG		REG		REG		REG		FD		REG	
Analyte	Units	MCL/PCL	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
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	33		36		29		19		65		8.5		59		58		11	
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331128

	Location Code		**50WW11 (Upper Shallow)**																	
	Sample ID		**50WW11-211007**		**50WW11-211007-**		**50WW11-220106**		**50WW11-220406**		**50WW11-221011**		**50WW11_052423**		**50WW11-100323**		**50WW11-100323-a**		**50WW11-052124**	
	Sample Date		**10/7/2021**		**10/7/2021**		**1/6/2022**		**4/6/2022**		**10/11/2022**		**5/24/2023**		**10/3/2023**		**10/3/2023**		**5/21/2024**	
	Sample Purpose		**REG**		**FD**		**REG**		**REG**		**REG**		**REG**		**REG**		**FD**		**REG**	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	2.8		3.3		2.4		1.8		6.5	J	0.82	J	**5.5**		**5.3**		< 1.0	U
Toluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**1,200**		**1,300**		**1,300**		**530**		**3,100**		**250**		**2400**		**2400**		**140**	
Trichlorofluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	0.84	J	1		0.98		< 0.5	U	< 10	U	< 0.5	U	1.8		**2.1**		< 1.0	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331129

		Location Code	50WW12 (Upper Shallow)																			
		Sample ID	50WW12-191112		50WW12-191112-		50WW12-200709		50WW12-201001		50WW12-210128		50WW12-210406		50WW12-210708		50WW12-211007		50WW12-220106		50WW12-220406	
		Sample Date	11/12/2019		11/12/2019		7/9/2020		10/1/2020		1/28/2021		4/6/2021		7/8/2021		10/7/2021		1/6/2022		4/6/2022	
		Sample Purpose	REG		FD		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
DHC																						
Dehalococcoides	cells/mL	NV	NA		NA		0.4	J	1.4		0.5	J	0.4	J	1.8		6.1		0.4	J	NA	
FIELD TESTS																						
Dissolved oxygen	mg/L	NV	0.14		0.14		0.05		0.27		0.08		0.65		0.84		0.24		0.58		0	
Ferrous Iron	NA	NV	0.61		0.61		0.31		NM		0.97		0.58		0.53		0.00		1.08		0.17	
Oxidation Reduction Potential	mV	NV	156		156		201		96		100		170		188		108		106		67	
pH	pH_units	NV	6.22		6.22		6.20		6.46		5.71		6.11		5.80		5.80		5.91		6.49	
Specific conductivity	µmhos/cm	NV	4.43		4.43		4.40		4.85		4.77		4.31		4.28		2.80		4.25		4.25	
Temperature	deg. C	NV	15.07		15.07		21.31		19.65		15.56		18.66		20.66		19.47		15.93		19.67	
Turbidity	NTU	NV	142		142		17.2		32		43.3		73.1		46.3		22.3		216		22	
DISSOLVED GASES																						
Carbon dioxide	µg/L	NV	250,000		300,000		140,000		140,000		420,000		130,000	J	570,000	J	366,000		326,000		83,700	J
Ethane	µg/L	NV	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	UJ	< 0.47	U	3.1		< 2	UJ	< 0.5	U	< 0.5	U
Ethylene	µg/L	NV	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	2.9		< 1	UJ	1.19	J	< 0.5	U
Methane	µg/L	NV	1.5		1.6		0.68	J	0.83	J	0.61	J	1.5		2.3		810	J	23.4	J	3,380	
GENERAL CHEMISTRY																						
Chloride	mg/L	NV	1,070		1,060		1,080		1,080		1,020		994		997		1,120		1,020		1,010	
Nitrate	mg/L	NV	< 0.1	U	< 0.1	U	< 0.1	U	< 0.2	U	0.11	J	0.226		< 0.2	U	< 0.1	U	0.108	J	< 0.2	U
Sulfate	mg/L	NV	531		533		561		595		499		572		534		567		634		574	
Total organic carbon	mg/L	NV	1.11		1.19		0.73	J	1.14		1.85		1.73		1.93		2.49		5.59		1.84	
PERCHLORATE																						
Perchlorate	µg/L	17	**47,000**		**43,000**		**43,000**		**41,600**		**83,800**		**90,000**		**60,300**		**25,500**		**68,100**		**141,000**	J
VOLATILES																						
1,1,1,2-Tetrachloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	< 0.5	U	1.5		NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	4.6		4.1		**7.3**		5.2		5.9	J	**17**		**11**		2.9		**12**		**20**	
1,1-Dichloropropene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	2.7		2.7		4.4		3		**5.8**		**11**		< 0.5	U	2.5		**9.3**		**10**	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331130

		Location Code	50WW12 (Upper Shallow)																			
		Sample ID	50WW12-191112		50WW12-191112-		50WW12-200709		50WW12-201001		50WW12-210128		50WW12-210406		50WW12-210708		50WW12-211007		50WW12-220106		50WW12-220406	
		Sample Date	11/12/2019		11/12/2019		7/9/2020		10/1/2020		1/28/2021		4/6/2021		7/8/2021		10/7/2021		1/6/2022		4/6/2022	
		Sample Purpose	REG		FD		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	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
1,2-Dichloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	< 2	U	< 2	U	NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	0.76	J	1.1		0.87	J	1.3		4	J	2.4		1.1		2		3.5	
cis-1,3-Dichloropropene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	< 1	U	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

	Location Code	50WW12 (Upper Shallow)																			
	Sample ID	50WW12-191112		50WW12-191112-		50WW12-200709		50WW12-201001		50WW12-210128		50WW12-210406		50WW12-210708		50WW12-211007		50WW12-220106		50WW12-220406	
	Sample Date	11/12/2019		11/12/2019		7/9/2020		10/1/2020		1/28/2021		4/6/2021		7/8/2021		10/7/2021		1/6/2022		4/6/2022	
	Sample Purpose	REG		FD		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	< 0.5	U	< 0.5	U	< 1	U	< 1	U	< 1	U	< 5	U	< 1	U	< 1	U	< 1		< 1	U
Toluene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**280**		**260**		**550**		**380**		**690**		**1,600**		**1,200**		**290**		**1,100**		**1,400**	
Trichlorofluoromethane	µg/L	NV	< 0.5	U	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	UJ	< 2.5	U	< 0.5	U	< 0.5	U	< 0.5		< 0.5	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331132

			Location Code	50WW12 (Upper Shallow)																50WW13 (Upper Shallow)					
			Sample ID	50WW12-220406-		50WW12-221011		50WW12-221011-		50WW12_052523		50WW12_052523_		50WW12-100323		50WW12-052224		50WW12-052224-a		50WW13-191113		50WW13-200709		50WW13-201001	
			Sample Date	4/6/2022		10/11/2022		10/11/2022		5/25/2023		5/25/2023		10/3/2023		5/22/2024		5/22/2024		11/13/2019		7/9/2020		10/1/2020	
			Sample Purpose	FD		REG		FD		REG		FD		REG		REG		FD		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**		**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**
DHC																									
Dehalococcoides	cells/mL	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		2		3.8	
FIELD TESTS																									
Dissolved oxygen	mg/L	NV		0		0.35		0.35		0.03		0.03		0.04		0.17		0.17		0.02		0.78		0.14	
Ferrous Iron	NA	NV		0.17		NM		NM		0.47		0.47		0.42		0.39		0.39		0.70		NM		NM	
Oxidation Reduction Potential	mV	NV		67		61		61		146		146		61		165		165		40		97		86	
pH	pH_units	NV		6.49		7.25		7.25		6.51		6.51		6.87		6.24		6.24		6.77		6.88		6.06	
Specific conductivity	µmhos/cm	NV		4.25		4.84		4.84		5.03		5.03		5.06		4.46		4.46		2.11		2.15		2.15	
Temperature	deg. C	NV		19.67		20.06		20.06		18.93		18.93		21.5		20.77		20.77		12.95		20.80		18.84	
Turbidity	NTU	NV		22		18.3		18.3		40.2		40.2		78.2		111		111		118		23.1		11.8	
DISSOLVED GASES																									
Carbon dioxide	µg/L	NV		96,000	J	80,000		78,000		64,000		64,000		56,000		300,000		320,000		86,000		72,000		310,000	
Ethane	µg/L	NV		< 0.5	U	< 0.5	U	< 0.5	UJ	< 0.5	U	< 0.5	U	< 0.000500	U	< 0.000500	U	< 0.000500	U	< 0.47	U	< 0.47	U	< 0.47	U
Ethylene	µg/L	NV		< 0.5	U	< 0.5	UJ	< 0.5	UJ	< 0.5	U	< 0.5	U	< 0.000500	U	< 0.000500	U	< 0.000500	U	< 0.55	U	< 0.55	U	< 0.55	U
Methane	µg/L	NV		3,220		9,860		8,290		14,800		12,100		8,890		4,320	J	1,440	J	4.7		0.65	J	4.2	
GENERAL CHEMISTRY																									
Chloride	mg/L	NV		1,020		1,160		1,150		1,150		1,150		1,140		1,070		1,430		308		353		316	
Nitrate	mg/L	NV		< 0.2	U	< 0.5	U	< 0.5	U	0.164		0.157		< 0.100 U		0.137	J	0.231	J	< 0.1	U	< 0.1	U	< 0.1	U
Sulfate	mg/L	NV		576		563		568		616		613		604		620	J	847	J	316		363		356	
Total organic carbon	mg/L	NV		1.41		1.69		1.66		2.05		1.96		1.36		9.72	J	9.44	J	1.78		1.39	J	3.54	
PERCHLORATE																									
Perchlorate	µg/L	17		**101,000**	J	**17,600**		**17,900**		**79,100**		**84,500**		**17,900**		**443,000**	J	**139,000**	J	**4,900**		**2,900**		**4,390**	
VOLATILES																									
1,1,1,2-Tetrachloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,1,1-Trichloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,1,2-Trichloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,1-Dichloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,1-Dichloroethene	µg/L	7		**19**		4.5		4.5		**19**		**19**		5.0		**22**		**18**		**17**	J	**7.4**		**17**	
1,1-Dichloropropene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,2,3-Trichloropropane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,2-Dibromoethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,2-Dichlorobenzene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,2-Dichloroethane	µg/L	5		**10**		0.79	J	0.82	J	**6.3**		**6.6**		1.2		**15**		**14**		**39**		**20**		**47**	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331133

		Location Code	50WW12 (Upper Shallow)																50WW13 (Upper Shallow)					
		Sample ID	50WW12-220406-		50WW12-221011		50WW12-221011-		50WW12_052523		50WW12_052523_		50WW12-100323		50WW12-052224		50WW12-052224-a		50WW13-191113		50WW13-200709		50WW13-201001	
		Sample Date	4/6/2022		10/11/2022		10/11/2022		5/25/2023		5/25/2023		10/3/2023		5/22/2024		5/22/2024		11/13/2019		7/9/2020		10/1/2020	
		Sample Purpose	FD		REG		FD		REG		FD		REG		REG		FD		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 25	U	NA		NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 25	U	NA		NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 25	U	NA		NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 25	U	NA		NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
cis-1,2-Dichloroethene	µg/L	70	4.1		< 1	U	< 1	U	1.6		1.6		0.77	J	< 10	U	< 10	U	**230**		**120**		**300**	
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 25	U	NA		NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 25	U	NA		NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 25	U	NA		NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331134

			50WW12 (Upper Shallow)																50WW13 (Upper Shallow)					
Location Code																								
Sample ID			50WW12-220406-		50WW12-221011		50WW12-221011-		50WW12_052523		50WW12_052523_		50WW12-100323		50WW12-052224		50WW12-052224-a		50WW13-191113		50WW13-200709		50WW13-201001	
Sample Date			4/6/2022		10/11/2022		10/11/2022		5/25/2023		5/25/2023		10/3/2023		5/22/2024		5/22/2024		11/13/2019		7/9/2020		10/1/2020	
Sample Purpose			FD		REG		FD		REG		FD		REG		REG		FD		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
sec-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Styrene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
tert-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Tetrachloroethene	µg/L	5	< 1	U	< 1	U	< 1	U	< 0.5	U	< 0.5	U	< 0.50	U	< 10	U	< 10	U	< 12	U	3.4	J	**8.6**	
Toluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Trichloroethene	µg/L	5	**1,400**		**180**		**180**		**1,100**		**1,100**		**160**		**1,200**		**1,100**		**7,300**		**3,400**		**8,300**	
Trichlorofluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 12	U	NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 1	U	< 1	U	< 0.5	U	< 0.5	U	< 0.50	U	< 10	U	< 10	U	< 12	U	< 2.5	U	NS	J

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MCL - Maximum Contaminant Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331135

			Location Code	50WW13 (Upper Shallow)																									
			Sample ID	50WW13-210128		50WW13-210406		50WW13-210708		50WW13-211007		50WW13-220106		50WW13-220106-		50WW13-220406		50WW13-221011		50WW13_052423		50WW13-100323		50WW13-100323-a		50WW13-052124	
			Sample Date	1/28/2021		4/6/2021		7/8/2021		10/7/2021		1/6/2022		1/6/2022		4/6/2022		10/11/2022		5/24/2023		10/3/2023		10/3/2023		5/21/2024	
			Sample Purpose	REG		REG		REG		REG		REG		FD		REG		REG		REG		REG		FD		REG	
Analyte	**Units**	**MCL/PCL**		**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**
DHC																													
Dehalococcoides	cells/mL	NV		5		1.7		2.9		0.8	J	2.6		NA		NA		NA		NA		NA		NA		NA			
FIELD TESTS																													
Dissolved oxygen	mg/L	NV		0.06		0.85		0.97		0.25		0.45		0.45		1		0.3		1.4		0.06		0.06		0.47			
Ferrous Iron	NA	NV		1.43		0.65		0.60		2.05		0.81		0.81		0.00		NM		0.46		0.41		0.41		0.48			
Oxidation Reduction Potential	mV	NV		-6		153		125		126		136		136		71		38		126		64		64		132			
pH	pH_units	NV		6.11		5.87		6.20		5.53		5.66		5.66		6.78		7.38		6.88		6.65		6.65		6.42			
Specific conductivity	µmhos/cm	NV		2.68		2.38		2.14		1.20		2.15		2.15		2.1		2.02		2.73		2.14		2.14		2.33			
Temperature	deg. C	NV		15.73		18.10		19.16		17.97		16.9		16.9		20.99		18.71		20.63		19.77		19.77		19.28			
Turbidity	NTU	NV		26.2		54.4		102		174		104		104		79		45.2		0		88.1		88.1		64			
DISSOLVED GASES																													
Carbon dioxide	µg/L	NV		260,000	J	300,000	J	330,000	J	477,000		288,000		220,000		50,100	J	67,000		38,000		72,000		73,000		280,000			
Ethane	µg/L	NV		< 0.47	U	< 0.47	U	< 0.47	U	< 2	UJ	< 0.5	U	< 0.5	U	1.56		< 0.5	UJ	< 0.5	U	< 0.000500	U	0.00104		< 0.000500	U		
Ethylene	µg/L	NV		< 0.55	U	< 0.55	U	< 0.55	U	< 1	UJ	0.901	J	2.25	J	< 0.5	U	1.87	J	< 0.5	U	0.000630	J	0.000666	J	< 0.000500	U		
Methane	µg/L	NV		4.3		1.4		1.6		3.3	J	7.59	J	8.38	J	2.81		21.9		1.55		25.6		27.6		1.32			
GENERAL CHEMISTRY																													
Chloride	mg/L	NV		387		386		329		294		312		300		372		291		401		277		282		402			
Nitrate	mg/L	NV		< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	0.038	J	0.0382	J	0.0314	J	< 0.1	U	0.119		< 0.100	U	< 0.100	U	< 0.0500	U		
Sulfate	mg/L	NV		302		345		347		338		324		309		349		332		374		338		334		357			
Total organic carbon	mg/L	NV		1.64		1.76		1.76		3.11		3.39	J	2.12	J	1.89		2.07		1.59		2.32		2.53		7.75			
PERCHLORATE																													
Perchlorate	µg/L	17		**155**		**122**		**2,420**		**5,080**		**2,500**		**3,220**		**514**		**5310**		**186**		**4170**		**4270**		**121**			
VOLATILES																													
1,1,1,2-Tetrachloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,1,1-Trichloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,1,2,2-Tetrachloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,1,2-Trichloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,1-Dichloroethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,1-Dichloroethene	µg/L	7		1		0.95	J	6.6		5	J	**11**		**9.6**		3.2		**14**	J	1.5		**18**		**18**		< 5.0	U		
1,1-Dichloropropene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,2,3-Trichlorobenzene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,2,3-Trichloropropane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,2,4-Trichlorobenzene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,2,4-Trimethylbenzene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,2-Dibromo-3-chloropropane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,2-Dibromoethane	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,2-Dichlorobenzene	µg/L	NV		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA			
1,2-Dichloroethane	µg/L	5		2.8		1.9		< 0.5	U	**28**		**37**		**33**		**7.1**		**46**		3		**42**		**43**		< 5.0	U		

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331136

		Location Code	50WW13 (Upper Shallow)																					
		Sample ID	50WW13-210128		50WW13-210406		50WW13-210708		50WW13-211007		50WW13-220106		50WW13-220106-		50WW13-220406		50WW13-221011		50WW13_052423		50WW13-100323		50WW13-100323-a		50WW13-052124	
		Sample Date	1/28/2021		4/6/2021		7/8/2021		10/7/2021		1/6/2022		1/6/2022		4/6/2022		10/11/2022		5/24/2023		10/3/2023		10/3/2023		5/21/2024	
		Sample Purpose	REG		REG		REG		REG		REG		FD		REG		REG		REG		REG		FD		REG	
Analyte	Units	MCL/PCL	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
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	26		16		**120**		**130**		**210**		**200**		**72**		**280**		30		**430**		**410**		24	
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331137

	Location Code		50WW13 (Upper Shallow)																					
	Sample ID		50WW13-210128		50WW13-210406		50WW13-210708		50WW13-211007		50WW13-220106		50WW13-220106-		50WW13-220406		50WW13-221011		50WW13_052423		50WW13-100323		50WW13-100323-a		50WW13-052124	
	Sample Date		1/28/2021		4/6/2021		7/8/2021		10/7/2021		1/6/2022		1/6/2022		4/6/2022		10/11/2022		5/24/2023		10/3/2023		10/3/2023		5/21/2024	
	Sample Purpose		REG		REG		REG		REG		REG		FD		REG		REG		REG		REG		FD		REG	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	2.4		1.7		3.8		4.7	J	**5.8**		**6.9**		**7.2**		< 25	U	2.2		**12**		**14**		< 5.0	U
Toluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**690**		**410**		**3,000**		**2,900**		**5,800**		**5,700**		**2,100**		**8,600**		**490**		**7,100**		**7,700**		**470**	
Trichlorofluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	0.92	J	< 2.5	U	< 2.5		< 2.5		0.54	J	< 25	U	< 0.5	U	**3.2**		**3.2**		< 5.0	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331138

		Location Code	50WW14 (Lower Shallow)															
		Sample ID	50WW14-191113		50WW14-200709		50WW14-201001		50WW14-210128		50WW14-210128-		50WW14-210406		50WW14-210708		50WW14-211007	
		Sample Date	11/13/2019		7/9/2020		10/1/2020		1/28/2021		1/28/2021		4/6/2021		7/8/2021		10/7/2021	
		Sample Purpose	REG		REG		REG		REG		FD		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
DHC																		
Dehalococcoides	cells/mL	NV	NA		0.8		2.1		3.3		NA		13.4		3.8		0.7	J
FIELD TESTS																		
Dissolved oxygen	mg/L	NV	0.03		0.46		0.15		0.04		0.04		0.17		1.23		0.28	
Ferrous Iron	NA	NV	1.67		1.83				3.77		3.77		1.6		1.49		3.87	
Oxidation Reduction Potential	mV	NV	-20		-21		7		-125		-125		-34		46		-12	
pH	pH_units	NV	6.53		6.75		6.26		5.91		5.91		6.34		5.87		5.39	
Specific conductivity	µmhos/cm	NV	2.20		2.21		2.22		2.68		2.68		2.40		2.24		1.34	
Temperature	deg. C	NV	16.55		20.87		18.53		16.60		16.60		18.30		19.47		18.66	
Turbidity	NTU	NV	300		125		159		207		207		76.2		196		104	
DISSOLVED GASES																		
Carbon dioxide	µg/L	NV	97,000		85,000		170,000		380,000	J	340,000	J	98,000	J	490,000	J	472,000	
Ethane	µg/L	NV	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 0.47	U	< 2	UJ
Ethylene	µg/L	NV	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 0.55	U	< 1	UJ
Methane	µg/L	NV	1.8		1.9		2.2		1.8		1.5		3		1.6		2.5	J
GENERAL CHEMISTRY																		
Chloride	mg/L	NV	395		397		393		385		387		402		404		422	
Nitrate	mg/L	NV	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	< 0.1	U	0.0723	UB	< 0.1	U
Sulfate	mg/L	NV	357		382		375		316		322		383		370		377	
Total organic carbon	mg/L	NV	0.88		0.84	J	1.58		1.86		1.88		1.57		1.34		1.39	
PERCHLORATE																		
Perchlorate	µg/L	17	< 2	U	3.69		1.37		< 0.25	U	< 0.25	U	< 0.05	U	0.636		< 0.2	U
VOLATILES																		
1,1,1,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U
1,1-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	0.54	J	< 0.5	U	< 0.5	U	< 0.5	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331139

		Location Code																	
		Sample ID	50WW14-191113		50WW14-200709		50WW14-201001		50WW14-210128		50WW14-210128-		50WW14-210406		50WW14-210708		50WW14-211007	
		Sample Date	11/13/2019		7/9/2020		10/1/2020		1/28/2021		1/28/2021		4/6/2021		7/8/2021		10/7/2021	
		Sample Purpose	REG		REG		REG		REG		FD		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
1,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	1.7		1.3		2.9		4.1		4.5		5.9		2.4		4.6	
cis-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	50WW14 (Lower Shallow)														
		Sample ID	50WW14-191113		50WW14-200709		50WW14-201001		50WW14-210128		50WW14-210128-		50WW14-210406		50WW14-210708		50WW14-211007	
		Sample Date	11/13/2019		7/9/2020		10/1/2020		1/28/2021		1/28/2021		4/6/2021		7/8/2021		10/7/2021	
		Sample Purpose	REG		REG		REG		REG		FD		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
p-Isopropyltoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	< 0.5	U	< 1	U	< 0.5	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U
Toluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**37**		**32**		**74**	J+	**46**		**46**		**23**		**24**		**28**	
Trichlorofluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA	
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

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331141

	Location Code														50WW15 (Upper Shallow)									
	Sample ID		50WW14-220106		50WW14-220406		50WW14-221011		50WW14_052523		50WW14-100323		50WW14-052124		50WW15-191108		50WW15-201005		50WW15-211011		50WW15-221010		50WW15_052523		50WW15-100223	
	Sample Date		1/6/2022		4/6/2022		10/11/2022		5/25/2023		10/3/2023		5/21/2024		11/8/2019		10/5/2020		10/11/2021		10/10/2022		5/25/2023		10/2/2023	
	Sample Purpose		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
DHC																										
Dehalococcoides	cells/mL	NV	20.4		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
FIELD TESTS																										
Dissolved oxygen	mg/L	NV	0.56		0.2		0.17		0.05		0.03		0.34		0.04		0.83		0.22		0.46		0.03		0.05	
Ferrous Iron	NA	NV	3.53		3.30		NM		3.30		3.17		3.89		NM		NM		NM		NM		NM		NM	
Oxidation Reduction Potential	mV	NV	165		-56		-39		-24		-52		-30		29		172		121		23		61		0	
pH	pH_units	NV	5.21		6.68		7.19		6.72		6.61		7.07		6.93		6.42		5.52		7.62		7.4		7.14	
Specific conductivity	µmhos/cm	NV	2.38		2.27		2.21		2.66		2.38		2.33		1.77		1.90		1.02		1.82		2.17		1.91	
Temperature	deg. C	NV	17.43		22.6		19.64		19.81		20		19.12		16.79		18.64		19.47		19.96		20.75		23.14	
Turbidity	NTU	NV	123		26		88.2		144		216		130		84.8		20		70.1		37.2		32.1		43.1	
DISSOLVED GASES																										
Carbon dioxide	µg/L	NV	634,000		65,700	J	75,000		49,000	J	51,000		110,000		NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	< 0.5	U	< 0.5	U	1.43	J	< 0.5	U	< 0.000500	U	0.000820	J	NA		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	2.32	J	2.28		< 0.5	UJ	< 0.5	U	< 0.000500	U	< 0.000500	U	NA		NA		NA		NA		NA		NA	
Methane	µg/L	NV	4.48	J	3.21	J	5.67		6.76		5.4		3.86		NA		NA		NA		NA		NA		NA	
GENERAL CHEMISTRY																										
Chloride	mg/L	NV	444		405		418		409		408		498		NA		NA		NA		NA		NA		NA	
Nitrate	mg/L	NV	< 0.1	U	< 0.1	U	< 0.1	U	< 0.05	U	< 0.100	U	< 0.0500	U	NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	398		380		394		408		424		399		NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	1.47		3.11		1.23		1.41		1.22		5.14	J	NA		NA		NA		NA		NA		NA	
PERCHLORATE																										
Perchlorate	µg/L	17	< 0.2	U	1.48		0.101		0.168		0.274		< 0.500	U	< 2	U	< 0.5	U	< 0.2	U	0.0301		0.113		0.161	
VOLATILES																										
1,1,1,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U
1,1-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	< 0.5		0.51	J	< 1	U	0.51	U	0.74	J	< 1.0	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331142

		Location Code	50WW15 (Upper Shallow)																					
		Sample ID	50WW14-220106		50WW14-220406		50WW14-221011		50WW14_052523		50WW14-100323		50WW14-052124		50WW15-191108		50WW15-201005		50WW15-211011		50WW15-221010		50WW15_052523		50WW15-100223	
		Sample Date	1/6/2022		4/6/2022		10/11/2022		5/25/2023		10/3/2023		5/21/2024		11/8/2019		10/5/2020		10/11/2021		10/10/2022		5/25/2023		10/2/2023	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	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
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA		NA		< 2	U	NA		NA		NA		NA		NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	9.6		14		2.4		2.1		4.6		4.7		5.5		5.4		1.4		2.7		3.2		3.2	
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331143

		Location Code												50WW15 (Upper Shallow)										
		Sample ID	50WW14-220106		50WW14-220406		50WW14-221011		50WW14_052523		50WW14-100323		50WW14-052124		50WW15-191108		50WW15-201005		50WW15-211011		50WW15-221010		50WW15_052523		50WW15-100223	
		Sample Date	1/6/2022		4/6/2022		10/11/2022		5/25/2023		10/3/2023		5/21/2024		11/8/2019		10/5/2020		10/11/2021		10/10/2022		5/25/2023		10/2/2023	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Styrene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	< 1		< 1	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	2.1		1.8		< 1	U	1		1.4		1.1	
Toluene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	**14**		**48**		**33**		**20**		**67**		**24**		**7.2**		**8.4**		2		4.9		**6.1**		**6.2**	
Trichlorofluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	1.7		1.1		< 0.5	U	0.56	J	0.52	J	0.63	J

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code		
		Sample ID	50WW15-052024	
		Sample Date	5/20/2024	
		Sample Purpose	REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**
DHC				
Dehalococcoides	cells/mL	NV	NA	
FIELD TESTS				
Dissolved oxygen	mg/L	NV	3.05	
Ferrous Iron	NA	NV	NM	
Oxidation Reduction Potential	mV	NV	144	
pH	pH_units	NV	6.81	
Specific conductivity	µmhos/cm	NV	0.959	
Temperature	deg. C	NV	21.65	
Turbidity	NTU	NV	66.1	
DISSOLVED GASES				
Carbon dioxide	µg/L	NV	NA	
Ethane	µg/L	NV	NA	
Ethylene	µg/L	NV	NA	
Methane	µg/L	NV	NA	
GENERAL CHEMISTRY				
Chloride	mg/L	NV	NA	
Nitrate	mg/L	NV	NA	
Sulfate	mg/L	NV	NA	
Total organic carbon	mg/L	NV	NA	
PERCHLORATE				
Perchlorate	µg/L	17	0.220	
VOLATILES				
1,1,1,2-Tetrachloroethane	µg/L	NV	NA	
1,1,1-Trichloroethane	µg/L	NV	NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	NA	
1,1,2-Trichloroethane	µg/L	NV	NA	
1,1-Dichloroethane	µg/L	NV	NA	
1,1-Dichloroethene	µg/L	7	< 1.0	U
1,1-Dichloropropene	µg/L	NV	NA	
1,2,3-Trichlorobenzene	µg/L	NV	NA	
1,2,3-Trichloropropane	µg/L	NV	NA	
1,2,4-Trichlorobenzene	µg/L	NV	NA	
1,2,4-Trimethylbenzene	µg/L	NV	NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	NA	
1,2-Dibromoethane	µg/L	NV	NA	
1,2-Dichlorobenzene	µg/L	NV	NA	
1,2-Dichloroethane	µg/L	5	< 1.0	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code		
		Sample ID	50WW15-052024	
		Sample Date	5/20/2024	
		Sample Purpose	REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**
1,2-Dichloropropane	µg/L	NV	NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA	
1,3-Dichlorobenzene	µg/L	NV	NA	
1,3-Dichloropropane	µg/L	NV	NA	
1,4-Dichlorobenzene	µg/L	NV	NA	
2,2-Dichloropropane	µg/L	NV	NA	
2-Butanone	µg/L	NV	NA	
2-Chlorotoluene	µg/L	NV	NA	
2-Hexanone	µg/L	NV	NA	
4-Chlorotoluene	µg/L	NV	NA	
Acetone	µg/L	NV	NA	
Benzene	µg/L	NV	NA	
Bromobenzene	µg/L	NV	NA	
Bromochloromethane	µg/L	NV	NA	
Bromodichloromethane	µg/L	NV	NA	
Bromoform	µg/L	NV	NA	
Bromomethane	µg/L	NV	NA	
Carbon disulfide	µg/L	NV	NA	
Carbon tetrachloride	µg/L	NV	NA	
Chlorobenzene	µg/L	NV	NA	
Chloroethane	µg/L	NV	NA	
Chloroform	µg/L	NV	NA	
Chloromethane	µg/L	NV	NA	
cis-1,2-Dichloroethene	µg/L	70	1.8	
cis-1,3-Dichloropropene	µg/L	NV	NA	
Dibromochloromethane	µg/L	NV	NA	
Dibromomethane	µg/L	NV	NA	
Dichlorodifluoromethane	µg/L	NV	NA	
Ethylbenzene	µg/L	NV	NA	
Hexachlorobutadiene	µg/L	NV	NA	
Isopropylbenzene	µg/L	NV	NA	
m,p-Xylenes	µg/L	NV	NA	
Methyl isobutyl ketone	µg/L	NV	NA	
Methylene chloride	µg/L	NV	NA	
Naphthalene	µg/L	NV	NA	
n-Butylbenzene	µg/L	NV	NA	
n-Propylbenzene	µg/L	NV	NA	
o-Xylene	µg/L	NV	NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code		
		Sample ID	50WW15-052024	
		Sample Date	5/20/2024	
		Sample Purpose	REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**
p-Isopropyltoluene	µg/L	NV	NA	
sec-Butylbenzene	µg/L	NV	NA	
Styrene	µg/L	NV	NA	
tert-Butylbenzene	µg/L	NV	NA	
Tetrachloroethene	µg/L	5	0.93	J
Toluene	µg/L	NV	NA	
trans-1,2-Dichloroethene	µg/L	NV	NA	
trans-1,3-Dichloropropene	µg/L	NV	NA	
Trichloroethene	µg/L	5	4.8	
Trichlorofluoromethane	µg/L	NV	NA	
Vinyl chloride	µg/L	2	< 1.0	U

Notes:

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µg/L - micrograms per liter
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NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331147

		Location Code	50WW16 (Upper Shallow)																			
		Sample ID	50WW16-191113		50WW16-201005		50WW16-211011		50WW16-211011-		50WW16-221010		50WW16-221010-		50WW16_052523		50WW16_052523_		50WW16-100223		50WW16-052024	
		Sample Date	11/13/2019		10/5/2020		10/11/2021		10/11/2021		10/10/2022		10/10/2022		5/25/2023		5/25/2023		10/2/2023		5/20/2024	
		Sample Purpose	REG		REG		REG		FD		REG		FD		REG		FD		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
DHC																						
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
FIELD TESTS																						
Dissolved oxygen	mg/L	NV	0.07		0.26		0.12		NM		0.39		0.39		0.02		0.02		0.02		0.43	
Ferrous Iron	NA	NV	0.15		NM		NM		NM		NM		NM		NM		NM		NM		NM	
Oxidation Reduction Potential	mV	NV	104		201		192		NM		52		52		96		96		83		160	
pH	pH_units	NV	6.97		5.60		4.90		NM		7.36		7.36		6.73		6.73		6.76		5.64	
Specific conductivity	µmhos/cm	NV	0.251		0.224		0.129		NM		0.217		0.217		0.307		0.307		0.237		0.244	
Temperature	deg. C	NV	14.49		19.02		19.79		NM		22.08		22.08		20.93		20.93		22.27		19.64	
Turbidity	NTU	NV	84.7		27.7		134		NM		65		65		101		101		83.2		118	
DISSOLVED GASES																						
Carbon dioxide	µg/L	NV	26,000		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	< 0.47	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	< 0.55	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methane	µg/L	NV	3		NA		NA		NA		NA		NA		NA		NA		NA		NA	
GENERAL CHEMISTRY																						
Chloride	mg/L	NV	6.07		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Nitrate	mg/L	NV	< 0.1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	28.7		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	1.05		NA		NA		NA		NA		NA		NA		NA		NA		NA	
PERCHLORATE																						
Perchlorate	µg/L	17	1.6	J	0.0701	J	< 0.2	U	< 0.2	U	< 0.05		< 0.05		0.0369	J	< 0.05	U	0.174		0.120	
VOLATILES																						
1,1,1,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 1	U	< 0.5	U	< 0.5	U	< 0.50	U	< 1.0	U
1,1-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 1	U	< 0.5	U	< 0.5	U	< 0.50	U	< 1.0	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331148

		Location Code	50WW16 (Upper Shallow)																			
		Sample ID	50WW16-191113		50WW16-201005		50WW16-211011		50WW16-211011-		50WW16-221010		50WW16-221010-		50WW16_052523		50WW16_052523_		50WW16-100223		50WW16-052024	
		Sample Date	11/13/2019		10/5/2020		10/11/2021		10/11/2021		10/10/2022		10/10/2022		5/25/2023		5/25/2023		10/2/2023		5/20/2024	
		Sample Purpose	REG		REG		REG		FD		REG		FD		REG		FD		REG		REG	
Analyte	Units	MCL/PCL	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
1,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 1	U	< 0.5	U	< 0.5	U	< 0.50	U	< 1.0 U	
cis-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331149

		Location Code	50WW16 (Upper Shallow)																			
		Sample ID	50WW16-191113		50WW16-201005		50WW16-211011		50WW16-211011-		50WW16-221010		50WW16-221010-		50WW16_052523		50WW16_052523_		50WW16-100223		50WW16-052024	
		Sample Date	11/13/2019		10/5/2020		10/11/2021		10/11/2021		10/10/2022		10/10/2022		5/25/2023		5/25/2023		10/2/2023		5/20/2024	
		Sample Purpose	REG		REG		REG		FD		REG		FD		REG		FD		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	< 0.5	U	< 0.5	U	< 1	U	< 1	U	< 1	U	< 1	U	< 0.5	U	< 0.5	U	< 0.50	U	< 1.0 U	
Toluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	1.5		0.62	J	< 0.5	U	< 0.5	U	< 1	U	< 1	U	< 0.5	U	< 0.5	U	< 0.50	U	< 1.0 U	
Trichlorofluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 1	U	< 0.5	U	< 0.5	U	< 0.50	U	< 1.0 U	

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331150

		Location Code	50WW18 (Upper Shallow)																50WW22 (Upper Shallow)			
		Sample ID	50WW18-191108		50WW18-201005		50WW18-201005-		50WW18-211011		50WW18-221010		50WW18_052523		50WW18-100223		50WW18-052024		50WW22-191112		50WW22-201005	
		Sample Date	11/8/2019		10/5/2020		10/5/2020		10/11/2021		10/10/2022		5/25/2023		10/2/2023		5/20/2024		11/12/2019		10/5/2020	
		Sample Purpose	REG		REG		FD		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
DHC																						
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
FIELD TESTS																						
Dissolved oxygen	mg/L	NV	0.05		0.15		0.15		0.16		0.09		0.07		0.07		0.71		1.83		0.95	
Ferrous Iron	NA	NV	NM		NM		NM		NM		NM		NM		NM		NM		0.17		NM	
Oxidation Reduction Potential	mV	NV	102		172		172		179		73		129		63		102		193		223	
pH	pH_units	NV	6.59		6.67		6.67		5.68		7.18		6.92		6.86		6.96		6.76		5.99	
Specific conductivity	µmhos/cm	NV	3.19		3.24		3.24		1.810		2.8		3.4		2.8		2.84		3.96		4.12	
Temperature	deg. C	NV	16.01		19.07		19.07		19.38		21.64		20.79		22.71		20.1		14.14		18.17	
Turbidity	NTU	NV	77		43.1		43.1		50.1		20.2		190		159		107		57.4		4.5	
DISSOLVED GASES																						
Carbon dioxide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		79,000		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 0.47	U	NA	
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 0.55	U	NA	
Methane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		0.55	J	NA	
GENERAL CHEMISTRY																						
Chloride	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		773		NA	
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		< 0.1	U	NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		587		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA		NA		NA		NA		1.01		NA	
PERCHLORATE																						
Perchlorate	µg/L	17	< 2	U	< 0.5	U	< 0.5	U	< 0.2	U	< 0.05	U	< 0.05	U	0.237		<0.100	U	< 2	U	< 0.5	U
VOLATILES																						
1,1,1,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,1,1-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		1		NA	
1,1,2-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,1-Dichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U
1,1-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2,3-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2,3-Trichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2,4-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2,4-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2-Dibromoethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331151

		Location Code	50WW18 (Upper Shallow)																50WW22 (Upper Shallow)			
		Sample ID	50WW18-191108		50WW18-201005		50WW18-201005-		50WW18-211011		50WW18-221010		50WW18_052523		50WW18-100223		50WW18-052024		50WW22-191112		50WW22-201005	
		Sample Date	11/8/2019		10/5/2020		10/5/2020		10/11/2021		10/10/2022		5/25/2023		10/2/2023		5/20/2024		11/12/2019		10/5/2020	
		Sample Purpose	REG		REG		FD		REG		REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	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
1,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,3,5-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,3-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,3-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
1,4-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
2,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
2-Butanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
2-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
2-Hexanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
4-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Acetone	µg/L	NV	< 2	U	NA		NA		NA		NA		NA		NA		NA		< 2	U	NA	
Benzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromodichloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromoform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Bromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Carbon disulfide	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Carbon tetrachloride	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Chlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Chloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Chloroform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Chloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U
cis-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Dibromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Dibromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Dichlorodifluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Ethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Hexachlorobutadiene	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Isopropylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
m,p-Xylenes	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Methyl isobutyl ketone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Methylene chloride	µg/L	NV	< 1	U	NA		NA		NA		NA		NA		NA		NA		< 1	U	NA	
Naphthalene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
n-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
n-Propylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
o-Xylene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331152

		Location Code	50WW18 (Upper Shallow)																50WW22 (Upper Shallow)			
		Sample ID	50WW18-191108		50WW18-201005		50WW18-201005-		50WW18-211011		50WW18-221010		50WW18_052523		50WW18-100223		50WW18-052024		50WW22-191112		50WW22-201005	
		Sample Date	11/8/2019		10/5/2020		10/5/2020		10/11/2021		10/10/2022		5/25/2023		10/2/2023		5/20/2024		11/12/2019		10/5/2020	
		Sample Purpose	REG		REG		FD		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
sec-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Styrene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
tert-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Tetrachloroethene	µg/L	5	< 0.5	U	< 1	U	< 0.5	U	< 1	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U
Toluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
trans-1,2-Dichloroethene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
trans-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Trichloroethene	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U
Trichlorofluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA		NA		NA		< 0.5	U	NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
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UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331153

		Location Code	50WW22 (Upper Shallow)										50WW23 (Upper Shallow)											
		Sample ID	50WW22-211011		50WW22-221010		50WW22_052423		50WW22-100223		50WW22-052024		50WW23-191113		50WW23-201005		50WW23-211011		50WW23-221010		50WW23_052523		50WW23-100223		50WW23-052224	
		Sample Date	10/11/2021		10/10/2022		5/24/2023		10/2/2023		5/20/2024		11/13/2019		10/5/2020		10/11/2021		10/10/2022		5/25/2023		10/2/2023		5/22/2024	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
DHC																										
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
FIELD TESTS																										
Dissolved oxygen	mg/L	NV	0.31		0.29		0.37		0.18		1.48		0.71		1.1		0.39		0.37		0.3		0.05		5.26	
Ferrous Iron	NA	NV	NM		NM		NM		NM		NM		0.38		NM		NM		NM		NM		NM		NM	
Oxidation Reduction Potential	mV	NV	218		129		171		110		146		172		216		200		173		197		129		194	
pH	pH_units	NV	5.63		7.43		6.18		6.94		6.63		6.18		6.30		5.42		6.82		6.43		6.44		6.28	
Specific conductivity	µmhos/cm	NV	2.290		3.85		4.48		4.01		3.91		4.80		5.59		2.90		7.55		5.59		6.87		4.36	
Temperature	deg. C	NV	18.61		18.24		19.78		19.54		21.74		14.48		18.36		18.50		18.57		19.2		20.11		19.95	
Turbidity	NTU	NV	12.4		0		0		18.2		33		65.9		0		18.6		0		0		22.1		76.1	
DISSOLVED GASES																										
Carbon dioxide	µg/L	NV	NA		NA		NA		NA		NA		190,000		NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.47	U	NA		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		< 0.55	U	NA		NA		NA		NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA		NA	
GENERAL CHEMISTRY																										
Chloride	mg/L	NV	NA		NA		NA		NA		NA		1,290		NA		NA		NA		NA		NA		NA	
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		0.104		NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		181		NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA		0.2	J	NA		NA		NA		NA		NA		NA	
PERCHLORATE																										
Perchlorate	µg/L	17	0.464		0.269		0.981		0.337		0.694	J	< 2	U	< 0.5	U	0.139	J	0.142		0.0857	J	0.159		<0.500	U
VOLATILES																										
1,1,1,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U
1,1-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331154

	Location Code	50WW22 (Upper Shallow)										50WW23 (Upper Shallow)											
	Sample ID	50WW22-211011		50WW22-221010		50WW22_052423		50WW22-100223		50WW22-052024		50WW23-191113		50WW23-201005		50WW23-211011		50WW23-221010		50WW23_052523		50WW23-100223		50WW23-052224	
	Sample Date	10/11/2021		10/10/2022		5/24/2023		10/2/2023		5/20/2024		11/13/2019		10/5/2020		10/11/2021		10/10/2022		5/25/2023		10/2/2023		5/22/2024	
	Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	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
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA		< 1	U	NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

01331155

		Location Code	50WW22 (Upper Shallow)										50WW23 (Upper Shallow)											
		Sample ID	50WW22-211011		50WW22-221010		50WW22_052423		50WW22-100223		50WW22-052024		50WW23-191113		50WW23-201005		50WW23-211011		50WW23-221010		50WW23_052523		50WW23-100223		50WW23-052224	
		Sample Date	10/11/2021		10/10/2022		5/24/2023		10/2/2023		5/20/2024		11/13/2019		10/5/2020		10/11/2021		10/10/2022		5/25/2023		10/2/2023		5/22/2024	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**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**
p-Isopropyltoluene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	< 1	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 1	U	< 1	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U
Toluene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U
Trichlorofluoromethane	µg/L	NV	NA		NA		NA		NA		NA		< 0.5	U	NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U	< 0.5	U	< 0.5	U	< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	50WW29 (Upper Shallow)											
		Sample ID	50WW29-191111		50WW29-200708		50WW29-201001		50WW29-210125		50WW29-210405		50WW29-210707	
		Sample Date	11/11/2019		7/8/2020		10/1/2020		1/25/2021		4/5/2021		7/7/2021	
		Sample Purpose	REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
DHC														
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA	
FIELD TESTS														
Dissolved oxygen	mg/L	NV	0.05		0.03		0.06		0.02		0.56		0.72	
Ferrous Iron	NA	NV	NM		NM		NM		NM		NM		NM	
Oxidation Reduction Potential	mV	NV	70		68		142		7		245		103	
pH	pH_units	NV	6.45		6.51		5.62		5.66		5.56		5.88	
Specific conductivity	µmhos/cm	NV	3.44		3.65		3.83		4.13		4.16		3.97	
Temperature	deg. C	NV	17.76		19.83		19.22		17.98		17.73		18.35	
Turbidity	NTU	NV	29.2		0		4.2		34.5		11.6		22.2	
DISSOLVED GASES														
Carbon dioxide	µg/L	NV	NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA		NA		NA		NA	
GENERAL CHEMISTRY														
Chloride	mg/L	NV	NA		NA		NA		NA		NA		NA	
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA		NA	
PERCHLORATE														
Perchlorate	µg/L	17	< 2	U	2.47		5.96		< 0.5	U	< 0.05	U	0.174	
VOLATILES														
1,1,1,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U
1,1-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	50WW29 (Upper Shallow)											
		Sample ID	50WW29-191111		50WW29-200708		50WW29-201001		50WW29-210125		50WW29-210405		50WW29-210707	
		Sample Date	11/11/2019		7/8/2020		10/1/2020		1/25/2021		4/5/2021		7/7/2021	
		Sample Purpose	REG		REG		REG		REG		REG		REG	
Analyte	Units	MCL/PCL	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
1,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Acetone	µg/L	NV	< 2	U	NA		NA		NA		NA		NA	
Benzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	< 1	U	NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
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
cis-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	< 1	U	NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	< 1	U	NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	< 1	U	NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	< 1	U	NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	50WW29 (Upper Shallow)											
		Sample ID	50WW29-191111		50WW29-200708		50WW29-201001		50WW29-210125		50WW29-210405		50WW29-210707	
		Sample Date	11/11/2019		7/8/2020		10/1/2020		1/25/2021		4/5/2021		7/7/2021	
		Sample Purpose	REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
p-Isopropyltoluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Styrene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	< 0.5	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U
Toluene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U
Trichlorofluoromethane	µg/L	NV	< 0.5	U	NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	50WW29 (Upper Shallow)													
		Sample ID	50WW29-211007		50WW29-220105		50WW29-220405		50WW29-221011		50WW29_052423		50WW29-100223		50WW29-052124	
		Sample Date	10/7/2021		1/5/2022		4/5/2022		10/11/2022		5/24/2023		10/2/2023		5/21/2024	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
DHC																
Dehalococcoides	cells/mL	NV	NA		NA		NA		NA		NA		NA		NA	
FIELD TESTS																
Dissolved oxygen	mg/L	NV	1.73		0.54		5.5		0.18		0.05		0.04		0.42	
Ferrous Iron	NA	NV	NM		NM		NM		NM		NM		NM		NM	
Oxidation Reduction Potential	mV	NV	126		206		333		34		132		-19		105	
pH	pH_units	NV	5.47		5.6		6.67		7.21		6.82		6.72		7.05	
Specific conductivity	µmhos/cm	NV	2.390		3.81		4.15		3.95		4.59		4.3		4.19	
Temperature	deg. C	NV	20.83		17.38		21.35		20.93		20.34		20.21		19.9	
Turbidity	NTU	NV	10.7		17.1		16		51.1		0		50.1		92	
DISSOLVED GASES																
Carbon dioxide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Ethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Ethylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Methane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
GENERAL CHEMISTRY																
Chloride	mg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Nitrate	mg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Sulfate	mg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Total organic carbon	mg/L	NV	NA		NA		NA		NA		NA		NA		NA	
PERCHLORATE																
Perchlorate	µg/L	17	3.58		0.075	J	0.0655	J	0.138		0.0701	J	0.252		0.606	J
VOLATILES																
1,1,1,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,1,1-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,1,2,2-Tetrachloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U
1,1-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,2,3-Trichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

		Location Code	50WW29 (Upper Shallow)													
		Sample ID	50WW29-211007		50WW29-220105		50WW29-220405		50WW29-221011		50WW29_052423		50WW29-100223		50WW29-052124	
		Sample Date	10/7/2021		1/5/2022		4/5/2022		10/11/2022		5/24/2023		10/2/2023		5/21/2024	
		Sample Purpose	REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
1,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,3-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
2,2-Dichloropropane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
2-Butanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
2-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
2-Hexanone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
4-Chlorotoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Acetone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Benzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Bromobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Bromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Bromodichloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Bromoform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Bromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Carbon disulfide	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Carbon tetrachloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Chlorobenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Chloroethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Chloroform	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Chloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U
cis-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Dibromomethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Dichlorodifluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Isopropylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
m,p-Xylenes	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Methyl isobutyl ketone	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Methylene chloride	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Naphthalene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
n-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
n-Propylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
o-Xylene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	

Table 4
Years 1, 2, 3, and 4 RA-O Analytical Results
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

	Location Code	50WW29 (Upper Shallow)													
	Sample ID	50WW29-211007		50WW29-220105		50WW29-220405		50WW29-221011		50WW29_052423		50WW29-100223		50WW29-052124	
	Sample Date	10/7/2021		1/5/2022		4/5/2022		10/11/2022		5/24/2023		10/2/2023		5/21/2024	
	Sample Purpose	REG		REG		REG		REG		REG		REG		REG	
Analyte	**Units**	**MCL/PCL**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
p-Isopropyltoluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
sec-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Styrene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
tert-Butylbenzene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Tetrachloroethene	µg/L	5	< 1	U	< 1		< 1	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U
Toluene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
trans-1,2-Dichloroethene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
trans-1,3-Dichloropropene	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Trichloroethene	µg/L	5	< 0.5	U	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	0.47	J
Trichlorofluoromethane	µg/L	NV	NA		NA		NA		NA		NA		NA		NA	
Vinyl chloride	µg/L	2	< 0.5	U	< 0.5		< 0.5	U	< 1	U	< 0.5	U	< 0.50	U	< 1.0	U

Notes:

Blue Highlighting Indicates the concentration or detection limit exceeds the MCL/PCL

Bold concentrations are positive detections exceeding the MCL/PCL
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

J+ - The analyte was positively identified; the associated numerical value is its approximate concentration in the sample, with a high bias.
U - Undetected: The analyte was analyzed for, but not detected.
UB - The concentration detected is less than 5x the contamination detected in the related blank sample; therefore, the concentration is qualified as not detected due to blank contamination.
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 Limit
PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (used for perchlorate where no MCL has been established)

mg/L - milligrams per liter
µg/L - micrograms per liter
ID - Identification
REG - Regular sample
FD - Field duplicate sample
< - The analyte was not detected above the concentration shown
NV - No MCL/PCL is shown for analytes that are not COCs
NA - not analyzed
NM - not measured
Std Units - Standard pH Units
mV - millivolts
Val Qual - validation qualifier
RA-O - Remedial Action Operation

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

Sample ID			50SW06-021715		50SW06-052215		50SW06-111315		50WW01-031314		50WW01-052715		50WW01-082015		50WW01-051216	
Sample Date			2/17/2015		5/22/2015		11/13/2015		3/13/2014		5/27/2015		8/20/2015		5/12/2016	
Well Completion Zone			Surface Water		Surface Water		Surface Water		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	0.684		0.218	J	1.44	J	<0.2	U	<0.2	U	<0.2	U	0.2	U
1,1-Dichloroethene	µg/L	7	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	1	U
1,2-Dichloroethane	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U
cis-1,2-Dichloroethene	µg/L	70	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.372	J	0.41	J	0.67	J
Tetrachloroethene	µg/L	5	<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	0.685	J	0.543	J	0.81	J
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

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

ID - identifier

MCL - maximum contaminant level

NA - not analyzed

PCL - Texas residential groundwater protective concentration level

RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW02-980930		50WW02-981022		50WW02-000524		50WW02-001003		50WW02-010209		50WW02-020311		50WW02-020921	
			Sample Date	9/30/1998		10/22/1998		5/24/2000		10/3/2000		2/9/2001		3/11/2002		9/21/2002	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		NA		18,000		4,190		9,950		10,000		6,840		7,600	
1,1-Dichloroethene	µg/L	7		50		NA		<350	U	<200	U	NA		NA		NA	
1,2-Dichloroethane	µg/L	5		98		NA		<350	U	79		NA		NA		NA	
cis-1,2-Dichloroethene	µg/L	70		2,100		NA		3,100		4,060		NA		NA		NA	
Tetrachloroethene	µg/L	5		35		NA		<350	U	<200	U	NA		NA		NA	
Trichloroethene	µg/L	5		2,900		NA		18,000		16,100		NA		NA		NA	
Vinyl Chloride	µg/L	2		100		NA		<350	U	<200	U	NA		NA		NA	

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

ID - identifier

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RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

	Sample ID	50WW02-040830		50WW02-050511		50WW02-FEB2007		50WW02-040309		50WW03-980930		50WW03-000522		50WW03-001002	
	Sample Date	8/30/2004		5/11/2005		2/23/2007		4/3/2009		9/30/1998		5/22/2000		10/2/2000	
	Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	2,500		1,630		532		110		NA		810		<8	U
1,1-Dichloroethene	µg/L	7	20		4.81		6.5		<50	U	<1	U	NA		NA	
1,2-Dichloroethane	µg/L	5	58		20.2		18.8		18	J	<1	U	NA		NA	
cis-1,2-Dichloroethene	µg/L	70	1,800	J	954		855		978		<1	U	NA		NA	
Tetrachloroethene	µg/L	5	28		6.87		9.3		<50	U	<1	U	NA		NA	
Trichloroethene	µg/L	5	9,200	J	4,840		5,420		8,050		0.57		NA		NA	
Vinyl Chloride	µg/L	2	36		8.56		15.2		<50	U	<1	U	NA		NA	

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			50WW03-010209		50WW03-020312		50WW03-020921		50WW03-040830		50WW03-050511		50WW03-FEB2007		50WW04-980930	
Sample ID																
Sample Date			2/9/2001		3/12/2002		9/21/2002		8/30/2004		5/11/2005		2/24/2007		9/30/1998	
Well Completion Zone			Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	**Units**	**MCL/PCL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Perchlorate	µg/L	17	<1.4	U	<4	U	<4	U	<1	U	<4	U	<10	U	NA	
1,1-Dichloroethene	µg/L	7	NA		NA		NA		<5	U	<1	U	<2	U	<1	U
1,2-Dichloroethane	µg/L	5	NA		NA		NA		<5	U	<1	U	<2	U	<1	U
cis-1,2-Dichloroethene	µg/L	70	NA		NA		NA		<5	U	<1	U	<2	U	0.64	
Tetrachloroethene	µg/L	5	NA		NA		NA		<5	U	<1	U	<2	U	<1	U
Trichloroethene	µg/L	5	NA		NA		NA		8		<1	U	<2	U	9.4	
Vinyl Chloride	µg/L	2	NA		NA		NA		<5	U	<1	U	<2	U	<1	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

	Sample ID	50WW04-981022		50WW04-000522		50WW04-001002		50WW04-020312		50WW04-020921		50WW04-040831		50WW04-050510	
	Sample Date	10/22/1998		5/22/2000		10/2/2000		3/12/2002		9/21/2002		8/31/2004		5/10/2005	
	Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	<1	U	<1	U	<16	U	<4	U	<4	U	<1	U	<5	U
1,1-Dichloroethene	µg/L	7	NA		NA		NA		NA		NA		<5	U	<1	U
1,2-Dichloroethane	µg/L	5	NA		NA		NA		NA		NA		<5	U	<1	U
cis-1,2-Dichloroethene	µg/L	70	NA		NA		NA		NA		NA		<5	U	<1	U
Tetrachloroethene	µg/L	5	NA		NA		NA		NA		NA		<5	U	<1	U
Trichloroethene	µg/L	5	NA		NA		NA		NA		NA		2	J	<1	U
Vinyl Chloride	µg/L	2	NA		NA		NA		NA		NA		<5	U	<1	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW05-020921		50WW05-050511		50WW05-FEB2007		50WW05-040409		50WW05-100805		50WW05-110613		50WW05-031714	
			Sample Date	9/21/2002		5/11/2005		2/23/2007		4/4/2009		8/5/2010		11/6/2013		3/17/2014	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		5850		719		27.8		<4	U	0.189	J	0.397	J	<0.2	U
1,1-Dichloroethene	µg/L	7		NA		21.6		12.9		4.61	J	5.73		2.57		2.12	
1,2-Dichloroethane	µg/L	5		NA		24.1		13.5		7.39		7.91		2.81		2.54	
cis-1,2-Dichloroethene	µg/L	70		NA		66.3		48.2		29		30.1		12.4		10.5	
Tetrachloroethene	µg/L	5		NA		6.76		5.1		1.61	J	2.64	J	1.54		1.01	
Trichloroethene	µg/L	5		NA		3,130		1,460		601		788		280		204	
Vinyl Chloride	µg/L	2		NA		3.69		2.5		<5	U	1.48	J	<0.5	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

	Sample ID	50WW05-062014		50WW05-111114		50WW05-021315		50WW05FD-021315		50WW05-052615		50WW05-081915		50WW05FD-081915	
	Sample Date	6/20/2014		11/11/2014		2/13/2015		2/13/2015		5/26/2015		8/19/2015		8/19/2015	
	Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	20.5		<0.2	U	<0.2	U	<0.2	U	<0.2	U	1.69		1.64	
1,1-Dichloroethene	µg/L	7	2.67		2.68		1.76	J	1.91	J	1.77	J	2.02		2.08	
1,2-Dichloroethane	µg/L	5	2.82		2.97		1.58		1.62		1.9		1.6		1.66	
cis-1,2-Dichloroethene	µg/L	70	12.6		15.7		11.7		12.6		9.81		29.1		28.1	
Tetrachloroethene	µg/L	5	1.48		1.6		0.963	J	0.888	J	0.86	J	0.787	J	0.651	J
Trichloroethene	µg/L	5	270		329		193		196		197		200		200	
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

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW05-111315		50WW05-051116		50WW05-110316		50WW05-111017		50WW05-111017-FD		50WW05-180515	
			Sample Date	11/13/2015		5/11/2016		11/03/2016		11/10/2017		11/10/2017		5/15/2018	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.7	J	1.67	J	0.2	U	4	U	4	U	2	U
1,1-Dichloroethene	µg/L	7		1.42	J	1.33		1.78	J	1.5		1.4		1.9	
1,2-Dichloroethane	µg/L	5		1.93		27.2		1.56		1.3		1.3		1.5	
cis-1,2-Dichloroethene	µg/L	70		17.2		0.565	J	66.7		16	J	13	J	44	
Tetrachloroethene	µg/L	5		0.848	J	0.5	U	0.637	J	0.91	J	0.83	J	0.5	U
Trichloroethene	µg/L	5		210		**129**		**184**		180		160		170	
Vinyl Chloride	µg/L	2		<0.5	U	0.5	U	0.5	U	1	U	1	U	0.5	U

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW05-181203		50WW05-190507		50WW05-191108		50WW06-040830		50WW06-050511		50WW06-FEB2007		50WW06-100807	
			Sample Date	12/3/2018		5/7/2019		11/8/2019		8/30/2004		5/11/2005		2/22/2007		8/7/2010	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		< 4	U	< 4	U	< 2	U	6.7		24.8		<10	U	113	
1,1-Dichloroethene	µg/L	7		1.2		1.2		4.8		<5	U	<1	U	<2	U	<1	U
1,2-Dichloroethane	µg/L	5		1.2		0.94	J	2.7		<5	U	<1	U	<2	U	<1	U
cis-1,2-Dichloroethene	µg/L	70		18		28		200		<5	U	0.332	J	<2	U	<1	U
Tetrachloroethene	µg/L	5		0.86	J	< 0.5	U	1.2		<5	U	<1	U	<2	U	<1	U
Trichloroethene	µg/L	5		150		110		290		15		4.7		2		3.33	
Vinyl Chloride	µg/L	2		< 0.5	U	< 0.5	U	< 0.5	U	<5	U	<1	U	<2	U	<1	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW06-100807-FD		50WW06-102813		50WW06-031114		50WW06-062514		50WW06-110414		50WW06-021715		50WW06-052015	
			Sample Date	8/7/2010		10/28/2013		3/11/2014		6/25/2014		11/4/2014		2/17/2015		5/20/2015	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		131		670		2,090		700		1,510		2,490		3,000	
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70		<1	U	0.994	J	0.39	J	0.299	J	1.61		0.572	J	0.637	J
Tetrachloroethene	µg/L	5		<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
Trichloroethene	µg/L	5		3.28		20.9		36.5		27.4		36.1		53.9		49.1	
Vinyl Chloride	µg/L	2		<1	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW06-081815		50WW06-111215		50WW06-051016		50WW06-110116		50WW06-111317		50WW06-180508	
			Sample Date	8/18/2015		11/12/2015		5/10/2016		11/1/2016		11/13/2017		5/8/2018	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		2,050		5,860		2,140		5,240		950		220	
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	1	U	1	U	1	U	0.5	U
1,2-Dichloroethane	µg/L	5		<0.5	U	0.25	J	0.5	U	0.5	U	1	U	0.5	U
cis-1,2-Dichloroethene	µg/L	70		0.874	J	1.04		0.388	J	2.37		1.9		0.5	U
Tetrachloroethene	µg/L	5		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U
Trichloroethene	µg/L	5		34.7		59.4		29.5		54.2		13		14	
Vinyl Chloride	µg/L	2		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW06-181129		50WW06-190506		50WW06-191112		50WW07-021908		50WW07-040409		50WW07-100807		50WW07-110513	
			Sample Date	11/29/2018		5/6/2019		11/12/2019		2/19/2008		4/4/2009		8/7/2010		11/5/2013	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		24		4.3		4,300		NA		<4	U	0.262		<0.2	U
1,1-Dichloroethene	µg/L	7		< 0.5	U	< 0.5	U	< 0.5	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		< 0.5	U	< 0.5	U	< 0.5	U	<1	U	<1	U	<1	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70		< 0.5	U	< 0.5	U	1.2		<1	U	<1	U	<1	U	<0.5	U
Tetrachloroethene	µg/L	5		< 0.5	U	< 0.5	U	< 0.5	U	<1	U	<1	U	<1	U	<0.5	U
Trichloroethene	µg/L	5		14		1.4		41		<1	U	<1	U	<1	U	<0.5	U
Vinyl Chloride	µg/L	2		< 0.5	U	< 0.5	U	< 0.5	U	<1	U	<1	U	<1	U	<0.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW07-032514	
			Sample Date	3/25/2014	
			Well Completion Zone	Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual
Perchlorate	µg/L	17		<0.2	U
1,1-Dichloroethene	µg/L	7		<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U
cis-1,2-Dichloroethene	µg/L	70		<0.5	U
Tetrachloroethene	µg/L	5		<0.5	U
Trichloroethene	µg/L	5		<0.5	U
Vinyl Chloride	µg/L	2		<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

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PCL - Texas residential groundwater protective concentration level

RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW07-062014		50WW07-110714		50WW07-021315		50WW07-052615		50WW07-082115		50WW07-110915		50WW07-051116 5/11/16	
			Sample Date	6/20/2014		11/7/2014		2/13/2015		5/26/2015		8/21/2015		11/9/2015			
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<0.2	U	<0.2	U	<0.2	U	<0.2	U	<0.2	U	<1	U	1.08	
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U
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
Tetrachloroethene	µg/L	5		<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	0.42	J	<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

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

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Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW08-103013 [b]		50WW08-031114		50WW08-062414	
			Sample Date	10/30/2013		3/11/2014		6/24/2014	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		6,404		91.5		132	
1,1-Dichloroethene	µg/L	7		<5	U	1.71	J	<5	U
1,2-Dichloroethane	µg/L	5		<5	U	5.73		4.36	J
cis-1,2-Dichloroethene	µg/L	70		30.6		103		86	
Tetrachloroethene	µg/L	5		<5	U	2.15		2.03	J
Trichloroethene	µg/L	5		247		845		814	
Vinyl Chloride	µg/L	2		<2	U	0.517	J	<2.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

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µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW08-110614		50WW08-021715		50WW08-052115		50WW08-081715		50WW08-111615		50WW08-050316		50WW08-110216	
			Sample Date	11/6/2014		2/17/2015		5/21/2015		8/17/2015		11/16/2015		5/3/2016		11/2/2016	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		56.3		99		200		157		32.4	J	146		126	
1,1-Dichloroethene	µg/L	7		<2.5	U	<2.5	U	<2.5	U	<2.5	U	<1	U	0.812	J	2.5	U
1,2-Dichloroethane	µg/L	5		2.12	J	3.59		3.6		2.63		1.26		3.23		2.41	J
cis-1,2-Dichloroethene	µg/L	70		48.5		70.5		62.1		45.4		17.7		48.1		38	
Tetrachloroethene	µg/L	5		1.9	J	2.55		2	J	1.2	J	1.21		1.66		1.11	J
Trichloroethene	µg/L	5		685		852		712		375		288		383		379	
Vinyl Chloride	µg/L	2		<1.25	U	<1.25	U	<1.25	U	<1.25	U	<0.5	U	0.374	J	1.25	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW08-111317		50WW08-111317-FD		50WW08-180508		50WW08-181128		50WW08-190507		50WW08-191112		50WW09-110113	
			Sample Date	11/13/2017		11/13/2017		5/8/2018		11/28/2018		5/7/2019		11/12/2019		11/1/2013	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		27		25		140		51		230		83		<0.2	U
1,1-Dichloroethene	µg/L	7		1	U	1	U	0.5	U	0.62	J	< 0.5	U	1.2		<1	U
1,2-Dichloroethane	µg/L	5		0.98	J	1.2	J	1.6		1.5		2.1		2.2		<0.5	U
cis-1,2-Dichloroethene	µg/L	70		19		23		15		20		20		39		<0.5	U
Tetrachloroethene	µg/L	5		1		1.1		0.5	U	1.1		0.75	J	1.3		<0.5	U
Trichloroethene	µg/L	5		180	J	240	J	130		240	J	210		420		0.26	J
Vinyl Chloride	µg/L	2		1	U	1	U	0.5	U	0.66	J	< 0.5	U	< 0.5	U	<0.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW09-031414		50WW09-061914		50WW09-111214		50WW09-021315		50WW09-052315		50WW09-082115		50WW09FD-082115	
			Sample Date	3/14/2014		6/19/2014		11/12/2014		2/13/2015		5/23/2015		8/21/2015		8/21/2015	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<0.2	U	<0.2	U	0.593		<0.2	U	0.196	J	<0.2	U	<0.2	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	1.11		1.66		1.83	
cis-1,2-Dichloroethene	µg/L	70		0.579	J	1.16		0.36	J	1.04		19.7		29.4		29.5	
Tetrachloroethene	µg/L	5		<0.5	U	<0.5	U	<0.5	U	0.353	J	0.423	J	0.536	J	0.34	J
Trichloroethene	µg/L	5		20.2		36.3		19.8		57	J	202		235		228	
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

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW09-111115		50WW09FD-111115		50WW09-051216		50WW09-110316		50WW09-111017		50WW09-180515		50WW09-180515FD	
			Sample Date	11/11/2015		11/11/2015		5/12/2016		11/3/2016		11/10/2017		5/15/2018		5/15/2018	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	**Units**	**MCL/PCL [a]**		**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Perchlorate	µg/L	17		<1	U	<1	U	0.2	U	0.2	U	4	U	2.7	J	2.8	J
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	1	U	1	U	1	U	0.5	U	0.5	U
1,2-Dichloroethane	µg/L	5		1.09		1.05		0.688	J	0.519	J	1	U	0.5	U	0.5	U
cis-1,2-Dichloroethene	µg/L	70		16.3		16		15.1		10.8		1	U	2.4		2.2	
Tetrachloroethene	µg/L	5		0.404	J	0.393	J	0.452	J	0.344	J	1	U	0.5	U	0.5	U
Trichloroethene	µg/L	5		173		170		**154**		126		4.9		83		74	
Vinyl Chloride	µg/L	2		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U	0.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW09-181203		50WW09-190507		50WW09-190507-FD		50WW09-191111		50WW10-110513		50WW10FD-110513		50WW10-031414	
			Sample Date	12/3/2018		5/7/2019		5/7/2019		11/11/2019		11/5/2013		11/5/2013		3/14/2014	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Intermediate		Intermediate		Intermediate	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		< 4	U	7.2		7.8		6.6		0.906		0.924		0.272	J
1,1-Dichloroethene	µg/L	7		< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70		7.3		2.2		2.1		4.1		<0.5	U	<0.5	U	<0.5	U
Tetrachloroethene	µg/L	5		< 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		120		16		16		30		<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

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

	Sample ID	50WW10-061914		50WW10FD-061914		50WW10-111214		50WW10-021315		50WW10-052315		50WW10-082115		50WW10-111115	
	Sample Date	6/19/2014		6/19/2014		11/12/2014		2/13/2015		5/23/2015		8/21/2015		11/11/2015	
	Well Completion Zone	Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		Intermediate	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	0.499		1.46		<0.2	U	<0.2	U	<0.2	U	<0.2	U	<0.2	U
1,1-Dichloroethene	µg/L	7	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5	<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	0.549	J	0.494	J	0.766	J
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

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			50WW10-051216		50WW10-110316		50WW10-111017		50WW10-180515		50WW10-181203		50WW10-190507		50WW11-102813	
		Sample ID Sample Date	5/12/2016		11/03/2016		11/10/2017		5/15/2018		12/3/2018		5/7/2019		10/28/2013	
		Well Completion Zone	Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		Intermediate		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	0.2	U	0.2	U	4	U	2	U	< 4	U	< 4	U	21,700	
1,1-Dichloroethene	µg/L	7	1	U	1	U	1	U	0.5	U	< 0.5	U	< 0.5	U	17.4	
1,2-Dichloroethane	µg/L	5	0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	15.2	
cis-1,2-Dichloroethene	µg/L	70	0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	43.9	
Tetrachloroethene	µg/L	5	0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	2.76	
Trichloroethene	µg/L	5	0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	2,750	
Vinyl Chloride	µg/L	2	0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	1.95	

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW11-031314		50WW11-062514		50WW11-110514		50WW11-021715		50WW11-052015		50WW11-081815		50WW11-111215	
			Sample Date	3/13/2014		6/25/2014		11/5/2014		2/17/2015		5/20/2015		8/18/2015		11/12/2015	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		2,570		8,910		22,300		2,690		1,140		17,600		22,800	
1,1-Dichloroethene	µg/L	7		1.88	J	7.35		27.9		2.47	J	1.03	J	13.1		17.5	J
1,2-Dichloroethane	µg/L	5		2.28	J	6.01		24.3		2.42		1.2		16.7		22.9	
cis-1,2-Dichloroethene	µg/L	70		4.46		12.6		70.8		6.86		2.4		36.3		54.1	
Tetrachloroethene	µg/L	5		<1.25	U	0.678	J	5.03		0.951	J	0.275	J	2.48		<10	U
Trichloroethene	µg/L	5		362		831		3,550		512		230		1,550		2,670	
Vinyl Chloride	µg/L	2		<1.25	U	0.516	J	3.53	J	<1	U	<0.5	U	1.29		<10	U

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Table 5
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LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

Sample ID			50WW11-051016		50WW11-110116		50WW11-111317		50WW11-180509		50WW11-181128		50WW11-181128-FD		50WW11-190506	
Sample Date			5/10/2016		11/01/2016		11/13/2017		5/9/2018		11/28/2018		11/28/2018		5/6/2019	
Well Completion Zone			Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	1,300		13,400		20,000		1,000		2,900		3,200		450	
1,1-Dichloroethene	µg/L	7	1.5	J	21.4		33		1.7		5.5		5.5		< 0.5	U
1,2-Dichloroethane	µg/L	5	1.84		26.1		30		2		5.6		5.4		0.75	J
cis-1,2-Dichloroethene	µg/L	70	5.35		67.4		78		11		18		17		3.1	
Tetrachloroethene	µg/L	5	0.417	J	4.91		10	U	0.5	U	1.7		1.7		< 0.5	U
Trichloroethene	µg/L	5	254		2,880		4,700		280		700	J	710	J	95	
Vinyl Chloride	µg/L	2	0.5	U	1.9		10	U	0.5	U	0.99	J	1		< 0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

ID - identifier

MCL - maximum contaminant level

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RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW11-191112		50WW12-102313		50WW12-031114		50WW12-062614		50WW12-110414		50WW12-021815		50WW12-052015	
			Sample Date	11/12/2019		10/23/2013		3/11/2014		6/26/2014		11/4/2014		2/18/2015		5/20/2015	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		8,000		23,600		35,700		35,500		14,300		30,600		59,200	
1,1-Dichloroethene	µg/L	7		26		<1	U	<1	U	<1	U	<1	U	<1	U	0.878	J
1,2-Dichloroethane	µg/L	5		28		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.389	J
cis-1,2-Dichloroethene	µg/L	70		58		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
Tetrachloroethene	µg/L	5		< 5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
Trichloroethene	µg/L	5		3,300		<0.5	U	0.257	J	0.411	J	<0.5	U	<0.5	U	33.9	
Vinyl Chloride	µg/L	2		< 5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW12-081815		50WW12-111215		50WW12-051016		50WW12-110116		50WW12-111417		50WW12-180508		50WW12-180508FD	
			Sample Date	8/18/2015		11/12/2015		5/10/2016		11/1/2016		11/14/2017		5/8/2018		5/8/2018	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		17,300		37,900		87,800		25,300		21,000		91,000		89,000	
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	7.35		1.57	J	0.81	J	1.3		1.1	
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	3.93		0.952	J	0.55	J	0.95	J	1	
cis-1,2-Dichloroethene	µg/L	70		<0.5	U	<0.5	U	0.78	J	0.5	U	1	U	0.5	U	0.5	U
Tetrachloroethene	µg/L	5		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U	0.5	U
Trichloroethene	µg/L	5		5.59		17.6		417		109		41		79		74	
Vinyl Chloride	µg/L	2		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U	0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
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Sample ID			50WW12-181128		50WW12-190516		50WW12-190516-FD		50WW12-191112		50WW13-103013 (1)		50WW13-031214		50WW13-062514	
Sample Date			11/28/2018		5/16/2019		5/16/2019		11/12/2019		10/30/2013		3/12/2014		6/25/2014	
Well Completion Zone			Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	47,000		65,000		76,000		47,000		14.7		510		3,110	
1,1-Dichloroethene	µg/L	7	0.83	J	2.2		2.2		4.6		16.6		2.54		4.95	J
1,2-Dichloroethane	µg/L	5	0.56	J	1.5		1.5		2.7		42		4.45		10.6	
cis-1,2-Dichloroethene	µg/L	70	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	205		25		56.3	
Tetrachloroethene	µg/L	5	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	7.2		1.06		1.39	J
Trichloroethene	µg/L	5	41	J	170		170		280		3000		823		1,840	
Vinyl Chloride	µg/L	2	< 0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<2	U	<0.5	U	<2.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
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			50WW13-110514		50WW13-021715		50WW13-052015		50WW13-081915		50WW13-111215		50WW13B-051316		50WW13T-051316	
		Sample ID														
		Sample Date	11/5/2014		2/17/2015		5/20/2015		8/19/2015		11/12/2015		5/13/2016		5/13/2016	
		Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	11,700		648		126		9,300		11,400		256		493	
1,1-Dichloroethene	µg/L	7	20.6		<5	U	0.978	J	13.5		<50	U	0.74	J	1.23	J
1,2-Dichloroethane	µg/L	5	42.4		4.99	J	1.78		31.5		43.4	J	2.24		4.31	
cis-1,2-Dichloroethene	µg/L	70	239		32.1		10.7		184		231		15.8		25	
Tetrachloroethene	µg/L	5	7.05	J	1.89	J	0.554	J	6.19		<25	U	0.555	J	0.846	J
Trichloroethene	µg/L	5	9,150		1,080		433		5,700		7,710	J	322		529	
Vinyl Chloride	µg/L	2	3.36	J	<2.5	U	<0.5	U	2.31	J	<25	U	0.5	U	0.259	J

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
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			Sample ID	50WW13-110116		50WW13-111317		50WW13-180509		50WW13-181129		50WW13-190506		50WW13-191113		50WW14-102813	
			Sample Date	11/1/2016		11/13/2017		5/9/2018		11/29/2018		5/6/2019		11/13/2019		10/28/2013	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		8,650		13,000		640		1,100		160		4,900		5.45	
1,1-Dichloroethene	µg/L	7		50	U	50	U	1.4		5.4		0.57	J	17	J	<1	U
1,2-Dichloroethane	µg/L	5		36.7	J	83		5.6		12		1.3		39		1.16	
cis-1,2-Dichloroethene	µg/L	70		228		410		32		100		12		230		6.52	
Tetrachloroethene	µg/L	5		25	U	50	U	1.6		4.6		< 0.5	U	< 12	U	<0.5	U
Trichloroethene	µg/L	5		6,050		13,000		620		2,700		250		7,300		93.8	
Vinyl Chloride	µg/L	2		25	U	50	U	0.5	U	1.4		< 0.5	U	< 12	U	<0.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW14-031214		50WW14-062514		50WW14-110514		50WW14-021715		50WW14-052015		50WW14-081915		50WW14-111215	
			Sample Date	3/12/2014		6/25/2014		11/5/2014		2/17/2015		5/20/2015		8/19/2015		11/12/2015	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.256	J	0.121	J	5.37		0.381	J	2.06		2.19		7.5	
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70		1.33		0.826	J	2.39		13.5		5.66		7.56		14.2	
Tetrachloroethene	µg/L	5		<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		37.4		21.9		26.7		9.14		6.05		12		5.78	
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

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			50WW14-050316		50WW14-110116		50WW14-111317		50WW14-180509		50WW14-181129		50WW14-190506		50WW15-102513	
Sample ID																
Sample Date			5/3/2016		11/01/2016		11/13/2017		5/9/2018		11/29/2018		5/6/2019		10/25/2013	
Well Completion Zone			Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Upper Shallow	
Analyte	**Units**	**MCL/PCL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Perchlorate	µg/L	17	0.47		0.2	U	4	U	2	U	1.9	J	< 4	U	<0.2	U
1,1-Dichloroethene	µg/L	7	1	U	1	U	1	U	0.5	U	< 0.5	U	< 0.5	U	<1	U
1,2-Dichloroethane	µg/L	5	0.5	U	0.5	U	1	U	1.2		< 0.5	U	< 0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70	1.41		2.76		2.7		3.9		3.2		1.9		11.9	
Tetrachloroethene	µg/L	5	0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	3.25	
Trichloroethene	µg/L	5	1.75		10.9		8.2		33		12		27		17.3	
Vinyl Chloride	µg/L	2	0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	3.24	

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW15-031714		50WW15-061914		50WW15-110714		50WW15-021215		50WW15FD-021215		50WW15-052315		50WW15-082015	
			Sample Date	3/17/2014		6/19/2014		11/7/2014		2/12/2015		2/12/2015		5/23/2015		8/20/2015	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<0.2	U	<0.2	U	<0.2	U	0.942	J	1.34	J	<0.2	U	0.237	J
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	0.258	J	<0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70		13.8		12.9		14.3		14.3		14.2		10.8		10.1	
Tetrachloroethene	µg/L	5		3.33		3.05		3.34		3.31		3.24		2.96		1.92	
Trichloroethene	µg/L	5		23.5		18.9		35.4		48.3		46.9		13		15.2	
Vinyl Chloride	µg/L	2		3.09		2.76		2.69		2.2		2.27		1.91		1.25	

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW15FD-082015		50WW15-111115		50WW15FD-111115		50WW15-051116		50WW15-110216		50WW15-111017	
			Sample Date	8/20/2015		11/11/2015		11/11/2015		5/12/2016		11/02/2016		11/10/2017	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.155	J	<1	U	<1	U	0.2	U	0.2	U	4	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	1	U	1	U	1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U	1	U
cis-1,2-Dichloroethene	µg/L	70		10.4		7.16		6.89		6.31		6.63		4.2	
Tetrachloroethene	µg/L	5		2.01		1.83		1.76		1.86		1.89		1.3	
Trichloroethene	µg/L	5		15.1		8.2		8.05		**5.32**		**9.52**		3.6	
Vinyl Chloride	µg/L	2		1.38		0.966	J	0.923	J	0.5	U	1.18		0.85	J

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			50WW15-180507		50WW15-181130		50WW15-190523		50WW15-191108		50WW16-102513		50WW16-032514		50WW16-062614	
Sample ID																
Sample Date			5/7/2018		11/30/2018		5/23/2019		11/8/2019		10/25/2013		3/25/2014		6/26/2014	
Well Completion Zone			Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	**Units**	**MCL/PCL [a]**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**	**Result**	**Val Qual**
Perchlorate	µg/L	17	2	U	< 4	U	< 4	U	< 2	U	0.284	J	<0.2	U	0.725	
1,1-Dichloroethene	µg/L	7	0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5	0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70	3.1		5.9		2.9		5.5		0.656	J	0.548	J	0.471	J
Tetrachloroethene	µg/L	5	1.5		2		0.87	J	2.1		<0.5	U	<0.5	U	<0.5	U
Trichloroethene	µg/L	5	3.5		9.1		2.3		**7.2**		18.1		11.4		12	
Vinyl Chloride	µg/L	2	0.5	U	1.5		< 0.5	U	1.7		<0.5	U	<0.5	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

ID - identifier

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PCL - Texas residential groundwater protective concentration level

RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW16FD-062614		50WW16-111214		50WW16-021315		50WW16-052215		50WW16-082015		50WW16-111315	
			Sample Date	6/26/2014		11/12/2014		2/13/2015		5/22/2015		8/20/2015		11/13/2015	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.682		<0.2	U	<0.2	U	<0.2	U	<0.2	U	<0.2	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70		0.456	J	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
Tetrachloroethene	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
Trichloroethene	µg/L	5		11.6		1.05		0.391	J	<0.5	U	1.5		0.986	J
Vinyl Chloride	µg/L	2		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW16-051116		50WW16-110216		50WW16-111417		50WW16-180509		50WW16-181128		50WW16-190506		50WW17-102513	
			Sample Date	5/11/2016		11/2/2016		11/14/2017		5/9/2018		11/28/2018		5/6/2019		10/25/2013	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Fully Penetrating Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.101	J	0.846		4	U	2	U	< 4	U	< 4	U	0.51	
1,1-Dichloroethene	µg/L	7		1	U	1	U	1	U	0.5	U	< 0.5	U	< 0.5	U	<1	U
1,2-Dichloroethane	µg/L	5		0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70		0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	<0.5	U
Tetrachloroethene	µg/L	5		0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	<0.5	U
Trichloroethene	µg/L	5		0.287	J	2.72		1.7	U	0.5	U	1.9	J	0.61	J	<0.5	U
Vinyl Chloride	µg/L	2		0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW17-032514		50WW17-062014		50WW17-111114		50WW17-021315		50WW17-052215		50WW17-081915		50WW17-110915	
			Sample Date	3/25/2014		6/20/2014		11/11/2014		2/13/2015		5/22/2015		8/19/2015		11/9/2015	
			Well Completion Zone	Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<0.2	U	1.76		<0.2	U	<0.2	U	<0.2	U	0.193	J	<0.4	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		<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	0.516	J	<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

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW17B-051316		50WW17M-051316		50WW17T-051316		50WW17-110416		50WW17-111017		50WW17-180515	
			Sample Date	5/13/16		5/13/16		5/13/16		11/4/2016		11/10/2017		5/15/2018	
			Well Completion Zone	Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.2	U	0.119	J	0.149	J	0.2	U	4	U	2	U
1,1-Dichloroethene	µg/L	7		1	U	1	U	1	U	1	U	1	U	0.5	U
1,2-Dichloroethane	µg/L	5		0.5	U	0.5	U	0.5	U	0.5	U	1	U	0.5	U
cis-1,2-Dichloroethene	µg/L	70		0.5	U	0.5	U	0.5	U	0.5	U	1	U	0.5	U
Tetrachloroethene	µg/L	5		0.5	U	0.5	U	0.5	U	0.5	U	1	U	0.5	U
Trichloroethene	µg/L	5		0.5	U	0.5	U	0.5	U	0.5	U	1	U	0.5	U
Vinyl Chloride	µg/L	2		0.5	U	0.5	U	0.5	U	0.5	U	1	U	0.5	U

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW17-181130		50WW17-190516		50WW17-191108		50WW18-102313		50WW18-032614		50WW18-062414		50WW18-110414	
			Sample Date	11/30/2018		5/16/2019		11/8/2019		10/23/2013		3/26/2014		6/24/2014		11/4/2014	
			Well Completion Zone	Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		< 4	U	< 4	U	2	U	<0.2	U	<0.2	U	0.172	J	<0.2	U
1,1-Dichloroethene	µg/L	7		< 0.5	U	< 0.5	U	0.5	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		< 0.5	U	< 0.5	U	0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		< 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
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

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			50WW18-021815		50WW18-052815		50WW18-081715		50WW18-111615		50WW18-050316		50WW18-110316		50WW18-111017	
		Sample ID Sample Date	2/18/2015		5/28/2015		8/17/2015		11/16/2015		5/3/2016		11/03/2016		11/10/2017	
		Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	0.258	J	<0.2	U	0.144	J	<1	U	0.2	U	0.2	U	4	U
1,1-Dichloroethene	µg/L	7	<1	U	<1	U	<1	U	<1	U	1	U	1	U	1	U
1,2-Dichloroethane	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U	1	U
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	1	U
Tetrachloroethene	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U	1	UJ
Trichloroethene	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	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	1	U

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW18-180507		50WW18-181130		50WW18-190516		50WW18-191108		50WW19-011414		50WW19-032514	
			Sample Date	5/7/2018		11/30/2018		5/16/2019		11/8/2019		1/14/2014		3/25/2014	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		2	U	< 4	U	< 4	U	< 2	U	<0.2	U	<0.2	U
1,1-Dichloroethene	µg/L	7		0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		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
Vinyl Chloride	µg/L	2		0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<0.5	U	<0.5	U

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LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW19-062014		50WW19-111114		50WW19-021315		50WW19-052215		50WW19FD-052215		50WW19-082115		50WW19-110915	
			Sample Date	6/20/2014		11/11/2014		2/13/2015		5/22/2015		5/22/2015		8/21/2015		11/9/2015	
			Well Completion Zone	Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.48		<0.2	U	<0.2	U	0.305	J	0.198	J	<0.2	U	<0.2	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		<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
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

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW19B-051316		50WW19M-051316		50WW19T-051316		50WW19-110416		50WW20-110713		50WW20-031314		50WW20FD-031314	
			Sample Date	5/3/2016		5/13/2016		5/13/2016		11/04/2016		11/7/2013		3/13/2014		3/13/2014	
			Well Completion Zone	Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.2	U	0.2	U	0.338	J	0.2	U	<0.2	U	0.697		0.673	
1,1-Dichloroethene	µg/L	7		1	U	1	U	1	U	1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		0.5	U	0.5	U	0.5	U	0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		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
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

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LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW20-061914		50WW20-111114		50WW20FD-111114		50WW20-021215		50WW20-052615	
			Sample Date	6/19/2014		11/11/2014		11/11/2014		2/12/2015		5/26/2015	
			Well Completion Zone	Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<0.2	U	<0.2	U	<0.2	U	0.168	J	<0.2	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
Tetrachloroethene	µg/L	5		<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
Vinyl Chloride	µg/L	2		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

ID - identifier

MCL - maximum contaminant level

NA - not analyzed

PCL - Texas residential groundwater protective concentration level

RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW20-082115		50WW20-111015		50WW20-51116		50WW21-102513		50WW21FD-102513		50WW21-032514	
			Sample Date	8/21/2015		11/10/2015		5/11/2016		10/25/2013		10/25/2013		3/25/2014	
			Well Completion Zone	Fully Penetrating Shallow		Fully Penetrating Shallow		Fully Penetrating Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<0.2	U	<0.2	U	0.2	U	0.731		0.818		0.606	
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		<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
Vinyl Chloride	µg/L	2		<0.5	U	<0.5	U	0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW21-062014		50WW21FD-062014		50WW21-111314		50WW21FD-111314		50WW21-021215		50WW21-052315		50WW21FD-052315	
			Sample Date	6/20/2014		6/20/2014		11/13/2014		11/13/2014		2/12/2015		5/23/2015		5/23/2015	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.964		0.934		0.779		0.779		0.878		0.502		0.516	
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		<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	0.447	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

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW21-082015		50WW21-111015		50WW21-051216		50WW21-110316		50WW21-111017		50WW21-180507	
			Sample Date	8/20/2015		11/10/2015		5/12/2016		11/03/2016		11/10/2017		5/7/2018	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.67		1.21	J	0.398	J	0.418		4	U	2	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	1	U	1	U	1	U	0.5	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U
cis-1,2-Dichloroethene	µg/L	70		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U
Tetrachloroethene	µg/L	5		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U
Trichloroethene	µg/L	5		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U
Vinyl Chloride	µg/L	2		<0.5	U	<0.5	U	0.5	U	0.5	U	1	U	0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			50WW21-181130		50WW21-190516		50WW22-102313		50WW22-031214		50WW22-062414		50WW22-110614	
Sample ID														
Sample Date			11/30/2018		5/16/2019		10/23/2013		3/12/2014		6/24/2014		11/6/2014	
Well Completion Zone			Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	< 4	U	< 4	U	6.97		1.54		2.29		1.06	
1,1-Dichloroethene	µg/L	7	< 0.5	U	< 0.5	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5	< 0.5	U	< 0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5	< 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	0.339	J
Vinyl Chloride	µg/L	2	< 0.5	U	< 0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW22-021715		50WW22-052115		50WW22-081815		50WW22-111615		50WW22-051016		50WW22-110216		50WW22-111317	
			Sample Date	2/17/2015		5/21/2015		8/18/2015		11/16/2015		5/10/2016		11/2/2016		11/13/2017	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		1.51		2.92		3.62		0.642	J	1.46		1.02		4	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	1	U	1	U	1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U	1	U
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	1	U
Tetrachloroethene	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U	1	U
Trichloroethene	µg/L	5		<0.5	U	<0.5	U	<0.5	U	0.454	J	0.5	U	0.5	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	1	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW22-180509		50WW22-181203		50WW22-190506		50WW22-191112		50WW23-102913		50WW23-031314	
			Sample Date	5/9/2018		12/3/2018		5/6/2019		11/12/2019		10/29/2013		3/13/2014	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		1.1	J	< 4	U	< 4	U	< 2	U	0.336	J	0.227	J
1,1-Dichloroethene	µg/L	7		0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		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
Vinyl Chloride	µg/L	2		0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<0.5	U	<0.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW23-062614		50WW23-110414		50WW23-021815		50WW23-052015		50WW23-081715		50WW23-111615		50WW23-051016	
			Sample Date	6/26/2014		11/4/2014		2/18/2015		5/20/2015		8/17/2015		11/16/2015		5/10/2016	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		0.182	J	<0.2	U	<0.2	U	23.3		0.527		<1	U	2.15	
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U
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
Tetrachloroethene	µg/L	5		<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
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

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			50WW23-110116		50WW23-111417		50WW23-180515		50WW23-181203		50WW23-190507		50WW23-190507		50WW24-102913	
		Sample ID Sample Date	11/01/2016		11/14/2017		5/15/2018		12/3/2018		5/7/2019		11/13/2019		10/29/2013	
		Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	4.76		4	U	2	U	< 4	U	< 4	U	< 2	U	0.479	
1,1-Dichloroethene	µg/L	7	1	U	1	U	0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<1	U
1,2-Dichloroethane	µg/L	5	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	UJ	< 0.5	U	<0.5	U
Tetrachloroethene	µg/L	5	0.5	U	1	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
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

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW24-032614		50WW24-062614		50WW24-110414		50WW24-021815		50WW24-052815		50WW24-081715	
			Sample Date	3/26/2014		6/26/2014		11/4/2014		2/18/2015		5/28/2015		8/17/2015	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<0.2	U	110		<0.2	U	<0.2	U	<0.2	U	<0.2	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		<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	0.268	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

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW24-111615		50WW24-051016		50WW24-110316		50WW24-111017		50WW24-180507		50WW24-181130		50WW24-190507	
			Sample Date	11/16/2015		5/10/2016		11/3/2016		11/10/2017		5/7/2018		11/30/2018		5/7/2019	
			Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<1	U	36.8		0.2	U	4	U	2	U	< 4	U	< 4	U
1,1-Dichloroethene	µg/L	7		<1	U	1	U	1	U	1	U	0.5	U	< 0.5	U	< 0.5	U
1,2-Dichloroethane	µg/L	5		<0.5	U	0.5	U	0.5	U	1	U	0.5	U	< 0.5	U	< 0.5	U
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
Tetrachloroethene	µg/L	5		<0.5	U	0.5	U	0.5	U	1	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
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

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

ID - identifier

MCL - maximum contaminant level

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PCL - Texas residential groundwater protective concentration level

RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			50WW24-191108		50WW25-102313		50WW25-032614		50WW25-062414		50WW25-110614		50WW25-021815		50WW25-052815	
		Sample ID														
		Sample Date	11/8/2019		10/23/2013		3/26/2014		6/24/2014		11/6/2014		2/18/2015		5/28/2015	
		Well Completion Zone	Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	2	U	<0.2	U	9.13		31.8		17.8		42.2		15	
1,1-Dichloroethene	µg/L	7	0.5	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5	0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5	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
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

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW26-110613		50WW26FD-110613		50WW26-032614		50WW26FD-032614		50WW26-062014		50WW26-111314	
			Sample Date	11/6/2013		11/6/2013		3/26/2014		3/26/2014		6/20/2014		11/13/2014	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<0.2	U	<0.2	U	<0.2	U	<0.2	U	<0.2	U	<0.2	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5		<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
Vinyl Chloride	µg/L	2		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW26-021315		50WW26-052315		50WW26-082015		50WW26-111015		50WW26FD-111015		50WW26-050316		50WW26-110216	
			Sample Date	2/13/2015		5/23/2015		8/20/2015		11/10/2015		11/10/2015		5/3/2016		11/2/2016	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		<0.2	U	<0.2	U	<0.2	U	<1	U	<1	U	0.2	U	0.2	U
1,1-Dichloroethene	µg/L	7		<1	U	<1	U	<1	U	<1	U	<1	U	1	U	1	U
1,2-Dichloroethane	µg/L	5		<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U
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	0.515	J
Tetrachloroethene	µg/L	5		<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
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

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

	Sample ID	50WW27-110613		50WW27-031714		50WW27FD-031714		50WW27-061914		50WW27-110714		50WW27FD-110714		50WW27-021215	
	Sample Date	11/6/2013		3/17/2014		3/17/2014		6/19/2014		11/7/2014		11/7/2014		2/12/2015	
	Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	<0.2	U	<0.2	U	<0.2	U	<0.2	U	<0.2	U	<0.2	U	<0.2	U
1,1-Dichloroethene	µg/L	7	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70	<0.5	U	0.611	J	0.518	J	0.871	J	0.529	J	0.493	J	0.691	J
Tetrachloroethene	µg/L	5	<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
Vinyl Chloride	µg/L	2	<0.5	U	<0.5	U	<0.5	U	0.251	J	<0.5	U	<0.5	U	<0.5	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			50WW27-052315		50WW27-082015		50WW27-111115		50WW27-051216		50WW27-110216		50WW27-111017	
Sample ID / Sample Date			5/23/2015		8/20/2015		11/11/2015		5/12/2016		11/2/2016		11/10/2017	
Well Completion Zone			Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	<0.2	U	<0.2	U	<1	U	0.2	U	0.124	J	4	U
1,1-Dichloroethene	µg/L	7	<1	U	<1	U	<1	U	1	U	1	U	1	U
1,2-Dichloroethane	µg/L	5	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U	1	U
cis-1,2-Dichloroethene	µg/L	70	0.709	J	0.33	J	0.581	J	0.515	J	0.498	J	1	U
Tetrachloroethene	µg/L	5	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U	1	U
Trichloroethene	µg/L	5	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U	1	U
Vinyl Chloride	µg/L	2	<0.5	U	<0.5	U	<0.5	U	0.5	U	0.5	U	1	U

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			Sample ID	50WW27-180507		50WW27-181203		50WW27-181203-FD		50WW27-190523		50WW27-191108		50WW28-070914		50WW28-111214	
			Sample Date	5/7/2018		12/3/2018		12/3/2018		5/23/2019		11/8/2019		7/9/2014		11/12/2014	
			Well Completion Zone	Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Lower Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]		Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17		2	U	< 4	U	< 4	U	< 4	U	2	U	2.57		2.01	J
1,1-Dichloroethene	µg/L	7		0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	0.5	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5		0.5	U	< 0.5	U	< 0.5	U	< 0.5	U	0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70		0.5	U	< 0.5	U	< 0.5	U	0.74	J	0.92	J	<0.5	U	<0.5	U
Tetrachloroethene	µg/L	5		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
Vinyl Chloride	µg/L	2		0.5	U	0.66	J	0.66	J	< 0.5	U	0.5	U	<0.5	U	<0.5	U

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

Sample ID			50WW28-021715		50WW28FD-021715		50WW28-052615		50WW28FD-052615		50WW28-082015		50WW28-051116		50WW28-111315	
Sample Date			2/17/2015		2/17/2015		5/26/2015		5/26/2015		8/20/2015		5/11/2016		11/13/2015	
Well Completion Zone			Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	1.44		1.44		1.04		1.05		0.688		1.12		1.64	
1,1-Dichloroethene	µg/L	7	<1	U	<1	U	<1	U	<1	U	<1	U	1	U	<1	U
1,2-Dichloroethane	µg/L	5	<0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	0.5	U	<0.5	U
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
Tetrachloroethene	µg/L	5	<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
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

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RA-O - Remedial Action Operation

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

Sample ID			50WW29-191111		GPW1-021715		GPW1-050815		GPW1-052215		GPW1-111315		GPW1-2/11/2016	
Sample Date			11/11/2019		2/17/2015		5/8/2015		5/22/2015		11/13/2015		2/11/2016	
Well Completion Zone			Upper Shallow		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	2	U	0.737		0.156	J	0.213	J	0.139	J	0.447	
1,1-Dichloroethene	µg/L	7	0.5	U	<1	U	<1	U	<1	U	<1	U	NA	
1,2-Dichloroethane	µg/L	5	0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	NA	
cis-1,2-Dichloroethene	µg/L	70	0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	NA	
Tetrachloroethene	µg/L	5	0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	NA	
Trichloroethene	µg/L	5	0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	NA	
Vinyl Chloride	µg/L	2	0.5	U	<0.5	U	<0.5	U	<0.5	U	<0.5	U	NA	

Notes:

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

Sample ID			GPW1-		GPW1-081016		GPW1-111316		GPW1A-021715		GPW1A-050815		GPW1A-021116	
Sample Date			5/13/2016		8/1/2016		11/13/2016		2/17/2015		5/8/2015		2/11/2016	
Well Completion Zone			Surface Water		Surface Water		Surface Water		Surface Water		Surface Water		Surface Water	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	6.59		0.162	J	0.301	J	38.2		16		NA	
1,1-Dichloroethene	µg/L	7	NA		NA		NA		<1	U	<1	U	NA	
1,2-Dichloroethane	µg/L	5	NA		NA		NA		<0.5	U	<0.5	U	NA	
cis-1,2-Dichloroethene	µg/L	70	NA		NA		NA		<0.5	U	<0.5	U	NA	
Tetrachloroethene	µg/L	5	NA		NA		NA		<0.5	U	<0.5	U	NA	
Trichloroethene	µg/L	5	NA		NA		NA		<0.5	U	<0.5	U	NA	
Vinyl Chloride	µg/L	2	NA		NA		NA		<0.5	U	<0.5	U	NA	

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Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

Sample ID			GPW1A-050116		GPW1A-081016		GPW1A-110116		LHSMW54-941209		LHSMW54-960212		LHSMW54-960821		LHSMW54-980520	
Sample Date			5/1/2016		8/1/16		11/1/2016		12/9/1994		2/12/1996		8/21/1996		5/20/1998	
Well Completion Zone			Surface Water		Surface Water		Surface Water		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	NA		0.137	J	NA		NA		NA		NA		NA	
1,1-Dichloroethene	µg/L	7	NA		NA		NA		<5	U	NA		<0.2	U	<1	U
1,2-Dichloroethane	µg/L	5	NA		NA		NA		<5	U	NA		<0.31	U	<1	U
cis-1,2-Dichloroethene	µg/L	70	NA		NA		NA		NA		NA		<0.2	U	0.7	
Tetrachloroethene	µg/L	5	NA		NA		NA		<5	U	NA		<0.25	U	<1	U
Trichloroethene	µg/L	5	NA		NA		NA		12		11		15.7		210	
Vinyl Chloride	µg/L	2	NA		NA		NA		NA		NA		<0.24	U	<1	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

ID - identifier

MCL - maximum contaminant level

NA - not analyzed

PCL - Texas residential groundwater protective concentration level

RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			LHSMW54-000521		LHSMW54-020309		LHSMW54-020921		LHSMW54-100806		LHSMW54-101707		LHSMW54-110713	
Sample ID			LHSMW54-000521		LHSMW54-020309		LHSMW54-020921		LHSMW54-100806		LHSMW54-101707		LHSMW54-110713	
Sample Date			5/21/2000		3/9/2002		9/21/2002		8/6/2010		10/17/2007		11/7/2013	
Well Completion Zone			Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	<1	U	<4	U	<4	U	<0.2	U	<1	U	<0.2	U
1,1-Dichloroethene	µg/L	7	NA		NA		NA		<2.5	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5	NA		NA		NA		<2.5	U	<1	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70	NA		NA		NA		0.657	J	1.59		0.392	J
Tetrachloroethene	µg/L	5	NA		NA		NA		<2.5	U	<1	U	<0.5	U
Trichloroethene	µg/L	5	NA		NA		NA		369		601		112	
Vinyl Chloride	µg/L	2	NA		NA		NA		<2.5	U	<1	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

ID - identifier

MCL - maximum contaminant level

NA - not analyzed

PCL - Texas residential groundwater protective concentration level

RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 5
Historical COC Concentrations
LHAAP-50, Longhorn Army Ammunition Plant, Karnack,
Year 10 RA-O Report

			LHSMW54-021815		LHSMW54-052715		LHSMW54-111315	
Sample ID			LHSMW54-021815		LHSMW54-052715		LHSMW54-111315	
Sample Date			2/18/2015		5/27/2015		11/13/2015	
Well Completion Zone			Upper Shallow		Upper Shallow		Upper Shallow	
Analyte	Units	MCL/PCL [a]	Result	Val Qual	Result	Val Qual	Result	Val Qual
Perchlorate	µg/L	17	0.271	J	<0.2	U	<1	UJ
1,1-Dichloroethene	µg/L	7	<1	U	<1	U	<1	U
1,2-Dichloroethane	µg/L	5	<0.5	U	<0.5	U	<0.5	U
cis-1,2-Dichloroethene	µg/L	70	0.316	J	0.261	J	0.323	J
Tetrachloroethene	µg/L	5	<0.5	U	<0.5	U	<0.5	U
Trichloroethene	µg/L	5	93.8		95.9		88.3	
Vinyl Chloride	µg/L	2	<0.5	U	<0.5	U	<0.5	U

Notes:

Blue Highlighting indicates analyte detected above MCL/PCL.

[a] Cleanup goal is MCL except for perchlorate. For perchlorate, Texas Risk Reduction Program groundwater residential PCL is used.

µg/L - micrograms per liter

J - estimated value; analyte concentration was less than the limit of quantification.

U - Not detected. The analyte was analyzed for, but not detected above the limit of detection.

COC - contaminant of concern

ID - identifier

MCL - maximum contaminant level

NA - not analyzed

PCL - Texas residential groundwater protective concentration level

RA-O - Remedial Action Operation

Val Qual - validation qualifier

Table 6

Future Year 11 ISB and RA-O Monitoring Network Locations and Analyses

LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas

Year 10 RA-O Report

Monitoring Location	Well Location/Purpose	Perchlorate (6850)	VOCs (8260C)	DO (field reading)	ORP (field reading)	pH (field reading)	Ferrous Iron (field reading)	Anions (SW9056A)	Ethene, Ethane, Methane & Carbon Dioxide (RSK-175)	TOC (SM5310B)
ISB Performance Monitoring Locations - Semiannual for Years 10 (current), 11 and 12 (future)										
50WW05	Cross-gradient to treatment area	X	X	X	X	X				
50WW06	Performance monitoring within the plume	X	X	X	X	X	X	X	X	X
50WW08	Upgradient of treatment area	X	X	X	X	X				
50WW11	Performance monitoring within the plume	X	X	X	X	X	X	X	X	X
50WW12	Performance monitoring within the plume	X	X	X	X	X	X	X	X	X
50WW13	Performance monitoring within the plume	X	X	X	X	X	X	X	X	X
50WW14	Performance monitoring within the plume	X	X	X	X	X	X	X	X	X
50WW29	Downgradient of plume/treatment area	X	X	X	X	X				
RA-O Long Term Monitoring Locations (Annual)										
50WW09	Within the plume	X	X	X	X	X				
50WW15	Plume delineation, cross/upgradient	X	X	X	X	X				
50WW16	Plume delineation, cross-gradient	X	X	X	X	X				
50WW18	Plume delineation, downgradient	X	X	X	X	X				
50WW22	Plume delineation, upgradient	X	X	X	X	X				
50WW23	Plume delineation, cross-gradient	X	X	X	X	X				

Notes:

Anions include chloride, nitrate, and sulfate.

X Indicates that sample will be collected and analyzed for the listed analyte.

DO - dissolved oxygen

ISB - in situ bioremediation

ORP - oxygen-reduction potential

RA-O - Remedial Action Operation

TOC - total organic carbon

VOC - volatile organic compound

Table 7
Groundwater Elevation vs. Bottom of Drainage Channel Elevation
LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas
Year 10 RA-O Report

Surface Water Sample Location	Bottom of Drainage Channel (ft amsl)	Nearest Well	Groundwater Elevation during Surface Water Sampling (ft amsl)	Groundwater Elevation Measurement Date
50SW06	182.902	50WW16	179.97	7/7/2021
			178.47	10/11/2021
			178.39	1/4/2022
			178.68	4/5/2022
			176.66	10/10/2023
			178.39	5/25/2023
			176.31	10/2/2023
			178.68	5/20/2024

Notes:
ft amsl - feet above mean sea level
vs. - versus
RA-O - Remedial Action Operation

Table 8

Mann-Kendall Trend Summary

LHAAP-50, Longhorn Army Ammunition Plant, Karnack, Texas

Year 10 RA-O Report

Monitoring Well	Well Location/Purpose	Period of Record	Perchlorate	TCE	cis-1,2-DCE	1,1-DCE	1,2-DCA
50WW05	Cross-gradient to treatment area	2019-2024	–	Decreasing (99.9%)	Decreasing (99.9%)	–	–
50WW06	Performance monitoring within the plume	2019-2024	No trend (52.4%)	No trend (70.5%)	–	–	–
50WW08	Upgradient of treatment area	2019-2024	No trend (61.7%)	**Increasing (99.8%)**	**Increasing (>99.9%)**	–	–
50WW09	Within the plume	2013-2024	–	Decreasing (96.3%)	No trend (65.1%)	–	–
50WW11	Performance monitoring within the plume	2019-2024	Probably decreasing (91.8%)	Stable (83.2%)	Stable (64.0%)	Stable (88.6%)	Stable (87.4%)
50WW12	Performance monitoring within the plume	2019-2024	No trend (64.0%)	No trend (61.7%)	–	Probably increasing (91.8%)	No trend (74.5%)
50WW13	Performance monitoring within the plume	2019-2024	Stable (78.2%)	Stable (74.5%)	Stable (54.8%)	Stable (57.1%)	Stable (52.4%)
50WW14	Performance monitoring within the plume	2019-2024	–	Stable (72.5%)	–	–	–
50WW15	Plume delineation, cross/upgradient	2019-2024	–	Stable (71.9%)	–	–	–

Notes:

Bolded cells indicate a statistically significant trend with >95% confidence. "Significant" refers to the statistical confidence in the trend.

Parenthetical after trend result indicates the confidence factor of the trend.

– - Mann-Kendall trend analysis was not conducted for the COC at the well due to the concentration being below the MCL/PCL.

DCA - dichloroethane

DCE - dichloroethene

TCE - trichloroethene

MCL - maximum concentration level

PCL - protective concentration level

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APPENDIX A
ANNUAL LAND USE CONTROL COMPLIANCE CERTIFICATION DOCUMENT

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Sample Annual Land Use Control Compliance Certification Documentation

In accordance with the Remedial Design dated 9/30/11 for LHAAP-50 a certification of site was conducted by Bitaty [indicate transferee] on 10/2/23

A summary of land use control mechanisms is as follows:

- Groundwater restriction – A restriction against use of groundwater will remain in effect until the levels of the COCs in groundwater and soil allow unrestricted use and unlimited exposure (UUUE). [Indicate whether groundwater restrictions are still required at LHAAP-50]

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-50.

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: October 2, 2023

Name/Title: Scott Bressinger / Environmental Tech

Signature: Scott Bressinger

Annual compliance certification forms shall be completed no later than March 1 of each year for the previous calendar year.

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APPENDIX B
PHOTOGRAPHIC LOG AND WELL INSPECTION FORMS

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Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 1: 50WW01 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 2: 50WW02 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 3: 50WW03 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 4: 50WW04 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 5: 50WW05 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 6: 50WW06 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 7: 50WW07 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 8: 50WW08 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 9: 50WW09 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 10: 50WW10 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 11 : 50WW11 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 12: 50WW12 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 13: 50WW13 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 14: 50WW14 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 15: 50WW15 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 16: 50WW16 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 17: 50WW17 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 18: 50WW18 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 19: 50WW19 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 20: 50WW20 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 21: 50WW21 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 22: 50WW22 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 23: 50WW23 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 24: 50WW24 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 25: 50WW25 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 26: 50WW26 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 27: 50WW27 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 28: 50WW28 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 29: 50WW29 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

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01331255

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCFBH.0001
Client: ARMY
Site Name: 50
Well ID: 50MW01
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 23.23
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) ☐ Yes ☒ No

COMMENTS:

01331256

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SVPCIBH.0001
Client: ARmy
Site Name: 50
Well ID: SDWW02
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 22.20
Inspector: Scott Beggs. AJ648

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): 4.11
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) ☒ 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:

01331257

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: Army
Site Name: 50
Well ID: 50MW03
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 22.98
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:

01331258

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SUPCSBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW04
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 23.16
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:

01331259

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 50
Well ID: ~~LHAAP~~ 50WW05
Inspection Date: 10/2/23
Well Completion Depth/ Measured Depth: 25.29
Inspector: Scott Beasinbar

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:

01331260

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPITBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW06
Inspection Date: 10/3/23
Well Completion Depth/ Measured Depth: 58.00
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) 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:

01331261

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCFBH.0001
Client: Army
Site Name: 50
Well ID: 50WW07
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 31.80
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:

01331262

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH0001
Client: Army
Site Name: 50
Well ID: ~~LHAAP~~ 50MW08
Inspection Date: 10/2/23
Well Completion Depth/ ~~Measured Depth~~: 32.70
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:

01331263

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 50
Well ID: 50MW09
Inspection Date: 10/2/23
Well Completion Depth/ Measured Depth: 62.40
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) 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:

01331264

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: SO
Well ID: SOWW10
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 111.18
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:

01331265

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: W9CI BH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW11
Inspection Date: 10/3/23
Well Completion Depth/ Measured Depth: 37.77
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)	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:

01331266

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SUPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW12
Inspection Date: 10/3/23
Well Completion Depth/ Measured Depth: 37.83
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) 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:

01331267

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50MW13
Inspection Date: 10/3/23
Well Completion Depth/ Measured Depth: 37.60
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): 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:

01331268

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPITBH.0001
Client: Army
Site Name: 50
Well ID: 50MW14
Inspection Date: 10/3/23
Well Completion Depth/ Measured Depth: 60.63
Inspector: Scott Beasingar

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
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:

01331269

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: J5PCIBH.0001
Client: Army
Site Name: 50
Well ID: SDWW15
Inspection Date: 10/2/23
Well Completion Depth/ Measured Depth: 37.78
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) 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:

01331270

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARMY
Site Name: SD
Well ID: SDMW16
Inspection Date: 10/2/23
Well Completion Depth/ Measured Depth: 39.88
Inspector: Scott Beasinbar

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:

01331271

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW17
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 64.55
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) 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:

01331272

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW18
Inspection Date: 10/2/23
Well Completion Depth/ Measured Depth: 37.48
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) 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:

01331273

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPLBH.0001
Client: ARMY
Site Name: SO
Well ID: SDWW19
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 64.93
Inspector: Scott Beggs, Inger

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:

01331274

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SUPCIBH.0001
Client: ARMY
Site Name: SD
Well ID: SDWW20
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 55;75
Inspector: Scott Beggingar

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:

01331275

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARMY
Site Name: 50

Well ID: 50MW21
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 37.60
Inspector: Scott Bessinger

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:

01331276

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SVPCI BH.0001
Client: ARMY
Site Name: 50
Well ID: 50MW22
Inspection Date: 10/2/23
Well Completion Depth/ Measured Depth: 37.74
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:

01331277

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50MW23
Inspection Date: 10/2/23
Well Completion Depth/ Measured Depth: 37.78
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:

WELL INSPECTION FORM

Job Name: LHAAP

Job No.: SUPCIBH.0001

Client: ARMY

Site Name: 50

Well ID: 50WW24

Inspection Date: 10/4/23

Well Completion Depth/ Measured Depth: 37.96

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:

01331279

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW25
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 57.75
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:

01331280

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SVPCIBH.0001
Client: Army
Site Name: SD

Well ID: SDMW26
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 57.57
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) 2 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) ☒ 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:

01331281

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: Army
Site Name: 50
Well ID: SDWW27
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 59.90
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:

01331282

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SUPCIBH.0001
Client: Army
Site Name: 50
Well ID: 50MW28
Inspection Date: 10/4/23
Well Completion Depth/ Measured Depth: 27.05
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:

01331283

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW29
Inspection Date: 10/2/23
Well Completion Depth/ Measured Depth: 38.08
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) 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:

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Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 1: 50WW01 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 2: 50WW02 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 3: 50WW03 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 4: 50WW04 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 5: 50WW05 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 6: 50WW06 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May2024



Photo 7: 50WW07 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 8: 50WW08 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 9: 50WW09 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 10: 50WW10 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 11: 50WW11 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 12: 50WW12 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 13: 50WW13 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 14: 50WW14 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 15: 50WW15 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 16: 50WW16 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 17: 50WW17 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 18: 50WW18 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log October 2023



Photo 19: 50WW19 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 20: 50WW20 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 21: 50WW21 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 22: 50WW22 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 23: 50WW23 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 24: 50WW24 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 25: 50WW25 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 26: 50WW26 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 27: 50WW27 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.



Photo 28: 50WW28 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

Longhorn Army Ammunition Plant Site LHAAP-50 Photograph Log May 2024



Photo 29: 50WW29 has a legible well ID label, an operable pad lock, stable bollards, an intact concrete pad, and a well plug in good condition. The paint on the bollards and well casing are also in good condition.

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01331301

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCTBH.0001
Client: Army
Site Name: SO

Well ID: SOWW01
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: ~~23.25~~ 23.25
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:

01331302

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARMY
Site Name: SO
Well ID: SDMW02
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 22,20
Inspector: Scott Beegle/Nour

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:

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCJBH.0001
Client: Army
Site Name: SO
Well ID: SOWW03
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 22,93
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:

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 50
Well ID: 50WW04
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 23.18
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:

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCI-BH.0001
Client: ARMY
Site Name: 50
Well ID: 50MW05
Inspection Date: 5/21/24
Well Completion Depth/ Measured Depth: 25.30
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 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:

01331306

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: SD
Well ID: SDMW06
Inspection Date: 5/22/24
Well Completion Depth/ Measured Depth: 58.13
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:

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: 1UPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW07
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 31.57
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:

01331308

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: Army
Site Name: 50
Well ID: 50WW08
Inspection Date: 5/22/24
Well Completion Depth/ Measured Depth: 32.71
Inspector: Scott Baesingar

ABOVE GROUND

Well Accessible? ☒ Yes ☐ No
Protective casing? ☒ Yes ☐ No
Material: 50
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:

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARmy
Site Name: 58
Well ID: 58WW09
Inspection Date: 5/22/24
Well Completion Depth/ Measured Depth: 62.42
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:

01331310

WELL INSPECTION FORM

Job Name: CHAAP
Job No.: SVPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW10
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 111.72
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): 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:

01331311

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARmy
Site Name: 50
Well ID: 50MW11
Inspection Date: 5/21/24
Well Completion Depth/ Measured Depth: 37.76
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): 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:

01331312

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: 50

Well ID: 50WW12
Inspection Date: 5/22/24
Well Completion Depth/ Measured Depth: 37.85
Inspector: Scott Baysinger

☒ 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:

01331313

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARmy
Site Name: 58
Well ID: 58NW13
Inspection Date: 5/21/24
Well Completion Depth/ Measured Depth: 37.62
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:

01331314

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARmy
Site Name: 50
Well ID: 50MW14
Inspection Date: 5/21/24
Well Completion Depth/ Measured Depth: 59.68
Inspector: Scott Baysinger

☒ 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:

01331315

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW15
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 37.84
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) 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:

01331316

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCI BH.0001
Client: Army
Site Name: 50
Well ID: 50MW16
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 37.90
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:

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 50
Well ID: 50WW17
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 64.32
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:

01331318

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW18
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 37.50
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:

01331319

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SJPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW19
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 64.90
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:

01331320

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCIBH.0001
Client: ARmy
Site Name: 50
Well ID: 50WW20
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 55.85
Inspector: Scott Baessinger

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:

01331321

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SVPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW21
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 37.60
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): 24
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:

01331322

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: ARMY
Site Name: 50

Well ID: 50WW22
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 37.80
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): 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:

01331323

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JUPCI BH.0001
Client: ARMY
Site Name: 50
Well ID: 50MW23
Inspection Date: 5/22/24
Well Completion Depth/ Measured Depth: 37.81
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) 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 SD
Is silt greater than 10% of well screen length? (complete when gauging) ☐ Yes ☒ No

COMMENTS:

WELL INSPECTION FORM

01331324

Job Name: LHAAP
Job No.: JUPCTBH.0001
Client: ARMY
Site Name: 50

Well ID: 50WW24
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 38.00
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) 24
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:

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 50
Well ID: 50WW25
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 57.80
Inspector: Scott Beggs, Nolan

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): 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:

01331326

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: SUPCIBH.0001
Client: ARMY
Site Name: 50
Well ID: 50WW26
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 62.80
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) 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:

01331327

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCIBH.0001
Client: Army
Site Name: 50
Well ID: 50MW27
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 59.92
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
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:

01331328

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCTBH.0001
Client: ARMY
Site Name: 50

Well ID: 50WW28
Inspection Date: 5/20/24
Well Completion Depth/ Measured Depth: 27.28
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:

01331329

WELL INSPECTION FORM

Job Name: LHAAP
Job No.: JVPCI BH.0001
Client: ARmy
Site Name: 50
Well ID: 50mw29
Inspection Date: 5/21/24
Well Completion Depth/ Measured Depth: 38.08
Inspector: Scott Baessinger

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:

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APPENDIX C
GROUNDWATER SAMPLING FORMS

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GROUNDWATER SAMPLE COLLECTION FORM

Page 1 of 1

LOCATION	Site: LHAAP - 50	Location ID: SDWW05	Date: 10/2/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): SS 4"	Unit Casing Volume (gal/lin ft) (A): ~~0.163~~ 0.652	Initial Depth to Water (ft) (B): 21.02
	Total Well Depth (ft) (C): 25.29	Water Column Thickness (ft) (C-B): 4.27	2nd Depth to Water(pre-purge): 21.02
	Screened Interval: 14.34 - 24.34	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.78
	Pump placement: 21.75	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/2/23	1100	21.10	0.13	100	21.80	7.36	1.70	0.63	8.3	20	
	1105	21.15	0.26	100	21.97	7.03	1.63	0.21	5.0	25	
	1110	21.18	0.39	100	22.19	6.97	1.59	0.05	4.8	35	
	1115	21.20	0.52	100	22.23	6.96	1.58	0.05	4.5	36	
	1120	21.22	0.65	100	22.27	6.96	1.58	0.04	4.2	36	
	1125	21.24	0.78	100	22.31	6.96	1.58	0.04	3.8	37	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40 ml GLASS	HCL	N		VOC
	1	125ml PLASTIC	NA	Y		PERCHLORATE

Sample ID: SDWW05_100223 Sample Time: 1125

01331334

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: 50WW06	Date: 10/3/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): ~~PVC~~ SS 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): 18.82
	Total Well Depth (ft) (C): 58.00	Water Column Thickness (ft) (C-B): 39.18	2nd Depth to Water(pre-purge): 18.82
	Screened Interval: 47.35 - 57.35	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 25.55
	Pump placement: 52.35	Well Condition: GOOD	Ferrous Iron: 0.05 mg/L

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/3/23	0945	18.88	0.13	100	19.97	6.98	0.433	0.73	31.7	118	
	0950	18.93	0.26	100	20.12	6.45	0.394	0.25	29.1	105	
	0955	18.95	0.39	100	20.18	6.34	0.394	0.08	27.7	95	
	1000	18.97	0.52	100	20.23	6.33	0.393	0.08	27.3	93	
	1005	18.99	0.65	100	20.26	6.33	0.393	0.07	26.6	92	
	1010	19.00	0.78	100	20.30	6.32	0.393	0.07	26.2	91	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCL	N		VOC
	3	40ml GLASS	HCL	N		MEE
	2	40ml AMBER	H2SO4	N		TOC
	3	40ml GLASS	NA	N		CO2
	1	125ml PLASTIC	NA	N		ANIONS
	1	125ml PLASTIC	NA	Y		PERCHLORATE

Sample ID: 50WW06_100323 Sample Time: 1010

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 50	Location ID: 50WW08	Date: 10/2/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 4"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 22.89
	Total Well Depth (ft) (C): 32.70	Water Column Thickness (ft) (C-B): 9.81	2nd Depth to Water(pre-purge): 22.89
	Screened Interval: 17.11-31.71	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.57
	Pump placement: 24.41	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/2/23	0755	22.96	0.13	100	19.72	6.97	2.41	0.71	37.3	123	
	0800	23.02	0.26	100	19.74	7.00	2.43	0.24	28.4	108	
	0805	23.06	0.39	100	19.71	7.03	2.44	0.08	24.7	91	
	0810	23.09	0.52	100	19.69	7.04	2.44	0.08	24.2	90	
	0815	23.11	0.65	100	19.66	7.05	2.45	0.07	23.6	89	
	0820	23.13	0.78	100	19.64	7.05	2.45	0.07	23.0	88	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40 ml GLASS	HCL	N		VOC
						1	125 ml PLASTIC	NA	Y		PERCHLORATE

Conversions	Stabilization Criteria									
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%						
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%						
	Cond	+/- 10%	ORP	+/- 10	Sample ID: 50WW08_100223				Sample Time: 0820	

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GROUNDWATER SAMPLE COLLECTION FORM

01331336

LOCATION	Site: LHAAP - 50	Location ID: SDWW09	Date: 10/2/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 22.62
	Total Well Depth (ft) (C): 62.40	Water Column Thickness (ft) (C-B): 39.78	2nd Depth to Water(pre-purge): 22.62
	Screened Interval: 46.75 - 61.25	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 6.36
	Pump placement: 54.00	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/2/23	0715	22.70	0.13	100	21.12	6.90	1.43	0.69	162	95	
	0720	22.76	0.26	100	20.33	6.53	2.21	0.20	154	74	
	0725	22.80	0.39	100	20.07	6.25	2.28	0.07	145	82	
	0730	22.82	0.52	100	20.04	6.23	2.29	0.07	144	83	
	0735	22.84	0.65	100	19.99	6.21	2.29	0.07	142	84	
↓	0740	22.86	0.78	100	19.95	6.20	2.30	0.06	141	85	

Colorimeter Results					**No. Containers/Volume/Type**			**Preserv.**	**Filter (Y/N)**	**Method**	**Parameter(s)**
Time	**Analyte**	**Dilution**	**Result**	**Units**		3	40ml GLASS	HCL	N		VOC
						1	125ml PLASTIC	NA	Y		PERCHLORATE

Conversions	**Stabilization Criteria**										
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%							
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID: SDWW09_100223				Sample Time: 0740		

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GROUNDWATER SAMPLE COLLECTION FORM

Page 1 of 1

LOCATION	Site: LHAAP - 50	Location ID: SDWW11	Date: 10/3/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 20.45
	Total Well Depth (ft) (C): 37.77	Water Column Thickness (ft) (C-B): 17.32	2nd Depth to Water(pre-purge): 20.45
	Screened Interval: 22.55-37.05	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.77
	Pump placement: 29.80	Well Condition: GOOD	Ferrous Iron: 0.33 mg/L

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/3/23	0850	20.52	0.13	100	19.60	7.12	2.12	0.61	92.7	75	
	0855	20.58	0.26	100	19.66	6.86	2.13	0.18	85.9	74	
	0900	20.62	0.39	100	19.69	6.76	2.13	0.03	84.8	74	
	0905	20.65	0.52	100	19.71	6.75	2.13	0.03	84.3	75	
	0910	20.67	0.65	100	19.73	6.75	2.13	0.03	83.6	75	
	0915	20.69	0.78	100	19.75	6.75	2.13	0.02	83.1	74	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
6	40ml GLASS		HCL	N		VOC
6	40ml GLASS		HCL	N		MEE
4	40ml AMBER		H2SO4	N		TOC
6	40ml GLASS		NA	N		CO2
2	125ml PLASTIC		NA	N		ANIONS
2	125ml PLASTIC		NA	Y		PERCHLORATE

Sample ID: SDWW11-100323

Sample Time: 0915

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: 50WW12	Date: 10/3/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 19.17
	Total Well Depth (ft) (C): 37.83	Water Column Thickness (ft) (C-B): 18.66	2nd Depth to Water(pre-purge): 19.17
	Screened Interval: 22.50 - 37.00	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.99
	Pump placement: 29.75	Well Condition: GOOD	Ferrous Iron: 0.42 mg/L

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/3/23	1030	19.25	0.13	100	21.05	6.72	4.85	0.68	89.9	104	
	1035	19.30	0.26	100	21.33	6.81	5.01	0.21	83.7	70	
	1040	19.33	0.39	100	21.38	6.86	5.05	0.05	80.1	63	
	1045	19.35	0.52	100	21.43	6.87	5.05	0.05	79.6	62	
	1050	19.37	0.65	100	21.46	6.87	5.06	0.05	78.8	62	
↓	1055	19.38	0.78	100	21.50	6.87	5.06	0.04	78.2	61	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40ml GLASS	HCL	N		VOC
	3	40ml GLASS	HCL	N		MAA
	2	40ml AMBER	H_2SO_4	N		TOC
	3	40ml GLASS	NA	N		CO2
	1	125ml PLASTIC	NA	N		ANIONS
	1	125ml PLASTIC	NA	Y		PERCHLORATE

Sample ID: 50WW12-100323 Sample Time: 1055

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: 50WW13	Date: 10/3/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 20.73
	Total Well Depth (ft) (C): 37.60	Water Column Thickness (ft) (C-B): 16.87	2nd Depth to Water(pre-purge): 20.73
	Screened Interval: 22.44 - 36.94	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.70
	Pump placement: 29.69	Well Condition: GOOD	Ferrous Iron: 0.41 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/3/23	0800	20.80	0.13	100	20.25	7.17	2.14	0.70	99.7	27	
	0805	20.85	0.26	100	19.95	6.84	2.14	0.23	94.5	43	
	0810	20.88	0.39	100	19.84	6.68	2.14	0.07	90.1	60	
	0815	20.91	0.52	100	19.81	6.67	2.14	0.07	89.5	62	
	0820	20.93	0.65	100	19.79	6.65	2.14	0.06	88.8	63	
	0825	20.95	0.78	100	19.77	6.65	2.14	0.06	88.1	64	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
6	40ml GLASS		HCL	N		VOC
6	40ml GLASS		HCL	N		MEE
4	40ml AMBER		H2SO4	N		TOC
6	40ml GLASS		NA	N		CO2
2	125ml PLASTIC		NA	N		ANIONS
2	125ml PLASTIC		NA	Y		PERCHLORATE

Sample ID: 50WW13-100323 Sample Time: 0825

01331340

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: 50WW14	Date: 10/3/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 20.92
	Total Well Depth (ft) (C): 60.63	Water Column Thickness (ft) (C-B): 39.71	2nd Depth to Water(pre-purge): 20.92
	Screened Interval: 45.78 - 60.28	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 6.35
	Pump placement: 53.03	Well Condition: GOOD	Ferrous Iron: 3.17 mg/L

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/3/23	0715	21.00	0.13	100	22.12	6.96	2.25	0.63	249	-36	
	0720	21.06	0.26	100	20.51	6.73	2.33	0.19	227	-44	
	0725	21.10	0.39	100	20.17	6.63	2.37	0.04	219	-50	
	0730	21.12	0.52	100	20.11	6.62	2.38	0.04	217	-51	
	0735	21.14	0.65	100	20.06	6.61	2.38	0.04	216	-52	
	0740	21.15	0.78	100	20.00	6.61	2.38	0.03	216	-52	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml Glass		HCl	N		VOC
3	40ml Glass		HCl	N		MEE
2	40ml Amber		H2SO4	N		TOC
3	40ml Glass		NA	N		CO2
1	125ml Plastic		NA	N		Anions
1	125ml Plastic		NA	Y		Perchlorate

Sample ID: SDWW14_100323 Sample Time: 0740

01331341

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GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 50	Location ID: SDWW15	Date: 10/2/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 19.52
	Total Well Depth (ft) (C): 37.78	Water Column Thickness (ft) (C-B): 18.26	2nd Depth to Water(pre-purge): 19.52
	Screened Interval: 22.25 - 36.75	Weather: Clear	Well Volume (gal) (A*(C-B)): 2.92
	Pump placement: 29.50	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/2/23	1145	19.59	0.13	100	24.03	7.38	1.73	0.64	55.7	21	
	1150	19.64	0.26	100	23.31	7.30	1.85	0.22	48.8	[illegible]	
	1155	19.69	0.39	100	23.25	7.17	1.90	0.06	45.0	1	
	1200	19.71	0.52	100	23.21	7.16	1.90	0.06	44.5	0	
	1205	19.73	0.65	100	23.18	7.15	1.91	0.06	43.7	0	
	1210	19.74	0.78	100	23.14	7.14	1.91	0.05	43.1	0	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers	Volume	Type	Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40 ml	GLASS	HCl	N		VOC
1	125 ml	Plastic	NA	Y		PERCHLORATE

Sample ID: SDWW15_100223 Sample Time: 1210

01331342

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50		Location ID: 50WW16		Date: 10/2/23
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"		Unit Casing Volume (gal/lin ft) (A): 0.160		Initial Depth to Water (ft) (B): 20.35
	Total Well Depth (ft) (C): 37.88		Water Column Thickness (ft) (C-B): 17.53		2nd Depth to Water(pre-purge): 20.35
	Screened Interval: 22.66 - 37.16		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 2.80
	Pump placement: 29.91		Well Condition: GOOD		Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/2/23	1225	20.42	0.13	100	24.76	7.63	0.223	0.61	89.9	100	
	1230	20.48	0.26	100	22.71	6.77	0.222	0.18	85.4	90	
	1235	20.52	0.39	100	22.39	6.77	0.236	0.03	84.7	85	
	1240	20.56	0.52	100	22.35	6.76	0.236	0.03	84.3	84	
	1245	20.58	0.65	100	22.31	6.76	0.237	0.02	83.6	83	
	1250	20.60	0.78	100	22.27	6.76	0.237	0.02	83.2	83	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40ml GLASS	HCL	N		VOC
						1	125ml PLASTIC	NA	Y		PERCHLORATE

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

Sample ID: 50WW16-100223 Sample Time: 1250

01331343

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: 50WW18	Date: 10/2/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 19.05
	Total Well Depth (ft) (C): 37.48	Water Column Thickness (ft) (C-B): 18.43	2nd Depth to Water(pre-purge): 19.05
	Screened Interval: 22.37 - 36.87	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.95
	Pump placement: 29.62	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/2/23	1310	19.12	0.13	100	25.25	6.67	2.66	0.65	177	140	
	1315	19.17	0.26	100	23.21	6.95	2.77	0.23	166	73	
	1320	19.20	0.39	100	22.88	6.88	2.80	0.08	161	65	
	1325	19.23	0.52	100	22.83	6.87	2.80	0.08	160	64	
	1330	19.25	0.65	100	22.76	6.86	2.80	0.07	159	64	
	1335	19.27	0.78	100	22.71	6.86	2.80	0.07	159	63	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40 ml GLASS	HCl	N		VOC
	1	125ml PLASTIC	NA	Y		PERCHLORATE

Sample ID: 50WW18-100223 Sample Time: 1335

01331344

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: 50WW22	Date: 10/2/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 25.20
	Total Well Depth (ft) (C): 37.74	Water Column Thickness (ft) (C-B): 12.54	2nd Depth to Water(pre-purge): 25.20
	Screened Interval: 21.97 - 36.57	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.01
	Pump placement: 29.27	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO	Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
	Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/2/23	0840	25.27	0.13	100	19.27	7.17	3.92	0.67	25.7	136	
	0845	25.33	0.26	100	19.39	6.99	3.98	0.22	21.3	117	
	0850	25.37	0.39	100	19.44	6.95	4.00	0.19	19.7	112	
	0855	25.40	0.52	100	19.47	6.94	4.01	0.19	19.4	111	
	0900	25.42	0.65	100	19.50	6.94	4.01	0.19	18.8	110	
↓	0905	25.44	0.78	100	19.54	6.94	4.01	0.18	18.2	110	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		9	40 ml GLASS	HCL	N		VOC
						3	125 ml PLASTIC	NA	Y		PERCHLORATE

Conversions	Stabilization Criteria										
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%							
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID: 50WW22_100223				Sample Time: 0905		

01331345

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: 50WW23	Date: 10/2/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 24.15
	Total Well Depth (ft) (C): 37.78	Water Column Thickness (ft) (C-B): 13.63	2nd Depth to Water(pre-purge): 24.15
	Screened Interval: 22.42-36.42	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.18
	Pump placement: 29.67	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/2/23	0930	24.23	0.13	100	19.65	6.96	6.81	0.72	29.8	158	
	0935	24.29	0.26	100	19.88	6.55	6.83	0.25	25.7	140	
	0940	24.33	0.39	100	19.96	6.45	6.85	0.06	23.8	131	
	0945	24.35	0.52	100	20.03	6.44	6.86	0.06	23.3	130	
	0950	24.37	0.65	100	20.07	6.44	6.87	0.05	22.6	129	
	0955	24.38	0.78	100	20.11	6.44	6.87	0.05	22.1	129	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40ml GLASS		HCL	N		VOC
1	125ml PLASTIC		NA	Y		PERCHLORATE

Sample ID: 50WW23_100223 Sample Time: 0955

01331346

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: 50WW29	Date: 10/2/23
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 19.83
	Total Well Depth (ft) (C): 38.08	Water Column Thickness (ft) (C-B): 18.25	2nd Depth to Water(pre-purge): 19.83
	Screened Interval: 23.45 - 38.45	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.92
	Pump placement: 30.45	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
10/2/23	1015	19.90	0.13	100	20.68	7.27	4.41	0.63	63.7	41	
	1020	19.94	0.26	100	20.42	6.83	4.37	0.18	56.1	-5	
	1025	20.00	0.39	100	20.32	6.74	4.32	0.05	52.2	-17	
	1030	20.02	0.52	100	20.28	6.74	4.31	0.04	51.6	-18	
	1035	20.04	0.65	100	20.25	6.73	4.30	0.04	50.8	-19	
	1040	20.05	0.78	100	20.21	6.72	4.30	0.04	50.1	-19	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40 ml GLASS		HCl	N		VOC
1	125 ml PLASTIC		NA	Y		PERCHLORATE

Sample ID: 50WW29.100223 Sample Time: 1040

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GROUNDWATER SAMPLE COLLECTION FORM

01331347

LOCATION	Site: LHAAP - 50	Location ID: 50WW05	Date: 5/21/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 4"	Unit Casing Volume (gal/lin ft) (A): 0.652	Initial Depth to Water (ft) (B): 18.67
	Total Well Depth (ft) (C): 25.30	Water Column Thickness (ft) (C-B):	2nd Depth to Water(pre-purge): 18.67
	Screened Interval: 14.34 - 24.34	Weather: CLEAR	Well Volume (gal) (A*(C-B)):
	Pump placement: 19.34	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/21/24	0910	18.74	0.13	100	20.69	7.34	1.67	0.65	35.5	98	
	0915	18.79	0.26	100	19.81	7.48	1.66	0.27	31.1	79	
	0920	18.82	0.39	100	19.58	7.54	1.66	0.05	28.7	63	
	0925	18.85	0.52	100	19.53	7.55	1.65	0.05	28.3	62	
	0930	18.87	0.65	100	19.47	7.56	1.65	0.04	27.7	62	
↓	0935	18.89	0.78	100	19.41	7.57	1.65	0.04	27.2	61	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40 mL Glass	HCL	N		VOC
						1	125 mL Plastic	NA	Y		Perchlorate

Conversions	Stabilization Criteria										
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%							
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID: 50WW05_052124				Sample Time: 0935		

01331348

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GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50		Location ID: 50WW06		Date: 5/22/24
	Project Name: LHAAP		Project No./Phase: JVPCIBH.0001		Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro		Water Quality Meter/ID#: U-52 Horiba		PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101		Other Equipment/ID#: NA		Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"		Other Equipment/ID#: NA		PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 4"		Unit Casing Volume (gal/lin ft) (A): 0.652		Initial Depth to Water (ft) (B): 14.27
	Total Well Depth (ft) (C): 58.13		Water Column Thickness (ft) (C-B): 43.86		2nd Depth to Water(pre-purge): 14.27
	Screened Interval: 47.35 - 57.35		Weather: CLEAR		Well Volume (gal) (A*(C-B)): 28.60
	Pump placement: 52.35		Well Condition: GOOD		Ferrous Iron: 0.13 mg/L

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/22/24	0955	14.35	0.13	100	22.57	7.09	0.325	2.39	53.7	170	
	1000	14.40	0.26	100	21.95	6.37	0.179	2.17	49.9	183	
	1005	14.43	0.39	100	21.49	5.95	0.136	2.02	45.7	208	
	1010	14.45	0.52	100	21.45	5.93	0.136	2.00	45.2	210	
	1015	14.47	0.65	100	21.40	5.92	0.136	1.98	44.6	212	
	1020	14.48	0.78	100	21.36	5.90	0.135	1.97	44.1	213	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions

1 L = 0.26 gals

1 gal = 3.79 L

Stabilization Criteria

Temp	+/- 10%	DO	+/- 10%
pH	+/- 0.1	Turb	+/- 10%
Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	6	40 mL Glass	HCL	N		VOC
	6	40 mL Glass	HCL	N		MEE
	6	40 mL Glass	NA	N		CO2
	4	40 ml Amber	H2SO4	N		TOC
	2	250 mL Plastic	NA	N		Anions
	2	125 mL Plastic	NA	Y		Perchlorate

Sample ID: 50WW06-052224 Sample Time: 1020

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GROUNDWATER SAMPLE COLLECTION FORM

01331349

LOCATION	Site: LHAAP - 50	Location ID: 50WW08	Date: 5/22/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 20.70
	Total Well Depth (ft) (C): 32.71	Water Column Thickness (ft) (C-B): 12.01	2nd Depth to Water(pre-purge): 20.70
	Screened Interval: 17.11 -31.71	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 1.92
	Pump placement: 24.41	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/22/24	0730	20.77	0.13	100	21.54	6.64	2.40	1.49	77.8	157	
	0735	20.83	0.26	100	20.59	7.05	2.43	1.31	70.5	162	
	0740	20.87	0.39	100	20.18	7.02	2.44	1.22	66.7	175	
	0745	20.90	0.52	100	20.11	7.01	2.45	1.20	66.3	177	
	0750	20.92	0.65	100	20.05	7.01	2.45	1.18	65.8	179	
	0755	20.94	0.78	100	19.99	7.01	2.46	1.17	65.2	180	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40 mL Glass	HCL	N		VOC
						1	125 mL Plastic	NA	Y		Perchlorate

Conversions	Stabilization Criteria										
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%							
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID: 50WW08.052224				Sample Time: 0755		

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

01331350

LOCATION	Site: LHAAP - 50	Location ID: 50WW09	Date: 5/22/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 4"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 20.38
	Total Well Depth (ft) (C): 62.42	Water Column Thickness (ft) (C-B): 42.04	2nd Depth to Water(pre-purge): 20.38
	Screened Interval: 46.75 - 61.25	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 6.73
	Pump placement: 54.00	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/22/24	0650	20.45	0.13	100	23.49	7.90	0.546	1.81	211	148	
	0655	20.50	0.26	100	20.57	6.71	0.829	1.60	195	165	
	0700	20.53	0.39	100	20.35	6.34	0.975	1.53	188	180	
	0705	20.56	0.52	100	20.30	6.32	0.976	1.51	186	181	
	0710	20.58	0.65	100	20.25	6.30	0.977	1.49	184	182	
	0715	20.60	0.78	100	20.20	6.29	0.977	1.47	183	183	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40 mL Glass	HCL	N		VOC
						1	125 mL Plastic	NA	Y		Perchlorate

Conversions	Stabilization Criteria										
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%							
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID: 50WW09.052224				Sample Time: 0715		

01331351

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

Page 1 of 1

LOCATION	Site: LHAAP - 50	Location ID: SDWW11	Date: 5/21/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 18.20
	Total Well Depth (ft) (C): 37.76	Water Column Thickness (ft) (C-B): 19.56	2nd Depth to Water(pre-purge): 18.20
	Screened Interval: 22.55 - 37.05	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.13
	Pump placement: 29.80	Well Condition: GOOD	Ferrous Iron:

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/21/24	0825	18.28	0.13	100	20.31	7.03	2.06	1.51	90.5	100	
	0830	18.34	0.26	100	19.92	7.08	2.05	1.33	85.0	81	
	0835	18.38	0.39	100	19.90	6.98	2.04	1.26	80.7	81	
	0840	18.41	0.52	100	19.87	6.97	2.04	1.24	80.3	82	
	0845	18.43	0.65	100	19.83	6.97	2.03	1.23	79.6	82	
	0850	18.45	0.78	100	19.80	6.97	2.03	1.22	79.1	83	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40 mL Glass	HCL	N		VOC
						3	40 mL Glass	HCL	N		MEE
						3	40 mL Glass	NA	N		CO2
						2	40 ml Amber	H2SO4	N		TOC
Conversions	**Stabilization Criteria**					1	250 mL Plastic	NA	N		Anions
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%		1	125 mL Plastic	NA	Y		Perchlorate
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID: SDWW11_052124				Sample Time: 0850		

01331352

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

LOCATION	Site: LHAAP - 50	Location ID: 50WW12	Date: 5/22/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 17.18
	Total Well Depth (ft) (C): 37.85	Water Column Thickness (ft) (C-B): 20.67	2nd Depth to Water(pre-purge): 17.18
	Screened Interval: 22.50 - 37.00	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.31
	Pump placement: 29.75	Well Condition: GOOD	Ferrous Iron: 0.39 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/22/24	0900	17.25	0.13	100	21.76	6.95	4.55	0.69	131	170	
	0905	17.30	0.26	100	21.05	6.69	4.50	0.31	119	155	
	0910	17.33	0.39	100	20.92	6.28	4.48	0.18	115	163	
	0915	17.36	0.52	100	20.86	6.26	4.47	0.17	113	164	
	0920	17.38	0.65	100	20.81	6.25	4.46	0.17	112	164	
↓	0925	17.40	0.78	100	20.77	6.24	4.46	0.17	111	165	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions

1 L = 0.26 gals

1 gal = 3.79 L

Stabilization Criteria

Temp	+/- 10%	DO	+/- 10%
pH	+/- 0.1	Turb	+/- 10%
Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	6	40 mL Glass	HCL	N		VOC
	6	40 mL Glass	HCL	N		MEE
	6	40 mL Glass	NA	N		CO2
	4	40 ml Amber	H2SO4	N		TOC
	2	250 mL Plastic	NA	N		Anions
	2	125 mL Plastic	NA	Y		Perchlorate

Sample ID: 50WW12.052224 Sample Time: 0925

01331353

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: 50WW13	Date: 5/21/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 18.58
	Total Well Depth (ft) (C): 37.62	Water Column Thickness (ft) (C-B): 19.04	2nd Depth to Water(pre-purge): 18.58
	Screened Interval: 22.44 - 36.94	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.05
	Pump placement: 29.69	Well Condition: GOOD	Ferrous Iron: 0.48 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/21/24	0735	18.65	0.13	100	20.13	7.35	2.30	0.98	80.5	37	
	0740	18.71	0.26	100	19.50	6.82	2.31	0.61	71.4	86	
	0745	18.75	0.39	100	19.39	6.47	2.32	0.49	65.9	127	
	0750	18.77	0.52	100	19.35	6.45	2.32	0.48	65.3	129	
	0755	18.79	0.65	100	19.32	6.43	2.33	0.47	64.6	131	
↓	0800	18.81	0.78	100	19.28	6.42	2.33	0.47	64.0	132	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40 mL Glass	HCL	N		VOC
						3	40 mL Glass	HCL	N		MEE
						3	40 mL Glass	NA	N		CO2
						2	40 ml Amber	H2SO4	N		TOC
Conversions	**Stabilization Criteria**					1	250 mL Plastic	NA	N		Anions
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%		1	125 mL Plastic	NA	Y		Perchlorate
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID: 50WW13_052124				Sample Time: 0800		

01331354

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

Page 1 of 1

LOCATION	Site: LHAAP - 50	Location ID: SDWW14	Date: 5/21/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 18.65
	Total Well Depth (ft) (C): 59.68	Water Column Thickness (ft) (C-B): 41.03	2nd Depth to Water(pre-purge): 18.65
	Screened Interval: 45.78 - 60.28	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 6.56
	Pump placement: 53.03	Well Condition: GOOD	Ferrous Iron: 3.89 mg/L

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/21/24	0650	18.73	0.13	100	21.43	7.20	2.22	0.93	151	33	
	0655	18.79	0.26	100	19.67	7.18	2.29	0.50	138	-18	
	0700	18.82	0.39	100	19.25	7.10	2.31	0.36	132	-28	
	0705	18.84	0.52	100	19.20	7.09	2.32	0.35	131	-29	
	0710	18.86	0.65	100	19.16	7.08	2.33	0.35	130	-29	
	0715	18.87	0.78	100	19.12	7.07	2.33	0.34	130	-30	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions

1 L = 0.26 gals

1 gal = 3.79 L

Stabilization Criteria

Temp	+/- 10%	DO	+/- 10%
pH	+/- 0.1	Turb	+/- 10%
Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40 mL Glass	HCL	N		VOC
	3	40 mL Glass	HCL	N		MEE
	3	40 mL Glass	NA	N		CO2
	2	40 ml Amber	H2SO4	N		TOC
	1	250 mL Plastic	NA	N		Anions
	1	125 mL Plastic	NA	Y		Perchlorate

Sample ID: SDWW14-052124 Sample Time: 0715

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

 01331355

LOCATION	Site: LHAAP - 50	Location ID: 50WW15	Date: 5/20/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): 2" PVC	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 17.27
	Total Well Depth (ft) (C): 37.84	Water Column Thickness (ft) (C-B): 20.57	2nd Depth to Water(pre-purge): ~~17.27~~ 16.27
	Screened Interval: 22.25-36.75	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.29
	Pump placement: 29.50	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO										
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/20/24	1150	17.35	0.13	100	24.56	7.65	0.937	4.08	77.8	121	
	1155	17.41	0.26	100	22.15	7.01	0.922	3.41	72.7	130	
	1200	17.44	0.39	100	21.80	6.85	0.957	3.10	67.7	142	
	1205	17.46	0.52	100	21.74	6.83	0.958	3.08	67.3	143	
	1210	17.48	0.65	100	21.69	6.82	0.959	3.07	66.8	143	
	1215	17.49	0.78	100	21.65	6.81	0.959	3.05	66.1	144	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			**Preserv.**	**Filter (Y/N)**	**Method**	**Parameter(s)**
	3	40 mL Glass	HCL	N		VOC
	1	125 mL Plastic	NA	Y		Perchlorate

Sample ID: 50WW15-052024 Sample Time: 1215

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

 01331356

LOCATION	Site: LHAAP - 50	Location ID: 50WW16	Date: 5/20/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): 2" PVC	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 17.98
	Total Well Depth (ft) (C): 37.90	Water Column Thickness (ft) (C-B): 19.92	2nd Depth to Water(pre-purge): 17.98
	Screened Interval: 22.66 - 37.16	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.19
	Pump placement: 29.91	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
	0925										
5/20/24	~~0930~~	18.05	0.13	100	21.95	7.37	0.348	0.93	154	112	
	~~0935~~	18.11	0.26	100	19.95	6.09	0.259	0.59	127	138	
	0940	18.14	0.39	100	19.79	5.68	0.245	0.45	122	156	
	0945	18.16	0.52	100	19.73	5.66	0.244	0.44	120	158	
	0950	18.18	0.65	100	19.68	5.65	0.244	0.44	119	159	
	0955	1820	0.78	100	19.64	5.64	0.244	0.43	118	160	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40 mL Glass	HCL	N		VOC
						1	125 mL Plastic	NA	Y		Perchlorate
Conversions	**Stabilization Criteria**										
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%							
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID: 50WW16_052024				Sample Time: 0950		

01331357

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

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LOCATION	Site: LHAAP - 50	Location ID: SD WW18	Date: ~~5/20/24~~ 5/20/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): 2" PVC	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 17.05
	Total Well Depth (ft) (C): 37.50	Water Column Thickness (ft) (C-B): 20.45	2nd Depth to Water(pre-purge): 17.05
	Screened Interval: 22.37 - 36.87	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.27
	Pump placement: 29.62	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/20/24	1015	17.13	0.13	100	21.56	5.73	2.80	1.05	139	156	
	1020	17.19	0.26	100	20.69	6.57	2.83	0.88	117	129	
	1025	17.23	0.39	100	20.25	6.91	2.83	0.75	110	107	
	1030	17.26	0.52	100	20.17	6.93	2.84	0.73	109	105	
	1035	17.28	0.65	100	20.13	6.95	2.84	0.72	108	103	
	1040	17.30	0.78	100	20.10	6.96	2.84	0.71	107	102	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	Stabilization Criteria			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
	3	40 mL Glass	HCL	N		VOC
	1	125 mL Plastic	NA	Y		Perchlorate
Sample ID: SD WW18-052024				Sample Time: 1040		

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

01331358

LOCATION	Site: LHAAP - 50	Location ID: 50WW22	Date: 5/20/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): 2" PVC	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 23.27
	Total Well Depth (ft) (C): 37.80	Water Column Thickness (ft) (C-B): 14.53	2nd Depth to Water(pre-purge): 23.27
	Screened Interval: 21.97 - 36.57	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 2.32
	Pump placement: 29.27	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/20/24	1105	23.35	0.13	100	23.59	7.07	3.91	1.87	41.3	129	
	1110	23.41	0.26	100	22.85	6.88	3.91	1.61	36.5	136	
	1115	23.45	0.39	100	21.91	6.65	3.91	1.53	34.7	144	
	1120	23.48	0.52	100	21.85	6.64	3.91	1.51	34.2	145	
	1125	23.50	0.65	100	21.79	6.64	3.91	1.49	33.5	146	
	1130	23.52	0.78	100	21.74	6.63	3.91	1.48	33.0	146	

Colorimeter Results

Time	Analyte	Dilution	Result	Units

Conversions	**Stabilization Criteria**			
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%
	Cond	+/- 10%	ORP	+/- 10

No. Containers	Volume	Type	Preserv.	Filter (Y/N)	Method	Parameter(s)
3	40 mL	Glass	HCL	N		VOC
1	125 mL	Plastic	NA	Y		Perchlorate

Sample ID: SDWW22_052024 Sample Time: 1130

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

01331359

LOCATION	Site: LHAAP - 50			Location ID: 50WW23				Date: 5/22/24			
	Project Name: LHAAP			Project No./Phase: JVPCIBH.0001				Recorded By: Scott Beesinger			
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro			Water Quality Meter/ID#: U-52 Horiba				PID Type/ID#: NA			
	Water Level Indicator Type/ID#: Solinist 101			Other Equipment/ID#: NA				Decon Method: Liquinox & DI water			
	Tubing Type/Diameter (in): 1/4"			Other Equipment/ID#: NA				PPE: Level D			
WELL INFO	Casing Type / ID (in): PVC 2"			Unit Casing Volume (gal/lin ft) (A): 0.160				Initial Depth to Water (ft) (B): 22.28			
	Total Well Depth (ft) (C): 37.81			Water Column Thickness (ft) (C-B): 15.53				2nd Depth to Water(pre-purge): 22.28			
	Screened Interval: 22.42 - 36.92			Weather: CLEAR				Well Volume (gal) (A*(C-B)): 2.48			
	Pump placement: 29.67			Well Condition: GOOD				Ferrous Iron: NA			

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/22/24	0815	22.35	0.13	100	21.33	7.74	4.17	5.88	88.8	171	
	0820	22.41	0.26	100	20.40	6.73	4.28	5.45	81.4	183	
	0825	22.45	0.39	100	20.15	6.33	4.34	5.31	78.2	191	
	0830	22.48	0.52	100	20.09	6.31	4.35	5.29	77.5	192	
	0835	22.50	0.65	100	20.02	6.29	4.36	5.27	76.7	193	
	0840	22.52	0.78	100	19.95	6.28	4.36	5.26	76.1	194	

Colorimeter Results					**No. Containers/Volume/Type**			**Preserv.**	**Filter (Y/N)**	**Method**	**Parameter(s)**
Time	**Analyte**	**Dilution**	**Result**	**Units**		9	40 mL Glass	HCL	N		VOC
						3	125 mL Plastic	NA	Y		Perchlorate

Conversions	**Stabilization Criteria**									
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%						
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%						
	Cond	+/- 10%	ORP	+/- 10	Sample ID: SDWW23-052224			Sample Time: 0840		

bhate ENVIRONMENT INFRASTRUCTURE

GROUNDWATER SAMPLE COLLECTION FORM

01331360

LOCATION	Site: LHAAP - 50	Location ID: SDWW29	Date: 5/21/24
	Project Name: LHAAP	Project No./Phase: JVPCIBH.0001	Recorded By: Scott Beesinger
EQUIPMENT	Pump Type/ID#: Bladder Pump / SamplePro	Water Quality Meter/ID#: U-52 Horiba	PID Type/ID#: NA
	Water Level Indicator Type/ID#: Solinist 101	Other Equipment/ID#: NA	Decon Method: Liquinox & DI water
	Tubing Type/Diameter (in): 1/4"	Other Equipment/ID#: NA	PPE: Level D
WELL INFO	Casing Type / ID (in): PVC 2"	Unit Casing Volume (gal/lin ft) (A): 0.160	Initial Depth to Water (ft) (B): 17.71
	Total Well Depth (ft) (C): 38.08	Water Column Thickness (ft) (C-B): 20.37	2nd Depth to Water(pre-purge): 17.71
	Screened Interval: 23.45 - 38.45	Weather: CLEAR	Well Volume (gal) (A*(C-B)): 3.26
	Pump placement: 30.95	Well Condition: GOOD	Ferrous Iron: NA

CASING INFO											
Casing ID (in)	0.5	0.75	1.0	1.5	2.0	3.0	4.0	5.0	6.0	8.0
Unit Casing Volume (gal/lin ft)	0.016	0.020	0.043	0.103	0.160	0.378	0.652	1.03	1.48	2.57

DATE	TIME (24 Hr)	Water Level (BTOC)	Volume Removed (Gals)	Pumping Rate (ml/min)	Temp (C)	pH	Cond (mS/cm)	DO (mg/l)	Turb (NTU)	ORP (mV)	Remarks (odor, clarity, etc.)
5/21/24	1000	17.79	0.13	100	21.34	7.78	4.03	0.77	104	100	
	1005	17.85	0.26	100	20.21	7.25	4.17	0.59	96.5	104	
	1010	17.88	0.39	100	20.04	7.10	4.18	0.45	94.2	104	
	1015	17.91	0.52	100	19.99	7.08	4.18	0.44	93.5	104	
	1020	17.93	0.65	100	19.94	7.06	4.19	0.43	92.7	105	
	1025	17.95	0.78	100	19.90	7.05	4.19	0.42	92.0	105	

Colorimeter Results					No. Containers/Volume/Type			Preserv.	Filter (Y/N)	Method	Parameter(s)
Time	Analyte	Dilution	Result	Units		3	40 mL Glass	HCL	N		VOC
						1	125 mL Plastic	NA	Y		Perchlorate

Conversions	Stabilization Criteria										
1 L = 0.26 gals	Temp	+/- 10%	DO	+/- 10%							
1 gal = 3.79 L	pH	+/- 0.1	Turb	+/- 10%							
	Cond	+/- 10%	ORP	+/- 10	Sample ID: SDWW29_052124				Sample Time: 1075		

APPENDIX D
LABORATORY ANALYTICAL DATA PACKAGES

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10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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October 17, 2023

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

Work Order: **HS23100159**

Laboratory Results for: **LHAAP Site 50**

Dear Marcia Olive,

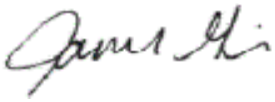
ALS Environmental received 17 sample(s) on Oct 04, 2023 for the analysis presented in the following report.

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: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Work Order: HS23100159

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23100159-01	50WW09_100223	Water		02-Oct-2023 07:40	04-Oct-2023 09:10	☐
HS23100159-02	50WW08_100223	Water		02-Oct-2023 08:20	04-Oct-2023 09:10	☐
HS23100159-03	50WW22_100223	Water		02-Oct-2023 09:05	04-Oct-2023 09:10	☐
HS23100159-04	50WW23_100223	Water		02-Oct-2023 09:55	04-Oct-2023 09:10	☐
HS23100159-05	50WW29_100223	Water		02-Oct-2023 10:40	04-Oct-2023 09:10	☐
HS23100159-06	50WW05_100223	Water		02-Oct-2023 11:25	04-Oct-2023 09:10	☐
HS23100159-07	50WW15_100223	Water		02-Oct-2023 12:10	04-Oct-2023 09:10	☐
HS23100159-08	50WW16_100223	Water		02-Oct-2023 12:50	04-Oct-2023 09:10	☐
HS23100159-09	50WW18_100223	Water		02-Oct-2023 13:35	04-Oct-2023 09:10	☐
HS23100159-10	50WW14_100323	Water		03-Oct-2023 07:40	04-Oct-2023 09:10	☐
HS23100159-11	50WW13_100323	Water		03-Oct-2023 08:25	04-Oct-2023 09:10	☐
HS23100159-12	50WW13_100323_a	Water		03-Oct-2023 08:25	04-Oct-2023 09:10	☐
HS23100159-13	50WW11_100323	Water		03-Oct-2023 09:15	04-Oct-2023 09:10	☐
HS23100159-14	50WW11_100323_a	Water		03-Oct-2023 09:15	04-Oct-2023 09:10	☐
HS23100159-15	50WW06_100323	Water		03-Oct-2023 10:10	04-Oct-2023 09:10	☐
HS23100159-16	50WW12_100323	Water		03-Oct-2023 10:55	04-Oct-2023 09:10	☐
HS23100159-17	Trip Blank	Water	CG-071023-907	03-Oct-2023 00:00	04-Oct-2023 09:10	☐

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP Site 50
Work Order: HS23100159

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS High Res Lab Houston, TX. Final report attached
- The analysis for Carbon dioxide was subcontracted to Eurofins Environmental Testing America l in Lancaster, PA . Final report attached

GC Semivolatiles by Method RSK-175

Batch ID: R448812

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

GCMS Volatiles by Method SW8260

Batch ID: R448564

Sample ID: 50WW06_100323 (HS23100159-15)

- 1,4_Dichlorobenzene (IS) failed recovery limits. compounds reported are not affected by this IS. Confirmed by re-analysis.

Sample ID: 50WW12_100323 (HS23100159-16)

- 1,4_Dichlorobenzene (IS) failed recovery limits. compounds reported are not affected by this IS. Confirmed by re-analysis.

Sample ID: 50WW14_100323 (HS23100159-10)

- 1,4_Dichlorobenzene (IS) failed recovery limits. compounds reported are not affected by this IS. Confirmed by re-analysis.

Sample ID: 50WW16_100223 (HS23100159-08)

- 1,4_Dichlorobenzene (IS) failed recovery limits. compounds reported are not affected by this IS. Confirmed by re-analysis.

Batch ID: R448800

Sample ID: HS23100355-09MS

- MS and MSD are for an unrelated sample

WetChemistry by Method SM5310B

Batch ID: R448844

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

WetChemistry by Method SW9056

Batch ID: R448193

Sample ID: 50WW13_100323 (HS23100159-11MS)

- The MS and/or MSD recovery was outside of the control limits; however, the result in the parent sample is greater than 4x the spike amount. (Chloride,Sulfate)

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW09_100223
Collection Date: 02-Oct-2023 07:40

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 19:46
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 19:46
cis-1,2-Dichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 19:46
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 19:46
Trichloroethene	**14**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 19:46
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 19:46
Surr: 1,2-Dichloroethane-d4	*83.3*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 19:46*
Surr: 4-Bromofluorobenzene	*87.2*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 19:46*
Surr: Dibromofluoromethane	*81.4*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 19:46*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 19:46*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW08_100223
Collection Date: 02-Oct-2023 08:20

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1-Dichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
1,2-Dichloroethane	**1.1**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
cis-1,2-Dichloroethene	**77**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
Tetrachloroethene	**1.4**		**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
Trichloroethene	**610**		**4.0**	**10**	**20**	**ug/L**	20	11-Oct-2023 16:30
Vinyl chloride	**0.56**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
Surr: 1,2-Dichloroethane-d4	*85.0*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 18:17*
Surr: 1,2-Dichloroethane-d4	*85.9*			**0**	*81-118*	*%REC*	*20*	*11-Oct-2023 16:30*
Surr: 4-Bromofluorobenzene	*90.1*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 18:17*
Surr: 4-Bromofluorobenzene	*87.9*			**0**	*85-114*	*%REC*	*20*	*11-Oct-2023 16:30*
Surr: Dibromofluoromethane	*84.5*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 18:17*
Surr: Dibromofluoromethane	*86.6*			**0**	*80-119*	*%REC*	*20*	*11-Oct-2023 16:30*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 18:17*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*20*	*11-Oct-2023 16:30*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)	**Method:NA**							Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW22_100223
Collection Date: 02-Oct-2023 09:05

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 17:54
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
Surr: 1,2-Dichloroethane-d4	*83.0*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 17:54*
Surr: 4-Bromofluorobenzene	*86.7*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 17:54*
Surr: Dibromofluoromethane	*84.9*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 17:54*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 17:54*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW23_100223
Collection Date: 02-Oct-2023 09:55

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 20:08
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
Surr: 1,2-Dichloroethane-d4	*84.6*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 20:08*
Surr: 4-Bromofluorobenzene	*88.4*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 20:08*
Surr: Dibromofluoromethane	*83.7*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 20:08*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 20:08*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW29_100223
Collection Date: 02-Oct-2023 10:40

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 20:31
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
Surr: 1,2-Dichloroethane-d4	*84.2*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 20:31*
Surr: 4-Bromofluorobenzene	*88.5*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 20:31*
Surr: Dibromofluoromethane	*83.5*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 20:31*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 20:31*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW05_100223
Collection Date: 02-Oct-2023 11:25

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-06
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**2.6**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:45
1,2-Dichloroethane	**0.93**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:45
cis-1,2-Dichloroethene	**69**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:45
Tetrachloroethene	**0.89**	J	**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:45
Trichloroethene	**180**		**1.0**	**2.5**	**5.0**	**ug/L**	5	11-Oct-2023 16:52
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:45
Surr: 1,2-Dichloroethane-d4	*83.4*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 22:45*
Surr: 1,2-Dichloroethane-d4	*85.3*			**0**	*81-118*	*%REC*	*5*	*11-Oct-2023 16:52*
Surr: 4-Bromofluorobenzene	*87.4*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 22:45*
Surr: 4-Bromofluorobenzene	*86.5*			**0**	*85-114*	*%REC*	*5*	*11-Oct-2023 16:52*
Surr: Dibromofluoromethane	*86.0*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 22:45*
Surr: Dibromofluoromethane	*86.7*			**0**	*80-119*	*%REC*	*5*	*11-Oct-2023 16:52*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 22:45*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*5*	*11-Oct-2023 16:52*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW15_100223
Collection Date: 02-Oct-2023 12:10

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-07
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:53
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:53
cis-1,2-Dichloroethene	**3.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 20:53
Tetrachloroethene	**1.1**		**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 20:53
Trichloroethene	**6.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 20:53
Vinyl chloride	**0.63**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 20:53
Surr: 1,2-Dichloroethane-d4	*85.0*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 20:53*
Surr: 4-Bromofluorobenzene	*89.0*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 20:53*
Surr: Dibromofluoromethane	*86.7*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 20:53*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 20:53*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW16_100223
Collection Date: 02-Oct-2023 12:50

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-08
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 21:16
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
Surr: 1,2-Dichloroethane-d4	*84.4*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 21:16*
Surr: 4-Bromofluorobenzene	*86.7*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 21:16*
Surr: Dibromofluoromethane	*87.5*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 21:16*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 21:16*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW18_100223
Collection Date: 02-Oct-2023 13:35

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 21:38
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
Surr: 1,2-Dichloroethane-d4	*85.6*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 21:38*
Surr: 4-Bromofluorobenzene	*87.7*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 21:38*
Surr: Dibromofluoromethane	*83.3*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 21:38*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 21:38*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW14_100323
Collection Date: 03-Oct-2023 07:40

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-10
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:00
1,2-Dichloroethane	**0.74**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:00
cis-1,2-Dichloroethene	**4.6**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:00
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 22:00
Trichloroethene	**67**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:00
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:00
Surr: 1,2-Dichloroethane-d4	*87.7*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 22:00*
Surr: 4-Bromofluorobenzene	*87.7*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 22:00*
Surr: Dibromofluoromethane	*84.9*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 22:00*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 22:00*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 09:31
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 09:31
Methane	**0.00540**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	10-Oct-2023 09:31
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**1.22**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 05:53
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**408**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 18:20
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 18:14
Sulfate	**424**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 18:20
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW13_100323
Collection Date: 03-Oct-2023 08:25

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-11
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**18**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:30
1,2-Dichloroethane	**42**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:30
cis-1,2-Dichloroethene	**430**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:14
Tetrachloroethene	**12**		**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:30
Trichloroethene	**7,100**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:14
Vinyl chloride	**3.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:30
Surr: 1,2-Dichloroethane-d4	*83.7*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 23:30*
Surr: 1,2-Dichloroethane-d4	*84.8*			**0**	*81-118*	*%REC*	*50*	*11-Oct-2023 17:14*
Surr: 4-Bromofluorobenzene	*89.3*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 23:30*
Surr: 4-Bromofluorobenzene	*85.3*			**0**	*85-114*	*%REC*	*50*	*11-Oct-2023 17:14*
Surr: Dibromofluoromethane	*85.4*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 23:30*
Surr: Dibromofluoromethane	*85.1*			**0**	*80-119*	*%REC*	*50*	*11-Oct-2023 17:14*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 23:30*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*50*	*11-Oct-2023 17:14*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 09:40
Ethene	**0.000630**	J	**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	10-Oct-2023 09:40
Methane	**0.0256**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	10-Oct-2023 09:40
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**2.32**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 06:07
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**277**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 18:43
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 18:26
Sulfate	**338**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 18:43
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW13_100323_a
Collection Date: 03-Oct-2023 08:25

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-12
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**18**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:52
1,2-Dichloroethane	**43**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:52
cis-1,2-Dichloroethene	**410**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:37
Tetrachloroethene	**14**		**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:52
Trichloroethene	**7,700**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:37
Vinyl chloride	**3.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:52
Surr: 1,2-Dichloroethane-d4	*82.7*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 23:52*
Surr: 1,2-Dichloroethane-d4	*86.3*			**0**	*81-118*	*%REC*	*50*	*11-Oct-2023 17:37*
Surr: 4-Bromofluorobenzene	*86.2*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 23:52*
Surr: 4-Bromofluorobenzene	*85.8*			**0**	*85-114*	*%REC*	*50*	*11-Oct-2023 17:37*
Surr: Dibromofluoromethane	*83.6*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 23:52*
Surr: Dibromofluoromethane	*82.5*			**0**	*80-119*	*%REC*	*50*	*11-Oct-2023 17:37*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 23:52*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*50*	*11-Oct-2023 17:37*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	**0.00104**		**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	10-Oct-2023 09:48
Ethene	**0.000666**	J	**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	10-Oct-2023 09:48
Methane	**0.0276**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	10-Oct-2023 09:48
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**2.53**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 06:20
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**282**		**2.00**	**5.00**	**5.00**	**mg/L**	10	04-Oct-2023 18:55
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 18:49
Sulfate	**334**		**2.00**	**5.00**	**5.00**	**mg/L**	10	04-Oct-2023 18:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW11_100323
Collection Date: 03-Oct-2023 09:15

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-13
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**23**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
1,2-Dichloroethane	**20**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
cis-1,2-Dichloroethene	**59**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
Tetrachloroethene	**5.5**		**0.30**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
Trichloroethene	**2,400**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:59
Vinyl chloride	**1.8**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
Surr: 1,2-Dichloroethane-d4	*84.9*			**0**	*81-118*	*%REC*	*1*	*10-Oct-2023 00:37*
Surr: 1,2-Dichloroethane-d4	*84.8*			**0**	*81-118*	*%REC*	*50*	*11-Oct-2023 17:59*
Surr: 4-Bromofluorobenzene	*90.8*			**0**	*85-114*	*%REC*	*1*	*10-Oct-2023 00:37*
Surr: 4-Bromofluorobenzene	*87.8*			**0**	*85-114*	*%REC*	*50*	*11-Oct-2023 17:59*
Surr: Dibromofluoromethane	*87.9*			**0**	*80-119*	*%REC*	*1*	*10-Oct-2023 00:37*
Surr: Dibromofluoromethane	*87.1*			**0**	*80-119*	*%REC*	*50*	*11-Oct-2023 17:59*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*10-Oct-2023 00:37*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*50*	*11-Oct-2023 17:59*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 10:04
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 10:04
Methane	**1.33**		**0.00535**	**0.0250**	**0.0250**	**mg/L**	50	10-Oct-2023 11:13
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**1.88**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 06:33
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**287**		**2.00**	**5.00**	**5.00**	**mg/L**	10	04-Oct-2023 19:35
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 19:29
Sulfate	**406**		**2.00**	**5.00**	**5.00**	**mg/L**	10	04-Oct-2023 19:35
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW11_100323_a
Collection Date: 03-Oct-2023 09:15

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-14
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**23**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
1,2-Dichloroethane	**19**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
cis-1,2-Dichloroethene	**58**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
Tetrachloroethene	**5.3**		**0.30**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
Trichloroethene	**2,400**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 18:21
Vinyl chloride	**2.1**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
Surr: 1,2-Dichloroethane-d4	*85.3*			**0**	*81-118*	*%REC*	*1*	*10-Oct-2023 00:59*
Surr: 1,2-Dichloroethane-d4	*88.0*			**0**	*81-118*	*%REC*	*50*	*11-Oct-2023 18:21*
Surr: 4-Bromofluorobenzene	*86.8*			**0**	*85-114*	*%REC*	*1*	*10-Oct-2023 00:59*
Surr: 4-Bromofluorobenzene	*86.9*			**0**	*85-114*	*%REC*	*50*	*11-Oct-2023 18:21*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*10-Oct-2023 00:59*
Surr: Dibromofluoromethane	*86.9*			**0**	*80-119*	*%REC*	*50*	*11-Oct-2023 18:21*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*10-Oct-2023 00:59*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*50*	*11-Oct-2023 18:21*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 10:27
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 10:27
Methane	**1.36**		**0.00535**	**0.0250**	**0.0250**	**mg/L**	50	10-Oct-2023 11:27
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**2.06**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 06:46
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**282**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 19:47
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 19:41
Sulfate	**405**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 19:47
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW06_100323
Collection Date: 03-Oct-2023 10:10

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-15
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:23
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:23
cis-1,2-Dichloroethene	**0.70**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:23
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 22:23
Trichloroethene	**15**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:23
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:23
Surr: 1,2-Dichloroethane-d4	*83.3*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 22:23*
Surr: 4-Bromofluorobenzene	*85.8*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 22:23*
Surr: Dibromofluoromethane	*80.8*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 22:23*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 22:23*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 10:40
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 10:40
Methane	**0.216**		**0.00107**	**0.00500**	**0.00500**	**mg/L**	10	10-Oct-2023 11:40
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**3.27**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 07:00
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**53.6**		**0.200**	**0.500**	**0.500**	**mg/L**	1	04-Oct-2023 19:52
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 19:52
Sulfate	**21.3**		**0.200**	**0.500**	**0.500**	**mg/L**	1	04-Oct-2023 19:52
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW12_100323
Collection Date: 03-Oct-2023 10:55

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-16
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**5.0**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 01:44
1,2-Dichloroethane	**1.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 01:44
cis-1,2-Dichloroethene	**0.77**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 01:44
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Oct-2023 01:44
Trichloroethene	**160**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 01:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	10-Oct-2023 01:44
Surr: 1,2-Dichloroethane-d4	*86.7*			**0**	*81-118*	*%REC*	*1*	*10-Oct-2023 01:44*
Surr: 4-Bromofluorobenzene	*86.5*			**0**	*85-114*	*%REC*	*1*	*10-Oct-2023 01:44*
Surr: Dibromofluoromethane	*86.7*			**0**	*80-119*	*%REC*	*1*	*10-Oct-2023 01:44*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*10-Oct-2023 01:44*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 10:53
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 10:53
Methane	**8.89**		**0.0535**	**0.250**	**0.250**	**mg/L**	500	10-Oct-2023 11:50
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**1.36**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 07:40
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,140**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 20:10
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 20:04
Sulfate	**604**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 20:10
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: Trip Blank
Collection Date: 03-Oct-2023 00:00

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-17
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 17:32
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
Surr: 1,2-Dichloroethane-d4	*83.3*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 17:32*
Surr: 4-Bromofluorobenzene	*88.2*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 17:32*
Surr: Dibromofluoromethane	*85.7*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 17:32*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 17:32*

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

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R448193 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			04 Oct 2023 18:20	20
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			04 Oct 2023 18:14	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			04 Oct 2023 18:43	20
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			04 Oct 2023 18:26	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			04 Oct 2023 18:55	10
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			04 Oct 2023 18:49	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			04 Oct 2023 19:35	10
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			04 Oct 2023 19:29	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			04 Oct 2023 19:47	20
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			04 Oct 2023 19:41	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			04 Oct 2023 19:52	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			04 Oct 2023 20:10	20
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			04 Oct 2023 20:04	1
Batch ID: R448564 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS23100159-01	50WW09_100223	02 Oct 2023 07:40			09 Oct 2023 19:46	1
HS23100159-02	50WW08_100223	02 Oct 2023 08:20			09 Oct 2023 18:17	1
HS23100159-03	50WW22_100223	02 Oct 2023 09:05			09 Oct 2023 17:54	1
HS23100159-04	50WW23_100223	02 Oct 2023 09:55			09 Oct 2023 20:08	1
HS23100159-05	50WW29_100223	02 Oct 2023 10:40			09 Oct 2023 20:31	1
HS23100159-06	50WW05_100223	02 Oct 2023 11:25			09 Oct 2023 22:45	1
HS23100159-07	50WW15_100223	02 Oct 2023 12:10			09 Oct 2023 20:53	1
HS23100159-08	50WW16_100223	02 Oct 2023 12:50			09 Oct 2023 21:16	1
HS23100159-09	50WW18_100223	02 Oct 2023 13:35			09 Oct 2023 21:38	1
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			09 Oct 2023 22:00	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			09 Oct 2023 23:30	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			09 Oct 2023 23:52	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			10 Oct 2023 00:37	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			10 Oct 2023 00:59	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			09 Oct 2023 22:23	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			10 Oct 2023 01:44	1
HS23100159-17	Trip Blank	03 Oct 2023 00:00			09 Oct 2023 17:32	1
Batch ID: R448800 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS23100159-02	50WW08_100223	02 Oct 2023 08:20			11 Oct 2023 16:30	20
HS23100159-06	50WW05_100223	02 Oct 2023 11:25			11 Oct 2023 16:52	5
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			11 Oct 2023 17:14	50
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			11 Oct 2023 17:37	50
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			11 Oct 2023 17:59	50
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			11 Oct 2023 18:21	50

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R448812 (1)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Water	
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			10 Oct 2023 09:31	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			10 Oct 2023 09:40	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			10 Oct 2023 09:48	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			10 Oct 2023 11:13	50
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			10 Oct 2023 10:04	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			10 Oct 2023 11:27	50
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			10 Oct 2023 10:27	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			10 Oct 2023 11:40	10
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			10 Oct 2023 10:40	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			10 Oct 2023 11:50	500
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			10 Oct 2023 10:53	1
Batch ID: R448844 (0)	**Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011				**Matrix:** Water	
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			12 Oct 2023 05:53	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			12 Oct 2023 06:07	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			12 Oct 2023 06:20	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			12 Oct 2023 06:33	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			12 Oct 2023 06:46	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			12 Oct 2023 07:00	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			12 Oct 2023 07:40	1
Batch ID: R448920 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS23100159-01	50WW09_100223	02 Oct 2023 07:40			12 Oct 2023 15:22	1
HS23100159-02	50WW08_100223	02 Oct 2023 08:20			12 Oct 2023 15:22	1
HS23100159-03	50WW22_100223	02 Oct 2023 09:05			12 Oct 2023 15:22	1
HS23100159-04	50WW23_100223	02 Oct 2023 09:55			12 Oct 2023 15:22	1
HS23100159-05	50WW29_100223	02 Oct 2023 10:40			12 Oct 2023 15:22	1
HS23100159-06	50WW05_100223	02 Oct 2023 11:25			12 Oct 2023 15:22	1
HS23100159-07	50WW15_100223	02 Oct 2023 12:10			12 Oct 2023 15:22	1
HS23100159-08	50WW16_100223	02 Oct 2023 12:50			12 Oct 2023 15:22	1
HS23100159-09	50WW18_100223	02 Oct 2023 13:35			12 Oct 2023 15:22	1
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			12 Oct 2023 15:22	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			12 Oct 2023 15:22	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			12 Oct 2023 15:22	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			12 Oct 2023 15:22	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			12 Oct 2023 15:22	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			12 Oct 2023 15:22	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			12 Oct 2023 15:22	1

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R449277 (0)	**Test Name :** SUBCONTRACT ANALYSIS - RSK				**Matrix:** Water	
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			16 Oct 2023 20:59	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			16 Oct 2023 20:59	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			16 Oct 2023 20:59	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			16 Oct 2023 20:59	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			16 Oct 2023 20:59	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			16 Oct 2023 20:59	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			16 Oct 2023 20:59	1

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448812 (1) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-231010** Units: **mg/L** Analysis Date: **10-Oct-2023 08:24**
Client ID: Run ID: **FID-4_448812** SeqNo: **7602169** 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-231010** Units: **mg/L** Analysis Date: **10-Oct-2023 08:40**
Client ID: Run ID: **FID-4_448812** SeqNo: **7602170** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0198	0.00100	0.01804	0	110	75 - 125				
Ethene	0.0172	0.00100	0.0168	0	102	75 - 125				
Methane	0.00772	0.000500	0.009647	0	80.0	75 - 125				

LCSD Sample ID: **LCSD-231010** Units: **mg/L** Analysis Date: **10-Oct-2023 08:56**
Client ID: Run ID: **FID-4_448812** SeqNo: **7602171** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0201	0.00100	0.01804	0	112	75 - 125	0.01981	1.57	30	
Ethene	0.0177	0.00100	0.0168	0	106	75 - 125	0.01715	3.38	30	
Methane	0.00796	0.000500	0.009647	0	82.5	75 - 125	0.007718	3.09	30	

DUP Sample ID: **HS23100159-11DUP** Units: **mg/L** Analysis Date: **10-Oct-2023 11:02**
Client ID: **50WW13_100323** Run ID: **FID-4_448812** SeqNo: **7602180** 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					0	0	30	U
Ethene	0.000604	0.00100					0.0006300	0	30	J
Methane	0.0251	0.000500					0.02562	2.14	30	

The following samples were analyzed in this batch:

HS23100159-10	HS23100159-11	HS23100159-12	HS23100159-13
HS23100159-14	HS23100159-15	HS23100159-16	

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448564 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-231009** Units: **ug/L** Analysis Date: **09-Oct-2023 17:09**
Client ID: Run ID: **VOA9_448564** SeqNo: **7596765** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*40.92*	*1.0*	*50*	*0*	*81.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*44.41*	*1.0*	*50*	*0*	*88.8*	*85 - 114*				
Surr: Dibromofluoromethane	*41.18*	*1.0*	*50*	*0*	*82.4*	*80 - 119*				
Surr: Toluene-d8	*55.21*	*1.0*	*50*	*0*	*110*	*89 - 112*				

LCS Sample ID: **VLCSW-231009** Units: **ug/L** Analysis Date: **09-Oct-2023 16:25**
Client ID: Run ID: **VOA9_448564** SeqNo: **7596764** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	21.66	1.0	20	0	108	71 - 131				
1,2-Dichloroethane	19.56	1.0	20	0	97.8	73 - 128				
cis-1,2-Dichloroethene	20.01	1.0	20	0	100	78 - 123				
Tetrachloroethene	21.77	1.0	20	0	109	74 - 129				
Trichloroethene	19.99	1.0	20	0	100.0	79 - 123				
Vinyl chloride	21.21	1.0	20	0	106	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.91*	*1.0*	*50*	*0*	*99.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*46.13*	*1.0*	*50*	*0*	*92.3*	*85 - 114*				
Surr: Dibromofluoromethane	*53.02*	*1.0*	*50*	*0*	*106*	*80 - 119*				
Surr: Toluene-d8	*50.08*	*1.0*	*50*	*0*	*100*	*89 - 112*				

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448564 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS23100159-03MS** Units: **ug/L** Analysis Date: **09-Oct-2023 18:39**
Client ID: **50WW22_100223** Run ID: **VOA9_448564** SeqNo: **7596769** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	20.81	1.0	20	0	104	71 - 131				
1,2-Dichloroethane	17.49	1.0	20	0	87.4	73 - 128				
cis-1,2-Dichloroethene	17.77	1.0	20	0	88.9	78 - 123				
Tetrachloroethene	24.69	1.0	20	0	123	74 - 129				
Trichloroethene	22.72	1.0	20	0	114	79 - 123				
Vinyl chloride	19.28	1.0	20	0	96.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*41.21*	*1.0*	*50*	*0*	*82.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.64*	*1.0*	*50*	*0*	*95.3*	*85 - 114*				
Surr: Dibromofluoromethane	*43.5*	*1.0*	*50*	*0*	*87.0*	*80 - 119*				
Surr: Toluene-d8	*53.82*	*1.0*	*50*	*0*	*108*	*89 - 112*				

MSD Sample ID: **HS23100159-03MSD** Units: **ug/L** Analysis Date: **09-Oct-2023 19:01**
Client ID: **50WW22_100223** Run ID: **VOA9_448564** SeqNo: **7596770** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	21.01	1.0	20	0	105	71 - 131	20.81	0.933	20	
1,2-Dichloroethane	18.21	1.0	20	0	91.0	73 - 128	17.49	4.03	20	
cis-1,2-Dichloroethene	17.4	1.0	20	0	87.0	78 - 123	17.77	2.09	20	
Tetrachloroethene	22.65	1.0	20	0	113	74 - 129	24.69	8.61	20	
Trichloroethene	19.48	1.0	20	0	97.4	79 - 123	22.72	15.3	20	
Vinyl chloride	19.83	1.0	20	0	99.1	58 - 137	19.28	2.82	20	
Surr: 1,2-Dichloroethane-d4	*42.6*	*1.0*	*50*	*0*	*85.2*	*81 - 118*	*41.21*	*3.32*	*20*	
Surr: 4-Bromofluorobenzene	*46.81*	*1.0*	*50*	*0*	*93.6*	*85 - 114*	*47.64*	*1.77*	*20*	
Surr: Dibromofluoromethane	*44.95*	*1.0*	*50*	*0*	*89.9*	*80 - 119*	*43.5*	*3.28*	*20*	
Surr: Toluene-d8	*51.85*	*1.0*	*50*	*0*	*104*	*89 - 112*	*53.82*	*3.74*	*20*	

The following samples were analyzed in this batch:

HS23100159-01	HS23100159-02	HS23100159-03	HS23100159-04
HS23100159-05	HS23100159-06	HS23100159-07	HS23100159-08
HS23100159-09	HS23100159-10	HS23100159-11	HS23100159-12
HS23100159-13	HS23100159-14	HS23100159-15	HS23100159-16
HS23100159-17			

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448800 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-231010** Units: **ug/L** Analysis Date: **11-Oct-2023 13:08**
Client ID: Run ID: **VOA9_448800** SeqNo: **7601723** 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
Surr: 1,2-Dichloroethane-d4	*42.99*	*1.0*	*50*	*0*	*86.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*44.17*	*1.0*	*50*	*0*	*88.3*	*85 - 114*				
Surr: Dibromofluoromethane	*42.06*	*1.0*	*50*	*0*	*84.1*	*80 - 119*				
Surr: Toluene-d8	*55.88*	*1.0*	*50*	*0*	*112*	*89 - 112*				

LCS Sample ID: **VLCSW-231010** Units: **ug/L** Analysis Date: **11-Oct-2023 12:24**
Client ID: Run ID: **VOA9_448800** SeqNo: **7601722** 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	18.89	1.0	20	0	94.5	78 - 123				
Trichloroethene	18.46	1.0	20	0	92.3	79 - 123				
Surr: 1,2-Dichloroethane-d4	*55.08*	*1.0*	*50*	*0*	*110*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*45.38*	*1.0*	*50*	*0*	*90.8*	*85 - 114*				
Surr: Dibromofluoromethane	*54.86*	*1.0*	*50*	*0*	*110*	*80 - 119*				
Surr: Toluene-d8	*53.33*	*1.0*	*50*	*0*	*107*	*89 - 112*				

MS Sample ID: **HS23100355-09MS** Units: **ug/L** Analysis Date: **11-Oct-2023 15:45**
Client ID: Run ID: **VOA9_448800** SeqNo: **7601729** 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	129.4	1.0	20	72.93	282	78 - 123				S
Trichloroethene	23.66	1.0	20	2.504	106	79 - 123				
Surr: 1,2-Dichloroethane-d4	*42.26*	*1.0*	*50*	*0*	*84.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.12*	*1.0*	*50*	*0*	*94.2*	*85 - 114*				
Surr: Dibromofluoromethane	*44.7*	*1.0*	*50*	*0*	*89.4*	*80 - 119*				
Surr: Toluene-d8	*54.54*	*1.0*	*50*	*0*	*109*	*89 - 112*				

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448800 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MSD Sample ID: **HS23100355-09MSD** Units: **ug/L** Analysis Date: **11-Oct-2023 16:07**
Client ID: Run ID: **VOA9_448800** SeqNo: **7601730** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	101.9	1.0	20	72.93	145	78 - 123	129.4	23.8	20	SR
Trichloroethene	21.33	1.0	20	2.504	94.1	79 - 123	23.66	10.3	20	
Surr: 1,2-Dichloroethane-d4	*42.67*	*1.0*	*50*	*0*	*85.3*	*81 - 118*	*42.26*	*0.972*	*20*	
Surr: 4-Bromofluorobenzene	*46.5*	*1.0*	*50*	*0*	*93.0*	*85 - 114*	*47.12*	*1.31*	*20*	
Surr: Dibromofluoromethane	*44.29*	*1.0*	*50*	*0*	*88.6*	*80 - 119*	*44.7*	*0.915*	*20*	
Surr: Toluene-d8	*54.66*	*1.0*	*50*	*0*	*109*	*89 - 112*	*54.54*	*0.218*	*20*	

The following samples were analyzed in this batch: HS23100159-02 HS23100159-06 HS23100159-11 HS23100159-12 HS23100159-13 HS23100159-14

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448193 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **04-Oct-2023 17:57**
Client ID: Run ID: **ICS-Integrion_448193** SeqNo: **7585965** 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
Nitrogen, Nitrate (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **04-Oct-2023 18:09**
Client ID: Run ID: **ICS-Integrion_448193** SeqNo: **7585966** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.66	0.500	20	0	103	80 - 120				
Nitrogen, Nitrate (As N)	3.849	0.100	4	0	96.2	80 - 120				
Sulfate	19.27	0.500	20	0	96.3	80 - 120				

MS Sample ID: **HS23100159-11MS** Units: **mg/L** Analysis Date: **04-Oct-2023 18:32**
Client ID: **50WW13_100323** Run ID: **ICS-Integrion_448193** SeqNo: **7585970** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	282.8	0.500	10	284.3	-15.0	80 - 120				SEO
Nitrogen, Nitrate (As N)	1.808	0.100	2	0	90.4	80 - 120				
Sulfate	332.7	0.500	10	329.5	32.5	80 - 120				SEO

MSD Sample ID: **HS23100159-11MSD** Units: **mg/L** Analysis Date: **04-Oct-2023 18:37**
Client ID: **50WW13_100323** Run ID: **ICS-Integrion_448193** SeqNo: **7585971** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	283.2	0.500	10	284.3	-11.4	80 - 120	282.8	0.129	20	SEO
Nitrogen, Nitrate (As N)	1.812	0.100	2	0	90.6	80 - 120	1.808	0.232	20	
Sulfate	332.8	0.500	10	329.5	33.5	80 - 120	332.7	0.0297	20	SEO

The following samples were analyzed in this batch:

HS23100159-10	HS23100159-11	HS23100159-12	HS23100159-13
HS23100159-14	HS23100159-15	HS23100159-16	

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448844 (0) **Instrument: TOC_04** **Method: TOTAL ORGANIC CARBON - SM5310B-2011**

MBLK Sample ID: **MBLK-10112023** Units: **mg/L** Analysis Date: **12-Oct-2023 04:57**
Client ID: Run ID: **TOC_04_448844** SeqNo: **7602858** 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-10112023** Units: **mg/L** Analysis Date: **12-Oct-2023 05:11**
Client ID: Run ID: **TOC_04_448844** SeqNo: **7602859** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.49	1.00	10	0	105	85 - 115				

LCSD Sample ID: **LCSD-10112023** Units: **mg/L** Analysis Date: **12-Oct-2023 05:26**
Client ID: Run ID: **TOC_04_448844** SeqNo: **7602860** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.59	1.00	10	0	106	85 - 115	10.49	0.949	20	

MS Sample ID: **HS23100291-02MS** Units: **mg/L** Analysis Date: **12-Oct-2023 08:20**
Client ID: Run ID: **TOC_04_448844** SeqNo: **7602875** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.57	1.00	10	1.14	94.3	80 - 120				

The following samples were analyzed in this batch: HS23100159-10 HS23100159-11 HS23100159-12 HS23100159-13 HS23100159-14 HS23100159-15 HS23100159-16

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: **HS23100159**

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
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

ALS Houston, US Date: 17-Oct-23

Sample Receipt Checklist

Work Order ID: HS23100159 **Date/Time Received:** **04-Oct-2023 09:10**

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

Completed By: */S/ Belinda Gomez* 04-Oct-2023 11:28 **Reviewed by:** */S/ James Guin* 04-Oct-2023 15:55

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 ☐	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):	3.8uc/3.7c	ir31
Cooler(s)/Kit(s):	49315	
Date/Time sample(s) sent to storage:	10/4/23 1129	

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:

bhate

01331396

Page: ____ of ____

Project/Phase No: JVPCIBH.0001

COC Number(1): ____

LIMS Number: ____

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 50

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions by SW9056	CO2 by RSK 175	Perchlorate by SW 6850				Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
SDWW09_100223	2 OCT 2023	0740	-	N		WG	4	X					X							
SDWW08_100223	2 OCT 2023	0820	-	N		WG	4	X					X							
SDWW22_100223	2 OCT 2023	0905	-	N		WG	4	X					X							
SDWW22_100223_MS	2 OCT 2023	0905		MS		WG	4	X					X							
SDWW22_100223_MSD	2 OCT 2023	0905		SD		WG	4	X					X							
SDWW23_100223	2 OCT 2023	0955	-	N		WG	4	X					X							
SDWW29_100223	2 OCT 2023	1040	-	N		WG	4	X					X							
SDWW05_100223	2 OCT 2023	1125	-	N		WG	4	X					X							
SDWW15_100223	2 OCT 2023	1210	-	N		WG	4	X					X							
SDWW16_100223	2 OCT 2023	1250	-	N		WG	4	X					X							
SDWW18_100223	2 OCT 2023	1335	-	N		WG	4	X					X							

Sample Analysis Requested (5) | Quality Assurance Samples (6)

HS23100159

Bhate Environmental Associates, Inc.
LHAAP

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	10/3/23	1330	1. [signature]	10-4-23	0916
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: ____ Shipped ____ No.:

Method of Shipment: ____

Fed Ex ____ Airbill Number: ____

Analytical Lab: ALS 10450 Stanciff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: Dane Wacasey Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

cooler# 49315 3.8°C IR#1 CF-0.1

bhate

01331397

Page: _____ of _____

Project/Phase No: JVPCIBH.0001

COC Number(1): _____

LIMS Number: _____

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 50

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code [2]	Sample Number [3]	Sample Matrix [4]	Number of containers	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions by SW9056	CO2 by RSK 175	Perchlorate by SW 6850				Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
SDwwl4_100323	03 OCT 2023	0740	-	N		wG	13	X	X	X	X	X	X							
SDwwl3_100323	03 OCT 2023	0825	-	N		wG	13	X	X	X	X	X	X							
SDwwl3_100323_e	03 OCT 2023	0825	-	FD		wG	13	X	X	X	X	X	X							
SDwwll_100323	03 OCT 2023	0915		N		wG	13	X	X	X	X	X	X							
SDwwll_100323_e	03 OCT 2023	0915		FD		wG	13	X	X	X	X	X	X							
SDwwl6_100323	03 OCT 2023	1010	-	N		wG	13	X	X	X	X	X	X							
SDwwl2_100323	03 OCT 2023	1055	-	N		wG	13	X	X	X	X	X	X							
TRIP BLANK	03 OCT 2023		-	TB		W	2	X												
			-																	
			-																	
			-																	

Sample Analysis Requested [5] | Quality Assurance Samples [6]

HS23100159

Bhate Environmental Associates, Inc.
LHAAP

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished by (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	10/3/23	1330	1.	10.4.23	0830
2.			2.		
3.			3.		

Sample Delivery I

Delivered Directly to Lab: _____ S No.:

Method of Shipment: _____

Fed Ex Airbill Number: _____

Analytical Lab: ALS 10450 Stanciff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: Dane Wacasey Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

3.2° 10.3

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

49315

CUSTODY SEAL

Date: 10/3/23 Time: 1330
Name: Scott Beesinger
Company: BTMTG

Seal Broken By:
Date: 10/4/23

49315 OCT 3 4 2023



ALS

49315

ORIGIN ID:SGRA (903) 930-6193
ATT: SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE PMB202

MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 13SEP23
ACTWGT: 1.00 LB MAN
CAD: 6221247/CAFE3751
DIMS: 19x16x13 IN

TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099
(281) 530-5866

917
B03
A

REF: LHAAP-B095494-CG

RMA:

FedEx Express

FedEx
TRK# 0221 6862 6796 5179

WED - 04 OCT AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

October 11, 2023 Service Request No:E2300897

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

Laboratory Results for: HS23100159

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory October 04, 2023
For your reference, these analyses have been assigned our service request number **E2300897.**

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.:**	E2300897
Project:	HS23100159	**Date Received:**	10/04/23
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

Sixteen samples were received for analysis at ALS Environmental in Houston on 10/04/23.

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:

EQ2300488: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and 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:**E2300897

Project: HS23100159

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2300897-001	50WW09_100223	10/2/2023	0740
E2300897-002	50WW08_100223	10/2/2023	0820
E2300897-003	50WW22_100223	10/2/2023	0905
E2300897-004	50WW23_100223	10/2/2023	0955
E2300897-005	50WW29_100223	10/2/2023	1040
E2300897-006	50WW05_100223	10/2/2023	1125
E2300897-007	50WW15_100223	10/2/2023	1210
E2300897-008	50WW16_100223	10/2/2023	1250
E2300897-009	50WW18_100223	10/2/2023	1335
E2300897-010	50WW14_100323	10/3/2023	0740
E2300897-011	50WW13_100323	10/3/2023	0825
E2300897-012	50WW13_100323_a	10/3/2023	0825
E2300897-013	50WW11_100323	10/3/2023	0915
E2300897-014	50WW11_100323_a	10/3/2023	0915
E2300897-015	50WW06_100323	10/3/2023	1010
E2300897-016	50WW12_100323	10/3/2023	1055

Service Request Summary

01331403

18 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Folder #: **E2300897**
Client Name: ALS Environmental - US
Project Name: HS23100159
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: 10/04/23
Internal Due Date: 10/18/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23100159
EDD: BASIC_WQC_CASNo_LOD

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2300897-001	50WW09_100223	Water	10/02/23 0740	**IV**
E2300897-002	50WW08_100223	Water	10/02/23 0820	**IV**
E2300897-003	50WW22_100223	Water	10/02/23 0905	**IV**
E2300897-004	50WW23_100223	Water	10/02/23 0955	**IV**
E2300897-005	50WW29_100223	Water	10/02/23 1040	**IV**
E2300897-006	50WW05_100223	Water	10/02/23 1125	**IV**
E2300897-007	50WW15_100223	Water	10/02/23 1210	**IV**
E2300897-008	50WW16_100223	Water	10/02/23 1250	**IV**
E2300897-009	50WW18_100223	Water	10/02/23 1335	**IV**
E2300897-010	50WW14_100323	Water	10/03/23 0740	**IV**
E2300897-011	50WW13_100323	Water	10/03/23 0825	**IV**
E2300897-012	50WW13_100323_a	Water	10/03/23 0825	**IV**
E2300897-013	50WW11_100323	Water	10/03/23 0915	**IV**
E2300897-014	50WW11_100323_a	Water	10/03/23 0915	**IV**
E2300897-015	50WW06_100323	Water	10/03/23 1010	**IV**
E2300897-016	50WW12_100323	Water	10/03/23 1055	**IV**

Service Request Summary

01331404

18 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Folder #: **E2300897**
Client Name: ALS Environmental - US
Project Name: HS23100159
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: 10/04/23
Internal Due Date: 10/18/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23100159
EDD: BASIC_WQC_CASNo_LOD

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

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

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	L22-90	3/31/2024
Department of Defense	L23-358	5/31/2025
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
Oklahoma Department of Environmental Quality	2023-140	8/31/2024
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: Colorado **COC ID:** 23402

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:	HS23100159
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS23100159-01**	**50WW09_100223**	**Water**	**02 Oct 2023 07:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
2.	**HS23100159-02**	**50WW08_100223**	**Water**	**02 Oct 2023 08:20**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
3.	**HS23100159-03**	**50WW22_100223**	**Water**	**02 Oct 2023 09:05**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
4.	**HS23100159-04**	**50WW23_100223**	**Water**	**02 Oct 2023 09:55**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
5.	**HS23100159-05**	**50WW29_100223**	**Water**	**02 Oct 2023 10:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
6.	**HS23100159-06**	**50WW05_100223**	**Water**	**02 Oct 2023 11:25**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
7.	**HS23100159-07**	**50WW15_100223**	**Water**	**02 Oct 2023 12:10**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
8.	**HS23100159-08**	**50WW16_100223**	**Water**	**02 Oct 2023 12:50**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
9.	**HS23100159-09**	**50WW18_100223**	**Water**	**02 Oct 2023 13:35**

Subcontract Chain of Custody

SAMPLING STATE: Colorado **COC ID:** 23402

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
10.	**HS23100159-10**	**50WW14_100323**	**Water**	**03 Oct 2023 07:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
11.	**HS23100159-11**	**50WW13_100323**	**Water**	**03 Oct 2023 08:25**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
12.	**HS23100159-12**	**50WW13_100323-a**	**Water**	**03 Oct 2023 08:25**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
13.	**HS23100159-13**	**50WW11_100323**	**Water**	**03 Oct 2023 09:15**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
14.	**HS23100159-14**	**50WW11_100323-a**	**Water**	**03 Oct 2023 09:15**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
15.	**HS23100159-15**	**50WW06_100323**	**Water**	**03 Oct 2023 10:10**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
16.	**HS23100159-16**	**50WW12_100323**	**Water**	**03 Oct 2023 10:55**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 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: PG Date/Time:

Received By: Date/Time: 10-4-23 2044

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist H

Client/Project ALS

Thermometer ID IR1

Date/Time Received: 10-4-23 Initials: CY

Date/Time Logged in: 10-4-23 Initials CY

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?
—		10-4-23	2049	CY	1.5	☒
						☐
						☐
						☐

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:

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

01331415

Prep Run#: 427721 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 10/5/23 15:28

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2300894-015	MW-5	.01	6850/ClO4			Water	10mL	
2	E2300894-016	MW-14	.01	6850/ClO4			Water	10mL	
3	E2300897-001	50WW09_100223	.01	6850/ClO4 DOD			Water	10mL	
4	E2300897-002	50WW08_100223	.01	6850/ClO4 DOD			Water	10mL	
5	E2300897-003	50WW22_100223	.02	6850/ClO4 DOD			Water	10mL	
6	E2300897-004	50WW23_100223	.01	6850/ClO4 DOD			Water	10mL	
7	E2300897-005	50WW29_100223	.01	6850/ClO4 DOD			Water	10mL	
8	E2300897-006	50WW05_100223	.01	6850/ClO4 DOD			Water	10mL	
9	E2300897-007	50WW15_100223	.01	6850/ClO4 DOD			Water	10mL	
10	E2300897-008	50WW16_100223	.01	6850/ClO4 DOD			Water	10mL	
11	E2300897-009	50WW18_100223	.01	6850/ClO4 DOD			Water	10mL	
12	E2300897-010	50WW14_100323	.01	6850/ClO4 DOD			Water	10mL	
13	E2300897-011	50WW13_100323	.01	6850/ClO4 DOD			Water	10mL	
14	E2300897-012	50WW13_100323_a	.01	6850/ClO4 DOD			Water	10mL	
15	E2300897-013	50WW11_100323	.01	6850/ClO4 DOD			Water	10mL	
16	E2300897-014	50WW11_100323_a	.01	6850/ClO4 DOD			Water	10mL	
17	E2300897-015	50WW06_100323	.01	6850/ClO4 DOD			Water	10mL	
18	E2300897-016	50WW12_100323	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2300488-01	MB		6850/ClO4			Liquid	10mL	
20	EQ2300488-02	LCS		6850/ClO4			Liquid	10mL	
21	EQ2300488-03	DLCS		6850/ClO4			Liquid	10mL	
22	EQ2300488-04	50WW22_100223 MS	.02	6850/ClO4 DOD			Liquid	10mL	
23	EQ2300488-05	50WW22_100223 DMS	.02	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

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

EQ2300488-02	1.00µL	EQ2300488-02	1.00µL	EQ2300488-03	1.00µL	EQ2300488-03	1.00µL	EQ2300488-04	1.00µL	EQ2300488-05	1.00µL

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

E2300894-015	100.00µL	E2300894-016	100.00µL	E2300897-001	100.00µL	E2300897-002	100.00µL	E2300897-003	100.00µL	E2300897-004	100.00µL
E2300897-005	100.00µL	E2300897-006	100.00µL	E2300897-007	100.00µL	E2300897-008	100.00µL	E2300897-009	100.00µL	E2300897-010	100.00µL
E2300897-011	100.00µL	E2300897-012	100.00µL	E2300897-013	100.00µL	E2300897-014	100.00µL	E2300897-015	100.00µL	E2300897-016	100.00µL
EQ2300488-01	100.00µL	EQ2300488-01	100.00µL	EQ2300488-02	100.00µL	EQ2300488-02	100.00µL	EQ2300488-03	100.00µL	EQ2300488-03	100.00µL
EQ2300488-04	100.00µL	EQ2300488-05	100.00µL								

Preparation Information Benchsheet

01331416

Prep Run#: 427721 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 10/5/23 15:28

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 Luer-Lok Syringes	luer-lock syringes (228116)				

Preparation Steps

Step: Preparation
Started: 10/5/23 15:28
Finished: 10/5/23 17:00
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

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0740
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW09_100223	**Units:**	µg/L
Lab Code:	E2300897-001	**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	**0.194**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:14	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0820
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW08_100223	**Units:**	µg/L
Lab Code:	E2300897-002	**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	**62.9**		0.500	0.250	0.125	5	10/ 5/23	10/6/23 14:15	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0905
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	E2300897-003	**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	**0.337**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 11:58	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0955
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW23_100223	**Units:**	µg/L
Lab Code:	E2300897-004	**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	**0.159**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:03	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1040
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW29_100223	**Units:**	µg/L
Lab Code:	E2300897-005	**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	**0.252**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:09	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1125
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW05_100223	**Units:**	µg/L
Lab Code:	E2300897-006	**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	**0.273**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:25	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1210
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW15_100223	**Units:**	µg/L
Lab Code:	E2300897-007	**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	**0.161**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:36	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1250
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW16_100223	**Units:**	µg/L
Lab Code:	E2300897-008	**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	**0.174**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:41	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1335
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW18_100223	**Units:**	µg/L
Lab Code:	E2300897-009	**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	**0.237**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:47	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0740
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW14_100323	**Units:**	µg/L
Lab Code:	E2300897-010	**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	**0.274**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:52	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0825
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW13_100323	**Units:**	µg/L
Lab Code:	E2300897-011	**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	**4170**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:41	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0825
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW13_100323_a	**Units:**	µg/L
Lab Code:	E2300897-012	**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	**4270**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:47	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0915
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW11_100323	**Units:**	µg/L
Lab Code:	E2300897-013	**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	**4690**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:52	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0915
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW11_100323_a	**Units:**	µg/L
Lab Code:	E2300897-014	**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	**5110**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:58	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 1010
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW06_100323	**Units:**	µg/L
Lab Code:	E2300897-015	**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	**554**		5.00	2.50	1.25	50	10/ 5/23	10/6/23 14:03	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 1055
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW12_100323	**Units:**	µg/L
Lab Code:	E2300897-016	**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	**17900**		100	50.0	25.0	1000	10/ 5/23	10/6/23 14:09	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2300488-01	**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	10/ 5/23	10/6/23 11:35	427721	819653	

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

Client: ALS Environmental - US
Project: HS23100159
Sample Matrix: Water

Service Request: E2300897
Date Analyzed: 10/ 6/23

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: 427721

	Lab Control Sample EQ2300488-02			Duplicate Lab Control Sample EQ2300488-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0985	0.100	99	0.0984	0.100	98	84 - 119	<1	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.

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300488-02	**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	**0.0985**	J	0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 11:41	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300488-03	**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	**0.0984**	J	0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 11:47	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/2/23
Sample Matrix:	Water	**Date Received:**	10/4/23
		Date Analyzed:	10/ 6/23

Matrix Spike Summary

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

Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	E2300897-003	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		50WW22_100223MS				50WW22_100223DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2300488-04				EQ2300488-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.337	0.425	0.100	88	0.424	0.100	87	84 - 119	<1	15

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

Results flagged with a pound (#) indicate the control criteria is not applicable.

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

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0905
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	EQ2300488-04	**Basis:**	NA
Run Type:	Matrix Spike		

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	**0.425**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 14:26	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0905
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	EQ2300488-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

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	**0.424**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 14:31	427721	819653	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Jumoke Lawal
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston, Texas 77099

Generated 10/16/2023 9:22:40 AM

JOB DESCRIPTION

HS23100159

JOB NUMBER

410-145740-1

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

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



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10/16/2023 9:22:40 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.

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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: HS23100159

Job ID: 410-145740-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
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: HS23100159

Job ID: 410-145740-1

Job ID: 410-145740-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative
410-145740-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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 may be 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.

Receipt
The samples were received on 10/5/2023 10:15 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 1.1°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: HS23100159

Job ID: 410-145740-1

Client Sample ID: 50WW14_100323 — Lab Sample ID: 410-145740-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	51000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW13_100323 — Lab Sample ID: 410-145740-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	72000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW13_100323-a — Lab Sample ID: 410-145740-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	73000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW11_100323 — Lab Sample ID: 410-145740-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	54000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW11_100323-a — Lab Sample ID: 410-145740-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	53000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW06_100323 — Lab Sample ID: 410-145740-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	56000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW12_100323 — Lab Sample ID: 410-145740-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	56000		12000	2600	ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 50WW14_100323
Lab Sample ID: 410-145740-1
Date Collected: 10/03/23 07:40
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	51000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:23	1

Client Sample ID: 50WW13_100323
Lab Sample ID: 410-145740-2
Date Collected: 10/03/23 08:25
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	72000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:30	1

Client Sample ID: 50WW13_100323-a
Lab Sample ID: 410-145740-3
Date Collected: 10/03/23 08:25
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	73000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:38	1

Client Sample ID: 50WW11_100323
Lab Sample ID: 410-145740-4
Date Collected: 10/03/23 09:15
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	54000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:46	1

Client Sample ID: 50WW11_100323-a
Lab Sample ID: 410-145740-5
Date Collected: 10/03/23 09:15
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	53000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:54	1

Client Sample ID: 50WW06_100323
Lab Sample ID: 410-145740-6
Date Collected: 10/03/23 10:10
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	56000		12000	2600	ug/L		10/13/23 10:44	10/13/23 12:01	1

Client Sample ID: 50WW12_100323
Lab Sample ID: 410-145740-7
Date Collected: 10/03/23 10:55
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	56000		12000	2600	ug/L		10/13/23 10:44	10/13/23 12:09	1

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-430977/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 430924 — **Prep Batch: 430977**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	2600	U	12000	2600	ug/L		10/13/23 10:44	10/13/23 10:49	1

Lab Sample ID: LCS 410-430977/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 430924 — **Prep Batch: 430977**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon dioxide			35800	38200		ug/L		107	80 - 122		

QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS23100159

Job ID: 410-145740-1

GC VOA

Analysis Batch: 430924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145740-1	50WW14_100323	Total/NA	Water	RSK-175	430977
410-145740-2	50WW13_100323	Total/NA	Water	RSK-175	430977
410-145740-3	50WW13_100323-a	Total/NA	Water	RSK-175	430977
410-145740-4	50WW11_100323	Total/NA	Water	RSK-175	430977
410-145740-5	50WW11_100323-a	Total/NA	Water	RSK-175	430977
410-145740-6	50WW06_100323	Total/NA	Water	RSK-175	430977
410-145740-7	50WW12_100323	Total/NA	Water	RSK-175	430977
MB 410-430977/1-A	Method Blank	Total/NA	Water	RSK-175	430977
LCS 410-430977/2-A	Lab Control Sample	Total/NA	Water	RSK-175	430977

Prep Batch: 430977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145740-1	50WW14_100323	Total/NA	Water	RSK-175	
410-145740-2	50WW13_100323	Total/NA	Water	RSK-175	
410-145740-3	50WW13_100323-a	Total/NA	Water	RSK-175	
410-145740-4	50WW11_100323	Total/NA	Water	RSK-175	
410-145740-5	50WW11_100323-a	Total/NA	Water	RSK-175	
410-145740-6	50WW06_100323	Total/NA	Water	RSK-175	
410-145740-7	50WW12_100323	Total/NA	Water	RSK-175	
MB 410-430977/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-430977/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Client Sample ID: 50WW14_100323

Lab Sample ID: 410-145740-1

Date Collected: 10/03/23 07:40

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:23

Client Sample ID: 50WW13_100323

Lab Sample ID: 410-145740-2

Date Collected: 10/03/23 08:25

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:30

Client Sample ID: 50WW13_100323-a

Lab Sample ID: 410-145740-3

Date Collected: 10/03/23 08:25

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:38

Client Sample ID: 50WW11_100323

Lab Sample ID: 410-145740-4

Date Collected: 10/03/23 09:15

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:46

Client Sample ID: 50WW11_100323-a

Lab Sample ID: 410-145740-5

Date Collected: 10/03/23 09:15

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:54

Client Sample ID: 50WW06_100323

Lab Sample ID: 410-145740-6

Date Collected: 10/03/23 10:10

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 12:01

Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS23100159

Job ID: 410-145740-1

Client Sample ID: 50WW12_100323
Date Collected: 10/03/23 10:55
Date Received: 10/05/23 10:15

Lab Sample ID: 410-145740-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 12:09

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: HS23100159

Job ID: 410-145740-1

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: HS23100159

Job ID: 410-145740-1

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:

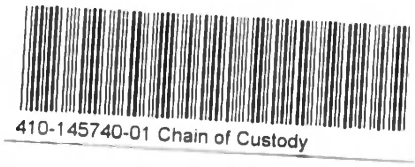
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: ALS Group USA, Corp
Project/Site: HS23100159

Job ID: 410-145740-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-145740-1	50WW14_100323	Water	10/03/23 07:40	10/05/23 10:15
410-145740-2	50WW13_100323	Water	10/03/23 08:25	10/05/23 10:15
410-145740-3	50WW13_100323-a	Water	10/03/23 08:25	10/05/23 10:15
410-145740-4	50WW11_100323	Water	10/03/23 09:15	10/05/23 10:15
410-145740-5	50WW11_100323-a	Water	10/03/23 09:15	10/05/23 10:15
410-145740-6	50WW06_100323	Water	10/03/23 10:10	10/05/23 10:15
410-145740-7	50WW12_100323	Water	10/03/23 10:55	10/05/23 10:15



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Subcontract Chain of Custody

SAMPLING STATE: Colorado **COC ID:** 23403

SUBCONTRACT TO:

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601
Phone: +1 717 656 2300

CUSTOMER INFORMATION:

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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:	HS23100159
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS23100159-10**	**50WW14_100323**	**Water**	**03 Oct 2023 07:40**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
2.	**HS23100159-11**	**50WW13_100323**	**Water**	**03 Oct 2023 08:25**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
3.	**HS23100159-12**	**50WW13_100323-a**	**Water**	**03 Oct 2023 08:25**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
4.	**HS23100159-13**	**50WW11_100323**	**Water**	**03 Oct 2023 09:15**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
5.	**HS23100159-14**	**50WW11_100323-a**	**Water**	**03 Oct 2023 09:15**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
6.	**HS23100159-15**	**50WW06_100323**	**Water**	**03 Oct 2023 10:10**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
7.	**HS23100159-16**	**50WW12_100323**	**Water**	**03 Oct 2023 10:55**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023

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

RIGHT SOLUTIONS | RIGHT PARTNER

Subcontract Chain of Custody

SAMPLING STATE: **Colorado** **COC ID:** **23403**

QC Level: DOD IV (DoD Data Package)

Relinquished By:	CH	Date/Time:	10-4-23 1800
Received By:	Debra A. Bynum	Date/Time:	10-5-23 10:15
Cooler ID(s):		Temperature(s):	

04-Oct-2023

R: 1.4
C: 1.1



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

Purchase Order

PO: HS23100159

VENDOR:

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

Phone: +1 717 656 2300

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:	23403
TSR:	Holly Tignac

Item	Catalog No	Unit Price	Quantity	Ext Price
1. RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey	NA		7	

Order Total:

Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-145740-1

Login Number: 145740

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Arroyo, Haley

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 acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=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	

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

June 07, 2024

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

Work Order: **HS24051300**

Laboratory Results for: **LHAAP Site 50**

Dear Marcia Olive,

ALS Environmental received 10 sample(s) on May 22, 2024 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
Luis.Aguilar

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Work Order: HS24051300

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS24051300-01	50WW16_052024	Groundwater		20-May-2024 09:50	22-May-2024 10:15	☐
HS24051300-02	50WW18_052024	Groundwater		20-May-2024 10:40	22-May-2024 10:15	☐
HS24051300-03	50WW22_052024	Groundwater		20-May-2024 11:30	22-May-2024 10:15	☐
HS24051300-04	50WW15_052024	Groundwater		20-May-2024 12:15	22-May-2024 10:15	☐
HS24051300-05	50WW14_052124	Groundwater		21-May-2024 07:15	22-May-2024 10:15	☐
HS24051300-06	50WW13_052124	Groundwater		21-May-2024 08:00	22-May-2024 10:15	☐
HS24051300-07	50WW11_052124	Groundwater		21-May-2024 08:50	22-May-2024 10:15	☐
HS24051300-08	50WW05_052124	Groundwater		21-May-2024 09:35	22-May-2024 10:15	☐
HS24051300-09	50WW29_052124	Groundwater		21-May-2024 10:25	22-May-2024 10:15	☐
HS24051300-10	Trip Blank_052124	Water	CG-041923-524	21-May-2024 00:00	22-May-2024 10:15	☐

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP Site 50
Work Order: HS24051300

Work Order Comments

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

  The analysis for Carbon Dioxide was subcontracted to Eurofins Environmental Testing America l in Lancaster, PA . Final report attached

GC Semivolatiles by Method RSK-175

Batch ID: R468189

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

GCMS Volatiles by Method SW8260

Batch ID: R467761

Sample ID: 50WW13_052124 (HS24051300-06)

- Lowest possible dilution due to high concentrations of target analytes.

Sample ID: 50WW16_052024 (HS24051300-01)

- Surrogate, Toluene-d8, failed QC control limits high. Associated analytes are ND.

Sample ID: 50WW18_052024 (HS24051300-02)

- Surrogates failed outside control limits high. Sample is ND.

Sample ID: 50WW22_052024 (HS24051300-03)

- Surrogates, 1,2 Dichloroethane and Toluene-d8, failed QC control limits high. Associated analytes are ND.

Sample ID: Trip Blank_052124 (HS24051300-10)

- Surrogates, 1,2 Dichloroethane and Toluene-d8, failed QC control limits high. Associated analytes are ND.

Batch ID: R468007

Sample ID: HS24051490-03MS

- MS and MSD are for an unrelated sample

WetChemistry by Method SM5310B

Batch ID: R468619

Sample ID: 50WW14_052124 (HS24051300-05MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

WetChemistry by Method SW9056

Batch ID: R467429,R467711

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW16_052024
Collection Date: 20-May-2024 09:50

ANALYTICAL REPORT
WorkOrder:HS24051300
Lab ID:HS24051300-01
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:32
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:32
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:32
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	24-May-2024 17:32
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:32
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:32
Surr: 1,2-Dichloroethane-d4	*115*			**0**	*81-118*	*%REC*	*1*	*24-May-2024 17:32*
Surr: 4-Bromofluorobenzene	*109*			**0**	*85-114*	*%REC*	*1*	*24-May-2024 17:32*
Surr: Dibromofluoromethane	*110*			**0**	*80-119*	*%REC*	*1*	*24-May-2024 17:32*
Surr: Toluene-d8	*114*	*S*		**0**	*89-112*	*%REC*	*1*	*24-May-2024 17:32*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	07-Jun-2024 09:22

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW18_052024
Collection Date: 20-May-2024 10:40

ANALYTICAL REPORT
WorkOrder:HS24051300
Lab ID:HS24051300-02
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:53
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:53
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:53
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	24-May-2024 17:53
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:53
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 17:53
Surr: 1,2-Dichloroethane-d4	*119*	*S*		**0**	*81-118*	*%REC*	*1*	*24-May-2024 17:53*
Surr: 4-Bromofluorobenzene	*114*	*S*		**0**	*85-114*	*%REC*	*1*	*24-May-2024 17:53*
Surr: Dibromofluoromethane	*113*			**0**	*80-119*	*%REC*	*1*	*24-May-2024 17:53*
Surr: Toluene-d8	*118*	*S*		**0**	*89-112*	*%REC*	*1*	*24-May-2024 17:53*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	07-Jun-2024 09:22

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW22_052024
Collection Date: 20-May-2024 11:30

ANALYTICAL REPORT
WorkOrder:HS24051300
Lab ID:HS24051300-03
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 18:15
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 18:15
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 18:15
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	24-May-2024 18:15
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 18:15
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 18:15
Surr: 1,2-Dichloroethane-d4	*118*	*S*		**0**	*81-118*	*%REC*	*1*	*24-May-2024 18:15*
Surr: 4-Bromofluorobenzene	*109*			**0**	*85-114*	*%REC*	*1*	*24-May-2024 18:15*
Surr: Dibromofluoromethane	*112*			**0**	*80-119*	*%REC*	*1*	*24-May-2024 18:15*
Surr: Toluene-d8	*115*	*S*		**0**	*89-112*	*%REC*	*1*	*24-May-2024 18:15*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	07-Jun-2024 09:22

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW15_052024
Collection Date: 20-May-2024 12:15

ANALYTICAL REPORT
WorkOrder:HS24051300
Lab ID:HS24051300-04
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 07:31
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 07:31
cis-1,2-Dichloroethene	**1.8**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 07:31
Tetrachloroethene	**0.93**	J	**0.30**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 07:31
Trichloroethene	**4.8**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 07:31
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 07:31
Surr: 1,2-Dichloroethane-d4	*116*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 07:31*
Surr: 4-Bromofluorobenzene	*108*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 07:31*
Surr: Dibromofluoromethane	*112*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 07:31*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 07:31*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	07-Jun-2024 09:22

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW14_052124
Collection Date: 21-May-2024 07:15

ANALYTICAL REPORT
WorkOrder:HS24051300
Lab ID:HS24051300-05
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 07:52
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 07:52
cis-1,2-Dichloroethene	**4.7**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 07:52
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-May-2024 07:52
Trichloroethene	**24**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 07:52
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 07:52
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 07:52*
Surr: 4-Bromofluorobenzene	*109*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 07:52*
Surr: Dibromofluoromethane	*116*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 07:52*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 07:52*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: RG
Ethane	**0.000820**	J	**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	31-May-2024 10:11
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	31-May-2024 10:11
Methane	**0.00386**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	31-May-2024 10:11
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: JAC
Organic Carbon, Total	**5.14**		**0.500**	**1.00**	**1.00**	**mg/L**	1	05-Jun-2024 23:56
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**498**		**2.00**	**2.50**	**5.00**	**mg/L**	10	22-May-2024 19:34
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	22-May-2024 19:28
Sulfate	**399**		**2.00**	**2.50**	**5.00**	**mg/L**	10	26-May-2024 16:50
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	07-Jun-2024 09:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	29-May-2024 10:17

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc. **ANALYTICAL REPORT**
Project: LHAAP Site 50 WorkOrder:HS24051300
Sample ID: 50WW13_052124 Lab ID:HS24051300-06
Collection Date: 21-May-2024 08:00 Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	5.0	U	1.0	5.0	5.0	ug/L	5	24-May-2024 19:44
1,2-Dichloroethane	5.0	U	1.0	5.0	5.0	ug/L	5	24-May-2024 19:44
cis-1,2-Dichloroethene	**24**		**1.0**	**5.0**	**5.0**	**ug/L**	5	24-May-2024 19:44
Tetrachloroethene	5.0	U	1.5	5.0	5.0	ug/L	5	24-May-2024 19:44
Trichloroethene	**470**		**1.0**	**5.0**	**5.0**	**ug/L**	5	24-May-2024 19:44
Vinyl chloride	5.0	U	1.0	5.0	5.0	ug/L	5	24-May-2024 19:44
Surr: 1,2-Dichloroethane-d4	*114*			**0**	*81-118*	*%REC*	*5*	*24-May-2024 19:44*
Surr: 4-Bromofluorobenzene	*108*			**0**	*85-114*	*%REC*	*5*	*24-May-2024 19:44*
Surr: Dibromofluoromethane	*107*			**0**	*80-119*	*%REC*	*5*	*24-May-2024 19:44*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*5*	*24-May-2024 19:44*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: RG
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	31-May-2024 10:37
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	31-May-2024 10:37
Methane	**0.00132**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	31-May-2024 10:37
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: JAC
Organic Carbon, Total	**7.75**		**0.500**	**1.00**	**1.00**	**mg/L**	1	06-Jun-2024 00:21
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**402**		**2.00**	**2.50**	**5.00**	**mg/L**	10	22-May-2024 19:46
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	22-May-2024 19:40
Sulfate	**357**		**2.00**	**2.50**	**5.00**	**mg/L**	10	26-May-2024 17:25
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	07-Jun-2024 09:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	29-May-2024 10:17

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW11_052124
Collection Date: 21-May-2024 08:50

ANALYTICAL REPORT
WorkOrder:HS24051300
Lab ID:HS24051300-07
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 08:13
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 08:13
cis-1,2-Dichloroethene	**11**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 08:13
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-May-2024 08:13
Trichloroethene	**140**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 08:13
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 08:13
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 08:13*
Surr: 4-Bromofluorobenzene	*109*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 08:13*
Surr: Dibromofluoromethane	*114*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 08:13*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 08:13*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: RG
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	31-May-2024 10:45
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	31-May-2024 10:45
Methane	**0.720**		**0.0107**	**0.0500**	**0.0500**	**mg/L**	100	31-May-2024 11:23
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: JAC
Organic Carbon, Total	**4.76**		**0.500**	**1.00**	**1.00**	**mg/L**	1	06-Jun-2024 00:32
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**344**		**2.00**	**2.50**	**5.00**	**mg/L**	10	22-May-2024 19:57
Nitrogen, Nitrate (As N)	0.0500	U	0.0300	0.0500	0.100	mg/L	1	22-May-2024 19:51
Sulfate	**317**		**2.00**	**2.50**	**5.00**	**mg/L**	10	26-May-2024 17:31
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	07-Jun-2024 09:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	06-Jun-2024 11:45

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW05_052124
Collection Date: 21-May-2024 09:35

ANALYTICAL REPORT
WorkOrder:HS24051300
Lab ID:HS24051300-08
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	**3.1**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 08:35
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 08:35
cis-1,2-Dichloroethene	**120**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 08:35
Tetrachloroethene	**0.79**	J	**0.30**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 08:35
Trichloroethene	**150**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 08:35
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 08:35
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 08:35*
Surr: 4-Bromofluorobenzene	*107*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 08:35*
Surr: Dibromofluoromethane	*116*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 08:35*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 08:35*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	07-Jun-2024 09:22

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW29_052124
Collection Date: 21-May-2024 10:25

ANALYTICAL REPORT
WorkOrder:HS24051300
Lab ID:HS24051300-09
Matrix:Groundwater

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 08:56
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 08:56
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 08:56
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-May-2024 08:56
Trichloroethene	**0.47**	J	**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 08:56
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 08:56
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 08:56*
Surr: 4-Bromofluorobenzene	*111*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 08:56*
Surr: Dibromofluoromethane	*116*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 08:56*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 08:56*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	07-Jun-2024 09:22

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

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: Trip Blank_052124
Collection Date: 21-May-2024 00:00

ANALYTICAL REPORT
WorkOrder:HS24051300
Lab ID:HS24051300-10
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 16:49
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 16:49
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 16:49
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	24-May-2024 16:49
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 16:49
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	24-May-2024 16:49
Surr: 1,2-Dichloroethane-d4	*120*	*S*		**0**	*81-118*	*%REC*	*1*	*24-May-2024 16:49*
Surr: 4-Bromofluorobenzene	*114*			**0**	*85-114*	*%REC*	*1*	*24-May-2024 16:49*
Surr: Dibromofluoromethane	*115*			**0**	*80-119*	*%REC*	*1*	*24-May-2024 16:49*
Surr: Toluene-d8	*119*	*S*		**0**	*89-112*	*%REC*	*1*	*24-May-2024 16:49*

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

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R467429 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS24051300-05	50WW14_052124	21 May 2024 07:15			22 May 2024 19:34	10
HS24051300-05	50WW14_052124	21 May 2024 07:15			22 May 2024 19:28	1
HS24051300-06	50WW13_052124	21 May 2024 08:00			22 May 2024 19:46	10
HS24051300-06	50WW13_052124	21 May 2024 08:00			22 May 2024 19:40	1
HS24051300-07	50WW11_052124	21 May 2024 08:50			22 May 2024 19:57	10
HS24051300-07	50WW11_052124	21 May 2024 08:50			22 May 2024 19:51	1
Batch ID: R467711 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Groundwater	
HS24051300-05	50WW14_052124	21 May 2024 07:15			26 May 2024 16:50	10
HS24051300-06	50WW13_052124	21 May 2024 08:00			26 May 2024 17:25	10
HS24051300-07	50WW11_052124	21 May 2024 08:50			26 May 2024 17:31	10
Batch ID: R467761 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS24051300-10	Trip Blank_052124	21 May 2024 00:00			24 May 2024 16:49	1
Batch ID: R467761 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS24051300-01	50WW16_052024	20 May 2024 09:50			24 May 2024 17:32	1
HS24051300-02	50WW18_052024	20 May 2024 10:40			24 May 2024 17:53	1
HS24051300-03	50WW22_052024	20 May 2024 11:30			24 May 2024 18:15	1
HS24051300-06	50WW13_052124	21 May 2024 08:00			24 May 2024 19:44	5
Batch ID: R467885 (0)	**Test Name :** SUBCONTRACT ANALYSIS - RSK				**Matrix:** Groundwater	
HS24051300-05	50WW14_052124	21 May 2024 07:15			29 May 2024 10:17	1
HS24051300-06	50WW13_052124	21 May 2024 08:00			29 May 2024 10:17	1
Batch ID: R468007 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Groundwater	
HS24051300-04	50WW15_052024	20 May 2024 12:15			30 May 2024 07:31	1
HS24051300-05	50WW14_052124	21 May 2024 07:15			30 May 2024 07:52	1
HS24051300-07	50WW11_052124	21 May 2024 08:50			30 May 2024 08:13	1
HS24051300-08	50WW05_052124	21 May 2024 09:35			30 May 2024 08:35	1
HS24051300-09	50WW29_052124	21 May 2024 10:25			30 May 2024 08:56	1
Batch ID: R468189 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Groundwater	
HS24051300-05	50WW14_052124	21 May 2024 07:15			31 May 2024 10:11	1
HS24051300-06	50WW13_052124	21 May 2024 08:00			31 May 2024 10:37	1
HS24051300-07	50WW11_052124	21 May 2024 08:50			31 May 2024 11:23	100
HS24051300-07	50WW11_052124	21 May 2024 08:50			31 May 2024 10:45	1
Batch ID: R468619 (0)	**Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011				**Matrix:** Groundwater	
HS24051300-05	50WW14_052124	21 May 2024 07:15			05 Jun 2024 23:56	1
HS24051300-06	50WW13_052124	21 May 2024 08:00			06 Jun 2024 00:21	1
HS24051300-07	50WW11_052124	21 May 2024 08:50			06 Jun 2024 00:32	1

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R468659 (0)	**Test Name :** SUBCONTRACT ANALYSIS - RSK				**Matrix:** Groundwater	
HS24051300-07	50WW11_052124	21 May 2024 08:50			06 Jun 2024 11:45	1
Batch ID: R468746 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Groundwater	
HS24051300-01	50WW16_052024	20 May 2024 09:50			07 Jun 2024 09:22	1
HS24051300-02	50WW18_052024	20 May 2024 10:40			07 Jun 2024 09:22	1
HS24051300-03	50WW22_052024	20 May 2024 11:30			07 Jun 2024 09:22	1
HS24051300-04	50WW15_052024	20 May 2024 12:15			07 Jun 2024 09:22	1
HS24051300-05	50WW14_052124	21 May 2024 07:15			07 Jun 2024 09:22	1
HS24051300-06	50WW13_052124	21 May 2024 08:00			07 Jun 2024 09:22	1
HS24051300-07	50WW11_052124	21 May 2024 08:50			07 Jun 2024 09:22	1
HS24051300-08	50WW05_052124	21 May 2024 09:35			07 Jun 2024 09:22	1
HS24051300-09	50WW29_052124	21 May 2024 10:25			07 Jun 2024 09:22	1

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

QC BATCH REPORT

Batch ID: R468189 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-240531** Units: **mg/L** Analysis Date: **31-May-2024 09:17**
Client ID: Run ID: **FID-4_468189** SeqNo: **8041232** 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-240531** Units: **mg/L** Analysis Date: **31-May-2024 09:30**
Client ID: Run ID: **FID-4_468189** SeqNo: **8041233** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0153	0.00100	0.01804	0	84.9	75 - 125				
Ethene	0.0146	0.00100	0.0168	0	86.6	75 - 125				
Methane	0.00908	0.000500	0.009647	0	94.1	75 - 125				

LCSD Sample ID: **LCSD-240531** Units: **mg/L** Analysis Date: **31-May-2024 09:38**
Client ID: Run ID: **FID-4_468189** SeqNo: **8041234** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0148	0.00100	0.01804	0	81.9	75 - 125	0.01532	3.64	30	
Ethene	0.0139	0.00100	0.0168	0	82.7	75 - 125	0.01455	4.68	30	
Methane	0.00869	0.000500	0.009647	0	90.1	75 - 125	0.009079	4.4	30	

The following samples were analyzed in this batch: HS24051300-05 HS24051300-06 HS24051300-07

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

QC BATCH REPORT

Batch ID: R467761 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-240524** Units: **ug/L** Analysis Date: **24-May-2024 14:18**
Client ID: Run ID: **VOA9_467761** SeqNo: **8031898** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	1.0	1.0								U
1,2-Dichloroethane	1.0	1.0								U
cis-1,2-Dichloroethene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Trichloroethene	1.0	1.0								U
Vinyl chloride	1.0	1.0								U
Surr: 1,2-Dichloroethane-d4	*57.86*	*35*	*50*	*0*	*116*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*55.8*	*35*	*50*	*0*	*112*	*85 - 114*				
Surr: Dibromofluoromethane	*54.71*	*35*	*50*	*0*	*109*	*80 - 119*				
Surr: Toluene-d8	*55.64*	*35*	*50*	*0*	*111*	*89 - 112*				

LCS Sample ID: **VLCSW-240524** Units: **ug/L** Analysis Date: **24-May-2024 13:13**
Client ID: Run ID: **VOA9_467761** SeqNo: **8031896** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	17.06	1.0	20	0	85.3	71 - 131				
1,2-Dichloroethane	19.33	1.0	20	0	96.7	73 - 128				
cis-1,2-Dichloroethene	17.33	1.0	20	0	86.6	78 - 123				
Tetrachloroethene	18.98	1.0	20	0	94.9	74 - 129				
Trichloroethene	18.06	1.0	20	0	90.3	79 - 123				
Vinyl chloride	17.63	1.0	20	0	88.2	58 - 137				
Surr: 1,2-Dichloroethane-d4	*55.24*	*35*	*50*	*0*	*110*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*56.96*	*35*	*50*	*0*	*114*	*85 - 114*				
Surr: Dibromofluoromethane	*55.22*	*35*	*50*	*0*	*110*	*80 - 119*				
Surr: Toluene-d8	*55.42*	*35*	*50*	*0*	*111*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

QC BATCH REPORT

Batch ID: R467761 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

LCSD Sample ID: **VLCSDW-240524** Units: **ug/L** Analysis Date: **24-May-2024 13:35**
Client ID: Run ID: **VOA9_467761** SeqNo: **8031897** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1-Dichloroethene	16.77	1.0	20	0	83.8	71 - 131	17.06	1.74	20	
1,2-Dichloroethane	19.25	1.0	20	0	96.2	73 - 128	19.33	0.446	20	
cis-1,2-Dichloroethene	16.98	1.0	20	0	84.9	78 - 123	17.33	2.02	20	
Tetrachloroethene	17.84	1.0	20	0	89.2	74 - 129	18.98	6.23	20	
Trichloroethene	17.15	1.0	20	0	85.7	79 - 123	18.06	5.17	20	
Vinyl chloride	17.4	1.0	20	0	87.0	58 - 137	17.63	1.3	20	
Surr: 1,2-Dichloroethane-d4	*56.48*	*35*	*50*	*0*	*113*	*81 - 118*	*55.24*	*2.22*	*20*	
Surr: 4-Bromofluorobenzene	*56.91*	*35*	*50*	*0*	*114*	*85 - 114*	*56.96*	*0.0971*	*20*	
Surr: Dibromofluoromethane	*56.62*	*35*	*50*	*0*	*113*	*80 - 119*	*55.22*	*2.49*	*20*	
Surr: Toluene-d8	*55.89*	*35*	*50*	*0*	*112*	*89 - 112*	*55.42*	*0.846*	*20*	

The following samples were analyzed in this batch: HS24051300-01 HS24051300-02 HS24051300-03 HS24051300-06 HS24051300-10

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

QC BATCH REPORT

Batch ID: R468007 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-240529** Units: **ug/L** Analysis Date: **30-May-2024 04:55**
Client ID: Run ID: **VOA9_468007** SeqNo: **8037237** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	1.0	1.0								U
1,2-Dichloroethane	1.0	1.0								U
cis-1,2-Dichloroethene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Trichloroethene	1.0	1.0								U
Vinyl chloride	1.0	1.0								U
Surr: 1,2-Dichloroethane-d4	*58.25*	*35*	*50*	*0*	*117*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*54.55*	*35*	*50*	*0*	*109*	*85 - 114*				
Surr: Dibromofluoromethane	*56.36*	*35*	*50*	*0*	*113*	*80 - 119*				
Surr: Toluene-d8	*55.78*	*35*	*50*	*0*	*112*	*89 - 112*				

LCS Sample ID: **VLCSW-240529** Units: **ug/L** Analysis Date: **30-May-2024 03:50**
Client ID: Run ID: **VOA9_468007** SeqNo: **8037235** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	18.5	1.0	20	0	92.5	71 - 131				
1,2-Dichloroethane	19.96	1.0	20	0	99.8	73 - 128				
cis-1,2-Dichloroethene	17.09	1.0	20	0	85.4	78 - 123				
Tetrachloroethene	18.99	1.0	20	0	95.0	74 - 129				
Trichloroethene	17.9	1.0	20	0	89.5	79 - 123				
Vinyl chloride	19.53	1.0	20	0	97.7	58 - 137				
Surr: 1,2-Dichloroethane-d4	*58.95*	*35*	*50*	*0*	*118*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*55.58*	*35*	*50*	*0*	*111*	*85 - 114*				
Surr: Dibromofluoromethane	*58.13*	*35*	*50*	*0*	*116*	*80 - 119*				
Surr: Toluene-d8	*55.54*	*35*	*50*	*0*	*111*	*89 - 112*				

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

QC BATCH REPORT

Batch ID: R468007 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MS Sample ID: **HS24051490-03MS** Units: **ug/L** Analysis Date: **30-May-2024 05:59**
Client ID: Run ID: **VOA9_468007** SeqNo: **8037239** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	19.08	1.0	20	0	95.4	71 - 131				
1,2-Dichloroethane	19.69	1.0	20	0	98.5	73 - 128				
cis-1,2-Dichloroethene	16.82	1.0	20	0	84.1	78 - 123				
Tetrachloroethene	19.24	1.0	20	0	96.2	74 - 129				
Trichloroethene	18.02	1.0	20	0	90.1	79 - 123				
Vinyl chloride	20.01	1.0	20	0	100	58 - 137				
Surr: 1,2-Dichloroethane-d4	*57.99*	*35*	*50*	*0*	*116*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*56.47*	*35*	*50*	*0*	*113*	*85 - 114*				
Surr: Dibromofluoromethane	*59.03*	*35*	*50*	*0*	*118*	*80 - 119*				
Surr: Toluene-d8	*56.63*	*35*	*50*	*0*	*113*	*89 - 112*				S

MSD Sample ID: **HS24051490-03MSD** Units: **ug/L** Analysis Date: **30-May-2024 06:21**
Client ID: Run ID: **VOA9_468007** SeqNo: **8037240** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	18.56	1.0	20	0	92.8	71 - 131	19.08	2.78	20	
1,2-Dichloroethane	19.3	1.0	20	0	96.5	73 - 128	19.69	2.02	20	
cis-1,2-Dichloroethene	16.78	1.0	20	0	83.9	78 - 123	16.82	0.223	20	
Tetrachloroethene	19.15	1.0	20	0	95.8	74 - 129	19.24	0.45	20	
Trichloroethene	17.95	1.0	20	0	89.7	79 - 123	18.02	0.374	20	
Vinyl chloride	19.68	1.0	20	0	98.4	58 - 137	20.01	1.65	20	
Surr: 1,2-Dichloroethane-d4	*57.17*	*35*	*50*	*0*	*114*	*81 - 118*	*57.99*	*1.41*	*20*	
Surr: 4-Bromofluorobenzene	*56.42*	*35*	*50*	*0*	*113*	*85 - 114*	*56.47*	*0.0822*	*20*	
Surr: Dibromofluoromethane	*57.9*	*35*	*50*	*0*	*116*	*80 - 119*	*59.03*	*1.95*	*20*	
Surr: Toluene-d8	*57.32*	*35*	*50*	*0*	*115*	*89 - 112*	*56.63*	*1.21*	*20*	S

The following samples were analyzed in this batch: HS24051300-04 HS24051300-05 HS24051300-07 HS24051300-08 HS24051300-09

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

QC BATCH REPORT

Batch ID: R467429 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **22-May-2024 13:03**
Client ID: Run ID: **ICS-Integrion_467429** SeqNo: **8024327** 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: **22-May-2024 13:14**
Client ID: Run ID: **ICS-Integrion_467429** SeqNo: **8024328** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.91	0.500	20	0	105	80 - 120				
Nitrogen, Nitrate (As N)	3.953	0.100	4	0	98.8	80 - 120				

MS Sample ID: **HS24051292-03MS** Units: **mg/L** Analysis Date: **22-May-2024 18:05**
Client ID: Run ID: **ICS-Integrion_467429** SeqNo: **8024346** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	35.18	0.500	10	25.71	94.7	80 - 120				
Nitrogen, Nitrate (As N)	1.969	0.100	2	0.1156	92.7	80 - 120				

MSD Sample ID: **HS24051292-03MSD** Units: **mg/L** Analysis Date: **22-May-2024 18:11**
Client ID: Run ID: **ICS-Integrion_467429** SeqNo: **8024347** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	35.48	0.500	10	25.71	97.6	80 - 120	35.18	0.829	20	
Nitrogen, Nitrate (As N)	1.983	0.100	2	0.1156	93.4	80 - 120	1.969	0.698	20	

The following samples were analyzed in this batch: HS24051300-05 HS24051300-06 HS24051300-07

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

QC BATCH REPORT

Batch ID: R467711 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **26-May-2024 14:29**
Client ID: Run ID: **ICS-Integrion_467711** SeqNo: **8030453** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	0.250	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **26-May-2024 14:35**
Client ID: Run ID: **ICS-Integrion_467711** SeqNo: **8030454** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	21.38	0.500	20	0	107	80 - 120				

MS Sample ID: **HS24051384-01MS** Units: **mg/L** Analysis Date: **26-May-2024 14:53**
Client ID: Run ID: **ICS-Integrion_467711** SeqNo: **8030456** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	177.9	2.50	50	131.5	92.9	80 - 120				

MSD Sample ID: **HS24051384-01MSD** Units: **mg/L** Analysis Date: **26-May-2024 14:59**
Client ID: Run ID: **ICS-Integrion_467711** SeqNo: **8030457** PrepDate: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfate	177.4	2.50	50	131.5	91.9	80 - 120	177.9	0.291	20	

The following samples were analyzed in this batch: HS24051300-05 HS24051300-06 HS24051300-07

RIGHT SOLUTIONS | RIGHT PARTNER

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS24051300

QC BATCH REPORT

Batch ID: R468619 (0) **Instrument:** TOC_05 **Method:** TOTAL ORGANIC CARBON - SM5310B-2011

MBLK Sample ID: **MBLK-06052024** Units: **mg/L** Analysis Date: **05-Jun-2024 23:09**
Client ID: Run ID: **TOC_05_468619** SeqNo: **8049998** 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-06052024** Units: **mg/L** Analysis Date: **05-Jun-2024 23:22**
Client ID: Run ID: **TOC_05_468619** SeqNo: **8049999** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.882	1.00	10	0	98.8	91 - 109				

LCSD Sample ID: **LCSD-06052024** Units: **mg/L** Analysis Date: **05-Jun-2024 23:34**
Client ID: Run ID: **TOC_05_468619** SeqNo: **8050000** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.647	1.00	10	0	96.5	91 - 109	9.882	2.41	20	

MS Sample ID: **HS24051300-05MS** Units: **mg/L** Analysis Date: **06-Jun-2024 00:09**
Client ID: **50WW14_052124** Run ID: **TOC_05_468619** SeqNo: **8050002** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.56	1.00	10	5.137	54.2	86 - 117				S

The following samples were analyzed in this batch: HS24051300-05 HS24051300-06 HS24051300-07

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: **HS24051300**

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

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CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356_2024	27-Mar-2025
California	2919; 2025	30-Apr-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Kentucky	123043	30-Apr-2025
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624 - 2024	31-Dec-2024
Oklahoma	2023-140	31-Aug-2024
Tennessee	04016	30-Apr-2025
Texas	T104704231 TX-C24-00130	30-Apr-2025
Utah	TX026932023-14	31-Jul-2024

RIGHT SOLUTIONS | RIGHT PARTNER

ALS Houston, US Date: 07-Jun-24

Sample Receipt Checklist

Work Order ID: HS24051300 **Date/Time Received:** 22-May-2024 10:15

Client Name: Bhate Environmental **Received by:** Jacob Coronado

Completed By: /S/ Jacob Coronado (eSignature) 22-May-2024 16:45 (Date/Time) **Reviewed by:** (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):	3.2uc/3.3c	ir31
Cooler(s)/Kit(s):	52140	
Date/Time sample(s) sent to storage:	05/22/2024 1645	

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:

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bhate

Page: of 01331487

Project/Phase No: JVPCIBH.0001

COC Number(1):

LIMS Number:

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP / **BILL to PCI**

Project/Site Name: LHAAP / Site 50

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Sample Analysis Requested (5): Number of containers	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions by SW9056	CO2 by RSK 175	Perchlorate by SW 6850	Quality Assurance Samples (6): Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
SDwwib_052024	20 May 2024	0950	-	N		wb	4	X					X				
SDwwi8_052024	20 May 2024	1040	-	N		wb	4	X					X				
SDwwi22_052024	20 May 2024	1130	-	N		wb	4	X					X				
SDwwi5_052024	20 May 2024	1215		N		wb	4	X					X				
SDwwi4_052124	21 May 2024	0715		N		wb	13	X	X	X	X	X	X				
SDwwi3_052124	21 May 2024	0800	-	N		wb	13	X	X	X	X	X	X				
SDwwi1_052124	21 May 2024	0850	-	N		wb	13	X	X	X	X	X	X				
SDwwi5_052124	21 May 2024	0935	-	N		wb	4	X					X				
SDwwi29_052124	21 May 2024	1025	-	N		wb	4	X					X				
TRIP BLANK_052124	21 May 2024		-	TB		w	2	X									
			-														

HS24051300

Bhate Environmental Associates, Inc.
LHAAP Site 50

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.		5/21/24	1330			
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: Shipped No.:

Method of Shipment:

Fed Ex Airbill Number:

Analytical Lab: ALS 10450 Stanciff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: Dane Wamsley Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

RIGHT SOLUTIONS | RIGHT PARTNER

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

52140

CUSTODY SEAL

Date: 5/21/24 Time: 1330
Name: Scott Beesinger
Company: Bhate

Seal Broken By:
Date: 05/22/24

52100 MAY 22 2024

Must Deliver Next Business Day
Time and Tempature Sensitive!

52140

ORIGIN ID:SGRA (903) 930-8193
SCOTT BEESINER
BHATE ENVIRONMENTAL ASSOCIATES
1203-B EAST GRAND AVE. PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 14MAY24
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3755

TO **SAMPLE RECEIVING**
ALS GROUP USA,CORP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LIIAAP 69-B0100866-LA

FedEx Express

FedEx
TRK# 6862 6805 6246

WED - 22 MAY AA
PRIORITY OVERNIGHT

77099
TX-US
IAH

AB SGRA

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bhate

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Project/Phase No: JVPCIBH.0001

COC Number(1):

LIMS Number:

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP / **BILL to PCI**

Project/Site Name: LHAAP / Site 50

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (3)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions by SW9056	CO2 by RSK 175	Perchlorate by SW 6850	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
SDWW16_052024	20 MAY 2024	0950	-	N		WG	4	X					X				
SDWW18_052024	20 MAY 2024	1040	-	N		WG	4	X					X				
SDWW22_052024	20 MAY 2024	1130	-	N		WG	4	X					X				
SDWW15_052024	20 MAY 2024	1215	-	N		WG	4	X					X				
SDWW14_052124	21 MAY 2024	0715	-	N		WG	13	X	X	X	X	X	X				
SDWW13_052124	21 MAY 2024	0800	-	N		WG	13	X	X	X	X	X	X				
SDWW11_052124	21 MAY 2024	0850	-	N		WG	13	X	X	X	X	X	X				
SDWW05_052124	21 MAY 2024	0935	-	N		WG	4	X					X				
SDWW29_052124	21 MAY 2024	1025	-	N		WG	4	X					X				
TRIPBLANK_052124	21 MAY 2024		-	TB		W	2	X									
			-														

Sample Analysis Requested (5) | Quality Assurance Samples (6)

HS24051300

Bhate Environmental Associates, Inc.
LHAAP Site 50

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time
1.	Scott Beesinger	5/21/24	1330
2.			
3.			

	Received by (signed)	Date	Time
1.		5/22/24	1015
2.			
3.			

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: Shipped No.:

Method of Shipment:

Fed Ex Airbill Number:

Analytical Lab: ALS 10450 Stanchff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN Dane Wacasey Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

RIGHT SOLUTIONS | RIGHT PARTNER

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

52140

CUSTODY SEAL

Date: 5/21/24 Time: 1330
Name: Scott Beesinger
Company: Pinnacle

Seal Broken By:
Date: 05/22/24

52140 MAY 22 2024

Must Deliver Next Business Day
Time and Tempature Sensitive!

52140

ORIGIN ID:SGRA (903) 930-6193
SCOTT BEESINER
BHATE ENVIRONMENTAL ASSOCIATES
1203-B EAST GRAND AVE. PMB202
MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 14MAY24
ACTWGT: 1.00 LB MAN
CAD: 0221247/CAFE3705

TO SAMPLE RECEIVING
ALS GROUP USA,CORP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LUAAP 59-BQ100866-LA

FedEx Express

WED - 22 MAY AA
PRIORITY OVERNIGHT

FedEx.
TRK# 0221 6862 6805 6246

77099
TX-US
IAH

AB SGRA

RIGHT SOLUTIONS | RIGHT PARTNER

June 05, 2024 Service Request No:E2400566

Luis Aguilar
ALS Environmental - US
10450 Stancliff Rd Suite 210
Houston, TX 77099

Laboratory Results for: HS24051300

Dear Luis,

Enclosed are the results of the sample(s) submitted to our laboratory May 22, 2024
For your reference, these analyses have been assigned our service request number **E2400566.**

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

HKelany

Hussam Kelany
Project Manager

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

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Client:	ALS Environmental - US	**Service Request No.:**	E2400566
Project:	HS24051300	**Date Received:**	05/22/24
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

Nine samples were received for analysis at ALS Environmental in Houston on 05/22/24.

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:

EQ2400268: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch.

IB20240531-067 had insufficient volume. No contamination detected. CCVs passed. Data not affected.

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.

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Client: ALS Environmental - US **Service Request:**E2400566

Project: HS24051300

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2400566-001	50WW16_052024	5/20/2024	0950
E2400566-002	50WW18_052024	5/20/2024	1040
E2400566-003	50WW22_052024	5/20/2024	1130
E2400566-004	50WW15_052024	5/20/2024	1215
E2400566-005	50WW14_052124	5/21/2024	0715
E2400566-006	50WW13_052124	5/21/2024	0800
E2400566-007	50WW11_052124	5/21/2024	0850
E2400566-008	50WW05_052124	5/21/2024	0935
E2400566-009	50WW29_052124	5/21/2024	1025

Service Request Summary

Folder #: **E2400566**
Client Name: ALS Environmental - US
Project Name: HS24051300
Project Number:

Report To: Luis Aguilar
ALS Environmental - US
10450 Stancliff Rd Suite 210
Houston, TX 77099
USA
Phone Number:
Cell Number:
Fax Number:
E-mail: luis.aguilar@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: JCORONADO2
Date Received: 05/22/24
Internal Due Date: 6/6/2024
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number:
EDD: BASIC_WQC_CASNo

01331495
9 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 5D
Pressure Gas:

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2400566-001	50WW16_052024	Water	05/20/24 0950	**IV**
E2400566-002	50WW18_052024	Water	05/20/24 1040	**IV**
E2400566-003	50WW22_052024	Water	05/20/24 1130	**IV**
E2400566-004	50WW15_052024	Water	05/20/24 1215	**IV**
E2400566-005	50WW14_052124	Water	05/21/24 0715	**IV**
E2400566-006	50WW13_052124	Water	05/21/24 0800	**IV**
E2400566-007	50WW11_052124	Water	05/21/24 0850	**IV**
E2400566-008	50WW05_052124	Water	05/21/24 0935	**IV**
E2400566-009	50WW29_052124	Water	05/21/24 1025	**IV**

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Service Request Summary

Folder #: **E2400566**
Client Name: ALS Environmental - US
Project Name: HS24051300
Project Number:

Report To: Luis Aguilar
ALS Environmental - US
10450 Stancliff Rd Suite 210
Houston, TX 77099
USA
Phone Number:
Cell Number:
Fax Number:
E-mail: luis.aguilar@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: JCORONADO2
Date Received: 05/22/24
Internal Due Date: 6/6/2024
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number:
EDD: BASIC_WQC_CASNo

01331496
9 120 mL-Plastic Bottle Natural WM Unpreserved
Location: EHRMS-WIC 5D
Pressure Gas:

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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.

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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.

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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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State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arkansas Department of Environmental Quality	88-00356	3/28/2025
California State Environmental Laboratory Accreditation Program	2919-2024	4/30/2025
Department of Defense	L24-240	4/30/2026
Florida Department of Health	E87611-38	6/30/2024
Hawaii Department of Health	2024	4/30/2025
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	LA028-2024	12/31/2024
Maryland Department of the Environment	343-2023	6/30/2024
Minnesota Department of Health	2645386	12/31/2024
Nevada Division of Environmental Protection	TX026932024-1	7/31/2024
New Hampshire Environmental Laboratory Accreditation Program	209424-A	4/24/2025
New Jersey Department of Environmental Protection	TX008-2024	6/30/2024
Oklahoma Department of Environmental Quality	2023-140	8/31/2024
Oregon Environmental Laboratory Accreditation Program	TX200002-2024	5/15/2025
Pennsylvania Department of Environmental Protection	68-03441-017	6/30/2024
Tennessee Department of Environment and Conservation	04016-2024	4/30/2025
Texas Commision on Environmental Quality	TX-C24-00130	4/30/2025
Utah Department of Health Environmental Laboratory Certification	TX026932023-14	7/31/2024
Washington Department of Ecology	C819-23	11/14/2024

Chain of Custody

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E2400566 5
ALS Environmental - US
HS24051300

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Subcontract Chain of Custody

SAMPLING STATE: **Colorado** **COC ID:** **25767**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Luis.Aguilar
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	luis.aguilar@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:	HS24051300
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS24051300-01**	**SOWW16_052024**	**Groundwater**	**20 May 2024 09:50**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			06 Jun 2024
2.	**HS24051300-02**	**SOWW18_052024**	**Groundwater**	**20 May 2024 10:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			06 Jun 2024
3.	**HS24051300-03**	**SOWW22_052024**	**Groundwater**	**20 May 2024 11:30**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			06 Jun 2024
4.	**HS24051300-04**	**SOWW15_052024**	**Groundwater**	**20 May 2024 12:15**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			06 Jun 2024
5.	**HS24051300-05**	**SOWW14_052124**	**Groundwater**	**21 May 2024 07:15**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			06 Jun 2024
6.	**HS24051300-06**	**SOWW13_052124**	**Groundwater**	**21 May 2024 08:00**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			06 Jun 2024
7.	**HS24051300-07**	**SOWW11_052124**	**Groundwater**	**21 May 2024 08:50**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			06 Jun 2024
8.	**HS24051300-08**	**SOWW05_052124**	**Groundwater**	**21 May 2024 09:35**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			06 Jun 2024
9.	**HS24051300-09**	**SOWW29_052124**	**Groundwater**	**21 May 2024 10:25**

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Subcontract Chain of Custody

SAMPLING STATE: **Colorado** **COC ID:** **25767**

LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
ANALYSIS REQUESTED			DUE DATE
6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			06 Jun 2024

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: _____

Received By: _____ Date/Time: 5/22/24 1015

Cooler ID(s): _____ Temperature(s): _____

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Sample Receipt Checklist

Work Order ID: HS24051300 **Date/Time received:** 22 May 2024 10:15

Client name: Bhate Environmental Associates, Inc. **Received by:** Jacob Coronado

Completed/By: 22 May 2024 16:45 Jacob Coronado (Date/Time, eSignature) **Reviewed/By:** (Date/Time, eSignature)

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	COC ID(s):
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): 3.2uc/3.3c ir31

Cooler Information: 1 Cooler(s), 52140

Date/Time sample(s) sent to storage: 05/22/2024 1645

Water - VOA vials have zero headspace?	☑ Yes	☐ No	☐ No VOA vials submitted
Water - pH acceptable upon receipt?	☐ Yes	☐ No	☑ Not Applicable
pH adjusted?	☐ Yes	☐ No	☑ Not Applicable

pH adjusted by:

Login notes:

Client contacted: **Date contacted:** **Person contacted:**

Contacted by: **Regarding:**

Comments:

Corrective action:

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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

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Preparation Information Benchsheets

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Preparation Information Benchsheet

01331507

Prep Run#: 439292 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/CGUERRA **Prep Method:** Method **Prep Date/Time:** 5/30/24 13:14

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2400556-001	2405091420Y 700-H-535	.01	6850/ClO4 DOD			Water	10mL	
2	E2400556-002	2405101000Y 700-H-350	.01	6850/ClO4 DOD			Water	10mL	
3	E2400556-003	2405131447B BLM-32-543	.01	6850/ClO4 DOD			Water	10mL	
4	E2400557-001	2405141431B WW-4-419	.01	6850/ClO4 DOD			Water	10mL	
5	E2400557-002	2405141447B WW-4-589	.01	6850/ClO4 DOD			Water	10mL	
6	E2400563-001	2405151418B WW-4-848	.01	6850/ClO4 DOD			Water	10mL	
7	E2400563-002	2405151435B WW-4-948	.01	6850/ClO4 DOD			Water	10mL	
8	E2400563-003	2405151506Y PL-7-560	.01	6850/ClO4 DOD			Water	10mL	
9	E2400566-001	50WW16_052024	.01	6850/ClO4 DOD			Water	10mL	
10	E2400566-002	50WW18_052024	.01	6850/ClO4 DOD			Water	10mL	
11	E2400566-003	50WW22_052024	.01	6850/ClO4 DOD			Water	10mL	
12	E2400566-004	50WW15_052024	.01	6850/ClO4 DOD			Water	10mL	
13	E2400566-005	50WW14_052124	.01	6850/ClO4 DOD			Water	10mL	
14	E2400566-006	50WW13_052124	.01	6850/ClO4 DOD			Water	10mL	
15	E2400566-007	50WW11_052124	.01	6850/ClO4 DOD			Water	10mL	
16	E2400566-008	50WW05_052124	.01	6850/ClO4 DOD			Water	10mL	
17	E2400566-009	50WW29_052124	.01	6850/ClO4 DOD			Water	10mL	
18	E2400568-001	LH18/24-SP140_052124	.01	6850/ClO4 DOD			Water	10mL	
19	E2400569-001	LH18/24-SP650_052124_AIX	.01	6850/ClO4 DOD			Water	10mL	
20	EQ2400268-01	MB		6850/ClO4 DOD			Liquid	10mL	
21	EQ2400268-02	LCS		6850/ClO4 DOD			Liquid	10mL	
22	EQ2400268-03	DLCS		6850/ClO4 DOD			Liquid	10mL	
23	EQ2400268-04	ICS		6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Anion Spiking Soln. 25,000 ppm Inventory ID 233595 Logbook Ref: Expires On: 08/04/2024

EQ2400268-04 20.00µL

Name: Perchlorate Intermediate Stock 3 Inventory ID 234838 Logbook Ref: Perchlorate Inter. Stock 3 NMV Expires On: 10/25/2024

EQ2400268-02 100.00µL EQ2400268-03 100.00µL EQ2400268-04 100.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 235428 Logbook Ref: Perchlorate IS cg5/24/24 Expires On: 11/24/2024

E2400556-001 100.00µL E2400556-002 100.00µL E2400556-003 100.00µL E2400557-001 100.00µL E2400557-002 100.00µL E2400563-001 100.00µL

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Preparation Information Benchsheet

01331508

Prep Run#: 439292 **Prep WorkFlow:** GenExt28Day **Status:** Prepped

Team: Semivoa GCMS/CGUERRA **Prep Method:** Method **Prep Date/Time:** 5/30/24 13:14

E2400563-002	100.00µL	E2400563-003	100.00µL	E2400566-001	100.00µL	E2400566-002	100.00µL	E2400566-003	100.00µL	E2400566-004	100.00µL
E2400566-005	100.00µL	E2400566-006	100.00µL	E2400566-007	100.00µL	E2400566-008	100.00µL	E2400566-009	100.00µL	E2400568-001	100.00µL
E2400569-001	100.00µL	EQ2400268-01	100.00µL	EQ2400268-02	100.00µL	EQ2400268-03	100.00µL	EQ2400268-04	100.00µL		

Preparation Materials

Water HPLC Grade	HPLC WATER 04/15/24 (233144)	6850 0.45um syringe filters	6850 0.45 SYRING FILTER (229979)	6850 Luer-Lok Syringes	Luer Lok Syringes (235267)

Preparation Steps

Step: Preparation
Started: 5/30/24 13:14
Finished: 5/30/24 15:00
By: CGUERRA
Comments

Comments: _____

Reviewed By: _____ Date: _____

Chain of Custody

Relinquished By: _____ Date: _____

Received By: _____ Date: _____

Extracts Examined
Yes No

Analytical Results

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	5/20/24 0950
Sample Matrix:	Water	**Date Received:**	5/22/24
Sample Name:	50WW16_052024	**Units:**	µg/L
Lab Code:	E2400566-001	**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	**0.120**		0.100	0.0500	0.0250	1	5/30/24	5/30/24 21:03	439292	842622	

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	5/20/24 1040
Sample Matrix:	Water	**Date Received:**	5/22/24
Sample Name:	50WW18_052024	**Units:**	µg/L
Lab Code:	E2400566-002	**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	ND	U	0.200	0.100	0.0500	2	5/30/24	5/31/24 17:44	439292	842781	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	5/20/24 1130
Sample Matrix:	Water	**Date Received:**	5/22/24
Sample Name:	50WW22_052024	**Units:**	µg/L
Lab Code:	E2400566-003	**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	**0.694**	J	1.00	0.500	0.250	10	5/30/24	6/3/24 14:40	439292	842873	

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	5/20/24 1215
Sample Matrix:	Water	**Date Received:**	5/22/24
Sample Name:	50WW15_052024	**Units:**	µg/L
Lab Code:	E2400566-004	**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	**0.220**		0.100	0.0500	0.0250	1	5/30/24	5/30/24 21:19	439292	842622	

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	5/21/24 0715
Sample Matrix:	Water	**Date Received:**	5/22/24
Sample Name:	50WW14_052124	**Units:**	µg/L
Lab Code:	E2400566-005	**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	1.00	0.500	0.250	10	5/30/24	6/3/24 14:45	439292	842873	

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	5/21/24 0800
Sample Matrix:	Water	**Date Received:**	5/22/24
Sample Name:	50WW13_052124	**Units:**	µg/L
Lab Code:	E2400566-006	**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	**121**		1.00	0.500	0.250	10	5/30/24	5/31/24 16:59	439292	842781	

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	5/21/24 0850
Sample Matrix:	Water	**Date Received:**	5/22/24
Sample Name:	50WW11_052124	**Units:**	µg/L
Lab Code:	E2400566-007	**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	**268**		1.00	0.500	0.250	10	5/30/24	5/31/24 17:05	439292	842781	

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	5/21/24 0935
Sample Matrix:	Water	**Date Received:**	5/22/24
Sample Name:	50WW05_052124	**Units:**	µg/L
Lab Code:	E2400566-008	**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	5/30/24	5/31/24 16:43	439292	842781	

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	5/21/24 1025
Sample Matrix:	Water	**Date Received:**	5/22/24
Sample Name:	50WW29_052124	**Units:**	µg/L
Lab Code:	E2400566-009	**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	**0.606**	J	1.00	0.500	0.250	10	5/30/24	6/3/24 14:51	439292	842873	

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2400268-01	**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	5/30/24	5/31/24 14:35	439292	842781	

Accuracy & Precision

ALS Environmental - Houston Specialties Laboratory
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QA/QC Report

Client: ALS Environmental - US
Project: HS24051300
Sample Matrix: Water

Service Request: E2400566
Date Analyzed: 5/31/24

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: 439292

	Lab Control Sample EQ2400268-02			Duplicate Lab Control Sample EQ2400268-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.106	0.100	106	0.105	0.100	105	84 - 119	1	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.

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2400268-02	**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	**0.106**		0.100	0.0500	0.0250	1	5/30/24	5/31/24 14:41	439292	842781	

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Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400566
Project:	HS24051300	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2400268-03	**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	**0.105**		0.100	0.0500	0.0250	1	5/30/24	5/31/24 14:46	439292	842781	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Jumoke Lawal
ALS Group USA, Corp
10450 Stancliff Rd.
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Houston, Texas 77099

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JOB DESCRIPTION

HS24051300

JOB NUMBER

410-173355-1

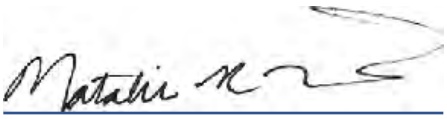
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Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



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Revision 1

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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.

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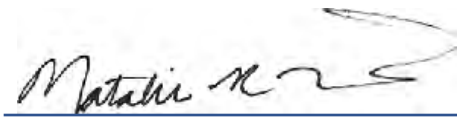


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Definitions/Glossary

Client: ALS Group USA, Corp
Project/Site: HS24051300

Job ID: 410-173355-1

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

Job ID: 410-173355-1 — Eurofins Lancaster Laboratories Environment

Job Narrative
410-173355-1

REVISION

The report being provided is a revision of the original report sent on 5/29/2024. The report (revision 1) is being revised due to the addition of a receipt exception comment regarding the COC.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- 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 may be 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.

Receipt
The samples were received on 5/24/2024 9:45 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 3.7°C.

Receipt Exceptions
The Chain-of-Custody (COC) was incomplete as received. The COC is missing Sample Preservation, Number of containers per sample, Sample Type (Grab or Composite). This does not meet regulatory requirements.

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: HS24051300

Job ID: 410-173355-1

Client Sample ID: 50WW14_052124 — Lab Sample ID: 410-173355-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	110000		12000	5600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW13_052124 — Lab Sample ID: 410-173355-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	280000	M	12000	5600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW11_052124 — Lab Sample ID: 410-173355-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	62000		12000	5600	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: HS24051300

Job ID: 410-173355-1

Client Sample ID: 50WW14_052124
Lab Sample ID: 410-173355-1
Date Collected: 05/21/24 07:15
Matrix: Water
Date Received: 05/24/24 09:45

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	110000		12000	5600	ug/L		05/28/24 10:08	05/28/24 11:35	1

Client Sample ID: 50WW13_052124
Lab Sample ID: 410-173355-2
Date Collected: 05/21/24 08:00
Matrix: Water
Date Received: 05/24/24 09:45

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	280000	M	12000	5600	ug/L		05/28/24 10:08	05/28/24 11:43	1

Client Sample ID: 50WW11_052124
Lab Sample ID: 410-173355-3
Date Collected: 05/21/24 08:50
Matrix: Water
Date Received: 05/24/24 09:45

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	62000		12000	5600	ug/L		05/28/24 10:08	05/28/24 12:04	1

QC Sample Results

Client: ALS Group USA, Corp
Project/Site: HS24051300

Job ID: 410-173355-1

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-510950/1-A
Matrix: Water
Analysis Batch: 510895

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 510950

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	5600	U M	12000	5600	ug/L		05/28/24 10:08	05/28/24 10:33	1

Lab Sample ID: LCS 410-510950/2-A
Matrix: Water
Analysis Batch: 510895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 510950

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon dioxide			35800	35500		ug/L		99	80 - 122		

Lab Sample ID: LCSD 410-510950/3-A
Matrix: Water
Analysis Batch: 510895

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 510950

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon dioxide			35800	34600		ug/L		96	80 - 122	3	20

QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS24051300

Job ID: 410-173355-1

GC VOA

Analysis Batch: 510895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-173355-1	50WW14_052124	Total/NA	Water	RSK-175	510950
410-173355-2	50WW13_052124	Total/NA	Water	RSK-175	510950
410-173355-3	50WW11_052124	Total/NA	Water	RSK-175	510950
MB 410-510950/1-A	Method Blank	Total/NA	Water	RSK-175	510950
LCS 410-510950/2-A	Lab Control Sample	Total/NA	Water	RSK-175	510950
LCSD 410-510950/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	510950

Prep Batch: 510950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-173355-1	50WW14_052124	Total/NA	Water	RSK-175	
410-173355-2	50WW13_052124	Total/NA	Water	RSK-175	
410-173355-3	50WW11_052124	Total/NA	Water	RSK-175	
MB 410-510950/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-510950/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-510950/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS24051300

Job ID: 410-173355-1

Client Sample ID: 50WW14_052124
Lab Sample ID: 410-173355-1
Date Collected: 05/21/24 07:15
Matrix: Water
Date Received: 05/24/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			510950	HQR6	ELLE	05/28/24 10:08
Total/NA	Analysis	RSK-175		1	510895	LXF2	ELLE	05/28/24 11:35

Client Sample ID: 50WW13_052124
Lab Sample ID: 410-173355-2
Date Collected: 05/21/24 08:00
Matrix: Water
Date Received: 05/24/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			510950	HQR6	ELLE	05/28/24 10:08
Total/NA	Analysis	RSK-175		1	510895	LXF2	ELLE	05/28/24 11:43

Client Sample ID: 50WW11_052124
Lab Sample ID: 410-173355-3
Date Collected: 05/21/24 08:50
Matrix: Water
Date Received: 05/24/24 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			510950	HQR6	ELLE	05/28/24 10:08
Total/NA	Analysis	RSK-175		1	510895	LXF2	ELLE	05/28/24 12:04

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: HS24051300

Job ID: 410-173355-1

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	05-30-24

Method Summary

01331536

Client: ALS Group USA, Corp
Project/Site: HS24051300

Job ID: 410-173355-1

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

01331537

Client: ALS Group USA, Corp
Project/Site: HS24051300

Job ID: 410-173355-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-173355-1	50WW14_052124	Water	05/21/24 07:15	05/24/24 09:45
410-173355-2	50WW13_052124	Water	05/21/24 08:00	05/24/24 09:45
410-173355-3	50WW11_052124	Water	05/21/24 08:50	05/24/24 09:45

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410-173355 Chain of Custody

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Subcontract Chain of Custody

SAMPLING STATE: Colorado **COC ID:** 25769

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:	Luis.Aguilar
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	luis.aguilar@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:	HS24051300
TSR:	Sonia West

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS24051300-05**	**SOWW14_052124**	**Groundwater**	**21 May 2024 07:15**
	RSK175 CO2; LHAAP; DoD Level IV, LHAAP EQUIS EDD			06 Jun 2024
2.	**HS24051300-06**	**SOWW13_052124**	**Groundwater**	**21 May 2024 08:00**
	RSK175 CO2; LHAAP; DoD Level IV, LHAAP EQUIS EDD			06 Jun 2024
3.	**HS24051300-07**	**SOWW11_052124**	**Groundwater**	**21 May 2024 08:50**
	RSK175 CO2; LHAAP; DoD Level IV, LHAAP EQUIS EDD			06 Jun 2024

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

QC Level: DOD IV (DoD Data Package)

Relinquished By: AM **Date/Time:** 5/23/24 18:00

Received By: [signature] **Date/Time:** 5/24/24 0945

Cooler ID(s): **Temperature(s):**

R: 3.8

RIGHT SOLUTIONS | RIGHT PARTNER

Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-173355-1

Login Number: 173355
List Number: 1
Creator: Arroyo, Haley

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=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.	False	Refer to Job Narrative for details.
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	

RIGHT SOLUTIONS | RIGHT PARTNER

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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June 12, 2024

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

Work Order: **HS24051490**

Laboratory Results for: **LHAAP-50**

Dear Marcia Olive,

ALS Environmental received 8 sample(s) on May 24, 2024 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: DAYNA.FISHER
Luis.Aguilar

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
Work Order: HS24051490

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS24051490-01	50WW09_052224	Water		22-May-2024 07:15	24-May-2024 09:50	☐
HS24051490-02	50WW08_052224	Water		22-May-2024 07:55	24-May-2024 09:50	☐
HS24051490-03	50WW23_052224	Water		22-May-2024 08:40	24-May-2024 09:50	☐
HS24051490-04	50WW12_052224	Water		22-May-2024 09:25	24-May-2024 09:50	☐
HS24051490-05	50WW12_052224_a	Water		22-May-2024 09:25	24-May-2024 09:50	☐
HS24051490-06	50WW06_052224	Water		22-May-2024 10:20	24-May-2024 09:50	☐
HS24051490-07	50WW06_052224_a	Water		22-May-2024 10:20	24-May-2024 09:50	☐
HS24051490-08	Trip Blank	Water	CG-111123-468	24-May-2024 09:50	24-May-2024 09:50	☐

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP-50
Work Order: HS24051490

Work Order Comments

- The analysis for CO2 by RSK175 was subcontracted to Eurofins in Lancaster, PA. The final report is appended.
- The analysis for Perchlorate was performed by ALS Houston Specialty Lab. The final report is appended.

Work Order Comments

- Login Comments: Nitrate containers received outside of 48hr hold time.

GC Semivolatiles by Method RSK-175

Batch ID: R468189,R468476

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

GCMS Volatiles by Method SW8260

Batch ID: R468115

Sample ID: 50WW08_052224 (HS24051490-02)

- Lowest possible dilution due to high concentrations of target analytes.

Sample ID: 50WW12_052224 (HS24051490-04)

- Lowest possible dilution due to high concentrations of target analytes.

Sample ID: 50WW12_052224_a (HS24051490-05)

- Lowest possible dilution due to high concentrations of target analytes.

Sample ID: 50WW12_052224_a (HS24051490-05MS)

- Surrogates failed outside control limits high. This was confirmed by MSD.

Sample ID: 50WW12_052224_a (HS24051490-05MSD)

- MSD recovered outside control limits for Trichloroethene

Batch ID: R468007

Sample ID: 50WW23_052224 (HS24051490-03MS)

- Surrogate failed outside control limits high. This was confirmed by MSD.

WetChemistry by Method SM5310B

Batch ID: R468251

Sample ID: 50WW12_052224_a (HS24051490-05MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Batch ID: R468250

Sample ID: HS24051089-09MS

- MS is for an unrelated sample

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
Work Order: HS24051490

CASE NARRATIVE

WetChemistry by Method SW9056

Batch ID: R467693

Sample ID: 50WW06_052224 (HS24051490-06)

- Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

Sample ID: 50WW06_052224_a (HS24051490-07)

- Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

Sample ID: 50WW12_052224 (HS24051490-04)

- Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

Sample ID: 50WW12_052224_a (HS24051490-05)

- Sample holding time expired prior to sample receipt. It was analyzed at the request of the client. Results should be considered estimated.

Sample ID: HS24051535-01MS

- MS and MSD are for an unrelated sample (Sulfate)

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
Sample ID: 50WW09_052224
Collection Date: 22-May-2024 07:15

ANALYTICAL REPORT
WorkOrder:HS24051490
Lab ID:HS24051490-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 17:51
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 17:51
cis-1,2-Dichloroethene	**0.64**	J	**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 17:51
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-May-2024 17:51
Trichloroethene	**4.7**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 17:51
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 17:51
Surr: 1,2-Dichloroethane-d4	*117*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 17:51*
Surr: 4-Bromofluorobenzene	*113*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 17:51*
Surr: Dibromofluoromethane	*114*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 17:51*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 17:51*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Jun-2024 14:27

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

ALS Houston, US

Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: LHAAP-50

WorkOrder:HS24051490

Sample ID: 50WW08_052224

Lab ID:HS24051490-02

Collection Date: 22-May-2024 07:55

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	10	U	2.0	10	10	ug/L	10	30-May-2024 22:57
1,2-Dichloroethane	10	U	2.0	10	10	ug/L	10	30-May-2024 22:57
cis-1,2-Dichloroethene	**93**		**2.0**	**10**	**10**	**ug/L**	10	30-May-2024 22:57
Tetrachloroethene	10	U	3.0	10	10	ug/L	10	30-May-2024 22:57
Trichloroethene	**820**		**2.0**	**10**	**10**	**ug/L**	10	30-May-2024 22:57
Vinyl chloride	10	U	2.0	10	10	ug/L	10	30-May-2024 22:57
Surr: 1,2-Dichloroethane-d4	*116*			**0**	*81-118*	*%REC*	*10*	*30-May-2024 22:57*
Surr: 4-Bromofluorobenzene	*107*			**0**	*85-114*	*%REC*	*10*	*30-May-2024 22:57*
Surr: Dibromofluoromethane	*112*			**0**	*80-119*	*%REC*	*10*	*30-May-2024 22:57*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*10*	*30-May-2024 22:57*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Jun-2024 14:27

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

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
Sample ID: 50WW23_052224
Collection Date: 22-May-2024 08:40

ANALYTICAL REPORT
WorkOrder:HS24051490
Lab ID:HS24051490-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 05:38
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 05:38
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 05:38
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-May-2024 05:38
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 05:38
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 05:38
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 05:38*
Surr: 4-Bromofluorobenzene	*112*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 05:38*
Surr: Dibromofluoromethane	*116*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 05:38*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 05:38*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Jun-2024 14:27

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

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
Sample ID: 50WW12_052224
Collection Date: 22-May-2024 09:25

ANALYTICAL REPORT
WorkOrder:HS24051490
Lab ID:HS24051490-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	**22**		**2.0**	**10**	**10**	**ug/L**	10	30-May-2024 23:21
1,2-Dichloroethane	**15**		**2.0**	**10**	**10**	**ug/L**	10	30-May-2024 23:21
cis-1,2-Dichloroethene	10	U	2.0	10	10	ug/L	10	30-May-2024 23:21
Tetrachloroethene	10	U	3.0	10	10	ug/L	10	30-May-2024 23:21
Trichloroethene	**1,200**		**2.0**	**10**	**10**	**ug/L**	10	30-May-2024 23:21
Vinyl chloride	10	U	2.0	10	10	ug/L	10	30-May-2024 23:21
Surr: 1,2-Dichloroethane-d4	*117*			**0**	*81-118*	*%REC*	*10*	*30-May-2024 23:21*
Surr: 4-Bromofluorobenzene	*107*			**0**	*85-114*	*%REC*	*10*	*30-May-2024 23:21*
Surr: Dibromofluoromethane	*114*			**0**	*80-119*	*%REC*	*10*	*30-May-2024 23:21*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*10*	*30-May-2024 23:21*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: RG
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	03-Jun-2024 15:04
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	03-Jun-2024 15:04
Methane	**4.32**		**0.0214**	**0.100**	**0.100**	**mg/L**	200	04-Jun-2024 09:36
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: JAC
Organic Carbon, Total	**9.72**		**0.500**	**1.00**	**1.00**	**mg/L**	1	01-Jun-2024 01:23
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,070**		**4.00**	**5.00**	**10.0**	**mg/L**	20	25-May-2024 00:26
Nitrogen, Nitrate (As N)	**0.137**	H	**0.0300**	**0.0500**	**0.100**	**mg/L**	1	25-May-2024 00:21
Sulfate	**620**		**4.00**	**5.00**	**10.0**	**mg/L**	20	25-May-2024 00:26
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Jun-2024 14:27
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Jun-2024 08:15

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

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
Sample ID: 50WW12_052224_a
Collection Date: 22-May-2024 09:25

ANALYTICAL REPORT
WorkOrder:HS24051490
Lab ID:HS24051490-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	**18**		**2.0**	**10**	**10**	**ug/L**	10	30-May-2024 23:43
1,2-Dichloroethane	**14**		**2.0**	**10**	**10**	**ug/L**	10	30-May-2024 23:43
cis-1,2-Dichloroethene	10	U	2.0	10	10	ug/L	10	30-May-2024 23:43
Tetrachloroethene	10	U	3.0	10	10	ug/L	10	30-May-2024 23:43
Trichloroethene	**1,100**		**2.0**	**10**	**10**	**ug/L**	10	30-May-2024 23:43
Vinyl chloride	10	U	2.0	10	10	ug/L	10	30-May-2024 23:43
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*10*	*30-May-2024 23:43*
Surr: 4-Bromofluorobenzene	*111*			**0**	*85-114*	*%REC*	*10*	*30-May-2024 23:43*
Surr: Dibromofluoromethane	*116*			**0**	*80-119*	*%REC*	*10*	*30-May-2024 23:43*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*10*	*30-May-2024 23:43*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: RG
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	31-May-2024 11:40
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	31-May-2024 11:40
Methane	**1.44**		**0.0214**	**0.100**	**0.100**	**mg/L**	200	31-May-2024 11:55
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: JAC
Organic Carbon, Total	**9.44**		**0.500**	**1.00**	**1.00**	**mg/L**	1	01-Jun-2024 03:22
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,430**		**10.0**	**12.5**	**25.0**	**mg/L**	50	25-May-2024 00:38
Nitrogen, Nitrate (As N)	**0.231**	H	**0.0600**	**0.100**	**0.200**	**mg/L**	2	25-May-2024 00:32
Sulfate	**847**		**10.0**	**12.5**	**25.0**	**mg/L**	50	25-May-2024 00:38
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Jun-2024 14:27
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Jun-2024 08:15

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

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
Sample ID: 50WW06_052224
Collection Date: 22-May-2024 10:20

ANALYTICAL REPORT
WorkOrder:HS24051490
Lab ID:HS24051490-06
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 18:12
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 18:12
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 18:12
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-May-2024 18:12
Trichloroethene	**11**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 18:12
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 18:12
Surr: 1,2-Dichloroethane-d4	*115*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 18:12*
Surr: 4-Bromofluorobenzene	*109*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 18:12*
Surr: Dibromofluoromethane	*110*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 18:12*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 18:12*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: RG
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	31-May-2024 10:01
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	31-May-2024 10:01
Methane	**0.00208**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	31-May-2024 10:01
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: JAC
Organic Carbon, Total	**3.71**		**0.500**	**1.00**	**1.00**	**mg/L**	1	01-Jun-2024 03:46
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**3.10**		**0.200**	**0.250**	**0.500**	**mg/L**	1	25-May-2024 01:07
Nitrogen, Nitrate (As N)	**0.108**	H	**0.0300**	**0.0500**	**0.100**	**mg/L**	1	25-May-2024 01:07
Sulfate	**11.2**		**0.200**	**0.250**	**0.500**	**mg/L**	1	25-May-2024 01:07
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Jun-2024 14:27
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Jun-2024 08:15

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

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
Sample ID: 50WW06_052224_a
Collection Date: 22-May-2024 10:20

ANALYTICAL REPORT
WorkOrder:HS24051490
Lab ID:HS24051490-07
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 18:34
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 18:34
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 18:34
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-May-2024 18:34
Trichloroethene	**11**		**0.20**	**1.0**	**1.0**	**ug/L**	1	30-May-2024 18:34
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 18:34
Surr: 1,2-Dichloroethane-d4	*118*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 18:34*
Surr: 4-Bromofluorobenzene	*109*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 18:34*
Surr: Dibromofluoromethane	*113*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 18:34*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 18:34*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: RG
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	31-May-2024 11:32
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	31-May-2024 11:32
Methane	**0.00186**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	31-May-2024 11:32
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: JAC
Organic Carbon, Total	**4.30**		**0.500**	**1.00**	**1.00**	**mg/L**	1	01-Jun-2024 03:58
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**3.35**		**0.200**	**0.250**	**0.500**	**mg/L**	1	25-May-2024 01:13
Nitrogen, Nitrate (As N)	**0.110**	H	**0.0300**	**0.0500**	**0.100**	**mg/L**	1	25-May-2024 01:13
Sulfate	**11.4**		**0.200**	**0.250**	**0.500**	**mg/L**	1	25-May-2024 01:13
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Jun-2024 14:27
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	03-Jun-2024 08:15

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

ALS Houston, US

Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.

ANALYTICAL REPORT

Project: LHAAP-50

WorkOrder:HS24051490

Sample ID: Trip Blank

Lab ID:HS24051490-08

Collection Date: 24-May-2024 09:50

Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: TS
1,1-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 17:29
1,2-Dichloroethane	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 17:29
cis-1,2-Dichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 17:29
Tetrachloroethene	1.0	U	0.30	1.0	1.0	ug/L	1	30-May-2024 17:29
Trichloroethene	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 17:29
Vinyl chloride	1.0	U	0.20	1.0	1.0	ug/L	1	30-May-2024 17:29
Surr: 1,2-Dichloroethane-d4	*116*			**0**	*81-118*	*%REC*	*1*	*30-May-2024 17:29*
Surr: 4-Bromofluorobenzene	*111*			**0**	*85-114*	*%REC*	*1*	*30-May-2024 17:29*
Surr: Dibromofluoromethane	*113*			**0**	*80-119*	*%REC*	*1*	*30-May-2024 17:29*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*30-May-2024 17:29*

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

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R467693 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS24051490-04	50WW12_052224	22 May 2024 09:25			25 May 2024 00:26	20
HS24051490-04	50WW12_052224	22 May 2024 09:25			25 May 2024 00:21	1
HS24051490-05	50WW12_052224_a	22 May 2024 09:25			25 May 2024 00:38	50
HS24051490-05	50WW12_052224_a	22 May 2024 09:25			25 May 2024 00:32	2
HS24051490-06	50WW06_052224	22 May 2024 10:20			25 May 2024 01:07	1
HS24051490-07	50WW06_052224_a	22 May 2024 10:20			25 May 2024 01:13	1
Batch ID: R468007 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS24051490-03	50WW23_052224	22 May 2024 08:40			30 May 2024 05:38	1
Batch ID: R468115 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS24051490-01	50WW09_052224	22 May 2024 07:15			30 May 2024 17:51	1
HS24051490-02	50WW08_052224	22 May 2024 07:55			30 May 2024 22:57	10
HS24051490-04	50WW12_052224	22 May 2024 09:25			30 May 2024 23:21	10
HS24051490-05	50WW12_052224_a	22 May 2024 09:25			30 May 2024 23:43	10
HS24051490-06	50WW06_052224	22 May 2024 10:20			30 May 2024 18:12	1
HS24051490-07	50WW06_052224_a	22 May 2024 10:20			30 May 2024 18:34	1
HS24051490-08	Trip Blank	24 May 2024 09:50			30 May 2024 17:29	1
Batch ID: R468189 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Water	
HS24051490-05	50WW12_052224_a	22 May 2024 09:25			31 May 2024 11:55	200
HS24051490-05	50WW12_052224_a	22 May 2024 09:25			31 May 2024 11:40	1
HS24051490-06	50WW06_052224	22 May 2024 10:20			31 May 2024 10:01	1
HS24051490-07	50WW06_052224_a	22 May 2024 10:20			31 May 2024 11:32	1
Batch ID: R468250 (0)	**Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011				**Matrix:** Water	
HS24051490-04	50WW12_052224	22 May 2024 09:25			01 Jun 2024 01:23	1
Batch ID: R468251 (0)	**Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011				**Matrix:** Water	
HS24051490-05	50WW12_052224_a	22 May 2024 09:25			01 Jun 2024 03:22	1
HS24051490-06	50WW06_052224	22 May 2024 10:20			01 Jun 2024 03:46	1
HS24051490-07	50WW06_052224_a	22 May 2024 10:20			01 Jun 2024 03:58	1
Batch ID: R468276 (0)	**Test Name :** SUBCONTRACT ANALYSIS - RSK				**Matrix:** Water	
HS24051490-04	50WW12_052224	22 May 2024 09:25			03 Jun 2024 08:15	1
HS24051490-05	50WW12_052224_a	22 May 2024 09:25			03 Jun 2024 08:15	1
HS24051490-06	50WW06_052224	22 May 2024 10:20			03 Jun 2024 08:15	1
HS24051490-07	50WW06_052224_a	22 May 2024 10:20			03 Jun 2024 08:15	1
Batch ID: R468476 (0)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Water	
HS24051490-04	50WW12_052224	22 May 2024 09:25			04 Jun 2024 09:36	200
HS24051490-04	50WW12_052224	22 May 2024 09:25			03 Jun 2024 15:04	1

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R469201 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS24051490-01	50WW09_052224	22 May 2024 07:15			12 Jun 2024 14:27	1
HS24051490-02	50WW08_052224	22 May 2024 07:55			12 Jun 2024 14:27	1
HS24051490-03	50WW23_052224	22 May 2024 08:40			12 Jun 2024 14:27	1
HS24051490-04	50WW12_052224	22 May 2024 09:25			12 Jun 2024 14:27	1
HS24051490-05	50WW12_052224_a	22 May 2024 09:25			12 Jun 2024 14:27	1
HS24051490-06	50WW06_052224	22 May 2024 10:20			12 Jun 2024 14:27	1
HS24051490-07	50WW06_052224_a	22 May 2024 10:20			12 Jun 2024 14:27	1

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

QC BATCH REPORT

Batch ID: R468189 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-240531** Units: **mg/L** Analysis Date: **31-May-2024 09:17**
Client ID: Run ID: **FID-4_468189** SeqNo: **8041232** 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-240531** Units: **mg/L** Analysis Date: **31-May-2024 09:30**
Client ID: Run ID: **FID-4_468189** SeqNo: **8041233** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0153	0.00100	0.01804	0	84.9	75 - 125				
Ethene	0.0146	0.00100	0.0168	0	86.6	75 - 125				
Methane	0.00908	0.000500	0.009647	0	94.1	75 - 125				

LCSD Sample ID: **LCSD-240531** Units: **mg/L** Analysis Date: **31-May-2024 09:38**
Client ID: Run ID: **FID-4_468189** SeqNo: **8041234** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0148	0.00100	0.01804	0	81.9	75 - 125	0.01532	3.64	30	
Ethene	0.0139	0.00100	0.0168	0	82.7	75 - 125	0.01455	4.68	30	
Methane	0.00869	0.000500	0.009647	0	90.1	75 - 125	0.009079	4.4	30	

The following samples were analyzed in this batch: HS24051490-05 HS24051490-06 HS24051490-07

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

QC BATCH REPORT

Batch ID: R468476 (0) **Instrument: FID-4** **Method: DISSOLVED GASES BY RSK-175**

MBLK Sample ID: **MBLK-240603** Units: **mg/L** Analysis Date: **03-Jun-2024 08:17**
Client ID: Run ID: **FID-4_468476** SeqNo: **8046712** 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-240603** Units: **mg/L** Analysis Date: **03-Jun-2024 08:35**
Client ID: Run ID: **FID-4_468476** SeqNo: **8046713** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0156	0.00100	0.01804	0	86.7	75 - 125				
Ethene	0.0137	0.00100	0.0168	0	81.6	75 - 125				
Methane	0.00844	0.000500	0.009647	0	87.5	75 - 125				

LCSD Sample ID: **LCSD-240603** Units: **mg/L** Analysis Date: **03-Jun-2024 08:53**
Client ID: Run ID: **FID-4_468476** SeqNo: **8046714** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0156	0.00100	0.01804	0	86.2	75 - 125	0.01565	0.555	30	
Ethene	0.0138	0.00100	0.0168	0	81.9	75 - 125	0.01371	0.332	30	
Methane	0.00862	0.000500	0.009647	0	89.4	75 - 125	0.008438	2.15	30	

The following samples were analyzed in this batch: HS24051490-04

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

QC BATCH REPORT

Batch ID: R468007 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-240529** Units: **ug/L** Analysis Date: **30-May-2024 04:55**
Client ID: Run ID: **VOA9_468007** SeqNo: **8037237** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	1.0	1.0								U
1,2-Dichloroethane	1.0	1.0								U
cis-1,2-Dichloroethene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Trichloroethene	1.0	1.0								U
Vinyl chloride	1.0	1.0								U
Surr: 1,2-Dichloroethane-d4	*58.25*	*35*	*50*	*0*	*117*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*54.55*	*35*	*50*	*0*	*109*	*85 - 114*				
Surr: Dibromofluoromethane	*56.36*	*35*	*50*	*0*	*113*	*80 - 119*				
Surr: Toluene-d8	*55.78*	*35*	*50*	*0*	*112*	*89 - 112*				

LCS Sample ID: **VLCSW-240529** Units: **ug/L** Analysis Date: **30-May-2024 03:50**
Client ID: Run ID: **VOA9_468007** SeqNo: **8037235** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	18.5	1.0	20	0	92.5	71 - 131				
1,2-Dichloroethane	19.96	1.0	20	0	99.8	73 - 128				
cis-1,2-Dichloroethene	17.09	1.0	20	0	85.4	78 - 123				
Tetrachloroethene	18.99	1.0	20	0	95.0	74 - 129				
Trichloroethene	17.9	1.0	20	0	89.5	79 - 123				
Vinyl chloride	19.53	1.0	20	0	97.7	58 - 137				
Surr: 1,2-Dichloroethane-d4	*58.95*	*35*	*50*	*0*	*118*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*55.58*	*35*	*50*	*0*	*111*	*85 - 114*				
Surr: Dibromofluoromethane	*58.13*	*35*	*50*	*0*	*116*	*80 - 119*				
Surr: Toluene-d8	*55.54*	*35*	*50*	*0*	*111*	*89 - 112*				

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

QC BATCH REPORT

Batch ID: R468007 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS24051490-03MS** Units: **ug/L** Analysis Date: **30-May-2024 05:59**
Client ID: **50WW23_052224** Run ID: **VOA9_468007** SeqNo: **8037239** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	19.08	1.0	20	0	95.4	71 - 131				
1,2-Dichloroethane	19.69	1.0	20	0	98.5	73 - 128				
cis-1,2-Dichloroethene	16.82	1.0	20	0	84.1	78 - 123				
Tetrachloroethene	19.24	1.0	20	0	96.2	74 - 129				
Trichloroethene	18.02	1.0	20	0	90.1	79 - 123				
Vinyl chloride	20.01	1.0	20	0	100	58 - 137				
Surr: 1,2-Dichloroethane-d4	*57.99*	*35*	*50*	*0*	*116*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*56.47*	*35*	*50*	*0*	*113*	*85 - 114*				
Surr: Dibromofluoromethane	*59.03*	*35*	*50*	*0*	*118*	*80 - 119*				
Surr: Toluene-d8	*56.63*	*35*	*50*	*0*	*113*	*89 - 112*				S

MSD Sample ID: **HS24051490-03MSD** Units: **ug/L** Analysis Date: **30-May-2024 06:21**
Client ID: **50WW23_052224** Run ID: **VOA9_468007** SeqNo: **8037240** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	18.56	1.0	20	0	92.8	71 - 131	19.08	2.78	20	
1,2-Dichloroethane	19.3	1.0	20	0	96.5	73 - 128	19.69	2.02	20	
cis-1,2-Dichloroethene	16.78	1.0	20	0	83.9	78 - 123	16.82	0.223	20	
Tetrachloroethene	19.15	1.0	20	0	95.8	74 - 129	19.24	0.45	20	
Trichloroethene	17.95	1.0	20	0	89.7	79 - 123	18.02	0.374	20	
Vinyl chloride	19.68	1.0	20	0	98.4	58 - 137	20.01	1.65	20	
Surr: 1,2-Dichloroethane-d4	*57.17*	*35*	*50*	*0*	*114*	*81 - 118*	*57.99*	*1.41*	*20*	
Surr: 4-Bromofluorobenzene	*56.42*	*35*	*50*	*0*	*113*	*85 - 114*	*56.47*	*0.0822*	*20*	
Surr: Dibromofluoromethane	*57.9*	*35*	*50*	*0*	*116*	*80 - 119*	*59.03*	*1.95*	*20*	
Surr: Toluene-d8	*57.32*	*35*	*50*	*0*	*115*	*89 - 112*	*56.63*	*1.21*	*20*	S

The following samples were analyzed in this batch: HS24051490-03

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

QC BATCH REPORT

Batch ID: R468115 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-240530** Units: **ug/L** Analysis Date: **30-May-2024 16:25**
Client ID: Run ID: **VOA9_468115** SeqNo: **8040018** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	1.0	1.0								U
1,2-Dichloroethane	1.0	1.0								U
cis-1,2-Dichloroethene	1.0	1.0								U
Tetrachloroethene	1.0	1.0								U
Trichloroethene	1.0	1.0								U
Vinyl chloride	1.0	1.0								U
Surr: 1,2-Dichloroethane-d4	*58.14*	*35*	*50*	*0*	*116*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*56.36*	*35*	*50*	*0*	*113*	*85 - 114*				
Surr: Dibromofluoromethane	*55.81*	*35*	*50*	*0*	*112*	*80 - 119*				
Surr: Toluene-d8	*55.97*	*35*	*50*	*0*	*112*	*89 - 112*				

LCS Sample ID: **VLCSW-240530** Units: **ug/L** Analysis Date: **30-May-2024 15:19**
Client ID: Run ID: **VOA9_468115** SeqNo: **8040017** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	18.85	1.0	20	0	94.2	71 - 131				
1,2-Dichloroethane	19.87	1.0	20	0	99.3	73 - 128				
cis-1,2-Dichloroethene	17.96	1.0	20	0	89.8	78 - 123				
Tetrachloroethene	19.75	1.0	20	0	98.7	74 - 129				
Trichloroethene	18.26	1.0	20	0	91.3	79 - 123				
Vinyl chloride	20.37	1.0	20	0	102	58 - 137				
Surr: 1,2-Dichloroethane-d4	*55.45*	*35*	*50*	*0*	*111*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*56.26*	*35*	*50*	*0*	*113*	*85 - 114*				
Surr: Dibromofluoromethane	*56.83*	*35*	*50*	*0*	*114*	*80 - 119*				
Surr: Toluene-d8	*55.47*	*35*	*50*	*0*	*111*	*89 - 112*				

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

QC BATCH REPORT

Batch ID: R468115 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS24051490-05MS** Units: **ug/L** Analysis Date: **31-May-2024 00:04**
Client ID: **50WW12_052224_a** Run ID: **VOA9_468115** SeqNo: **8040034** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	193.9	10	200	17.9	88.0	71 - 131				
1,2-Dichloroethane	200.6	10	200	13.52	93.5	73 - 128				
cis-1,2-Dichloroethene	167.7	10	200	0	83.8	78 - 123				
Tetrachloroethene	196	10	200	0	98.0	74 - 129				
Trichloroethene	1232	10	200	1067	82.4	79 - 123				O
Vinyl chloride	222.7	10	200	0	111	58 - 137				
Surr: 1,2-Dichloroethane-d4	*581.7*	*350*	*500*	*0*	*116*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*586*	*350*	*500*	*0*	*117*	*85 - 114*				S
Surr: Dibromofluoromethane	*580*	*350*	*500*	*0*	*116*	*80 - 119*				
Surr: Toluene-d8	*575.4*	*350*	*500*	*0*	*115*	*89 - 112*				S

MSD Sample ID: **HS24051490-05MSD** Units: **ug/L** Analysis Date: **31-May-2024 00:26**
Client ID: **50WW12_052224_a** Run ID: **VOA9_468115** SeqNo: **8040035** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	191.1	10	200	17.9	86.6	71 - 131	193.9	1.48	20	
1,2-Dichloroethane	192.4	10	200	13.52	89.4	73 - 128	200.6	4.17	20	
cis-1,2-Dichloroethene	163.4	10	200	0	81.7	78 - 123	167.7	2.59	20	
Tetrachloroethene	188.5	10	200	0	94.2	74 - 129	196	3.93	20	
Trichloroethene	1172	10	200	1067	52.5	79 - 123	1232	4.97	20	SO
Vinyl chloride	213.9	10	200	0	107	58 - 137	222.7	4	20	
Surr: 1,2-Dichloroethane-d4	*582.1*	*350*	*500*	*0*	*116*	*81 - 118*	*581.7*	*0.0697*	*20*	
Surr: 4-Bromofluorobenzene	*592.7*	*350*	*500*	*0*	*119*	*85 - 114*	*586*	*1.13*	*20*	S
Surr: Dibromofluoromethane	*578.8*	*350*	*500*	*0*	*116*	*80 - 119*	*580*	*0.213*	*20*	
Surr: Toluene-d8	*579.6*	*350*	*500*	*0*	*116*	*89 - 112*	*575.4*	*0.725*	*20*	S

The following samples were analyzed in this batch: HS24051490-01 HS24051490-02 HS24051490-04 HS24051490-05 HS24051490-06 HS24051490-07 HS24051490-08

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

QC BATCH REPORT

Batch ID: R467693 (0) **Instrument: ICS-Integrion** **Method: ANIONS BY SW9056A**

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **24-May-2024 21:13**
Client ID: Run ID: **ICS-Integrion_467693** SeqNo: **8029946** 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
Sulfate	0.250	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **24-May-2024 21:19**
Client ID: Run ID: **ICS-Integrion_467693** SeqNo: **8029947** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	21.06	0.500	20	0	105	80 - 120				
Nitrogen, Nitrate (As N)	4.225	0.100	4	0	106	80 - 120				
Sulfate	20.94	0.500	20	0	105	80 - 120				

MS Sample ID: **HS24051535-01MS** Units: **mg/L** Analysis Date: **24-May-2024 21:37**
Client ID: Run ID: **ICS-Integrion_467693** SeqNo: **8029950** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	472.6	5.00	100	390.9	81.7	80 - 120				
Nitrogen, Nitrate (As N)	19.66	1.00	20	0	98.3	80 - 120				
Sulfate	487.4	5.00	100	435.7	51.7	80 - 120				SO

MSD Sample ID: **HS24051535-01MSD** Units: **mg/L** Analysis Date: **24-May-2024 21:42**
Client ID: Run ID: **ICS-Integrion_467693** SeqNo: **8029951** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	472.5	5.00	100	390.9	81.6	80 - 120	472.6	0.0169	20	
Nitrogen, Nitrate (As N)	19.72	1.00	20	0	98.6	80 - 120	19.66	0.315	20	
Sulfate	488	5.00	100	435.7	52.3	80 - 120	487.4	0.114	20	SO

The following samples were analyzed in this batch: HS24051490-04 HS24051490-05 HS24051490-06 HS24051490-07

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

QC BATCH REPORT

Batch ID: R468250 (0) **Instrument: TOC_05** **Method: TOTAL ORGANIC CARBON - SM5310B-2011**

MBLK Sample ID: **MBLK-05292024** Units: **mg/L** Analysis Date: **31-May-2024 21:36**
Client ID: Run ID: **TOC_05_468250** SeqNo: **8042367** 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-05292024** Units: **mg/L** Analysis Date: **31-May-2024 21:49**
Client ID: Run ID: **TOC_05_468250** SeqNo: **8042368** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.642	1.00	10	0	96.4	91 - 109				

LCSD Sample ID: **LCSD-05292024** Units: **mg/L** Analysis Date: **31-May-2024 22:01**
Client ID: Run ID: **TOC_05_468250** SeqNo: **8042369** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.579	1.00	10	0	95.8	91 - 109	9.642	0.656	20	

MS Sample ID: **HS24051089-09MS** Units: **mg/L** Analysis Date: **31-May-2024 22:35**
Client ID: Run ID: **TOC_05_468250** SeqNo: **8042371** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.63	1.00	10	2.904	77.3	86 - 117				S

The following samples were analyzed in this batch: HS24051490-04

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: HS24051490

QC BATCH REPORT

Batch ID: R468251 (0) **Instrument: TOC_05** **Method: TOTAL ORGANIC CARBON - SM5310B-2011**

MBLK Sample ID: **MBLK-05292024** Units: **mg/L** Analysis Date: **01-Jun-2024 02:36**
Client ID: Run ID: **TOC_05_468251** SeqNo: **8042387** 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-05292024** Units: **mg/L** Analysis Date: **01-Jun-2024 02:48**
Client ID: Run ID: **TOC_05_468251** SeqNo: **8042388** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.539	1.00	10	0	95.4	91 - 109				

LCSD Sample ID: **LCSD-05292024** Units: **mg/L** Analysis Date: **01-Jun-2024 03:00**
Client ID: Run ID: **TOC_05_468251** SeqNo: **8042389** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.704	1.00	10	0	97.0	91 - 109	9.539	1.71	20	

MS Sample ID: **HS24051490-05MS** Units: **mg/L** Analysis Date: **01-Jun-2024 03:34**
Client ID: **50WW12_052224_a** Run ID: **TOC_05_468251** SeqNo: **8042391** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	12.44	1.00	10	9.443	30.0	86 - 117				S

The following samples were analyzed in this batch: HS24051490-05 HS24051490-06 HS24051490-07

ALS Houston, US Date: 12-Jun-24

Client: Bhate Environmental Associates, Inc.
Project: LHAAP-50
WorkOrder: **HS24051490**

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: 12-Jun-24

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	88-00356_2024	27-Mar-2025
California	2919; 2025	30-Apr-2025
Florida	E87611-38	30-Jun-2024
Illinois	2000322023-11	30-Jun-2024
Kansas	E-10352 2023-2024	31-Jul-2024
Kentucky	123043	30-Apr-2025
Louisiana	03087 2023-2024	30-Jun-2024
Maryland	343; 2023-2024	30-Jun-2024
North Carolina	624 - 2024	31-Dec-2024
Oklahoma	2023-140	31-Aug-2024
Tennessee	04016	30-Apr-2025
Texas	T104704231 TX-C24-00130	30-Apr-2025
Utah	TX026932023-14	31-Jul-2024

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ALS Houston, US Date: 12-Jun-24

Sample Receipt Checklist

Work Order ID: HS24051490 **Date/Time Received:** **24-May-2024 09:50**

Client Name: Bhate Environmental **Received by:** **Si Ma**

Completed By:	/S/ Monica Smith	24-May-2024 13:07	**Reviewed by:**	/S/ Luis.Aguilar	28-May-2024 14:21
	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 ☐	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):	0.9 uc/1.0 c	IR31
Cooler(s)/Kit(s):	50048	
Date/Time sample(s) sent to storage:	05/24/2024 1309	

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: Login Comments: Nitrate containers received outside of 48hr hold time.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

HS24051490

01331566

Aptim Environmental & Infrastructure. Inc.

LHAAP/ Site 50

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 50

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions by SW9056	CO2 by RSK 175	Perchlorate by SW 6850				Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
							Sample Analysis Requested (5)										Quality Assurance Samples (6)			
SDWW09_052224	22 MAY 2024	0715	-	N		WG	4	X					X							
SDWW08_052224	22 MAY 2024	0755	-	N		WG	4	X					X							
SDWW23_052224	22 MAY 2024	0840	-	N		WG	4	X					X							
SDWW23_052224_MS	22 MAY 2024	0840		MS		WG	4	X					X							
SDWW23_052224_MSD	22 MAY 2024	0840		SD		WG	4	X					X							
SDWW12_052224	22 MAY 2024	0925	-	N		WG	13	X	X	X	X	X	X							
SDWW12_052224_a	22 MAY 2024	0925	-	FD		WG	13	X	X	X	X	X	X							
SDWW06_052224	22 MAY 2024	1020	-	N		WG	13	X	X	X	X	X	X							
SDWW06_052224_b	22 MAY 2024	1020	-	FD		WG	13	X	X	X	X	X	X							
TRIP BLANK_052224	22 MAY 2024		-	TB		W	2	X												
			-																	

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

	Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1.	Scott Beesinger	5/23/24	1350	SM	05/24/24	09:50
2.						
3.						

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped No.:

_____ Method of Shipment: _____

_____ Fed Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stanciff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: Dane Wacasey Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

Cooler 51548 Temp 4.1 C Dup 3! 0.4 corr to 0.1

01331567

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5857

CUSTODY SEAL
Date: 5/22/23
Time: 1330
Name:
Company:
Seal Broken By:
Date: 5/24/24

50048

Must Deliver Next Business Da,
Time and Tempature Sensitive!

SAMPLE RECEIVING
ALS GROUP USA,CORP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530- 5656
REF: LHAAP 50 - BO 100866 - LA

AWA:

FedEx Express

FedEx.
TRK# 0221 6862 6805 6235

THU - 23 MAY AA
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US
IAH

bhate

HS24051490 01331568

Bhate Environmental Associates, Inc.
LHAAP-50

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 50

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code [2]	Sample Number [3]	Sample Matrix [4]	Number of containers	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions by SW9056	CO2 by RSK 175	Perchlorate by SW 6850				Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
SDww09_052224	22-May-2024	0715	-	N		wg	4	X					X							
SDww08_052224	22-May-2024	0755	-	N		wg	4	X					X							
SDww23_052224	22-May-2024	0840	-	N		wg	4	X					X							
SDww23_052224_MS	22-May-2024	0840		MS		wg	4	X					X							
SDww23_052224_MSD	22-May-2024	0840		SD		wg	4	X					X							
SDww12_052224	22-May-2024	0925	-	N		wg	13	X	X	X	X	X	X							
SDww12_052224_a	22-May-2024	0925	-	FD		wg	13	X	X	X	X	X	X							
SDww06_052224	22-May-2024	1020	-	N		wg	13	X	X	X	X	X	X							
SDww06_052224_a	22-May-2024	1020	-	FD		wg	13	X	X	X	X	X	X							
TRIP BLANK_052224	22-May-2024		-	TB		w	2	X												
			-																	

Sample Analysis Requested [5] | Quality Assurance Samples [6]

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	5/22/24	1350	1.		
2.			2. [illegible]	05/24/24	09:50
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped

_____ Method of Shipment: _____

_____ Fed _____ Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stanolind Rd, Suite 230 Houston, TX 77092 (281) 530-5656

ATTN: Dawn Wassey Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 101099-01 in the Equipment Blank Lot Control

Column SO848 temp 4.1 °C Dup 2.1 °C cf +0.1

01331569

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

CUSTODY SEAL
Date: 5/22/23 Time: 1330
Name:
Company:

Seal Broken By:
Date:

50048

Must Deliver Next Business Day
Time and Tempature Sensitive!

SAMPLE RECEIVING
ALS GROUP USA CORP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP 50 - BO 100036 - LA
RMA:

FedEx Express

FedEx.
TRK# 0221 6862 6805 6235

THU - 23 MAY AA
PRIORITY OVERNIGHT

77099
TX-US
IAH

AB SGRA

June 11, 2024 Service Request No:E2400588

Bernadette Fini
ALS Laboratory Group
10450 Stancliff Road
Suite 210
Houston, TX 77099-4338

Laboratory Results for: HS24051490

Dear Luis,

Enclosed are the results of the sample(s) submitted to our laboratory May 24, 2024
For your reference, these analyses have been assigned our service request number **E2400588.**

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.:**	E2400588
Project:	HS24051490	**Date Received:**	05/24/24
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

Seven samples were received for analysis at ALS Environmental in Houston on 05/24/24.

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:

EQ2400278: 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.

EQ2400278-04 (MS) and EQ2400278-05 (DMS) out of control data due to matrix interference.

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:**E2400588

Project: HS24051490

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2400588-001	50WW09_052224	5/22/2024	0715
E2400588-002	50WW08_052224	5/22/2024	0755
E2400588-003	50WW23_052224	5/22/2024	0840
E2400588-004	50WW12_052224	5/22/2024	0925
E2400588-005	50WW12_052224_a	5/22/2024	0925
E2400588-006	50WW06_052224	5/22/2024	1020
E2400588-007	50WW06_052224_a	5/22/2024	1020

Service Request Summary

01331574

9 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-WIC 6A

Pressure Gas:

Folder #: **E2400588**
Client Name: ALS Environmental - US
Project Name: HS24051490
Project Number:

Report To: Bernadette Fini
ALS Laboratory Group
10450 Stancliff Road
Houston, TX 77099-4338
USA
Phone Number: 281-530-5656
Cell Number:
Fax Number: 281-530-5887
E-mail: bernadette.fini@alsglobal.com

Project Chemist: Hussam Kelany
Originating Lab: HOUSTON
Logged By: JCORONADO2
Date Received: 05/24/24
Internal Due Date: 6/5/2024
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number:
EDD: EQUIS EFWEDD ERM Global High-res

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2400588-001	50WW09_052224	Water	05/22/24 0715	**IV**
E2400588-002	50WW08_052224	Water	05/22/24 0755	**IV**
E2400588-003	50WW23_052224	Water	05/22/24 0840	**IV**
E2400588-004	50WW12_052224	Water	05/22/24 0925	**IV**
E2400588-005	50WW12_052224_a	Water	05/22/24 0925	**IV**
E2400588-006	50WW06_052224	Water	05/22/24 1020	**IV**
E2400588-007	50WW06_052224_a	Water	05/22/24 1020	**IV**

Service Request Summary

Folder #:	**E2400588**
Client Name:	ALS Environmental - US
Project Name:	HS24051490
Project Number:	

Report To:	Bernadette Fini ALS Laboratory Group 10450 Stancliff Road Houston, TX 77099-4338 USA
Phone Number:	281-530-5656
Cell Number:	
Fax Number:	281-530-5887
E-mail:	bernadette.fini@alsglobal.com

Project Chemist:	Hussam Kelany
Originating Lab:	HOUSTON
Logged By:	JCORONADO2
Date Received:	05/24/24
Internal Due Date:	6/5/2024
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	
EDD:	EQUIS EFWEDD ERM Global High-res

01331575

9 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-WIC 6A

Pressure Gas:

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

ALS Environmental

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arkansas Department of Environmental Quality	88-00356	3/28/2025
California State Environmental Laboratory Accreditation Program	2919-2024	4/30/2025
Department of Defense	L24-240	4/30/2026
Florida Department of Health	E87611-38	6/30/2024
Hawaii Department of Health	2024	4/30/2025
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	LA028-2024	12/31/2024
Maryland Department of the Environment	343-2023	6/30/2024
Minnesota Department of Health	2645386	12/31/2024
Nevada Division of Environmental Protection	TX026932024-1	7/31/2024
New Hampshire Environmental Laboratory Accreditation Program	209424-A	4/24/2025
New Jersey Department of Environmental Protection	TX008-2024	6/30/2024
Oklahoma Department of Environmental Quality	2023-140	8/31/2024
Oregon Environmental Laboratory Accreditation Program	TX200002-2024	5/15/2025
Pennsylvania Department of Environmental Protection	68-03441-017	6/30/2024
Tennessee Department of Environment and Conservation	04016-2024	4/30/2025
Texas Commision on Environmental Quality	TX-C24-00130	4/30/2025
Utah Department of Health Environmental Laboratory Certification	TX026932023-14	7/31/2024
Washington Department of Ecology	C819-23	11/14/2024

Chain of Custody

ALS Environmental - Houston Specialties Laboratory
10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (281)530-5656 Fax (281)530-5887
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E2400588 5

ALS Laboratory Group
HS24051490

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Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID: 25795**

SUBCONTRACT TO:

ALS Environmental
10450 Stancliff RoadSuite 210
Houston, TX 77084

Phone: +1 281 530 5656

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	Luis.Aguilar
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	luis.aguilar@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:	HS24051490
TSR:	Ron Martino

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS24051490-01**	**50WW09_052224**	**Water**	**22 May 2024 07:15**
	Perchlorate Level II and Level IV reports on a seperate pdf. Send WOA to Vicki Graves.			10 Jun 2024
2.	**HS24051490-02**	**50WW08_052224**	**Water**	**22 May 2024 07:55**
	Perchlorate Level II and Level IV reports on a seperate pdf. Send WOA to Vicki Graves.			10 Jun 2024
3.	**HS24051490-03**	**50WW23_052224**	**Water**	**22 May 2024 08:40**
	Perchlorate Level II and Level IV reports on a seperate pdf. Send WOA to Vicki Graves.			10 Jun 2024
4.	**HS24051490-04**	**50WW12_052224**	**Water**	**22 May 2024 09:25**
	Perchlorate Level II and Level IV reports on a seperate pdf. Send WOA to Vicki Graves.			10 Jun 2024
5.	**HS24051490-05**	**50WW12_052224_a**	**Water**	**22 May 2024 09:25**
	Perchlorate Level II and Level IV reports on a seperate pdf. Send WOA to Vicki Graves.			10 Jun 2024
6.	**HS24051490-06**	**50WW06_052224**	**Water**	**22 May 2024 10:20**
	Perchlorate Level II and Level IV reports on a seperate pdf. Send WOA to Vicki Graves.			10 Jun 2024
7.	**HS24051490-07**	**50WW06_052224_a**	**Water**	**22 May 2024 10:20**
	Perchlorate Level II and Level IV reports on a seperate pdf. Send WOA to Vicki Graves.			10 Jun 2024

ALS Laboratory Group
HS24051490

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Sample Receipt Checklist

Work Order ID: HS24051490 **Date/Time received:** 24 May 2024 09:50

Client name: Aptim Environmental & Infrastucture, Inc. **Received by:** Si Ma

Completed/By: 24 May 2024 13:07 Monica Smith **Reviewed/By:**
Date/Time eSignature Date/Time eSignature

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	COC ID(s): 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): 0.9 uc/1.0 c IR31

Cooler Information: 1 Cooler(s), 50048

Date/Time sample(s) sent to storage: 05/24/2024 1309

Water - VOA vials have zero headspace?	☑ Yes	☐ No	☐ No VOA vials submitted
Water - pH acceptable upon receipt?	☐ Yes	☐ No	☑ Not Applicable
pH adjusted?	☐ Yes	☐ No	☑ Not Applicable

pH adjusted by:

Login notes: Nitrates received out of hold, proceeded with running.

Client contacted: **Date contacted:** **Person contacted:**

Contacted by: **Regarding:**

Comments:

Corrective action:

Subcontract Chain of Custody

SAMPLING STATE: **Dept of Defense** **COC ID:** **25795**

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: _____

Received By: _____ Date/Time: 5/24/24 0950

Cooler ID(s): _____ Temperature(s): _____

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

Preparation Information Benchsheet

01331586

Prep Run#: 439478 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/CGUERRA **Prep Method:** Method **Prep Date/Time:** 6/4/24 10:16

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2400588-001	50WW09_052224	.01	6850/ClO4 DOD			Water	10mL	
2	E2400588-002	50WW08_052224	.01	6850/ClO4 DOD			Water	10mL	
3	E2400588-003	50WW23_052224	.01	6850/ClO4 DOD			Water	10mL	
4	E2400588-004	50WW12_052224	.01	6850/ClO4 DOD			Water	10mL	
5	E2400588-005	50WW12_052224_a	.01	6850/ClO4 DOD			Water	10mL	
6	E2400588-006	50WW06_052224	.01	6850/ClO4 DOD			Water	10mL	
7	E2400588-007	50WW06_052224_a	.01	6850/ClO4 DOD			Water	10mL	
8	E2400610-001	2405581-01 (W-29)	.01	6850/ClO4 DOD			Water	10mL	
9	E2400610-002	2405581-02 (W-8)	.01	6850/ClO4 DOD			Water	10mL	
10	E2400610-003	2405581-03 (W-3)	.01	6850/ClO4 DOD			Water	10mL	
11	E2400610-004	2405581-04 (W-4)	.01	6850/ClO4 DOD			Water	10mL	
12	E2400610-005	2405581-05 (W-15)	.01	6850/ClO4 DOD			Water	10mL	
13	E2400610-006	2405581-06 (W-16)	.01	6850/ClO4 DOD			Water	10mL	
14	E2400610-007	2405581-07 (W-11)	.01	6850/ClO4 DOD			Water	10mL	
15	E2400610-008	2405581-08 (W-1)	.01	6850/ClO4 DOD			Water	10mL	
16	E2400610-009	2405581-09 (W-12)	.01	6850/ClO4 DOD			Water	10mL	
17	E2400617-001	2405240908X WB-1-255	.01	6850/ClO4 DOD			Water	10mL	
18	EQ2400278-01	MB		6850/ClO4 DOD			Liquid	10mL	
19	EQ2400278-02	LCS		6850/ClO4 DOD			Liquid	10mL	
20	EQ2400278-03	ICS		6850/ClO4 DOD			Liquid	10mL	
21	EQ2400278-04	50WW23_052224 MS	.02	6850/ClO4 DOD			Liquid	10mL	
22	EQ2400278-05	50WW23_052224 DMS	.02	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

Name: Perchlorate Anion Spiking Soln. 25,000 ppm Inventory ID 233595 Logbook Ref: Expires On: 08/04/2024

EQ2400278-03 20.00µL

Name: Perchlorate Intermediate Stock 3 Inventory ID 234838 Logbook Ref: Perchlorate Inter. Stock 3 NMV Expires On: 10/25/2024

EQ2400278-02 100.00µL EQ2400278-03 100.00µL EQ2400278-04 100.00µL EQ2400278-05 100.00µL

Name: Perchlorate Internal Standard 1ug/mL Inventory ID 235428 Logbook Ref: Perchlorate IS cg5/24/24 Expires On: 11/24/2024

E2400588-001 100.00µL E2400588-002 100.00µL E2400588-003 100.00µL E2400588-004 100.00µL E2400588-005 100.00µL E2400588-006 100.00µL
E2400588-007 100.00µL E2400610-001 100.00µL E2400610-002 100.00µL E2400610-003 100.00µL E2400610-004 100.00µL E2400610-005 100.00µL

Preparation Information Benchsheet

01331587

Prep Run#: 439478 **Prep WorkFlow:** GenExt28Day **Status:** Prepped

Team: Semivoa GCMS/CGUERRA **Prep Method:** Method **Prep Date/Time:** 6/4/24 10:16

E2400610-006	100.00µL	E2400610-007	100.00µL	E2400610-008	100.00µL	E2400610-009	100.00µL	E2400617-001	100.00µL	EQ2400278-01	100.00µL
EQ2400278-02	100.00µL	EQ2400278-03	100.00µL	EQ2400278-04	100.00µL	EQ2400278-05	100.00µL				

Preparation Materials

Water HPLC Grade	HPLC WATER 04/15/24 (233144)	6850 0.45um syringe filters	6850 0.45 SYRING FILTER (229979)	6850 Luer-Lok Syringes	Luer Lok Syringes (235268)

Preparation Steps

Step: Preparation
Started: 6/4/24 10:16
Finished: 6/4/24 14:00
By: CGUERRA
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
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ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	5/22/24 0715
Sample Matrix:	Water	**Date Received:**	5/24/24
Sample Name:	50WW09_052224	**Units:**	µg/L
Lab Code:	E2400588-001	**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	**0.450**		0.100	0.0500	0.0250	1	6/ 4/24	6/7/24 14:05	439478	843419	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	5/22/24 0755
Sample Matrix:	Water	**Date Received:**	5/24/24
Sample Name:	50WW08_052224	**Units:**	µg/L
Lab Code:	E2400588-002	**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	**210**		1.00	0.500	0.250	10	6/ 4/24	6/7/24 16:31	439478	843419	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	5/22/24 0840
Sample Matrix:	Water	**Date Received:**	5/24/24
Sample Name:	50WW23_052224	**Units:**	µg/L
Lab Code:	E2400588-003	**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	1.00	0.500	0.250	10	6/ 4/24	6/7/24 16:36	439478	843419	

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	5/22/24 0925
Sample Matrix:	Water	**Date Received:**	5/24/24
Sample Name:	50WW12_052224	**Units:**	µg/L
Lab Code:	E2400588-004	**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	**443000**		1000	500	250	10000	6/ 4/24	6/7/24 16:42	439478	843419	

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	5/22/24 0925
Sample Matrix:	Water	**Date Received:**	5/24/24
Sample Name:	50WW12_052224_a	**Units:**	µg/L
Lab Code:	E2400588-005	**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	**139000**		1000	500	250	10000	6/ 4/24	6/7/24 16:47	439478	843419	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	5/22/24 1020
Sample Matrix:	Water	**Date Received:**	5/24/24
Sample Name:	50WW06_052224	**Units:**	µg/L
Lab Code:	E2400588-006	**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	**0.537**		0.100	0.0500	0.0250	1	6/ 4/24	6/7/24 15:02	439478	843419	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	5/22/24 1020
Sample Matrix:	Water	**Date Received:**	5/24/24
Sample Name:	50WW06_052224_a	**Units:**	µg/L
Lab Code:	E2400588-007	**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	**1.28**		0.100	0.0500	0.0250	1	6/ 4/24	6/7/24 15:08	439478	843419	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2400278-01	**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	6/ 4/24	6/7/24 13:37	439478	843419	

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

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Analyzed:**	06/07/24
Sample Matrix:	Water	**Date Extracted:**	06/04/24

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

Analysis Method:	6850	**Units:**	ug/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	843419

Lab Control Sample
EQ2400278-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Perchlorate	0.104	0.100	104	84-119

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2400278-02	**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	**0.104**		0.100	0.0500	0.0250	1	6/ 4/24	6/7/24 13:43	439478	843419	

QA/QC Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	05/22/24
Sample Matrix:	Water	**Date Received:**	05/24/24
		Date Analyzed:	06/10/24
		Date Extracted:	06/4/24

Duplicate Matrix Spike Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name:	50WW23_052224	**Units:**	ug/L
Lab Code:	E2400588-003	**Basis:**	NA
Analysis Method:	6850		
Prep Method:	Method		

		Matrix Spike			Duplicate Matrix Spike					
		EQ2400278-04			EQ2400278-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	ND U	ND U	0.100	0 *	ND U	0.100	0 *	84-119	NC	15

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

Results flagged with a pound (#) indicate the control criteria is not applicable.

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

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	5/22/24 0840
Sample Matrix:	Water	**Date Received:**	5/24/24
Sample Name:	50WW23_052224	**Units:**	µg/L
Lab Code:	EQ2400278-04	**Basis:**	NA
Run Type:	Matrix Spike		

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	1.00	0.500	0.250	10	6/ 4/24	6/10/24 12:28	439478	843543	

Analytical Report

Client:	ALS Environmental - US	**Service Request:**	E2400588
Project:	HS24051490	**Date Collected:**	5/22/24 0840
Sample Matrix:	Water	**Date Received:**	5/24/24
Sample Name:	50WW23_052224	**Units:**	µg/L
Lab Code:	EQ2400278-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

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	1.00	0.500	0.250	10	6/ 4/24	6/10/24 12:34	439478	843543	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Jumoke Lawal
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston, Texas 77099

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JOB DESCRIPTION

HS24051490

JOB NUMBER

410-173670-1

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

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



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Authorized for release by
Dana Kauffman, Project Manager
Dana.Kauffman@et.eurofinsus.com
(717)556-7219

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.

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Definitions/Glossary

Client: ALS Group USA, Corp
Project/Site: HS24051490

Job ID: 410-173670-1

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

Job Narrative
410-173670-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- 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 may be 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.

Receipt
The samples were received on 5/29/2024 10:30 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 4.6°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: HS24051490

Job ID: 410-173670-1

Client Sample ID: 50WW12_052224 — Lab Sample ID: 410-173670-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	300000	M	12000	5600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW12_052224_a — Lab Sample ID: 410-173670-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	320000	M	12000	5600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW06_052224 — Lab Sample ID: 410-173670-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	160000		12000	5600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW06_052224_a — Lab Sample ID: 410-173670-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	170000		12000	5600	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: HS24051490

Job ID: 410-173670-1

Client Sample ID: 50WW12_052224
Lab Sample ID: 410-173670-1
Date Collected: 05/22/24 09:25
Matrix: Water
Date Received: 05/29/24 10:30

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	300000	M	12000	5600	ug/L		05/31/24 10:23	05/31/24 11:29	1

Client Sample ID: 50WW12_052224_a
Lab Sample ID: 410-173670-2
Date Collected: 05/22/24 09:25
Matrix: Water
Date Received: 05/29/24 10:30

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	320000	M	12000	5600	ug/L		05/31/24 10:23	05/31/24 11:36	1

Client Sample ID: 50WW06_052224
Lab Sample ID: 410-173670-3
Date Collected: 05/22/24 10:20
Matrix: Water
Date Received: 05/29/24 10:30

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	160000		12000	5600	ug/L		05/31/24 10:23	05/31/24 11:44	1

Client Sample ID: 50WW06_052224_a
Lab Sample ID: 410-173670-4
Date Collected: 05/22/24 10:20
Matrix: Water
Date Received: 05/29/24 10:30

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	170000		12000	5600	ug/L		05/31/24 10:23	05/31/24 11:52	1

QC Sample Results

Client: ALS Group USA, Corp
Project/Site: HS24051490

Job ID: 410-173670-1

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-512401/1-A
Matrix: Water
Analysis Batch: 512348

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 512401

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	5600	U M	12000	5600	ug/L		05/31/24 10:23	05/31/24 10:34	1

Lab Sample ID: LCS 410-512401/2-A
Matrix: Water
Analysis Batch: 512348

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 512401

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon dioxide			35800	38800		ug/L		108	80 - 122		

Lab Sample ID: LCSD 410-512401/3-A
Matrix: Water
Analysis Batch: 512348

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 512401

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon dioxide			35800	39600		ug/L		111	80 - 122	2	20

QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS24051490

Job ID: 410-173670-1

GC VOA

Analysis Batch: 512348

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-173670-1	50WW12_052224	Total/NA	Water	RSK-175	512401
410-173670-2	50WW12_052224_a	Total/NA	Water	RSK-175	512401
410-173670-3	50WW06_052224	Total/NA	Water	RSK-175	512401
410-173670-4	50WW06_052224_a	Total/NA	Water	RSK-175	512401
MB 410-512401/1-A	Method Blank	Total/NA	Water	RSK-175	512401
LCS 410-512401/2-A	Lab Control Sample	Total/NA	Water	RSK-175	512401
LCSD 410-512401/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	512401

Prep Batch: 512401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-173670-1	50WW12_052224	Total/NA	Water	RSK-175	
410-173670-2	50WW12_052224_a	Total/NA	Water	RSK-175	
410-173670-3	50WW06_052224	Total/NA	Water	RSK-175	
410-173670-4	50WW06_052224_a	Total/NA	Water	RSK-175	
MB 410-512401/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-512401/2-A	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 410-512401/3-A	Lab Control Sample Dup	Total/NA	Water	RSK-175	

Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS24051490

Job ID: 410-173670-1

Client Sample ID: 50WW12_052224
Lab Sample ID: 410-173670-1
Date Collected: 05/22/24 09:25
Matrix: Water
Date Received: 05/29/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			512401	HQR6	ELLE	05/31/24 10:23
Total/NA	Analysis	RSK-175		1	512348	LXF2	ELLE	05/31/24 11:29

Client Sample ID: 50WW12_052224_a
Lab Sample ID: 410-173670-2
Date Collected: 05/22/24 09:25
Matrix: Water
Date Received: 05/29/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			512401	HQR6	ELLE	05/31/24 10:23
Total/NA	Analysis	RSK-175		1	512348	LXF2	ELLE	05/31/24 11:36

Client Sample ID: 50WW06_052224
Lab Sample ID: 410-173670-3
Date Collected: 05/22/24 10:20
Matrix: Water
Date Received: 05/29/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			512401	HQR6	ELLE	05/31/24 10:23
Total/NA	Analysis	RSK-175		1	512348	LXF2	ELLE	05/31/24 11:44

Client Sample ID: 50WW06_052224_a
Lab Sample ID: 410-173670-4
Date Collected: 05/22/24 10:20
Matrix: Water
Date Received: 05/29/24 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			512401	HQR6	ELLE	05/31/24 10:23
Total/NA	Analysis	RSK-175		1	512348	LXF2	ELLE	05/31/24 11:52

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: HS24051490

Job ID: 410-173670-1

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

01331615

Client: ALS Group USA, Corp
Project/Site: HS24051490

Job ID: 410-173670-1

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

01331616

Client: ALS Group USA, Corp
Project/Site: HS24051490

Job ID: 410-173670-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-173670-1	50WW12_052224	Water	05/22/24 09:25	05/29/24 10:30
410-173670-2	50WW12_052224_a	Water	05/22/24 09:25	05/29/24 10:30
410-173670-3	50WW06_052224	Water	05/22/24 10:20	05/29/24 10:30
410-173670-4	50WW06_052224_a	Water	05/22/24 10:20	05/29/24 10:30

410-173670-01 Chain of Custody

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:** **25793**

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:	Luis.Aguilar
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	luis.aguilar@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS24051490
TSR:	Ron Martino

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS24051490-04**	**50WW12_052224**	**Water**	**22 May 2024 09:25**
	RSK175 CO2; LHAAP; DoD Level IV, LHAAP EQUIS EDD			10 Jun 2024
2.	**HS24051490-05**	**50WW12_052224_a**	**Water**	**22 May 2024 09:25**
	RSK175 CO2; LHAAP; DoD Level IV, LHAAP EQUIS EDD			10 Jun 2024
3.	**HS24051490-06**	**50WW06_052224**	**Water**	**22 May 2024 10:20**
	RSK175 CO2; LHAAP; DoD Level IV, LHAAP EQUIS EDD			10 Jun 2024
4.	**HS24051490-07**	**50WW06_052224_a**	**Water**	**22 May 2024 10:20**
	RSK175 CO2; LHAAP; DoD Level IV, LHAAP EQUIS EDD			10 Jun 2024

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

QC Level: DOD IV (DoD Data Package)

Relinquished By: AM Date/Time: 5/28/24 18:00

Received By: Date/Time: 5/29/24 1030

Cooler ID(s): Temperature(s):

RIGHT SOLUTIONS | RIGHT PARTNER

Raw 4.5 - COR 4.6

Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-173670-1

Login Number: 173670
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 acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=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	

APPENDIX E
QUALITY CONTROL SUMMARY REPORTS

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QUALITY CONTROL SUMMARY REPORT
LHAAP-Site 50 October 2023
SEMIANNUAL SAMPLING EVENT
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

March 2024

Prepared For:

Longhorn Army Ammunition Plant
Karnack, Texas

Under Contract To:

U.S. Army Corps of Engineers
Tulsa District
Tulsa, Oklahoma

Prepared By:

1608 13th Avenue South, Suite 300
Birmingham, Alabama 35205
1-800-806-4001 • www.bhate.com

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1.9 Field Precision 4
2.0 Lab Precision 5
2.1 DATA USABILITY SUMMARY 5

Tables

Table 1: Field Sample Identification and Laboratory Packages
Table 2: Qualified Analytical Data
Table 3: Completeness by Method

1 INTRODUCTION

Bhate reviewed 1 data package from ALS Environmental, Houston, Texas. Groundwater samples were collected October 2nd from Site LHAAP-50 at the Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data was reviewed for conformance to the requirements of the following guidance documents: *USEPA Contract Laboratory Program* [CLP] *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, November 2020), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, November 2020) and the *Final Basewide Uniform Federal Policy* [UFP] – *Quality Assurance Project Plan* [QAPP] *Longhorn Army Ammunition Plant* which is in Appendix C of the *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant Karnack, Texas* (Bhate, May 2018).

1.1 Intended Use of Data

The objective of sampling at LHAAP-50 in October 2023 was to monitor the groundwater impact of remedial activities.

Analyses performed include:

- SW8260C- Volatiles
- RSK175 – Methane, Ethane, Ethene (MEE)
- SW9056A – Anions
- RSK175 – Carbon Dioxide (CO2)
- SM5310C – Total Organic Carbon (TOC)
- SW6850 – Perchlorate

Table 1 lists the sample identification numbers (IDs) and their associated laboratory package.

Table 2 lists qualified results with the qualification flag and reason code.

The following narrative is a brief synopsis of data that required qualification due to quality control discrepancies.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good condition, and within the required hold time.

1.3 Calibrations

All analytes reported must be present in the initial and continuing calibration. The calibrations must meet the acceptance criteria specified in Worksheet 24 (Analytical Instrument Calibration)

of the QAPP. All results reported must be within the calibration range. Samples were diluted, if necessary, to bring analyte responses within the calibration range

1.3.1 Continuing Calibration Verifications

The CCV recovery for all compounds was within control limits.

1.4 Blanks

If the analyte results for an associated sample met the criteria in the National Functional Guidelines for blank contamination, then the sample result was qualified based on those criteria.

No compounds warranted blank qualification.

1.5 Surrogates

Surrogates were evaluated using limits defined by each method in the project-specific QAPP Worksheet 28.

No surrogate recoveries were outside control limits.

1.6 Laboratory Control Sample/Laboratory Control Sample Duplicate

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries were evaluated using limits defined in the project-specific QAPP Worksheet 15.

No LCS recoveries warranted qualification.

1.7 Matrix Spike/Matrix Spike Duplicate Sample

Any MS/MSD recoveries outside control limits were either from batched samples or the sample concentration exceeded the spiked concentration by a factor of four or more and control limits did not apply. No qualifiers were warranted.

1.8 Internal Standards

If the %R for an internal standard in a sample is not within the limit, the associated sample is qualified for those analytes associated with the internal standard(s) outside of the limit.

Internal standard 1,4-Dichlorobenzene was recovered outside control limits for multiple samples. This standard was not associated with any reported analytes in the samples and required no qualification.

1.9 Field Precision

Precision is the measure of variability of individual sample measurements. Evaluation of field duplicates for precision was done using the relative percent difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Field duplicate RPD limits were set at <30% for groundwater matrices.

No RPD exceedances were reported.

2.0 Lab Precision

The laboratory RPDs were within control limits.

2.1 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project (see Table 3). The data quality objectives have been met for the project.

Table 1: Field Sample Identification and Laboratory Packages

Client Sample ID	Lab Package/ID	SW8260C	RSK 175 (MEE)	SW9056A	RSK-175 (CO2)	TOC SM5310C	Perchlorate 6850
50WW09_100223	HS23100159-01	X					X
50WW08_100223	HS23100159-02	X					X
50WW22_100223	HS23100159-03	X					X
50WW23_100223	HS23100159-04	X					X
50WW29_100223	HS23100159-05	X					X
50WW05_100223	HS23100159-06	X					X
50WW15_100223	HS23100159-07	X					X
50WW16_100223	HS23100159-08	X					X
50WW18_100223	HS23100159-09	X					X
50WW14_100323	HS23100159-10	X	X	X	X	X	X
50WW13_100323	HS23100159-11	X	X	X	X	X	X
50WW13_100323_a	HS23100159-12	X	X	X	X	X	X
50WW11_100323	HS23100159-13	X	X	X	X	X	X
50WW11_100323_a	HS23100159-14	X	X	X	X	X	X
50WW06_100323	HS23100159-15	X	X	X	X	X	X
50WW12_100323	HS23100159-16	X	X	X	X	X	X
Trip Blank	HS23100159-17	X					

Table 2: Qualified Analytical Data

Client Sample ID Laboratory	Laboratory Package	Analyte Name	Data Validation Qualifier	Reason for Qualification
N/A	N/A	N/A	N/A	N/A

Table 3: Completeness by Method

Method	No. of Rejected Results	% Completeness
SW8260C	0	100
RSK 175 (MEE)	0	100
SW9056	0	100
RSK 175 (CO2)	0	100
SM5310C	0	100
SW6850	0	100
SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods		

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QUALITY CONTROL SUMMARY REPORT
LHAAP-Site 50 May 2024
SEMIANNUAL SAMPLING EVENT
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

June 2024

Prepared For:

Longhorn Army Ammunition Plant
Karnack, Texas

Under Contract To:

U.S. Army Corps of Engineers
Tulsa District
Tulsa, Oklahoma

Prepared By:

1608 13th Avenue South, Suite 300
Birmingham, Alabama 35205
1-800-806-4001 • www.bhate.com

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1.8 Internal Standards 4
1.9 Field Precision 4
2.0 Lab Precision 5
2.1 DATA USABILITY SUMMARY 5

Tables

Table 1: Field Sample Identification and Laboratory Packages
Table 2: Qualified Analytical Data
Table 3: Completeness by Method

1 INTRODUCTION

Bhate reviewed 2 data packages from ALS Environmental, Houston, Texas. Groundwater samples were collected May 20th-22nd from Site LHAAP-50 at the Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data was reviewed for conformance to the requirements of the following guidance documents: *USEPA Contract Laboratory Program* [CLP] *National Functional Guidelines for Superfund Organic Methods Data Review* (USEPA, November 2020), *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review* (USEPA, November 2020) and the *Final Basewide Uniform Federal Policy* [UFP] – *Quality Assurance Project Plan* [QAPP] *Longhorn Army Ammunition Plant* which is in Appendix C of the *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant Karnack, Texas* (Bhate, May 2018).

1.1 Intended Use of Data

The objective of sampling at LHAAP-50 in May 2024 was to monitor the groundwater impact of remedial activities. .

Analyses performed include:

- SW8260C- Volatiles
- RSK175 – Methane, Ethane, Ethene (MEE)
- SW9056A – Anions
- RSK175 – Carbon Dioxide (CO2)
- SM5310C – Total Organic Carbon (TOC)
- SW6850 – Perchlorate

Table 1 lists the sample identification numbers (IDs) and their associated laboratory package.

Table 2 lists qualified results with the qualification flag and reason code.

The following narrative is a brief synopsis of data that required qualification due to quality control discrepancies.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good condition with the following exception. Four nitrogen samples including 50WW12_052224, 50WW12_052224_a, 50WW06_052224, and 50WW06_052224_a were received by the laboratory outside of holding time. These samples were all J-qualified.

1.3 Calibrations

All analytes reported must be present in the initial and continuing calibration. The calibrations must meet the acceptance criteria specified in Worksheet 24 (Analytical Instrument Calibration) of the QAPP. All results reported must be within the calibration range. Samples were diluted, if necessary, to bring analyte responses within the calibration range

1.3.1 Continuing Calibration Verifications

The CCV recovery for all compounds was within control limits.

1.4 Blanks

If the analyte results for an associated sample met the criteria in the National Functional Guidelines for blank contamination, then the sample result was qualified based on those criteria.

No compounds warranted blank qualification.

1.5 Surrogates

Surrogates were evaluated using limits defined by each method in the project-specific QAPP Worksheet 28.

Several surrogates were recovered high outside of control limits. All associated analytes were non-detects and thus not qualified.

1.6 Laboratory Control Sample/Laboratory Control Sample Duplicate

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries were evaluated using limits defined in the project-specific QAPP Worksheet 15.

No LCS recoveries warranted qualification.

1.7 Matrix Spike/Matrix Spike Duplicate Sample

The MS recoveries were outside control limits for spiked samples 50WW14_052124 and 50WW12_052224_a for total organic carbon. The analyte was J-qualified.

1.8 Internal Standards

If the %R for an internal standard in a sample is not within the limit, the associated sample is qualified for those analytes associated with the internal standard(s) outside of the limit.

1.9 Field Precision

Precision is the measure of variability of individual sample measurements. Evaluation of field duplicates for precision was done using the relative percent difference (RPD). The RPD is defined as the difference between two duplicate samples divided by the mean and expressed as a percent. Field duplicate RPD limits were set at <30% for groundwater matrices.

The RPD for methane, nitrate, sulfate, and perchlorate were outside of the RPD control limits for samples 50WW12_052224 and 50WW12_052224_a. Those results were J-qualified.

Samples 50WW06_052224 and 50WW06_052224_a resulted in perchlorate outside of RPD limits. This analyte was J-qualified.

2.0 Lab Precision

The laboratory RPDs were within control limits.

2.1 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project (see Table 3). The data quality objectives have been met for the project.

Table 1: Field Sample Identification and Laboratory Packages

Client Sample ID	Lab Package/ID	SW8260C	RSK 175 (MEE)	SW9056A	RSK-175 (CO2)	TOC SM5310C	Perchlorate 6850
50WW09_052224	HS24051490-01	X					X
50WW08_052224	HS24051490-02	X					X
50WW23_052224	HS24051490-03	X					X
50WW12_052224	HS24051490-04	X	X	X	X	X	X
50WW12_052224_a	HS24051490-05	X	X	X	X	X	X
50WW06_052224	HS24051490-06	X	X	X	X	X	X
50WW06_052224_a	HS24051490-07	X	X	X	X	X	X
Trip Blank	HS24051490-08	X					
50WW16_052024	HS24051300-01	X					X
50WW18_052024	HS24051300-02	X					X
50WW22_052024	HS24051300-03	X					X
50WW15_052024	HS24051300-04	X					X
50WW14_052124	HS24051300-05	X	X	X	X	X	X
50WW13_052124	HS24051300-06	X	X	X	X	X	X
50WW11_052124	HS24051300-07	X	X	X	X	X	X
50WW05_052124	HS24051300-08	X					X
50WW29_052124	HS24051300-09	X					X
Trip Blank_052124	HS24051300-10	X					

Table 2: Qualified Analytical Data

Client Sample ID Laboratory	Laboratory Package	Analyte Name	Sample Result & Data Validation Qualifier (general chemistry mg/L, VOCs and perchlorate ug/L)	Reason for Qualification
50WW12_052224	HS24051490-04	Nitrogen, Nitrate (As N)	**0.137 J**	**Holding Time/Field Duplicate**
50WW12_052224	HS24051490-04	Sulfate	**620 J**	**Field Precision**
50WW12_052224	HS24051490-04	Methane	**4.32 J**	**Field Precision**
50WW12_052224	HS24051490-04	Perchlorate	**443,000 J**	**Field Precision**

50WW12_052224_a	HS24051490-05	Nitrogen, Nitrate (As N)	**0.231 J**	**Holding Time/Field Precision**
50WW12_052224_a	HS24051490-05	Total Organic Carbon	**9.44 J**	**MS<**
50WW12_052224_a	HS24051490-05	Methane	**1.44 J**	**Field Precision**
50WW12_052224_a	HS24051490-05	Perchlorate	**139,000 J**	**Field Precision**
50WW12_052224_a	HS24051490-05	Sulfate	**847 J**	**Field Precision**
50WW06_052224_a	HS24051490-05	Nitrogen, Nitrate (As N)	**0.110 J**	**Holding Time**
50WW06_052224_a	HS24051490-05	Perchlorate	**1.28 J**	**Field Precision**
50WW06_052224	HS24051490-06	Nitrogen, Nitrate (As N)	**0.108 J**	**Holding Time**
50WW06_052224	HS24051490-07	Perchlorate	**0.537 J**	**Field Precision**
50WW14_052124	HS24051300-05	Total Organic Carbon	**5.14 J**	**MS<**
MS < - matrix spike below control limits, J -estimated				

Table 3: Completeness by Method

Method	No. of Rejected Results	% Completeness
SW8260C	0	100
RSK 175 (MEE)	0	100
SW9056	0	100
RSK 175 (CO2)	0	100
SM5310C	0	100
SW6850	0	100
SW-846 - Test Methods for Evaluating Solid Waste, Physical/Chemical Methods		

APPENDIX F
MANN-KENDALL TREND TEST RESULTS

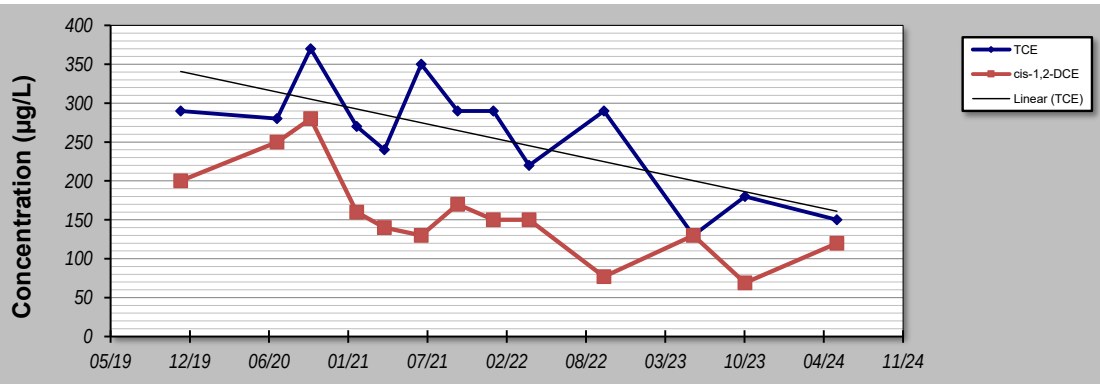
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **4-Sep-24**
Facility Name: **LHAAP-50**
Conducted By: **Zachary Beck**

Job ID: **JVPCIBH.0001.0009**
Constituent: **50WW05**
Concentration Units: **µg/L**

Sampling Point ID:	TCE	cis-1,2-DCE					
Sampling Event	Sampling Date	50WW05 CONCENTRATION (µg/L)						
1	8-Nov-19	290	200					
2	8-Jul-20	280	250					
3	1-Oct-20	370	280					
4	25-Jan-21	270	160					
5	5-Apr-21	240	140					
6	7-Jul-21	350	130					
7	7-Oct-21	290	170					
8	5-Jan-22	290	150					
9	5-Apr-22	220	150					
10	11-Oct-22	290	77					
11	25-May-23	130	130					
12	2-Oct-23	180	69					
13	21-May-24	150	120					
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.49	0.38					
Mann-Kendall Statistic (S):		-63	-50					
Confidence Factor:		99.9%	99.9%					
Concentration Trend:		Decreasing	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.
4 *ND values are shown in red italics as 1/2 the limit of detection.*

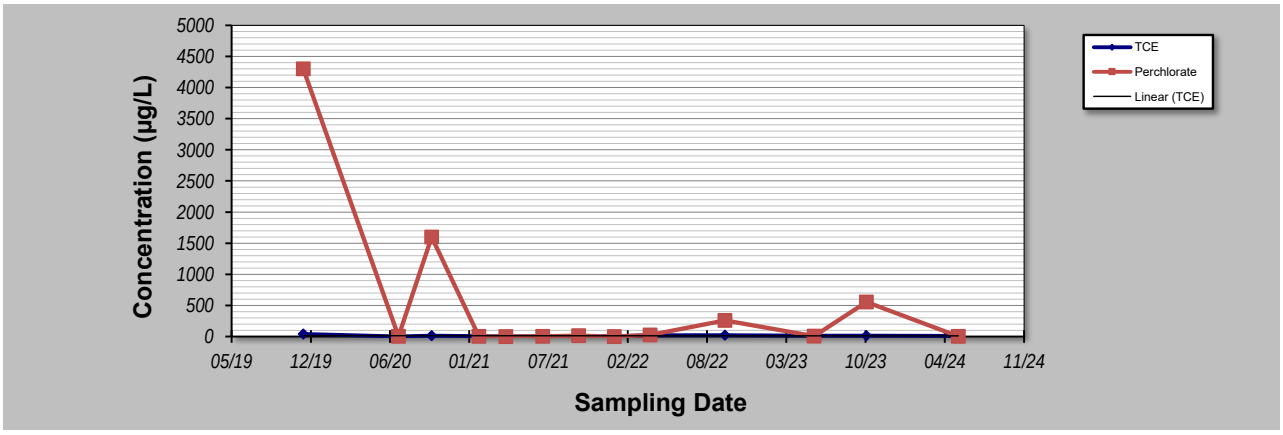
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **4-Sep-24**
Facility Name: **LHAAP-50**
Conducted By: **Zachary Beck**

Job ID: **JVPCIBH.0001.0009**
Constituent: **50WW06**
Concentration Units: **µg/L**

Sampling Point ID:	TCE	Perchlorate					
Sampling Event	Sampling Date	50WW06 CONCENTRATION (µg/L)						
1	12-Nov-19	41	4300					
2	9-Jul-20	1.3	1.69					
3	1-Oct-20	14	1600					
4	28-Jan-21	4.8	2.78					
5	6-Apr-21	3.1	0.032					
6	8-Jul-21	4.2	1.89					
7	7-Oct-21	2.8	15					
8	5-Jan-22	4.3	0.39					
9	5-Apr-22	23	24.7					
10	11-Oct-22	20	257					
11	24-May-23	13	5.79					
12	3-Oct-23	15	554					
13	22-May-24	11	1.28					
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.92	2.35					
Mann-Kendall Statistic (S):		10	-2					
Confidence Factor:		70.5%	52.4%					
Concentration Trend:		No Trend	No Trend					



Notes:

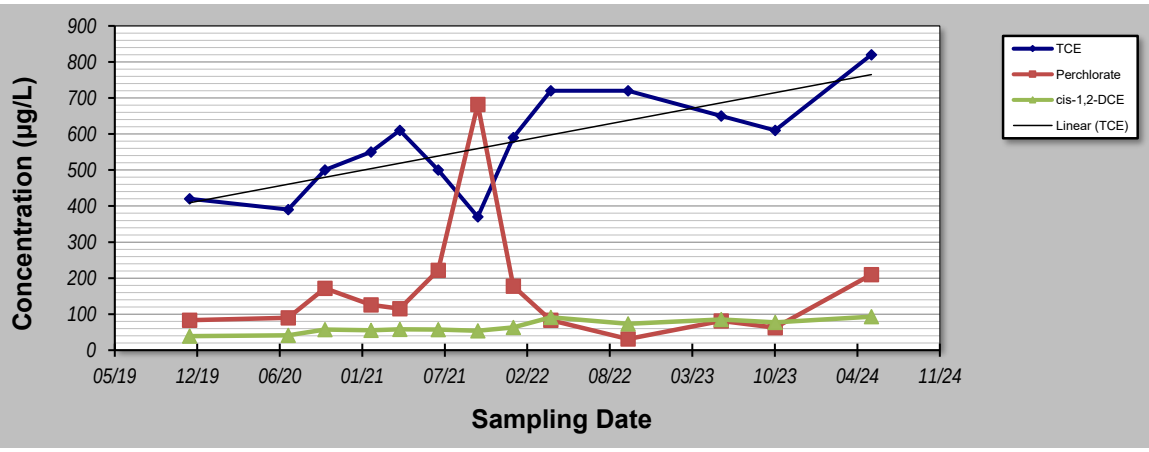
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably 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.
4 *ND values are shown in red italics as 1/2 the limit of detection.*

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	4-Sep-24	Job ID:	JVPCIBH.0001.0009
Facility Name:	LHAAP-50	Constituent:	50WW08
Conducted By:	Zachary Beck	Concentration Units:	µg/L

Sampling Point ID:	TCE	Perchlorate	cis-1,2-DCE				
Sampling Event	Sampling Date	50WW08 CONCENTRATION (µg/L)						
1	12-Nov-19	420	83	39				
2	8-Jul-20	390	89.8	41				
3	5-Oct-20	500	172	57				
4	25-Jan-21	550	126	55				
5	5-Apr-21	610	115	58				
6	7-Jul-21	500	222	57				
7	11-Oct-21	370	682	54				
8	5-Jan-22	590	178	63				
9	6-Apr-22	720	83.4	91				
10	10-Oct-22	720	31.1	73				
11	24-May-23	650	81.1	85				
12	2-Oct-23	610	62.9	77				
13	22-May-24	820	210	93				
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.24	1.01	0.27				
Mann-Kendall Statistic (S):		45	-6	57				
Confidence Factor:		99.8%	61.7%	>99.9%				
Concentration Trend:		Increasing	No Trend	Increasing				



Notes:

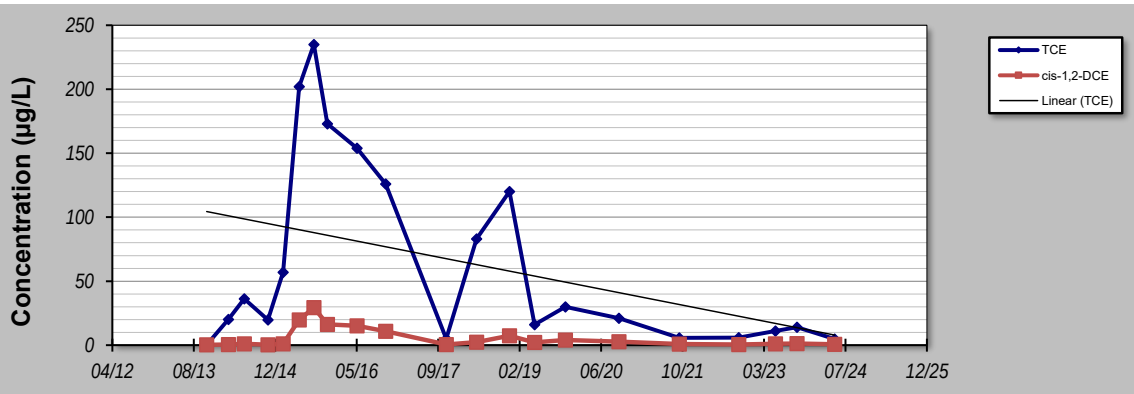
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably 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.
4. *ND values are shown in red italics as 1/2 the limit of detection.*

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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	4-Sep-24	Job ID:	JVPCIBH.0001.0009
Facility Name:	LHAAP-50	Constituent:	50WW09
Conducted By:	Zachary Beck	Concentration Units:	µg/L

Sampling Point ID:	TCE	cis-1,2-DCE					
Sampling Event	Sampling Date	50WW09 CONCENTRATION (µg/L)						
1	1-Nov-13	0.26	0.25					
2	14-Mar-14	20.2	0.579					
3	19-Jun-14	36.3	1.16					
4	12-Nov-14	19.8	0.36					
5	13-Feb-15	57	1.04					
6	23-May-15	202	19.7					
7	21-Aug-15	235	29.4					
8	11-Nov-15	173	16.3					
9	12-May-16	154	15.1					
10	3-Nov-16	126	10.8					
11	10-Nov-17	4.9	0.5					
12	15-May-18	83	2.4					
13	3-Dec-18	120	7.3					
14	7-May-19	16	2.2					
15	11-Nov-19	30	4.1					
16	5-Oct-20	21	2.8					
17	11-Oct-21	5.7	0.93					
18	10-Oct-22	5.8	0.54					
19	24-May-23	11	1.1					
20	3-Oct-23	14	1.2					
21	22-May-24	4.7	0.64					
22								
23								
24								
25								
Coefficient of Variation:		1.16	1.43					
Mann-Kendall Statistic (S):		-60	-14					
Confidence Factor:		96.3%	65.1%					
Concentration Trend:		Decreasing	No Trend					



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.
4. *ND values are shown in red italics as 1/2 the limit of detection.*

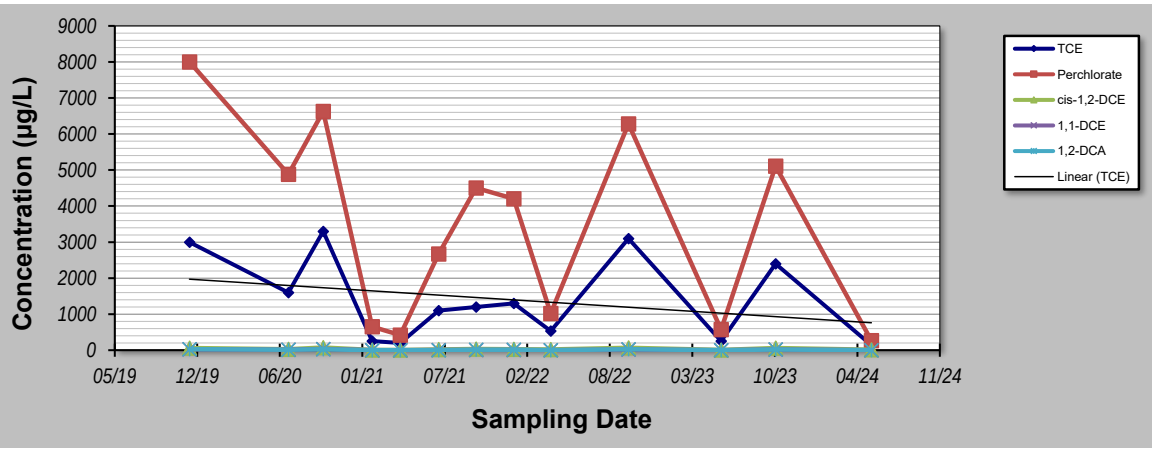
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: 4-Sep-24
Facility Name: LHAAP-50
Conducted By: Zachary Beck

Job ID: JVPCIBH.0001.0009
Constituent: 50WW11
Concentration Units: µg/L

Sampling Point ID:	TCE	Perchlorate	cis-1,2-DCE	1,1-DCE	1,2-DCA		
Sampling Event	Sampling Date	50WW11 CONCENTRATION (µg/L)						
1	12-Nov-19	3000	8000	58	26	28		
2	9-Jul-20	1600	4880	29	15	13		
3	1-Oct-20	3300	6630	74	35	26		
4	28-Jan-21	250	651	6.7	2.1	2.4		
5	6-Apr-21	200	421	5.3	2	1.8		
6	8-Jul-21	1100	2670	20	9.9	0.5		
7	7-Oct-21	1200	4500	33	9.3	15		
8	6-Jan-22	1300	4200	29	9.5	12		
9	6-Apr-22	530	1020	19	3.3	3.1		
10	11-Oct-22	3100	6280	65	22	25		
11	24-May-23	250	570	8.5	2.1	1.9		
12	3-Oct-23	2400	5110	59	23	20		
13	22-May-24	140	268	11	1	1		
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.83	0.78	0.75	0.90	0.91		
Mann-Kendall Statistic (S):		-17	-24	-7	-21	-20		
Confidence Factor:		83.2%	91.8%	64.0%	88.6%	87.4%		
Concentration Trend:		Stable	Prob. Decreasing	Stable	Stable	Stable		



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.
4. *ND values are shown in red italics as 1/2 the limit of detection.*

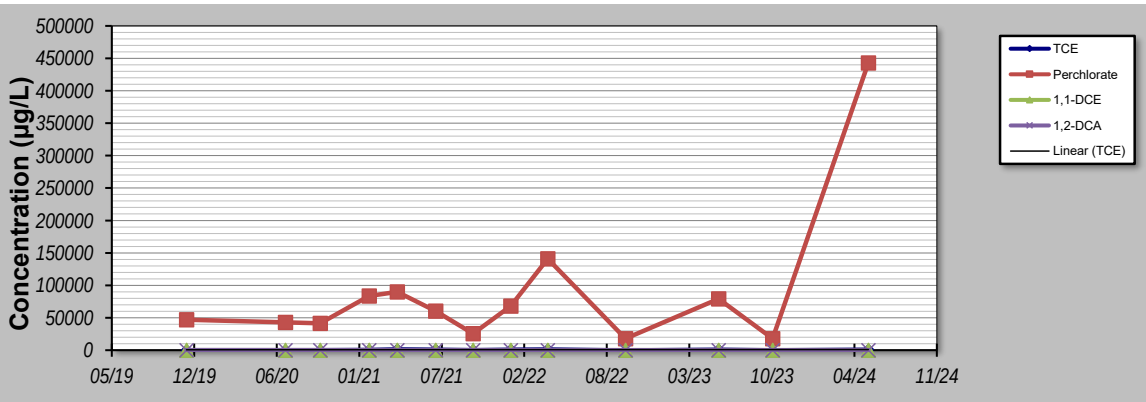
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: 4-Sep-24
Facility Name: LHAAP-50
Conducted By: Zachary Beck

Job ID: JVPCIBH.0001.0009
Constituent: 50WW12
Concentration Units: µg/L

Sampling Point ID:	TCE	Perchlorate	1,1-DCE	1,2-DCA			
Sampling Event	Sampling Date	50WW12 CONCENTRATION (µg/L)						
1	12-Nov-19	280	47000	4.6	2.7			
2	9-Jul-20	550	43000	7.3	4.4			
3	1-Oct-20	380	41600	5.2	3			
4	28-Jan-21	690	83800	5.9	5.8			
5	6-Apr-21	1600	90000	17	11			
6	8-Jul-21	1200	60300	11	0.5			
7	7-Oct-21	290	25500	2.9	2.5			
8	6-Jan-22	1100	68100	12	9.3			
9	6-Apr-22	1400	141000	20	10			
10	11-Oct-22	180	17900	4.5	0.79			
11	25-May-23	1100	79100	19	6.3			
12	3-Oct-23	160	17900	5	1.2			
13	22-May-24	1200	443000	22	15			
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.65	1.25	0.65	0.81			
Mann-Kendall Statistic (S):		6	7	24	12			
Confidence Factor:		61.7%	64.0%	91.8%	74.5%			
Concentration Trend:		No Trend	No Trend	Prob. Increasing	No Trend			



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.
4 *ND values are shown in red italics as 1/2 the limit of detection.*

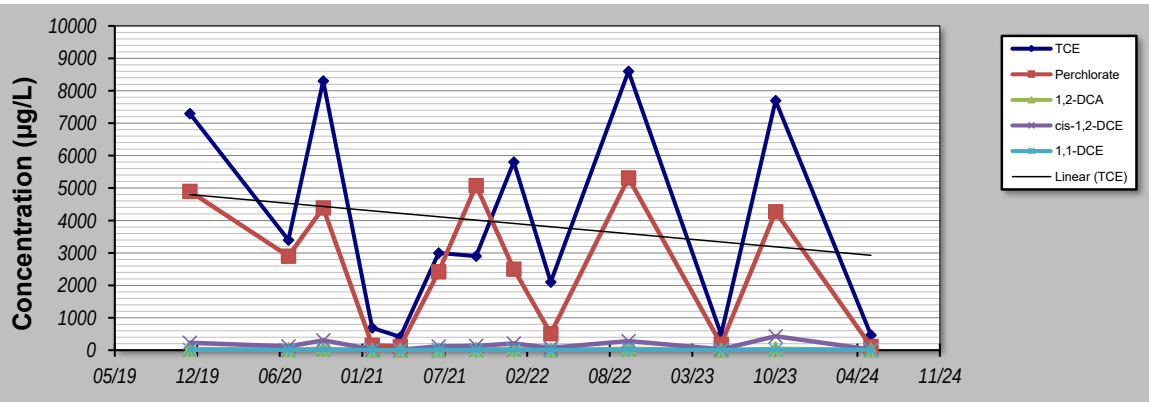
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: **4-Sep-24**
Facility Name: **LHAAP-50**
Conducted By: **Zachary Beck**

Job ID: **JVPCIBH.0001.0009**
Constituent: **50WW13**
Concentration Units: **µg/L**

Sampling Point ID:	TCE	Perchlorate	1,2-DCA	cis-1,2-DCE	1,1-DCE		
Sampling Event	Sampling Date	50WW13 CONCENTRATION (µg/L)						
1	13-Nov-19	7300	4900	39	230	17		
2	9-Jul-20	3400	2900	20	120	7.4		
3	1-Oct-20	8300	4390	47	300	17		
4	28-Jan-21	690	155	2.8	26	1		
5	6-Apr-21	410	122	1.9	16	0.95		
6	8-Jul-21	3000	2420	0.5	120	6.6		
7	7-Oct-21	2900	5080	28	130	5		
8	6-Jan-22	5800	2500	37	210	11		
9	6-Apr-22	2100	514	7.1	72	3.2		
10	11-Oct-22	8600	5310	46	280	14		
11	24-May-23	490	186	3	30	1.5		
12	3-Oct-23	7700	4270	43	430	18		
13	21-May-24	470	121	5	24	5		
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.81	0.83	0.88	0.84	0.77		
Mann-Kendall Statistic (S):		-12	-14	-2	-3	-4		
Confidence Factor:		74.5%	78.2%	52.4%	54.8%	57.1%		
Concentration Trend:		Stable	Stable	Stable	Stable	Stable		



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.
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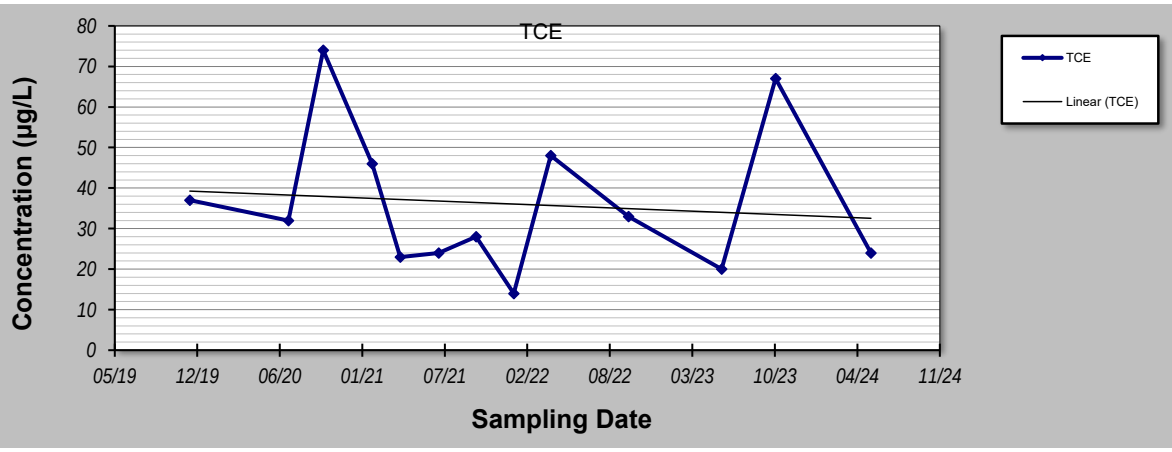
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	4-Sep-24	Job ID:	JVPCIBH.0001.0009
Facility Name:	LHAAP-50	Constituent:	50WW14
Conducted By:	Zachary Beck	Concentration Units:	µg/L

Sampling Point ID: TCE

Sampling Event	Sampling Date	50WW14 CONCENTRATION (µg/L)
1	13-Nov-19	37
2	9-Jul-20	32
3	1-Oct-20	74
4	28-Jan-21	46
5	6-Apr-21	23
6	8-Jul-21	24
7	7-Oct-21	28
8	6-Jan-22	14
9	6-Apr-22	48
10	11-Oct-22	33
11	25-May-23	20
12	3-Oct-23	67
13	21-May-24	24
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.50
Mann-Kendall Statistic (S):		-11
Confidence Factor:		72.5%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
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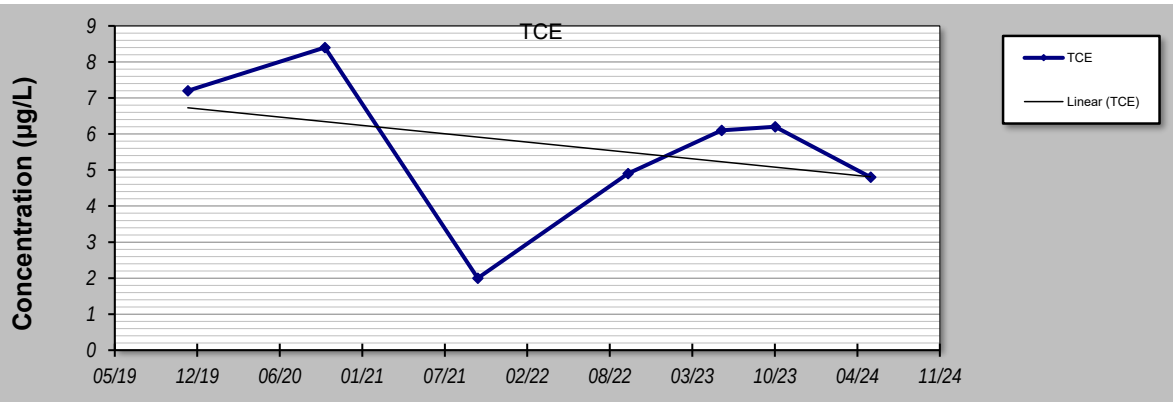
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GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	4-Sep-24	Job ID:	JVPCIBH.0001.0009
Facility Name:	LHAAP-50	Constituent:	50WW15
Conducted By:	Zachary Beck	Concentration Units:	µg/L

Sampling Point ID: TCE

Sampling Event	Sampling Date	50WW15 CONCENTRATION (µg/L)
1	8-Nov-19	7.2
2	5-Oct-20	8.4
3	11-Oct-21	2
4	10-Oct-22	4.9
5	25-May-23	6.1
6	2-Oct-23	6.2
7	20-May-24	4.8
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
Coefficient of Variation:		0.36
Mann-Kendall Statistic (S):		-5
Confidence Factor:		71.9%
Concentration Trend:		Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
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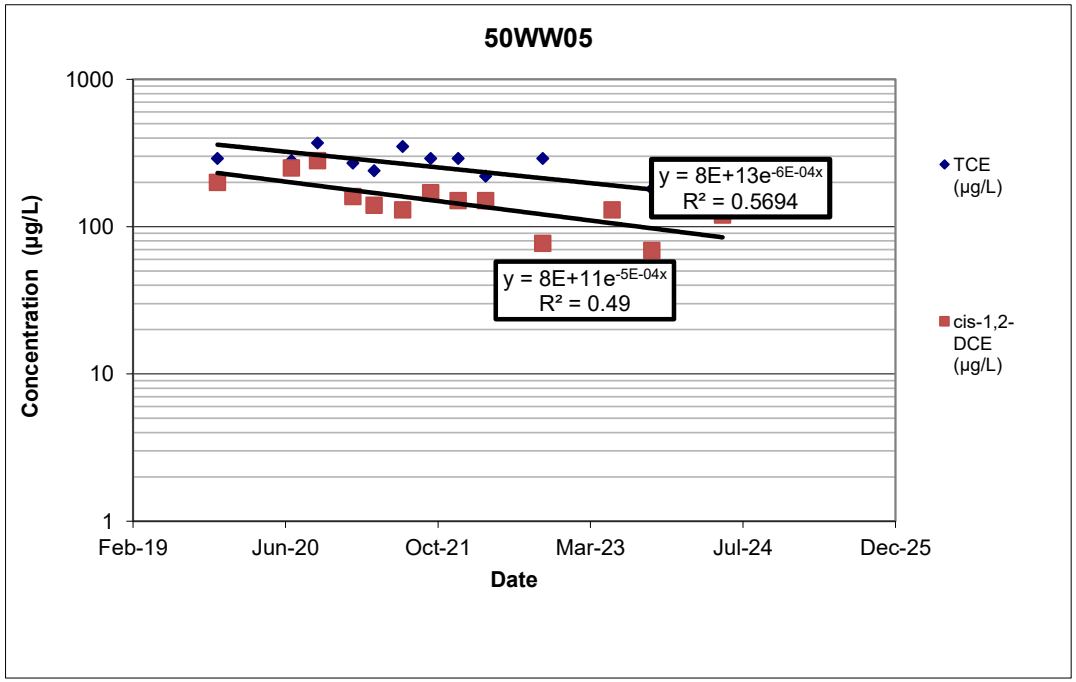
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APPENDIX G
DEGRADATION RATES

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Time-Dependent Attenuation Rate Constant and Estimated Cleanup Time
50WW05

Date	TCE (µg/L)	cis-1,2-DCE (µg/L)
8-Nov-19	290	200
8-Jul-20	280	250
1-Oct-20	370	280
25-Jan-21	270	160
5-Apr-21	240	140
7-Jul-21	350	130
7-Oct-21	290	170
5-Jan-22	290	150
5-Apr-22	220	150
10-Oct-22	290	77
25-May-23	130	130
2-Oct-23	180	69
21-May-24	150	120



Chemical	Attenuation Rate Constant (day^{-1})	Attenuation Half-life (days)	Attenuation Half-life (years)	Current Conc. (µg/L)	Target Concentration (µg/L)	Estimated Cleanup Time (years)
TCE	0.00070	990.2	2.7	150	5	13.3
cis-1,2-DCE	0.00050	1386.3	3.8	120	70	3.0

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

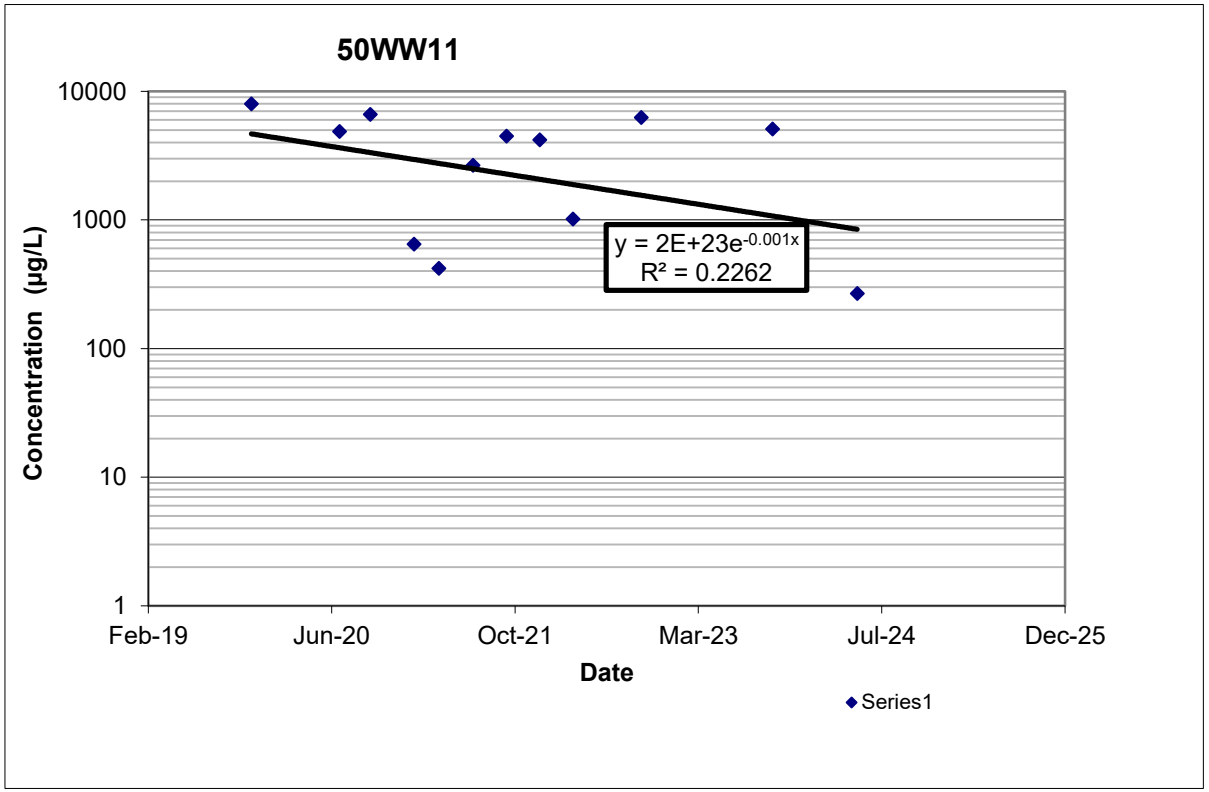
MCL - maximum contaminant level

TCE - trichloroethene

DCE - dichloroethylene

Time-Dependent Attenuation Rate Constant and Estimated Cleanup Time
50WW11

Date	Perchlorate (µg/L)
12-Nov-19	8000
9-Jul-20	4880
1-Oct-20	6630
28-Jan-21	651
6-Apr-21	421
8-Jul-21	2670
7-Oct-21	4500
6-Jan-22	4200
6-Apr-22	1020
10-Oct-22	6280
25-May-23	570
3-Oct-23	5110
21-May-24	268



Chemical	Attenuation Rate Constant (day^{-1})	Attenuation Half-life (days)	Attenuation Half-life (years)	Current Conc. (µg/L)	Target Concentration (µg/L)	Estimated Cleanup Time (years)
Perchlorate	0.00100	693.1	1.9	268	17	7.6

Notes:

The estimated cleanup time was calculated as the time it would take the most recent detected PCE 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

HS23100159 LHAAP Site 50 Cover Page

ALS WO# HS23100159

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Raw Data VOA9 448459
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Form 7 - CCV
Run Log
Raw Data FID 4 322102
Raw Data FID 4 448812
HS23100159 Wetchem 9056_W
Sequence Overview

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WorkOrder: HS23100159

LHAAP Site 50

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

18-Oct-2023

HS23100159 LHAAP Site 50 Final

ALS WO# HS23100159

10450 Stancliff Rd. Suite 210
Houston, TX 77099
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October 17, 2023

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

Work Order: **HS23100159**

Laboratory Results for: **LHAAP Site 50**

Dear Marcia Olive,

ALS Environmental received 17 sample(s) on Oct 04, 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: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Work Order: HS23100159

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS23100159-01	50WW09_100223	Water		02-Oct-2023 07:40	04-Oct-2023 09:10	☐
HS23100159-02	50WW08_100223	Water		02-Oct-2023 08:20	04-Oct-2023 09:10	☐
HS23100159-03	50WW22_100223	Water		02-Oct-2023 09:05	04-Oct-2023 09:10	☐
HS23100159-04	50WW23_100223	Water		02-Oct-2023 09:55	04-Oct-2023 09:10	☐
HS23100159-05	50WW29_100223	Water		02-Oct-2023 10:40	04-Oct-2023 09:10	☐
HS23100159-06	50WW05_100223	Water		02-Oct-2023 11:25	04-Oct-2023 09:10	☐
HS23100159-07	50WW15_100223	Water		02-Oct-2023 12:10	04-Oct-2023 09:10	☐
HS23100159-08	50WW16_100223	Water		02-Oct-2023 12:50	04-Oct-2023 09:10	☐
HS23100159-09	50WW18_100223	Water		02-Oct-2023 13:35	04-Oct-2023 09:10	☐
HS23100159-10	50WW14_100323	Water		03-Oct-2023 07:40	04-Oct-2023 09:10	☐
HS23100159-11	50WW13_100323	Water		03-Oct-2023 08:25	04-Oct-2023 09:10	☐
HS23100159-12	50WW13_100323_a	Water		03-Oct-2023 08:25	04-Oct-2023 09:10	☐
HS23100159-13	50WW11_100323	Water		03-Oct-2023 09:15	04-Oct-2023 09:10	☐
HS23100159-14	50WW11_100323_a	Water		03-Oct-2023 09:15	04-Oct-2023 09:10	☐
HS23100159-15	50WW06_100323	Water		03-Oct-2023 10:10	04-Oct-2023 09:10	☐
HS23100159-16	50WW12_100323	Water		03-Oct-2023 10:55	04-Oct-2023 09:10	☐
HS23100159-17	Trip Blank	Water	CG-071023-907	03-Oct-2023 00:00	04-Oct-2023 09:10	☐

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: LHAAP Site 50
Work Order: HS23100159

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS High Res Lab Houston, TX. Final report attached
- The analysis for Carbon dioxide was subcontracted to Eurofins Environmental Testing America l in Lancaster, PA . Final report attached

GC Semivolatiles by Method RSK-175

Batch ID: R448812

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

GCMS Volatiles by Method SW8260

Batch ID: R448564

Sample ID: 50WW06_100323 (HS23100159-15)

- 1,4_Dichlorobenzene (IS) failed recovery limits. compounds reported are not affected by this IS. Confirmed by re-analysis.

Sample ID: 50WW12_100323 (HS23100159-16)

- 1,4_Dichlorobenzene (IS) failed recovery limits. compounds reported are not affected by this IS. Confirmed by re-analysis.

Sample ID: 50WW14_100323 (HS23100159-10)

- 1,4_Dichlorobenzene (IS) failed recovery limits. compounds reported are not affected by this IS. Confirmed by re-analysis.

Sample ID: 50WW16_100223 (HS23100159-08)

- 1,4_Dichlorobenzene (IS) failed recovery limits. compounds reported are not affected by this IS. Confirmed by re-analysis.

Batch ID: R448800

Sample ID: HS23100355-09MS

- MS and MSD are for an unrelated sample

WetChemistry by Method SM5310B

Batch ID: R448844

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

WetChemistry by Method SW9056

Batch ID: R448193

Sample ID: 50WW13_100323 (HS23100159-11MS)

- The MS and/or MSD recovery was outside of the control limits; however, the result in the parent sample is greater than 4x the spike amount. (Chloride,Sulfate)

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW09_100223
Collection Date: 02-Oct-2023 07:40

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 19:46
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 19:46
cis-1,2-Dichloroethene	**1.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 19:46
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 19:46
Trichloroethene	**14**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 19:46
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 19:46
Surr: 1,2-Dichloroethane-d4	*83.3*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 19:46*
Surr: 4-Bromofluorobenzene	*87.2*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 19:46*
Surr: Dibromofluoromethane	*81.4*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 19:46*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 19:46*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW08_100223
Collection Date: 02-Oct-2023 08:20

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1-Dichloroethene	**1.1**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
1,2-Dichloroethane	**1.1**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
cis-1,2-Dichloroethene	**77**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
Tetrachloroethene	**1.4**		**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
Trichloroethene	**610**		**4.0**	**10**	**20**	**ug/L**	20	11-Oct-2023 16:30
Vinyl chloride	**0.56**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 18:17
Surr: 1,2-Dichloroethane-d4	*85.0*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 18:17*
Surr: 1,2-Dichloroethane-d4	*85.9*			**0**	*81-118*	*%REC*	*20*	*11-Oct-2023 16:30*
Surr: 4-Bromofluorobenzene	*90.1*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 18:17*
Surr: 4-Bromofluorobenzene	*87.9*			**0**	*85-114*	*%REC*	*20*	*11-Oct-2023 16:30*
Surr: Dibromofluoromethane	*84.5*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 18:17*
Surr: Dibromofluoromethane	*86.6*			**0**	*80-119*	*%REC*	*20*	*11-Oct-2023 16:30*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 18:17*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*20*	*11-Oct-2023 16:30*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)	**Method:NA**							Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW22_100223
Collection Date: 02-Oct-2023 09:05

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-03
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 17:54
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:54
Surr: 1,2-Dichloroethane-d4	*83.0*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 17:54*
Surr: 4-Bromofluorobenzene	*86.7*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 17:54*
Surr: Dibromofluoromethane	*84.9*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 17:54*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 17:54*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW23_100223
Collection Date: 02-Oct-2023 09:55

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-04
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 20:08
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:08
Surr: 1,2-Dichloroethane-d4	*84.6*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 20:08*
Surr: 4-Bromofluorobenzene	*88.4*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 20:08*
Surr: Dibromofluoromethane	*83.7*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 20:08*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 20:08*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW29_100223
Collection Date: 02-Oct-2023 10:40

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-05
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 20:31
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:31
Surr: 1,2-Dichloroethane-d4	*84.2*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 20:31*
Surr: 4-Bromofluorobenzene	*88.5*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 20:31*
Surr: Dibromofluoromethane	*83.5*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 20:31*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 20:31*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW05_100223
Collection Date: 02-Oct-2023 11:25

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-06
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**2.6**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:45
1,2-Dichloroethane	**0.93**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:45
cis-1,2-Dichloroethene	**69**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:45
Tetrachloroethene	**0.89**	J	**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:45
Trichloroethene	**180**		**1.0**	**2.5**	**5.0**	**ug/L**	5	11-Oct-2023 16:52
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:45
Surr: 1,2-Dichloroethane-d4	*83.4*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 22:45*
Surr: 1,2-Dichloroethane-d4	*85.3*			**0**	*81-118*	*%REC*	*5*	*11-Oct-2023 16:52*
Surr: 4-Bromofluorobenzene	*87.4*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 22:45*
Surr: 4-Bromofluorobenzene	*86.5*			**0**	*85-114*	*%REC*	*5*	*11-Oct-2023 16:52*
Surr: Dibromofluoromethane	*86.0*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 22:45*
Surr: Dibromofluoromethane	*86.7*			**0**	*80-119*	*%REC*	*5*	*11-Oct-2023 16:52*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 22:45*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*5*	*11-Oct-2023 16:52*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW15_100223
Collection Date: 02-Oct-2023 12:10

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-07
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:53
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 20:53
cis-1,2-Dichloroethene	**3.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 20:53
Tetrachloroethene	**1.1**		**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 20:53
Trichloroethene	**6.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 20:53
Vinyl chloride	**0.63**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 20:53
Surr: 1,2-Dichloroethane-d4	*85.0*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 20:53*
Surr: 4-Bromofluorobenzene	*89.0*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 20:53*
Surr: Dibromofluoromethane	*86.7*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 20:53*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 20:53*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW16_100223
Collection Date: 02-Oct-2023 12:50

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-08
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 21:16
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:16
Surr: 1,2-Dichloroethane-d4	*84.4*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 21:16*
Surr: 4-Bromofluorobenzene	*86.7*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 21:16*
Surr: Dibromofluoromethane	*87.5*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 21:16*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 21:16*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW18_100223
Collection Date: 02-Oct-2023 13:35

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-09
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 21:38
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 21:38
Surr: 1,2-Dichloroethane-d4	*85.6*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 21:38*
Surr: 4-Bromofluorobenzene	*87.7*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 21:38*
Surr: Dibromofluoromethane	*83.3*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 21:38*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 21:38*
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW14_100323
Collection Date: 03-Oct-2023 07:40

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-10
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:00
1,2-Dichloroethane	**0.74**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:00
cis-1,2-Dichloroethene	**4.6**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:00
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 22:00
Trichloroethene	**67**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:00
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:00
Surr: 1,2-Dichloroethane-d4	*87.7*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 22:00*
Surr: 4-Bromofluorobenzene	*87.7*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 22:00*
Surr: Dibromofluoromethane	*84.9*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 22:00*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 22:00*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 09:31
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 09:31
Methane	**0.00540**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	10-Oct-2023 09:31
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**1.22**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 05:53
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**408**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 18:20
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 18:14
Sulfate	**424**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 18:20
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW13_100323
Collection Date: 03-Oct-2023 08:25

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-11
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**18**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:30
1,2-Dichloroethane	**42**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:30
cis-1,2-Dichloroethene	**430**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:14
Tetrachloroethene	**12**		**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:30
Trichloroethene	**7,100**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:14
Vinyl chloride	**3.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:30
Surr: 1,2-Dichloroethane-d4	*83.7*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 23:30*
Surr: 1,2-Dichloroethane-d4	*84.8*			**0**	*81-118*	*%REC*	*50*	*11-Oct-2023 17:14*
Surr: 4-Bromofluorobenzene	*89.3*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 23:30*
Surr: 4-Bromofluorobenzene	*85.3*			**0**	*85-114*	*%REC*	*50*	*11-Oct-2023 17:14*
Surr: Dibromofluoromethane	*85.4*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 23:30*
Surr: Dibromofluoromethane	*85.1*			**0**	*80-119*	*%REC*	*50*	*11-Oct-2023 17:14*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 23:30*
Surr: Toluene-d8	*110*			**0**	*89-112*	*%REC*	*50*	*11-Oct-2023 17:14*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 09:40
Ethene	**0.000630**	J	**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	10-Oct-2023 09:40
Methane	**0.0256**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	10-Oct-2023 09:40
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**2.32**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 06:07
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**277**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 18:43
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 18:26
Sulfate	**338**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 18:43
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW13_100323_a
Collection Date: 03-Oct-2023 08:25

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-12
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**18**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:52
1,2-Dichloroethane	**43**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:52
cis-1,2-Dichloroethene	**410**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:37
Tetrachloroethene	**14**		**0.30**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:52
Trichloroethene	**7,700**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:37
Vinyl chloride	**3.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 23:52
Surr: 1,2-Dichloroethane-d4	*82.7*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 23:52*
Surr: 1,2-Dichloroethane-d4	*86.3*			**0**	*81-118*	*%REC*	*50*	*11-Oct-2023 17:37*
Surr: 4-Bromofluorobenzene	*86.2*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 23:52*
Surr: 4-Bromofluorobenzene	*85.8*			**0**	*85-114*	*%REC*	*50*	*11-Oct-2023 17:37*
Surr: Dibromofluoromethane	*83.6*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 23:52*
Surr: Dibromofluoromethane	*82.5*			**0**	*80-119*	*%REC*	*50*	*11-Oct-2023 17:37*
Surr: Toluene-d8	*108*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 23:52*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*50*	*11-Oct-2023 17:37*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	**0.00104**		**0.000144**	**0.000500**	**0.00100**	**mg/L**	1	10-Oct-2023 09:48
Ethene	**0.000666**	J	**0.000234**	**0.000500**	**0.00100**	**mg/L**	1	10-Oct-2023 09:48
Methane	**0.0276**		**0.000107**	**0.000500**	**0.000500**	**mg/L**	1	10-Oct-2023 09:48
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**2.53**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 06:20
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**282**		**2.00**	**5.00**	**5.00**	**mg/L**	10	04-Oct-2023 18:55
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 18:49
Sulfate	**334**		**2.00**	**5.00**	**5.00**	**mg/L**	10	04-Oct-2023 18:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW11_100323
Collection Date: 03-Oct-2023 09:15

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-13
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**23**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
1,2-Dichloroethane	**20**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
cis-1,2-Dichloroethene	**59**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
Tetrachloroethene	**5.5**		**0.30**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
Trichloroethene	**2,400**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 17:59
Vinyl chloride	**1.8**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:37
Surr: 1,2-Dichloroethane-d4	*84.9*			**0**	*81-118*	*%REC*	*1*	*10-Oct-2023 00:37*
Surr: 1,2-Dichloroethane-d4	*84.8*			**0**	*81-118*	*%REC*	*50*	*11-Oct-2023 17:59*
Surr: 4-Bromofluorobenzene	*90.8*			**0**	*85-114*	*%REC*	*1*	*10-Oct-2023 00:37*
Surr: 4-Bromofluorobenzene	*87.8*			**0**	*85-114*	*%REC*	*50*	*11-Oct-2023 17:59*
Surr: Dibromofluoromethane	*87.9*			**0**	*80-119*	*%REC*	*1*	*10-Oct-2023 00:37*
Surr: Dibromofluoromethane	*87.1*			**0**	*80-119*	*%REC*	*50*	*11-Oct-2023 17:59*
Surr: Toluene-d8	*109*			**0**	*89-112*	*%REC*	*1*	*10-Oct-2023 00:37*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*50*	*11-Oct-2023 17:59*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 10:04
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 10:04
Methane	**1.33**		**0.00535**	**0.0250**	**0.0250**	**mg/L**	50	10-Oct-2023 11:13
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**1.88**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 06:33
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**287**		**2.00**	**5.00**	**5.00**	**mg/L**	10	04-Oct-2023 19:35
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 19:29
Sulfate	**406**		**2.00**	**5.00**	**5.00**	**mg/L**	10	04-Oct-2023 19:35
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW11_100323_a
Collection Date: 03-Oct-2023 09:15

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-14
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**23**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
1,2-Dichloroethane	**19**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
cis-1,2-Dichloroethene	**58**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
Tetrachloroethene	**5.3**		**0.30**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
Trichloroethene	**2,400**		**10**	**25**	**50**	**ug/L**	50	11-Oct-2023 18:21
Vinyl chloride	**2.1**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 00:59
Surr: 1,2-Dichloroethane-d4	*85.3*			**0**	*81-118*	*%REC*	*1*	*10-Oct-2023 00:59*
Surr: 1,2-Dichloroethane-d4	*88.0*			**0**	*81-118*	*%REC*	*50*	*11-Oct-2023 18:21*
Surr: 4-Bromofluorobenzene	*86.8*			**0**	*85-114*	*%REC*	*1*	*10-Oct-2023 00:59*
Surr: 4-Bromofluorobenzene	*86.9*			**0**	*85-114*	*%REC*	*50*	*11-Oct-2023 18:21*
Surr: Dibromofluoromethane	*84.8*			**0**	*80-119*	*%REC*	*1*	*10-Oct-2023 00:59*
Surr: Dibromofluoromethane	*86.9*			**0**	*80-119*	*%REC*	*50*	*11-Oct-2023 18:21*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*10-Oct-2023 00:59*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*50*	*11-Oct-2023 18:21*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 10:27
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 10:27
Methane	**1.36**		**0.00535**	**0.0250**	**0.0250**	**mg/L**	50	10-Oct-2023 11:27
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**2.06**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 06:46
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**282**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 19:47
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 19:41
Sulfate	**405**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 19:47
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW06_100323
Collection Date: 03-Oct-2023 10:10

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-15
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:23
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:23
cis-1,2-Dichloroethene	**0.70**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:23
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 22:23
Trichloroethene	**15**		**0.20**	**0.50**	**1.0**	**ug/L**	1	09-Oct-2023 22:23
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 22:23
Surr: 1,2-Dichloroethane-d4	*83.3*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 22:23*
Surr: 4-Bromofluorobenzene	*85.8*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 22:23*
Surr: Dibromofluoromethane	*80.8*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 22:23*
Surr: Toluene-d8	*107*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 22:23*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 10:40
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 10:40
Methane	**0.216**		**0.00107**	**0.00500**	**0.00500**	**mg/L**	10	10-Oct-2023 11:40
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**3.27**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 07:00
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**53.6**		**0.200**	**0.500**	**0.500**	**mg/L**	1	04-Oct-2023 19:52
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 19:52
Sulfate	**21.3**		**0.200**	**0.500**	**0.500**	**mg/L**	1	04-Oct-2023 19:52
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: 50WW12_100323
Collection Date: 03-Oct-2023 10:55

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-16
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
1,1-Dichloroethene	**5.0**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 01:44
1,2-Dichloroethane	**1.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 01:44
cis-1,2-Dichloroethene	**0.77**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 01:44
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Oct-2023 01:44
Trichloroethene	**160**		**0.20**	**0.50**	**1.0**	**ug/L**	1	10-Oct-2023 01:44
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	10-Oct-2023 01:44
Surr: 1,2-Dichloroethane-d4	*86.7*			**0**	*81-118*	*%REC*	*1*	*10-Oct-2023 01:44*
Surr: 4-Bromofluorobenzene	*86.5*			**0**	*85-114*	*%REC*	*1*	*10-Oct-2023 01:44*
Surr: Dibromofluoromethane	*86.7*			**0**	*80-119*	*%REC*	*1*	*10-Oct-2023 01:44*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*10-Oct-2023 01:44*
DISSOLVED GASES BY RSK-175		**Method:RSK-175**						Analyst: SAM
Ethane	0.000500	U	0.000144	0.000500	0.00100	mg/L	1	10-Oct-2023 10:53
Ethene	0.000500	U	0.000234	0.000500	0.00100	mg/L	1	10-Oct-2023 10:53
Methane	**8.89**		**0.0535**	**0.250**	**0.250**	**mg/L**	500	10-Oct-2023 11:50
TOTAL ORGANIC CARBON - SM5310B-2011		**Method:SM5310B**						Analyst: DW
Organic Carbon, Total	**1.36**		**0.500**	**1.00**	**1.00**	**mg/L**	1	12-Oct-2023 07:40
ANIONS BY SW9056A		**Method:SW9056**						Analyst: TH
Chloride	**1,140**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 20:10
Nitrogen, Nitrate (As N)	0.100	U	0.0300	0.100	0.100	mg/L	1	04-Oct-2023 20:04
Sulfate	**604**		**4.00**	**10.0**	**10.0**	**mg/L**	20	04-Oct-2023 20:10
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	12-Oct-2023 15:22
SUBCONTRACT ANALYSIS - RSK		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	16-Oct-2023 20:59

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

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
Sample ID: Trip Blank
Collection Date: 03-Oct-2023 00:00

ANALYTICAL REPORT
WorkOrder:HS23100159
Lab ID:HS23100159-17
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	09-Oct-2023 17:32
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	09-Oct-2023 17:32
Surr: 1,2-Dichloroethane-d4	*83.3*			**0**	*81-118*	*%REC*	*1*	*09-Oct-2023 17:32*
Surr: 4-Bromofluorobenzene	*88.2*			**0**	*85-114*	*%REC*	*1*	*09-Oct-2023 17:32*
Surr: Dibromofluoromethane	*85.7*			**0**	*80-119*	*%REC*	*1*	*09-Oct-2023 17:32*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*09-Oct-2023 17:32*

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

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R448193 (0)	**Test Name :** ANIONS BY SW9056A				**Matrix:** Water	
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			04 Oct 2023 18:20	20
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			04 Oct 2023 18:14	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			04 Oct 2023 18:43	20
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			04 Oct 2023 18:26	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			04 Oct 2023 18:55	10
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			04 Oct 2023 18:49	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			04 Oct 2023 19:35	10
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			04 Oct 2023 19:29	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			04 Oct 2023 19:47	20
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			04 Oct 2023 19:41	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			04 Oct 2023 19:52	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			04 Oct 2023 20:10	20
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			04 Oct 2023 20:04	1
Batch ID: R448564 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS23100159-01	50WW09_100223	02 Oct 2023 07:40			09 Oct 2023 19:46	1
HS23100159-02	50WW08_100223	02 Oct 2023 08:20			09 Oct 2023 18:17	1
HS23100159-03	50WW22_100223	02 Oct 2023 09:05			09 Oct 2023 17:54	1
HS23100159-04	50WW23_100223	02 Oct 2023 09:55			09 Oct 2023 20:08	1
HS23100159-05	50WW29_100223	02 Oct 2023 10:40			09 Oct 2023 20:31	1
HS23100159-06	50WW05_100223	02 Oct 2023 11:25			09 Oct 2023 22:45	1
HS23100159-07	50WW15_100223	02 Oct 2023 12:10			09 Oct 2023 20:53	1
HS23100159-08	50WW16_100223	02 Oct 2023 12:50			09 Oct 2023 21:16	1
HS23100159-09	50WW18_100223	02 Oct 2023 13:35			09 Oct 2023 21:38	1
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			09 Oct 2023 22:00	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			09 Oct 2023 23:30	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			09 Oct 2023 23:52	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			10 Oct 2023 00:37	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			10 Oct 2023 00:59	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			09 Oct 2023 22:23	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			10 Oct 2023 01:44	1
HS23100159-17	Trip Blank	03 Oct 2023 00:00			09 Oct 2023 17:32	1
Batch ID: R448800 (0)	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C				**Matrix:** Water	
HS23100159-02	50WW08_100223	02 Oct 2023 08:20			11 Oct 2023 16:30	20
HS23100159-06	50WW05_100223	02 Oct 2023 11:25			11 Oct 2023 16:52	5
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			11 Oct 2023 17:14	50
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			11 Oct 2023 17:37	50
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			11 Oct 2023 17:59	50
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			11 Oct 2023 18:21	50

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R448812 (1)	**Test Name :** DISSOLVED GASES BY RSK-175				**Matrix:** Water	
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			10 Oct 2023 09:31	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			10 Oct 2023 09:40	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			10 Oct 2023 09:48	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			10 Oct 2023 11:13	50
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			10 Oct 2023 10:04	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			10 Oct 2023 11:27	50
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			10 Oct 2023 10:27	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			10 Oct 2023 11:40	10
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			10 Oct 2023 10:40	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			10 Oct 2023 11:50	500
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			10 Oct 2023 10:53	1
Batch ID: R448844 (0)	**Test Name :** TOTAL ORGANIC CARBON - SM5310B-2011				**Matrix:** Water	
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			12 Oct 2023 05:53	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			12 Oct 2023 06:07	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			12 Oct 2023 06:20	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			12 Oct 2023 06:33	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			12 Oct 2023 06:46	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			12 Oct 2023 07:00	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			12 Oct 2023 07:40	1
Batch ID: R448920 (0)	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)				**Matrix:** Water	
HS23100159-01	50WW09_100223	02 Oct 2023 07:40			12 Oct 2023 15:22	1
HS23100159-02	50WW08_100223	02 Oct 2023 08:20			12 Oct 2023 15:22	1
HS23100159-03	50WW22_100223	02 Oct 2023 09:05			12 Oct 2023 15:22	1
HS23100159-04	50WW23_100223	02 Oct 2023 09:55			12 Oct 2023 15:22	1
HS23100159-05	50WW29_100223	02 Oct 2023 10:40			12 Oct 2023 15:22	1
HS23100159-06	50WW05_100223	02 Oct 2023 11:25			12 Oct 2023 15:22	1
HS23100159-07	50WW15_100223	02 Oct 2023 12:10			12 Oct 2023 15:22	1
HS23100159-08	50WW16_100223	02 Oct 2023 12:50			12 Oct 2023 15:22	1
HS23100159-09	50WW18_100223	02 Oct 2023 13:35			12 Oct 2023 15:22	1
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			12 Oct 2023 15:22	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			12 Oct 2023 15:22	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			12 Oct 2023 15:22	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			12 Oct 2023 15:22	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			12 Oct 2023 15:22	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			12 Oct 2023 15:22	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			12 Oct 2023 15:22	1

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R449277 (0)	**Test Name :** SUBCONTRACT ANALYSIS - RSK				**Matrix:** Water	
HS23100159-10	50WW14_100323	03 Oct 2023 07:40			16 Oct 2023 20:59	1
HS23100159-11	50WW13_100323	03 Oct 2023 08:25			16 Oct 2023 20:59	1
HS23100159-12	50WW13_100323_a	03 Oct 2023 08:25			16 Oct 2023 20:59	1
HS23100159-13	50WW11_100323	03 Oct 2023 09:15			16 Oct 2023 20:59	1
HS23100159-14	50WW11_100323_a	03 Oct 2023 09:15			16 Oct 2023 20:59	1
HS23100159-15	50WW06_100323	03 Oct 2023 10:10			16 Oct 2023 20:59	1
HS23100159-16	50WW12_100323	03 Oct 2023 10:55			16 Oct 2023 20:59	1

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448812 (1) **Instrument:** FID-4 **Method:** DISSOLVED GASES BY RSK-175

MBLK Sample ID: **MBLK-231010** Units: **mg/L** Analysis Date: **10-Oct-2023 08:24**
Client ID: Run ID: **FID-4_448812** SeqNo: **7602169** 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-231010** Units: **mg/L** Analysis Date: **10-Oct-2023 08:40**
Client ID: Run ID: **FID-4_448812** SeqNo: **7602170** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0198	0.00100	0.01804	0	110	75 - 125				
Ethene	0.0172	0.00100	0.0168	0	102	75 - 125				
Methane	0.00772	0.000500	0.009647	0	80.0	75 - 125				

LCSD Sample ID: **LCSD-231010** Units: **mg/L** Analysis Date: **10-Oct-2023 08:56**
Client ID: Run ID: **FID-4_448812** SeqNo: **7602171** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ethane	0.0201	0.00100	0.01804	0	112	75 - 125	0.01981	1.57	30	
Ethene	0.0177	0.00100	0.0168	0	106	75 - 125	0.01715	3.38	30	
Methane	0.00796	0.000500	0.009647	0	82.5	75 - 125	0.007718	3.09	30	

DUP Sample ID: **HS23100159-11DUP** Units: **mg/L** Analysis Date: **10-Oct-2023 11:02**
Client ID: **50WW13_100323** Run ID: **FID-4_448812** SeqNo: **7602180** 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					0	0	30	U
Ethene	0.000604	0.00100					0.0006300	0	30	J
Methane	0.0251	0.000500					0.02562	2.14	30	

The following samples were analyzed in this batch:

HS23100159-10	HS23100159-11	HS23100159-12	HS23100159-13
HS23100159-14	HS23100159-15	HS23100159-16	

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448564 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MBLK Sample ID: **VBLKW-231009** Units: **ug/L** Analysis Date: **09-Oct-2023 17:09**
Client ID: Run ID: **VOA9_448564** SeqNo: **7596765** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*40.92*	*1.0*	*50*	*0*	*81.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*44.41*	*1.0*	*50*	*0*	*88.8*	*85 - 114*				
Surr: Dibromofluoromethane	*41.18*	*1.0*	*50*	*0*	*82.4*	*80 - 119*				
Surr: Toluene-d8	*55.21*	*1.0*	*50*	*0*	*110*	*89 - 112*				

LCS Sample ID: **VLCSW-231009** Units: **ug/L** Analysis Date: **09-Oct-2023 16:25**
Client ID: Run ID: **VOA9_448564** SeqNo: **7596764** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	21.66	1.0	20	0	108	71 - 131				
1,2-Dichloroethane	19.56	1.0	20	0	97.8	73 - 128				
cis-1,2-Dichloroethene	20.01	1.0	20	0	100	78 - 123				
Tetrachloroethene	21.77	1.0	20	0	109	74 - 129				
Trichloroethene	19.99	1.0	20	0	100.0	79 - 123				
Vinyl chloride	21.21	1.0	20	0	106	58 - 137				
Surr: 1,2-Dichloroethane-d4	*49.91*	*1.0*	*50*	*0*	*99.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*46.13*	*1.0*	*50*	*0*	*92.3*	*85 - 114*				
Surr: Dibromofluoromethane	*53.02*	*1.0*	*50*	*0*	*106*	*80 - 119*				
Surr: Toluene-d8	*50.08*	*1.0*	*50*	*0*	*100*	*89 - 112*				

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448564 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MS Sample ID: **HS23100159-03MS** Units: **ug/L** Analysis Date: **09-Oct-2023 18:39**
Client ID: **50WW22_100223** Run ID: **VOA9_448564** SeqNo: **7596769** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	20.81	1.0	20	0	104	71 - 131				
1,2-Dichloroethane	17.49	1.0	20	0	87.4	73 - 128				
cis-1,2-Dichloroethene	17.77	1.0	20	0	88.9	78 - 123				
Tetrachloroethene	24.69	1.0	20	0	123	74 - 129				
Trichloroethene	22.72	1.0	20	0	114	79 - 123				
Vinyl chloride	19.28	1.0	20	0	96.4	58 - 137				
Surr: 1,2-Dichloroethane-d4	*41.21*	*1.0*	*50*	*0*	*82.4*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.64*	*1.0*	*50*	*0*	*95.3*	*85 - 114*				
Surr: Dibromofluoromethane	*43.5*	*1.0*	*50*	*0*	*87.0*	*80 - 119*				
Surr: Toluene-d8	*53.82*	*1.0*	*50*	*0*	*108*	*89 - 112*				

MSD Sample ID: **HS23100159-03MSD** Units: **ug/L** Analysis Date: **09-Oct-2023 19:01**
Client ID: **50WW22_100223** Run ID: **VOA9_448564** SeqNo: **7596770** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1-Dichloroethene	21.01	1.0	20	0	105	71 - 131	20.81	0.933	20	
1,2-Dichloroethane	18.21	1.0	20	0	91.0	73 - 128	17.49	4.03	20	
cis-1,2-Dichloroethene	17.4	1.0	20	0	87.0	78 - 123	17.77	2.09	20	
Tetrachloroethene	22.65	1.0	20	0	113	74 - 129	24.69	8.61	20	
Trichloroethene	19.48	1.0	20	0	97.4	79 - 123	22.72	15.3	20	
Vinyl chloride	19.83	1.0	20	0	99.1	58 - 137	19.28	2.82	20	
Surr: 1,2-Dichloroethane-d4	*42.6*	*1.0*	*50*	*0*	*85.2*	*81 - 118*	*41.21*	*3.32*	*20*	
Surr: 4-Bromofluorobenzene	*46.81*	*1.0*	*50*	*0*	*93.6*	*85 - 114*	*47.64*	*1.77*	*20*	
Surr: Dibromofluoromethane	*44.95*	*1.0*	*50*	*0*	*89.9*	*80 - 119*	*43.5*	*3.28*	*20*	
Surr: Toluene-d8	*51.85*	*1.0*	*50*	*0*	*104*	*89 - 112*	*53.82*	*3.74*	*20*	

The following samples were analyzed in this batch:

HS23100159-01	HS23100159-02	HS23100159-03	HS23100159-04
HS23100159-05	HS23100159-06	HS23100159-07	HS23100159-08
HS23100159-09	HS23100159-10	HS23100159-11	HS23100159-12
HS23100159-13	HS23100159-14	HS23100159-15	HS23100159-16
HS23100159-17			

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448800 (0) **Instrument: VOA9** **Method: VOLATILES ORGANICS BY METHOD 8260C**

MBLK Sample ID: **VBLKW-231010** Units: **ug/L** Analysis Date: **11-Oct-2023 13:08**
Client ID: Run ID: **VOA9_448800** SeqNo: **7601723** 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
Surr: 1,2-Dichloroethane-d4	*42.99*	*1.0*	*50*	*0*	*86.0*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*44.17*	*1.0*	*50*	*0*	*88.3*	*85 - 114*				
Surr: Dibromofluoromethane	*42.06*	*1.0*	*50*	*0*	*84.1*	*80 - 119*				
Surr: Toluene-d8	*55.88*	*1.0*	*50*	*0*	*112*	*89 - 112*				

LCS Sample ID: **VLCSW-231010** Units: **ug/L** Analysis Date: **11-Oct-2023 12:24**
Client ID: Run ID: **VOA9_448800** SeqNo: **7601722** 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	18.89	1.0	20	0	94.5	78 - 123				
Trichloroethene	18.46	1.0	20	0	92.3	79 - 123				
Surr: 1,2-Dichloroethane-d4	*55.08*	*1.0*	*50*	*0*	*110*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*45.38*	*1.0*	*50*	*0*	*90.8*	*85 - 114*				
Surr: Dibromofluoromethane	*54.86*	*1.0*	*50*	*0*	*110*	*80 - 119*				
Surr: Toluene-d8	*53.33*	*1.0*	*50*	*0*	*107*	*89 - 112*				

MS Sample ID: **HS23100355-09MS** Units: **ug/L** Analysis Date: **11-Oct-2023 15:45**
Client ID: Run ID: **VOA9_448800** SeqNo: **7601729** 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	129.4	1.0	20	72.93	282	78 - 123				S
Trichloroethene	23.66	1.0	20	2.504	106	79 - 123				
Surr: 1,2-Dichloroethane-d4	*42.26*	*1.0*	*50*	*0*	*84.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.12*	*1.0*	*50*	*0*	*94.2*	*85 - 114*				
Surr: Dibromofluoromethane	*44.7*	*1.0*	*50*	*0*	*89.4*	*80 - 119*				
Surr: Toluene-d8	*54.54*	*1.0*	*50*	*0*	*109*	*89 - 112*				

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448800 (0) **Instrument:** VOA9 **Method:** VOLATILES ORGANICS BY METHOD 8260C

MSD Sample ID: **HS23100355-09MSD** Units: **ug/L** Analysis Date: **11-Oct-2023 16:07**
Client ID: Run ID: **VOA9_448800** SeqNo: **7601730** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	101.9	1.0	20	72.93	145	78 - 123	129.4	23.8	20	SR
Trichloroethene	21.33	1.0	20	2.504	94.1	79 - 123	23.66	10.3	20	
Surr: 1,2-Dichloroethane-d4	*42.67*	*1.0*	*50*	*0*	*85.3*	*81 - 118*	*42.26*	*0.972*	*20*	
Surr: 4-Bromofluorobenzene	*46.5*	*1.0*	*50*	*0*	*93.0*	*85 - 114*	*47.12*	*1.31*	*20*	
Surr: Dibromofluoromethane	*44.29*	*1.0*	*50*	*0*	*88.6*	*80 - 119*	*44.7*	*0.915*	*20*	
Surr: Toluene-d8	*54.66*	*1.0*	*50*	*0*	*109*	*89 - 112*	*54.54*	*0.218*	*20*	

The following samples were analyzed in this batch: HS23100159-02 HS23100159-06 HS23100159-11 HS23100159-12 HS23100159-13 HS23100159-14

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448193 (0) **Instrument:** ICS-Integrion **Method:** ANIONS BY SW9056A

MBLK Sample ID: **MBLK** Units: **mg/L** Analysis Date: **04-Oct-2023 17:57**
Client ID: Run ID: **ICS-Integrion_448193** SeqNo: **7585965** 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
Nitrogen, Nitrate (As N)	0.100	0.100								U
Sulfate	0.500	0.500								U

LCS Sample ID: **LCS** Units: **mg/L** Analysis Date: **04-Oct-2023 18:09**
Client ID: Run ID: **ICS-Integrion_448193** SeqNo: **7585966** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.66	0.500	20	0	103	80 - 120				
Nitrogen, Nitrate (As N)	3.849	0.100	4	0	96.2	80 - 120				
Sulfate	19.27	0.500	20	0	96.3	80 - 120				

MS Sample ID: **HS23100159-11MS** Units: **mg/L** Analysis Date: **04-Oct-2023 18:32**
Client ID: **50WW13_100323** Run ID: **ICS-Integrion_448193** SeqNo: **7585970** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	282.8	0.500	10	284.3	-15.0	80 - 120				SEO
Nitrogen, Nitrate (As N)	1.808	0.100	2	0	90.4	80 - 120				
Sulfate	332.7	0.500	10	329.5	32.5	80 - 120				SEO

MSD Sample ID: **HS23100159-11MSD** Units: **mg/L** Analysis Date: **04-Oct-2023 18:37**
Client ID: **50WW13_100323** Run ID: **ICS-Integrion_448193** SeqNo: **7585971** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	283.2	0.500	10	284.3	-11.4	80 - 120	282.8	0.129	20	SEO
Nitrogen, Nitrate (As N)	1.812	0.100	2	0	90.6	80 - 120	1.808	0.232	20	
Sulfate	332.8	0.500	10	329.5	33.5	80 - 120	332.7	0.0297	20	SEO

The following samples were analyzed in this batch:

HS23100159-10	HS23100159-11	HS23100159-12	HS23100159-13
HS23100159-14	HS23100159-15	HS23100159-16	

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: HS23100159

QC BATCH REPORT

Batch ID: R448844 (0) **Instrument:** TOC_04 **Method:** TOTAL ORGANIC CARBON - SM5310B-2011

MBLK Sample ID: **MBLK-10112023** Units: **mg/L** Analysis Date: **12-Oct-2023 04:57**
Client ID: Run ID: **TOC_04_448844** SeqNo: **7602858** 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-10112023** Units: **mg/L** Analysis Date: **12-Oct-2023 05:11**
Client ID: Run ID: **TOC_04_448844** SeqNo: **7602859** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.49	1.00	10	0	105	85 - 115				

LCSD Sample ID: **LCSD-10112023** Units: **mg/L** Analysis Date: **12-Oct-2023 05:26**
Client ID: Run ID: **TOC_04_448844** SeqNo: **7602860** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.59	1.00	10	0	106	85 - 115	10.49	0.949	20	

MS Sample ID: **HS23100291-02MS** Units: **mg/L** Analysis Date: **12-Oct-2023 08:20**
Client ID: Run ID: **TOC_04_448844** SeqNo: **7602875** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.57	1.00	10	1.14	94.3	80 - 120				

The following samples were analyzed in this batch:

HS23100159-10	HS23100159-11	HS23100159-12	HS23100159-13
HS23100159-14	HS23100159-15	HS23100159-16	

ALS Houston, US Date: 17-Oct-23

Client: Bhate Environmental Associates, Inc.
Project: LHAAP Site 50
WorkOrder: **HS23100159**

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
Oklahoma	2023-140	31-Aug-2024
Texas	T104704231-23-31	30-Apr-2024
Utah	TX026932023-14	31-Jul-2024

ALS Houston, US Date: 17-Oct-23

Sample Receipt Checklist

Work Order ID: HS23100159 **Date/Time Received:** 04-Oct-2023 09:10

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

Completed By: /S/ Belinda Gomez (eSignature) 04-Oct-2023 11:28 (Date/Time) **Reviewed by:** /S/ James Guin (eSignature) 04-Oct-2023 15:55 (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):	3.8uc/3.7c	ir31
Cooler(s)/Kit(s):	49315	
Date/Time sample(s) sent to storage:	10/4/23 1129	

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:

bhate

01331687

Page: _____ of _____

Project/Phase No: JVPCI8H.0001

COC Number(1): _____

LIMS Number: _____

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 50

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions by SW9056	CO2 by RSK 175	Perchlorate by SW 6850				Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
SDWW09_100223	2 OCT 2023	0740	-	N		WG	4	X					X							
SDWW08_100223	2 OCT 2023	0820	-	N		WG	4	X					X							
SDWW22_100223	2 OCT 2023	0905	-	N		WG	4	X					X							
SDWW22_100223_MS	2 OCT 2023	0905		MS		WG	4	X					X							
SDWW22_100223_MSD	2 OCT 2023	0905		SD		WG	4	X					X							
SDWW23_100223	2 OCT 2023	0955	-	N		WG	4	X					X							
SDWW29_100223	2 OCT 2023	1040	-	N		WG	4	X					X							
SDWW05_100223	2 OCT 2023	1125	-	N		WG	4	X					X							
SDWW15_100223	2 OCT 2023	1210	-	N		WG	4	X					X							
SDWW16_100223	2 OCT 2023	1250	-	N		WG	4	X					X							
SDWW18_100223	2 OCT 2023	1335	-	N		WG	4	X					X							

Sample Analysis Requested (5) | Quality Assurance Samples (6)

HS23100159

Bhate Environmental Associates, Inc.
LHAAP

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished By (signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	10/3/23	1330	1. [signature]	10-4-23	0916
2.			2.		
3.			3.		

Sample Delivery Details / Laboratory Receipt

Delivered Directly to Lab: _____ Shipped _____ No.:

Method of Shipment: _____

_____ Fed Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stanciff Rd. Suite 210 Houston, TX 77099 (281) 530-5656

ATTN: Dane Wagasey Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

cooler# 49315 3.8c IR#1 CF-0.1

bhate

01331688

Page: _____ of _____

Project/Phase No: JVPCIBH.0001

COC Number(1): _____

LIMS Number: _____

1608 13th Avenue South, Suite 300
Birmingham Alabama 35205
Tel: 205-918-4000
Fax: 205-918-4050

Chain of Custody and Analytical Request

Facility/Base I.D.: LHAAP

Project/Site Name: LHAAP / Site 50

Client Name:

Collected by: Scott Beesinger

Field Sample ID (30 Characters Max)	Date Collected (dd-mmm-yyyy)	Time Collected (Military) (hhmm)	Sample Depth (beginning - ending)	SA Code (2)	Sample Number (3)	Sample Matrix (4)	Number of containers	VOC by SW 8260B	TOC by SM5310C	MEE by RSK 175	Anions by SW9056	CO2 by RSK 175	Perchlorate by SW 6850	Ambient Blank Lot Control Number	Equipment Blank Lot Control Number	Trip Blank Lot Control Number	Cooler ID
SDwwl4_100323	03 OCT 2023	0740	-	N		wg	13	X	X	X	X	X	X				
SDwwl3_100323	03 OCT 2023	0825	-	N		wg	13	X	X	X	X	X	X				
SDwwl3_100323_e	03 OCT 2023	0825	-	FD		wg	13	X	X	X	X	X	X				
SDwwll_100323	03 OCT 2023	0915		N		wg	13	X	X	X	X	X	X				
SDwwll_100323_e	03 OCT 2023	0915		FD		wg	13	X	X	X	X	X	X				
SDwww06_100323	03 OCT 2023	1010	-	N		wg	13	X	X	X	X	X	X				
SDwwl2_100323	03 OCT 2023	1055	-	N		wg	13	X	X	X	X	X	X				
TRIP BLANK	03 OCT 2023		-	TB		w	2	X									
			-														
			-														
			-														

Sample Analysis Requested (5) | Quality Assurance Samples (6)

HS23100159

Bhate Environmental Associates, Inc.
LHAAP

COMMENTS: STANDARD TAT

Custody Transfers Prior to Receipt by Laboratory

Relinquished by (Signed)	Date	Time	Received by (signed)	Date	Time
1. Scott Beesinger	10/3/23	1330	1.	10.4.23	0400
2.			2.		
3.			3.		

Sample Delivery I

Delivered Directly to Lab: _____ S No.:

Method of Shipment: _____

_____ Fed Ex _____ Airbill Number:

_____ Analytical Lab: ALS 10450 Stanciff Rd. Suite 310 Houston, TX 77099 (281) 530-5656

ATTN: Dane Wacasey Lab Recipient: Delivery Date/Time:

1.) Chain of Custody Number = date collected + custody number (e.g. 09-02-1999-01)

2.) Sample Type (SA) Codes: N = Normal Sample, TB = Trip Blank (-c) Sample, FD = Field Duplicate (-a) Samples, FR = Field Replicate (-b) Samples, EB = Equipment Blank (-d) Samples, MS = Matrix Spike, SD = Matrix Spike Duplicate, AB = Ambient Blank (-e)

3.) Sample Number: Unique sample number collected from a particular location per day. (e.g. Groundwater sample collected from MW-1 on 10/10/99 = 01, if sampled again on 10/10/99 = 02, etc.)

4.) Matrix Codes: GS = Soil Gas, WG = Groundwater, WS = Surface Water, SO = Soil, SE = Sediment, SL = Sludge, SS = Surface Soil Samples, WQ = Aqueous Blank Samples (trip, equipment, ambient, etc), SQ = Soil Blanks

5.) Sample Analysis Requested: Analytical method requested and number of containers provided for each.

6.) Quality assurance samples are assigned by date (ddmmyy) and the sample number associated with the sample (01, 02, etc) (e.g. Equipment blank collected in association with MW-1 on 10/10/99 will be designated 10109901 in the Equipment Blank Lot Control

3.5° 10.3

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

49315

CUSTODY SEAL

Date: 10/3/23 Time: 1330
Name: Scott Beesinger
Company: BTMG

Seal Broken By:
Date: 10/4/23

49315 OCT 3 & 2023



ALS

49315

ORIGIN ID:SGRA (903) 930-6193
ATT: SCOTT BEESINGER
APTIM
1203-B EAST GRAND AVE PMB202

MARSHALL, TX 75670
UNITED STATES US

SHIP DATE: 13SEP23
ACTWGT: 1.00 LB MAN
CAD: 6221247/CAFE3751
DIMS: 19x16x13 IN

TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099
(281) 530-5656

917
B03

REF: LHAAP-B095494-CG

RMA:

FedEx Express

WED - 04 OCT AA
PRIORITY OVERNIGHT

TRK# 0221 6862 6796 5179

77099
TX-US
IAH

AB SGRA

October 11, 2023 Service Request No:E2300897

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

Laboratory Results for: HS23100159

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory October 04, 2023
For your reference, these analyses have been assigned our service request number **E2300897.**

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.:**	E2300897
Project:	HS23100159	**Date Received:**	10/04/23
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

Sixteen samples were received for analysis at ALS Environmental in Houston on 10/04/23.

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:

EQ2300488: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and 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:**E2300897

Project: HS23100159

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2300897-001	50WW09_100223	10/2/2023	0740
E2300897-002	50WW08_100223	10/2/2023	0820
E2300897-003	50WW22_100223	10/2/2023	0905
E2300897-004	50WW23_100223	10/2/2023	0955
E2300897-005	50WW29_100223	10/2/2023	1040
E2300897-006	50WW05_100223	10/2/2023	1125
E2300897-007	50WW15_100223	10/2/2023	1210
E2300897-008	50WW16_100223	10/2/2023	1250
E2300897-009	50WW18_100223	10/2/2023	1335
E2300897-010	50WW14_100323	10/3/2023	0740
E2300897-011	50WW13_100323	10/3/2023	0825
E2300897-012	50WW13_100323_a	10/3/2023	0825
E2300897-013	50WW11_100323	10/3/2023	0915
E2300897-014	50WW11_100323_a	10/3/2023	0915
E2300897-015	50WW06_100323	10/3/2023	1010
E2300897-016	50WW12_100323	10/3/2023	1055

Service Request Summary

01331694

18 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Folder #: **E2300897**
Client Name: ALS Environmental - US
Project Name: HS23100159
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: 10/04/23
Internal Due Date: 10/18/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23100159
EDD: BASIC_WQC_CASNo_LOD

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2300897-001	50WW09_100223	Water	10/02/23 0740	**IV**
E2300897-002	50WW08_100223	Water	10/02/23 0820	**IV**
E2300897-003	50WW22_100223	Water	10/02/23 0905	**IV**
E2300897-004	50WW23_100223	Water	10/02/23 0955	**IV**
E2300897-005	50WW29_100223	Water	10/02/23 1040	**IV**
E2300897-006	50WW05_100223	Water	10/02/23 1125	**IV**
E2300897-007	50WW15_100223	Water	10/02/23 1210	**IV**
E2300897-008	50WW16_100223	Water	10/02/23 1250	**IV**
E2300897-009	50WW18_100223	Water	10/02/23 1335	**IV**
E2300897-010	50WW14_100323	Water	10/03/23 0740	**IV**
E2300897-011	50WW13_100323	Water	10/03/23 0825	**IV**
E2300897-012	50WW13_100323_a	Water	10/03/23 0825	**IV**
E2300897-013	50WW11_100323	Water	10/03/23 0915	**IV**
E2300897-014	50WW11_100323_a	Water	10/03/23 0915	**IV**
E2300897-015	50WW06_100323	Water	10/03/23 1010	**IV**
E2300897-016	50WW12_100323	Water	10/03/23 1055	**IV**

Service Request Summary

01331695

18 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Folder #:	**E2300897**
Client Name:	ALS Environmental - US
Project Name:	HS23100159
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:	10/04/23
Internal Due Date:	10/18/2023
QAP:	LAB QAP
Qualifier Set:	Lab Standard
Formset:	Lab Standard
Merged?:	Y
Report to MDL?:	Y
P.O. Number:	HS23100159
EDD:	BASIC_WQC_CASNo_LOD

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

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

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	L22-90	3/31/2024
Department of Defense	L23-358	5/31/2025
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
Oklahoma Department of Environmental Quality	2023-140	8/31/2024
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
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Colorado **COC ID:** 23402

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:	HS23100159
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS23100159-01**	**50WW09_100223**	**Water**	**02 Oct 2023 07:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
2.	**HS23100159-02**	**50WW08_100223**	**Water**	**02 Oct 2023 08:20**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
3.	**HS23100159-03**	**50WW22_100223**	**Water**	**02 Oct 2023 09:05**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
4.	**HS23100159-04**	**50WW23_100223**	**Water**	**02 Oct 2023 09:55**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
5.	**HS23100159-05**	**50WW29_100223**	**Water**	**02 Oct 2023 10:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
6.	**HS23100159-06**	**50WW05_100223**	**Water**	**02 Oct 2023 11:25**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
7.	**HS23100159-07**	**50WW15_100223**	**Water**	**02 Oct 2023 12:10**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
8.	**HS23100159-08**	**50WW16_100223**	**Water**	**02 Oct 2023 12:50**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
9.	**HS23100159-09**	**50WW18_100223**	**Water**	**02 Oct 2023 13:35**

Subcontract Chain of Custody

SAMPLING STATE: Colorado **COC ID:** 23402

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
10.	**HS23100159-10**	**50WW14_100323**	**Water**	**03 Oct 2023 07:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
11.	**HS23100159-11**	**50WW13_100323**	**Water**	**03 Oct 2023 08:25**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
12.	**HS23100159-12**	**50WW13_100323-a**	**Water**	**03 Oct 2023 08:25**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
13.	**HS23100159-13**	**50WW11_100323**	**Water**	**03 Oct 2023 09:15**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
14.	**HS23100159-14**	**50WW11_100323-a**	**Water**	**03 Oct 2023 09:15**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
15.	**HS23100159-15**	**50WW06_100323**	**Water**	**03 Oct 2023 10:10**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
16.	**HS23100159-16**	**50WW12_100323**	**Water**	**03 Oct 2023 10:55**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 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: PG Date/Time:

Received By: Date/Time: 10-4-23 2044

Cooler ID(s): Temperature(s):

Cooler Receipt Form

ALS Environmental

Project Chemist H

Client/Project ALS

Thermometer ID IR1

Date/Time Received: 10-4-23 Initials: LY

Date/Time Logged in: 10-4-23 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?
—		10-4-23	2049	LY	1.5	☒
						☐
						☐
						☐

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:

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

01331706

Prep Run#: 427721 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 10/5/23 15:28

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2300894-015	MW-5	.01	6850/ClO4			Water	10mL	
2	E2300894-016	MW-14	.01	6850/ClO4			Water	10mL	
3	E2300897-001	50WW09_100223	.01	6850/ClO4 DOD			Water	10mL	
4	E2300897-002	50WW08_100223	.01	6850/ClO4 DOD			Water	10mL	
5	E2300897-003	50WW22_100223	.02	6850/ClO4 DOD			Water	10mL	
6	E2300897-004	50WW23_100223	.01	6850/ClO4 DOD			Water	10mL	
7	E2300897-005	50WW29_100223	.01	6850/ClO4 DOD			Water	10mL	
8	E2300897-006	50WW05_100223	.01	6850/ClO4 DOD			Water	10mL	
9	E2300897-007	50WW15_100223	.01	6850/ClO4 DOD			Water	10mL	
10	E2300897-008	50WW16_100223	.01	6850/ClO4 DOD			Water	10mL	
11	E2300897-009	50WW18_100223	.01	6850/ClO4 DOD			Water	10mL	
12	E2300897-010	50WW14_100323	.01	6850/ClO4 DOD			Water	10mL	
13	E2300897-011	50WW13_100323	.01	6850/ClO4 DOD			Water	10mL	
14	E2300897-012	50WW13_100323_a	.01	6850/ClO4 DOD			Water	10mL	
15	E2300897-013	50WW11_100323	.01	6850/ClO4 DOD			Water	10mL	
16	E2300897-014	50WW11_100323_a	.01	6850/ClO4 DOD			Water	10mL	
17	E2300897-015	50WW06_100323	.01	6850/ClO4 DOD			Water	10mL	
18	E2300897-016	50WW12_100323	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2300488-01	MB		6850/ClO4			Liquid	10mL	
20	EQ2300488-02	LCS		6850/ClO4			Liquid	10mL	
21	EQ2300488-03	DLCS		6850/ClO4			Liquid	10mL	
22	EQ2300488-04	50WW22_100223 MS	.02	6850/ClO4 DOD			Liquid	10mL	
23	EQ2300488-05	50WW22_100223 DMS	.02	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

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

EQ2300488-02	1.00µL	EQ2300488-02	1.00µL	EQ2300488-03	1.00µL	EQ2300488-03	1.00µL	EQ2300488-04	1.00µL	EQ2300488-05	1.00µL

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

E2300894-015	100.00µL	E2300894-016	100.00µL	E2300897-001	100.00µL	E2300897-002	100.00µL	E2300897-003	100.00µL	E2300897-004	100.00µL
E2300897-005	100.00µL	E2300897-006	100.00µL	E2300897-007	100.00µL	E2300897-008	100.00µL	E2300897-009	100.00µL	E2300897-010	100.00µL
E2300897-011	100.00µL	E2300897-012	100.00µL	E2300897-013	100.00µL	E2300897-014	100.00µL	E2300897-015	100.00µL	E2300897-016	100.00µL
EQ2300488-01	100.00µL	EQ2300488-01	100.00µL	EQ2300488-02	100.00µL	EQ2300488-02	100.00µL	EQ2300488-03	100.00µL	EQ2300488-03	100.00µL
EQ2300488-04	100.00µL	EQ2300488-05	100.00µL								

Preparation Information Benchsheet

01331707

Prep Run#: 427721 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 10/5/23 15:28

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 Luer-Lok Syringes	luer-lock syringes (228116)				

Preparation Steps

Step: Preparation
Started: 10/5/23 15:28
Finished: 10/5/23 17:00
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

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0740
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW09_100223	**Units:**	µg/L
Lab Code:	E2300897-001	**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	**0.194**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:14	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0820
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW08_100223	**Units:**	µg/L
Lab Code:	E2300897-002	**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	**62.9**		0.500	0.250	0.125	5	10/ 5/23	10/6/23 14:15	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0905
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	E2300897-003	**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	**0.337**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 11:58	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0955
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW23_100223	**Units:**	µg/L
Lab Code:	E2300897-004	**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	**0.159**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:03	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1040
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW29_100223	**Units:**	µg/L
Lab Code:	E2300897-005	**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	**0.252**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:09	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1125
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW05_100223	**Units:**	µg/L
Lab Code:	E2300897-006	**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	**0.273**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:25	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1210
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW15_100223	**Units:**	µg/L
Lab Code:	E2300897-007	**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	**0.161**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:36	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1250
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW16_100223	**Units:**	µg/L
Lab Code:	E2300897-008	**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	**0.174**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:41	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1335
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW18_100223	**Units:**	µg/L
Lab Code:	E2300897-009	**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	**0.237**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:47	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0740
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW14_100323	**Units:**	µg/L
Lab Code:	E2300897-010	**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	**0.274**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:52	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0825
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW13_100323	**Units:**	µg/L
Lab Code:	E2300897-011	**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	**4170**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:41	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0825
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW13_100323_a	**Units:**	µg/L
Lab Code:	E2300897-012	**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	**4270**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:47	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0915
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW11_100323	**Units:**	µg/L
Lab Code:	E2300897-013	**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	**4690**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:52	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0915
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW11_100323_a	**Units:**	µg/L
Lab Code:	E2300897-014	**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	**5110**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:58	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 1010
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW06_100323	**Units:**	µg/L
Lab Code:	E2300897-015	**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	**554**		5.00	2.50	1.25	50	10/ 5/23	10/6/23 14:03	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 1055
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW12_100323	**Units:**	µg/L
Lab Code:	E2300897-016	**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	**17900**		100	50.0	25.0	1000	10/ 5/23	10/6/23 14:09	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2300488-01	**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	10/ 5/23	10/6/23 11:35	427721	819653	

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

Client: ALS Environmental - US
Project: HS23100159
Sample Matrix: Water

Service Request: E2300897
Date Analyzed: 10/ 6/23

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: 427721

	Lab Control Sample EQ2300488-02			Duplicate Lab Control Sample EQ2300488-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0985	0.100	99	0.0984	0.100	98	84 - 119	<1	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.

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300488-02	**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	**0.0985**	J	0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 11:41	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300488-03	**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	**0.0984**	J	0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 11:47	427721	819653	

Client: ALS Environmental - US
Project: HS23100159
Sample Matrix: Water

Service Request: E2300897
Date Collected: 10/2/23
Date Received: 10/4/23
Date Analyzed: 10/ 6/23

Matrix Spike Summary
Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Sample Name: 50WW22_100223
Lab Code: E2300897-003

Units: µg/L
Basis: NA

Analytical Method: 6850
Prep Method: Method

		50WW22_100223MS				50WW22_100223DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2300488-04				EQ2300488-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.337	0.425	0.100	88	0.424	0.100	87	84 - 119	<1	15

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

Results flagged with a pound (#) indicate the control criteria is not applicable.

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

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0905
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	EQ2300488-04	**Basis:**	NA
Run Type:	Matrix Spike		

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	**0.425**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 14:26	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0905
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	EQ2300488-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

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	**0.424**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 14:31	427721	819653	

ANALYTICAL REPORT

PREPARED FOR

Attn: Jumoke Lawal
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston, Texas 77099

Generated 10/16/2023 9:22:40 AM

JOB DESCRIPTION

HS23100159

JOB NUMBER

410-145740-1

Eurofins Lancaster Laboratories Environment Testing, LLC

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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
10/16/2023 9:22:40 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.

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Definitions/Glossary

Client: ALS Group USA, Corp
Project/Site: HS23100159

Job ID: 410-145740-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
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: HS23100159

Job ID: 410-145740-1

Job ID: 410-145740-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative
410-145740-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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 may be 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.

Receipt
The samples were received on 10/5/2023 10:15 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 1.1°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: HS23100159

Job ID: 410-145740-1

Client Sample ID: 50WW14_100323 — Lab Sample ID: 410-145740-1

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	51000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW13_100323 — Lab Sample ID: 410-145740-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	72000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW13_100323-a — Lab Sample ID: 410-145740-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	73000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW11_100323 — Lab Sample ID: 410-145740-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	54000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW11_100323-a — Lab Sample ID: 410-145740-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	53000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW06_100323 — Lab Sample ID: 410-145740-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	56000		12000	2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW12_100323 — Lab Sample ID: 410-145740-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	56000		12000	2600	ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 50WW14_100323

Lab Sample ID: 410-145740-1

Date Collected: 10/03/23 07:40

Matrix: Water

Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	51000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:23	1

Client Sample ID: 50WW13_100323

Lab Sample ID: 410-145740-2

Date Collected: 10/03/23 08:25

Matrix: Water

Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	72000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:30	1

Client Sample ID: 50WW13_100323-a

Lab Sample ID: 410-145740-3

Date Collected: 10/03/23 08:25

Matrix: Water

Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	73000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:38	1

Client Sample ID: 50WW11_100323

Lab Sample ID: 410-145740-4

Date Collected: 10/03/23 09:15

Matrix: Water

Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	54000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:46	1

Client Sample ID: 50WW11_100323-a

Lab Sample ID: 410-145740-5

Date Collected: 10/03/23 09:15

Matrix: Water

Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	53000		12000	2600	ug/L		10/13/23 10:44	10/13/23 11:54	1

Client Sample ID: 50WW06_100323

Lab Sample ID: 410-145740-6

Date Collected: 10/03/23 10:10

Matrix: Water

Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	56000		12000	2600	ug/L		10/13/23 10:44	10/13/23 12:01	1

Client Sample ID: 50WW12_100323

Lab Sample ID: 410-145740-7

Date Collected: 10/03/23 10:55

Matrix: Water

Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	56000		12000	2600	ug/L		10/13/23 10:44	10/13/23 12:09	1

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-430977/1-A
Matrix: Water
Analysis Batch: 430924

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430977

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	2600	U	12000	2600	ug/L		10/13/23 10:44	10/13/23 10:49	1

Lab Sample ID: LCS 410-430977/2-A
Matrix: Water
Analysis Batch: 430924

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430977

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon dioxide	35800	38200		ug/L		107	80 - 122

QC Association Summary

Client: ALS Group USA, Corp
Project/Site: HS23100159

Job ID: 410-145740-1

GC VOA

Analysis Batch: 430924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145740-1	50WW14_100323	Total/NA	Water	RSK-175	430977
410-145740-2	50WW13_100323	Total/NA	Water	RSK-175	430977
410-145740-3	50WW13_100323-a	Total/NA	Water	RSK-175	430977
410-145740-4	50WW11_100323	Total/NA	Water	RSK-175	430977
410-145740-5	50WW11_100323-a	Total/NA	Water	RSK-175	430977
410-145740-6	50WW06_100323	Total/NA	Water	RSK-175	430977
410-145740-7	50WW12_100323	Total/NA	Water	RSK-175	430977
MB 410-430977/1-A	Method Blank	Total/NA	Water	RSK-175	430977
LCS 410-430977/2-A	Lab Control Sample	Total/NA	Water	RSK-175	430977

Prep Batch: 430977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145740-1	50WW14_100323	Total/NA	Water	RSK-175	
410-145740-2	50WW13_100323	Total/NA	Water	RSK-175	
410-145740-3	50WW13_100323-a	Total/NA	Water	RSK-175	
410-145740-4	50WW11_100323	Total/NA	Water	RSK-175	
410-145740-5	50WW11_100323-a	Total/NA	Water	RSK-175	
410-145740-6	50WW06_100323	Total/NA	Water	RSK-175	
410-145740-7	50WW12_100323	Total/NA	Water	RSK-175	
MB 410-430977/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-430977/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Client Sample ID: 50WW14_100323

Lab Sample ID: 410-145740-1

Date Collected: 10/03/23 07:40

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:23

Client Sample ID: 50WW13_100323

Lab Sample ID: 410-145740-2

Date Collected: 10/03/23 08:25

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:30

Client Sample ID: 50WW13_100323-a

Lab Sample ID: 410-145740-3

Date Collected: 10/03/23 08:25

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:38

Client Sample ID: 50WW11_100323

Lab Sample ID: 410-145740-4

Date Collected: 10/03/23 09:15

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:46

Client Sample ID: 50WW11_100323-a

Lab Sample ID: 410-145740-5

Date Collected: 10/03/23 09:15

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:54

Client Sample ID: 50WW06_100323

Lab Sample ID: 410-145740-6

Date Collected: 10/03/23 10:10

Matrix: Water

Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 12:01

Lab Chronicle

Client: ALS Group USA, Corp
Project/Site: HS23100159

Job ID: 410-145740-1

Client Sample ID: 50WW12_100323

Date Collected: 10/03/23 10:55
Date Received: 10/05/23 10:15

Lab Sample ID: 410-145740-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 12:09

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: HS23100159

Job ID: 410-145740-1

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: HS23100159

Job ID: 410-145740-1

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:

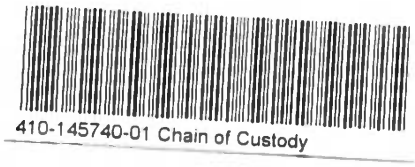
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: ALS Group USA, Corp
Project/Site: HS23100159

Job ID: 410-145740-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-145740-1	50WW14_100323	Water	10/03/23 07:40	10/05/23 10:15
410-145740-2	50WW13_100323	Water	10/03/23 08:25	10/05/23 10:15
410-145740-3	50WW13_100323-a	Water	10/03/23 08:25	10/05/23 10:15
410-145740-4	50WW11_100323	Water	10/03/23 09:15	10/05/23 10:15
410-145740-5	50WW11_100323-a	Water	10/03/23 09:15	10/05/23 10:15
410-145740-6	50WW06_100323	Water	10/03/23 10:10	10/05/23 10:15
410-145740-7	50WW12_100323	Water	10/03/23 10:55	10/05/23 10:15



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F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Colorado **COC ID:** 23403

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:	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:	HS23100159
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS23100159-10**	**50WW14_100323**	**Water**	**03 Oct 2023 07:40**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
2.	**HS23100159-11**	**50WW13_100323**	**Water**	**03 Oct 2023 08:25**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
3.	**HS23100159-12**	**50WW13_100323-a**	**Water**	**03 Oct 2023 08:25**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
4.	**HS23100159-13**	**50WW11_100323**	**Water**	**03 Oct 2023 09:15**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
5.	**HS23100159-14**	**50WW11_100323-a**	**Water**	**03 Oct 2023 09:15**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
6.	**HS23100159-15**	**50WW06_100323**	**Water**	**03 Oct 2023 10:10**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
7.	**HS23100159-16**	**50WW12_100323**	**Water**	**03 Oct 2023 10:55**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023

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

RIGHT SOLUTIONS | RIGHT PARTNER

Subcontract Chain of Custody

SAMPLING STATE: **Colorado** **COC ID:** **23403**

QC Level: DOD IV (DoD Data Package)

Relinquished By:	CH	Date/Time:	10-4-23 1800
Received By:	Debra A. Bynum	Date/Time:	10-5-23 10:15
Cooler ID(s):		Temperature(s):	

R: 1.4
C: 1.1



10450 Stancliff Rd, Ste 210
Houston, TX 77099
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Purchase Order

PO: HS23100159

VENDOR:

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

Phone: +1 717 656 2300

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:	23403
TSR:	Holly Tignac

	Item	Catalog No	Unit Price	Quantity	Ext Price
1.	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey	NA		7	

Order Total:

Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-145740-1

Login Number: 145740

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Arroyo, Haley

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 acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=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	

HS23100159-MSVOA-SW8260

ALS WO# HS23100159

right solutions.
right partner.

Form 1

Organic Analysis Data Sheet

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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 LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-01	Collected	Received	Matrix	Basis
50WW09_100223	10/02/23 07:40	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 19:46	VOA9_448564	U100914.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 19:46	VOA9_448564	U100914.D
cis-1,2-Dichloroethene	ug/L	1.2		0.20	1.0	1.0	1	10/09/23 19:46	VOA9_448564	U100914.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 19:46	VOA9_448564	U100914.D
Trichloroethene	ug/L	14		0.20	1.0	1.0	1	10/09/23 19:46	VOA9_448564	U100914.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 19:46	VOA9_448564	U100914.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-02	Collected	Received	Matrix	Basis
50WW08_100223	10/02/23 08:20	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.1		0.20	1.0	1.0	1	10/09/23 18:17	VOA9_448564	U100910.D
1,2-Dichloroethane	ug/L	1.1		0.20	1.0	1.0	1	10/09/23 18:17	VOA9_448564	U100910.D
cis-1,2-Dichloroethene	ug/L	77		0.20	1.0	1.0	1	10/09/23 18:17	VOA9_448564	U100910.D
Tetrachloroethene	ug/L	1.4		0.30	1.0	1.0	1	10/09/23 18:17	VOA9_448564	U100910.D
Trichloroethene	ug/L	610		4.0	20	20	20	10/11/23 16:30	VOA9_448800	U101116.D
Vinyl chloride	ug/L	0.56	J	0.20	1.0	1.0	1	10/09/23 18:17	VOA9_448564	U100910.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-03	Collected	Received	Matrix	Basis
50WW22_100223	10/02/23 09:05	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:54	VOA9_448564	U100909.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:54	VOA9_448564	U100909.D
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:54	VOA9_448564	U100909.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 17:54	VOA9_448564	U100909.D
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:54	VOA9_448564	U100909.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:54	VOA9_448564	U100909.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-04	Collected	Received	Matrix	Basis
50WW23_100223	10/02/23 09:55	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:08	VOA9_448564	U100915.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:08	VOA9_448564	U100915.D
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:08	VOA9_448564	U100915.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 20:08	VOA9_448564	U100915.D
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:08	VOA9_448564	U100915.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:08	VOA9_448564	U100915.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-05	Collected	Received	Matrix	Basis
50WW29_100223	10/02/23 10:40	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:31	VOA9_448564	U100916.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:31	VOA9_448564	U100916.D
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:31	VOA9_448564	U100916.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 20:31	VOA9_448564	U100916.D
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:31	VOA9_448564	U100916.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:31	VOA9_448564	U100916.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-06	Collected	Received	Matrix	Basis
50WW05_100223	10/02/23 11:25	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	2.6		0.20	1.0	1.0	1	10/09/23 22:45	VOA9_448564	U100922.D
1,2-Dichloroethane	ug/L	0.93	J	0.20	1.0	1.0	1	10/09/23 22:45	VOA9_448564	U100922.D
cis-1,2-Dichloroethene	ug/L	69		0.20	1.0	1.0	1	10/09/23 22:45	VOA9_448564	U100922.D
Tetrachloroethene	ug/L	0.89	J	0.30	1.0	1.0	1	10/09/23 22:45	VOA9_448564	U100922.D
Trichloroethene	ug/L	180		1.0	5.0	5.0	5	10/11/23 16:52	VOA9_448800	U101117.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 22:45	VOA9_448564	U100922.D

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Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-07	Collected	Received	Matrix	Basis
50WW15_100223	10/02/23 12:10	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:53	VOA9_448564	U100917.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 20:53	VOA9_448564	U100917.D
cis-1,2-Dichloroethene	ug/L	3.2		0.20	1.0	1.0	1	10/09/23 20:53	VOA9_448564	U100917.D
Tetrachloroethene	ug/L	1.1		0.30	1.0	1.0	1	10/09/23 20:53	VOA9_448564	U100917.D
Trichloroethene	ug/L	6.2		0.20	1.0	1.0	1	10/09/23 20:53	VOA9_448564	U100917.D
Vinyl chloride	ug/L	0.63	J	0.20	1.0	1.0	1	10/09/23 20:53	VOA9_448564	U100917.D

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Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-08	Collected	Received	Matrix	Basis
50WW16_100223	10/02/23 12:50	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:16	VOA9_448564	U100918.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:16	VOA9_448564	U100918.D
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:16	VOA9_448564	U100918.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 21:16	VOA9_448564	U100918.D
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:16	VOA9_448564	U100918.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:16	VOA9_448564	U100918.D

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Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-09	Collected	Received	Matrix	Basis
50WW18_100223	10/02/23 13:35	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:38	VOA9_448564	U100919.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:38	VOA9_448564	U100919.D
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:38	VOA9_448564	U100919.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 21:38	VOA9_448564	U100919.D
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:38	VOA9_448564	U100919.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 21:38	VOA9_448564	U100919.D

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Project LHAAP Site 50

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HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-10	Collected	Received	Matrix	Basis
50WW14_100323	10/03/23 07:40	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 22:00	VOA9_448564	U100920.D
1,2-Dichloroethane	ug/L	0.74	J	0.20	1.0	1.0	1	10/09/23 22:00	VOA9_448564	U100920.D
cis-1,2-Dichloroethene	ug/L	4.6		0.20	1.0	1.0	1	10/09/23 22:00	VOA9_448564	U100920.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 22:00	VOA9_448564	U100920.D
Trichloroethene	ug/L	67		0.20	1.0	1.0	1	10/09/23 22:00	VOA9_448564	U100920.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 22:00	VOA9_448564	U100920.D

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Project LHAAP Site 50

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Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-11	Collected	Received	Matrix	Basis
50WW13_100323	10/03/23 08:25	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	18		0.20	1.0	1.0	1	10/09/23 23:30	VOA9_448564	U100924.D
1,2-Dichloroethane	ug/L	42		0.20	1.0	1.0	1	10/09/23 23:30	VOA9_448564	U100924.D
cis-1,2-Dichloroethene	ug/L	430		10	50	50	50	10/11/23 17:14	VOA9_448800	U101118.D
Tetrachloroethene	ug/L	12		0.30	1.0	1.0	1	10/09/23 23:30	VOA9_448564	U100924.D
Trichloroethene	ug/L	7,100		10	50	50	50	10/11/23 17:14	VOA9_448800	U101118.D
Vinyl chloride	ug/L	3.2		0.20	1.0	1.0	1	10/09/23 23:30	VOA9_448564	U100924.D

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HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-12	Collected	Received	Matrix	Basis
50WW13_100323_a	10/03/23 08:25	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	18		0.20	1.0	1.0	1	10/09/23 23:52	VOA9_448564	U100925.D
1,2-Dichloroethane	ug/L	43		0.20	1.0	1.0	1	10/09/23 23:52	VOA9_448564	U100925.D
cis-1,2-Dichloroethene	ug/L	410		10	50	50	50	10/11/23 17:37	VOA9_448800	U101119.D
Tetrachloroethene	ug/L	14		0.30	1.0	1.0	1	10/09/23 23:52	VOA9_448564	U100925.D
Trichloroethene	ug/L	7,700		10	50	50	50	10/11/23 17:37	VOA9_448800	U101119.D
Vinyl chloride	ug/L	3.2		0.20	1.0	1.0	1	10/09/23 23:52	VOA9_448564	U100925.D

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Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-13	Collected	Received	Matrix	Basis
50WW11_100323	10/03/23 09:15	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	23		0.20	1.0	1.0	1	10/10/23 00:37	VOA9_448564	U100927.D
1,2-Dichloroethane	ug/L	20		0.20	1.0	1.0	1	10/10/23 00:37	VOA9_448564	U100927.D
cis-1,2-Dichloroethene	ug/L	59		0.20	1.0	1.0	1	10/10/23 00:37	VOA9_448564	U100927.D
Tetrachloroethene	ug/L	5.5		0.30	1.0	1.0	1	10/10/23 00:37	VOA9_448564	U100927.D
Trichloroethene	ug/L	2,400		10	50	50	50	10/11/23 17:59	VOA9_448800	U101120.D
Vinyl chloride	ug/L	1.8		0.20	1.0	1.0	1	10/10/23 00:37	VOA9_448564	U100927.D

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Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-14	Collected	Received	Matrix	Basis
50WW11_100323_a	10/03/23 09:15	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	23		0.20	1.0	1.0	1	10/10/23 00:59	VOA9_448564	U100928.D
1,2-Dichloroethane	ug/L	19		0.20	1.0	1.0	1	10/10/23 00:59	VOA9_448564	U100928.D
cis-1,2-Dichloroethene	ug/L	58		0.20	1.0	1.0	1	10/10/23 00:59	VOA9_448564	U100928.D
Tetrachloroethene	ug/L	5.3		0.30	1.0	1.0	1	10/10/23 00:59	VOA9_448564	U100928.D
Trichloroethene	ug/L	2,400		10	50	50	50	10/11/23 18:21	VOA9_448800	U101121.D
Vinyl chloride	ug/L	2.1		0.20	1.0	1.0	1	10/10/23 00:59	VOA9_448564	U100928.D

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Project LHAAP Site 50

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Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-15	Collected	Received	Matrix	Basis
50WW06_100323	10/03/23 10:10	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 22:23	VOA9_448564	U100921.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 22:23	VOA9_448564	U100921.D
cis-1,2-Dichloroethene	ug/L	0.70	J	0.20	1.0	1.0	1	10/09/23 22:23	VOA9_448564	U100921.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 22:23	VOA9_448564	U100921.D
Trichloroethene	ug/L	15		0.20	1.0	1.0	1	10/09/23 22:23	VOA9_448564	U100921.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 22:23	VOA9_448564	U100921.D

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Project LHAAP Site 50

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Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-16	Collected	Received	Matrix	Basis
50WW12_100323	10/03/23 10:55	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	5.0		0.20	1.0	1.0	1	10/10/23 01:44	VOA9_448564	U100930.D
1,2-Dichloroethane	ug/L	1.2		0.20	1.0	1.0	1	10/10/23 01:44	VOA9_448564	U100930.D
cis-1,2-Dichloroethene	ug/L	0.77	J	0.20	1.0	1.0	1	10/10/23 01:44	VOA9_448564	U100930.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/10/23 01:44	VOA9_448564	U100930.D
Trichloroethene	ug/L	160		0.20	1.0	1.0	1	10/10/23 01:44	VOA9_448564	U100930.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/10/23 01:44	VOA9_448564	U100930.D

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Project LHAAP Site 50

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HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-17	Collected	Received	Matrix	Basis
Trip Blank	10/03/23 00:00	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:32	VOA9_448564	U100908.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:32	VOA9_448564	U100908.D
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:32	VOA9_448564	U100908.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 17:32	VOA9_448564	U100908.D
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:32	VOA9_448564	U100908.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:32	VOA9_448564	U100908.D

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Project LHAAP Site 50

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HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

VBLKW-231009	Collected	Received	Matrix	Basis
VBLKW-231009	NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
1,1-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:09	VOA9_448564	U100907.D
1,2-Dichloroethane	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:09	VOA9_448564	U100907.D
cis-1,2-Dichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:09	VOA9_448564	U100907.D
Tetrachloroethene	ug/L	1.0	U	0.30	1.0	1.0	1	10/09/23 17:09	VOA9_448564	U100907.D
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:09	VOA9_448564	U100907.D
Vinyl chloride	ug/L	1.0	U	0.20	1.0	1.0	1	10/09/23 17:09	VOA9_448564	U100907.D

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Project LHAAP Site 50

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Volatiles by EPA Volatiles Organics by Method 8260C

VBLKW-231010	Collected	Received	Matrix	Basis
VBLKW-231010	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	10/11/23 13:08	VOA9_448800	U101107.D
Trichloroethene	ug/L	1.0	U	0.20	1.0	1.0	1	10/11/23 13:08	VOA9_448800	U101107.D

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Form 2

System Monitoring Compound Recovery

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

CCB-CCB	Analyzed	Conc Units	Dilution
CCB	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	41.12	50	82.2		80-120
4-Bromofluorobenzene	43.41	50	86.8		80-120
Dibromofluoromethane	42.42	50	84.8		80-120
Toluene-d8	54.3	50	109		80-120

CCV-CCV	Analyzed	Conc Units	Dilution
CCV	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	55.59	50	111		80-120
4-Bromofluorobenzene	58.99	50	118		80-120
Dibromofluoromethane	56.52	50	113		80-120
Toluene-d8	44.9	50	89.8		80-120

HS23100159-01	Analyzed	Conc Units	Dilution
50WW09_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	83.3		81-118
4-Bromofluorobenzene	44	50	87.2		85-114
Dibromofluoromethane	41	50	81.4		80-119
Toluene-d8	55	50	110		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-02	Analyzed	Conc Units	Dilution
50WW08_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	43	50	85.0		81-118
4-Bromofluorobenzene	45	50	90.1		85-114
Dibromofluoromethane	42	50	84.5		80-119
Toluene-d8	54	50	108		89-112

HS23100159-03	Analyzed	Conc Units	Dilution
50WW22_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	41	50	83.0		81-118
4-Bromofluorobenzene	43	50	86.7		85-114
Dibromofluoromethane	42	50	84.9		80-119
Toluene-d8	55	50	109		89-112

HS23100159-03MS	Analyzed	Conc Units	Dilution
50WW22_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	41.21	50	82.4		81-118
4-Bromofluorobenzene	47.64	50	95.3		85-114
Dibromofluoromethane	43.5	50	87.0		80-119
Toluene-d8	53.82	50	108		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-03MSD	Analyzed	Conc Units	Dilution
50WW22_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42.6	50	85.2		81-118
4-Bromofluorobenzene	46.81	50	93.6		85-114
Dibromofluoromethane	44.95	50	89.9		80-119
Toluene-d8	51.85	50	104		89-112

HS23100159-04	Analyzed	Conc Units	Dilution
50WW23_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	84.6		81-118
4-Bromofluorobenzene	44	50	88.4		85-114
Dibromofluoromethane	42	50	83.7		80-119
Toluene-d8	55	50	109		89-112

HS23100159-05	Analyzed	Conc Units	Dilution
50WW29_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	84.2		81-118
4-Bromofluorobenzene	44	50	88.5		85-114
Dibromofluoromethane	42	50	83.5		80-119
Toluene-d8	54	50	109		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-06	Analyzed	Conc Units	Dilution
50WW05_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	83.4		81-118
4-Bromofluorobenzene	44	50	87.4		85-114
Dibromofluoromethane	43	50	86.0		80-119
Toluene-d8	55	50	110		89-112

HS23100159-07	Analyzed	Conc Units	Dilution
50WW15_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	85.0		81-118
4-Bromofluorobenzene	45	50	89.0		85-114
Dibromofluoromethane	43	50	86.7		80-119
Toluene-d8	55	50	110		89-112

HS23100159-08	Analyzed	Conc Units	Dilution
50WW16_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	84.4		81-118
4-Bromofluorobenzene	43	50	86.7		85-114
Dibromofluoromethane	44	50	87.5		80-119
Toluene-d8	55	50	110		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-09	Analyzed	Conc Units	Dilution
50WW18_100223	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	43	50	85.6		81-118
4-Bromofluorobenzene	44	50	87.7		85-114
Dibromofluoromethane	42	50	83.3		80-119
Toluene-d8	55	50	109		89-112

HS23100159-10	Analyzed	Conc Units	Dilution
50WW14_100323	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	44	50	87.7		81-118
4-Bromofluorobenzene	44	50	87.7		85-114
Dibromofluoromethane	42	50	84.9		80-119
Toluene-d8	55	50	111		89-112

HS23100159-11	Analyzed	Conc Units	Dilution
50WW13_100323	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	83.7		81-118
4-Bromofluorobenzene	45	50	89.3		85-114
Dibromofluoromethane	43	50	85.4		80-119
Toluene-d8	54	50	108		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-12	Analyzed	Conc Units	Dilution
50WW13_100323_a	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	41	50	82.7		81-118
4-Bromofluorobenzene	43	50	86.2		85-114
Dibromofluoromethane	42	50	83.6		80-119
Toluene-d8	54	50	108		89-112

HS23100159-13	Analyzed	Conc Units	Dilution
50WW11_100323	10/10/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	84.9		81-118
4-Bromofluorobenzene	45	50	90.8		85-114
Dibromofluoromethane	44	50	87.9		80-119
Toluene-d8	54	50	109		89-112

HS23100159-14	Analyzed	Conc Units	Dilution
50WW11_100323_a	10/10/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	43	50	85.3		81-118
4-Bromofluorobenzene	43	50	86.8		85-114
Dibromofluoromethane	42	50	84.8		80-119
Toluene-d8	54	50	107		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-15	Analyzed	Conc Units	Dilution
50WW06_100323	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	83.3		81-118
4-Bromofluorobenzene	43	50	85.8		85-114
Dibromofluoromethane	40	50	80.8		80-119
Toluene-d8	54	50	107		89-112

HS23100159-16	Analyzed	Conc Units	Dilution
50WW12_100323	10/10/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	43	50	86.7		81-118
4-Bromofluorobenzene	43	50	86.5		85-114
Dibromofluoromethane	43	50	86.7		80-119
Toluene-d8	56	50	111		89-112

HS23100159-17	Analyzed	Conc Units	Dilution
Trip Blank	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42	50	83.3		81-118
4-Bromofluorobenzene	44	50	88.2		85-114
Dibromofluoromethane	43	50	85.7		80-119
Toluene-d8	56	50	112		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

VBLKW-231009	Analyzed	Conc Units	Dilution
VBLKW-231009	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	40.92	50	81.8		81-118
4-Bromofluorobenzene	44.41	50	88.8		85-114
Dibromofluoromethane	41.18	50	82.4		80-119
Toluene-d8	55.21	50	110		89-112

VLCSW-231009	Analyzed	Conc Units	Dilution
VLCSW-231009	10/09/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	49.91	50	99.8		81-118
4-Bromofluorobenzene	46.13	50	92.3		85-114
Dibromofluoromethane	53.02	50	106		80-119
Toluene-d8	50.08	50	100		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448800

Volatiles by EPA Volatiles Organics by Method 8260C

CCB-CCB	Analyzed	Conc Units	Dilution
CCB	10/11/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	40.82	50	81.6		80-120
4-Bromofluorobenzene	44.92	50	89.8		80-120
Dibromofluoromethane	41.77	50	83.5		80-120
Toluene-d8	55.95	50	112		80-120

CCV-CCV	Analyzed	Conc Units	Dilution
CCV	10/11/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	53.97	50	108		80-120
4-Bromofluorobenzene	54.78	50	110		80-120
Dibromofluoromethane	53.22	50	106		80-120
Toluene-d8	51.3	50	103		80-120

HS23100159-02	Analyzed	Conc Units	Dilution
50WW08_100223	10/11/23	%REC	20

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	860	1000	85.9		81-118
4-Bromofluorobenzene	880	1000	87.9		85-114
Dibromofluoromethane	870	1000	86.6		80-119
Toluene-d8	1100	1000	108		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448800

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-06	Analyzed	Conc Units	Dilution
50WW05_100223	10/11/23	%REC	5

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	210	250	85.3		81-118
4-Bromofluorobenzene	220	250	86.5		85-114
Dibromofluoromethane	220	250	86.7		80-119
Toluene-d8	280	250	111		89-112

HS23100159-11	Analyzed	Conc Units	Dilution
50WW13_100323	10/11/23	%REC	50

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	2100	2500	84.8		81-118
4-Bromofluorobenzene	2100	2500	85.3		85-114
Dibromofluoromethane	2100	2500	85.1		80-119
Toluene-d8	2700	2500	110		89-112

HS23100159-12	Analyzed	Conc Units	Dilution
50WW13_100323_a	10/11/23	%REC	50

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	2200	2500	86.3		81-118
4-Bromofluorobenzene	2100	2500	85.8		85-114
Dibromofluoromethane	2100	2500	82.5		80-119
Toluene-d8	2700	2500	109		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448800

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100159-13	Analyzed	Conc Units	Dilution
50WW11_100323	10/11/23	%REC	50

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	2100	2500	84.8		81-118
4-Bromofluorobenzene	2200	2500	87.8		85-114
Dibromofluoromethane	2200	2500	87.1		80-119
Toluene-d8	2800	2500	112		89-112

HS23100159-14	Analyzed	Conc Units	Dilution
50WW11_100323_a	10/11/23	%REC	50

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	2200	2500	88.0		81-118
4-Bromofluorobenzene	2200	2500	86.9		85-114
Dibromofluoromethane	2200	2500	86.9		80-119
Toluene-d8	2800	2500	111		89-112

HS23100355-09MS	Analyzed	Conc Units	Dilution
BatchQC	10/11/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42.26	50	84.5		81-118
4-Bromofluorobenzene	47.12	50	94.2		85-114
Dibromofluoromethane	44.7	50	89.4		80-119
Toluene-d8	54.54	50	109		89-112

Form 2 - System Monitoring Compound Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448800

Volatiles by EPA Volatiles Organics by Method 8260C

HS23100355-09MSD	Analyzed	Conc Units	Dilution
BatchQC	10/11/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42.67	50	85.3		81-118
4-Bromofluorobenzene	46.5	50	93.0		85-114
Dibromofluoromethane	44.29	50	88.6		80-119
Toluene-d8	54.66	50	109		89-112

VBLKW-231010	Analyzed	Conc Units	Dilution
VBLKW-231010	10/11/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	42.99	50	86.0		81-118
4-Bromofluorobenzene	44.17	50	88.3		85-114
Dibromofluoromethane	42.06	50	84.1		80-119
Toluene-d8	55.88	50	112		89-112

VLCSW-231010	Analyzed	Conc Units	Dilution
VLCSW-231010	10/11/23	%REC	1

Surrogate	Result Conc	Spike Conc	%Recovery	Q	%Recovery Limits
1,2-Dichloroethane-d4	55.08	50	110		81-118
4-Bromofluorobenzene	45.38	50	90.8		85-114
Dibromofluoromethane	54.86	50	110		80-119
Toluene-d8	53.33	50	107		89-112

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Form 3A

Matrix Spike/Spike Duplicate Recovery

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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 LHAAP Site 50

HS23100159

SAMPLENUM

HS23100159-03MS

Volatiles by EPA Volatiles Organics by Method 8260C

50WW22_100223 (HS23100159-03)				HS23100159-03MS				HS23100159-03MSD						
Sample Matrix Aqueous			**Run Date**	10/09/23				10/09/23						
Result Units ug/L			**Run Time**	18:39				19:01						
			Data File	U100911.D				U100912.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-Dichloroethene	71-131	1	0	20.81	20	104		21.01	20	105		20	0.933	
1,2-Dichloroethane	73-128	1	0	17.49	20	87		18.21	20	91		20	4.03	
cis-1,2-Dichloroethene	78-123	1	0	17.77	20	89		17.4	20	87		20	2.09	
Tetrachloroethene	74-129	1	0	24.69	20	123		22.65	20	113		20	8.61	
Trichloroethene	79-123	1	0	22.72	20	114		19.48	20	97		20	15.3	
Vinyl chloride	58-137	1	0	19.28	20	96		19.83	20	99		20	2.82	

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.

Project LHAAP Site 50

Workorder
HS23100159

SAMPLENUM
HS23100355-09MS

Volatiles by EPA Volatiles Organics by Method 8260C

BatchQC (HS23100355-09)				HS23100355-09MS				HS23100355-09MSD						
Sample Matrix Aqueous			Run Date	10/11/23				10/11/23						
Result Units ug/L			Run Time	15:45				16:07						
			Data File	U101114.D				U101115.D						
Analyte	%R Limits	DF	Sample Result	MS Result	Spike Added	%R	Q	MSD Result	Spike Added	%R	Q	RPD Limit	RPD	Q
cis-1,2-Dichloroethene	78-123	1	72.93	129.4	20	282		101.9	20	145		20	23.8	
Trichloroethene	79-123	1	2.504	23.66	20	106		21.33	20	94		20	10.3	

Q - %Recovery / RPD Flag * - %Recovery / RPD Outside Limits OL - Outside Limits %R - %Recovery DF - Dilution Factor Amt - Amount (weight or volume)

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Form 3B

Laboratory Control Sample Recovery

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

ALS Environmental–Houston Laboratory
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Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Form 3B - Laboratory Control Sample Recovery

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

SAMPLENUM
VLCSW-231009

Volatiles by EPA Volatiles Organics by Method 8260C

VOA9_448564		VLCSW-231009	
Spike Matrix	Aqueous	Run Date	10/09/23
Result Units	ug/L	Run Time	16:25
		Data File	U100905.D

Analyte	%Recovery Limits	Spike Added	LCS Result	%R	Q
1,1-Dichloroethene	71-131	20	21.66	108	
1,2-Dichloroethane	73-128	20	19.56	97.8	
cis-1,2-Dichloroethene	78-123	20	20.01	100	
Tetrachloroethene	74-129	20	21.77	109	
Trichloroethene	79-123	20	19.99	100.0	
Vinyl chloride	58-137	20	21.21	106	

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.

Project LHAAP Site 50

Workorder
HS23100159

SAMPLENUM
VLCSW-231010

Volatiles by EPA Volatiles Organics by Method 8260C

VOA9_448800		VLCSW-231010	
Spike Matrix	Aqueous	Run Date	10/11/23
Result Units	ug/L	Run Time	12:24
		Data File	U101105.D

Analyte	%Recovery Limits	Spike Added	LCS Result	%R	Q
cis-1,2-Dichloroethene	78-123	20	18.89	94.5	
Trichloroethene	79-123	20	18.46	92.3	

Q - %Recovery / RPD Flag * - %Recovery / RPD Outside Limits %R - %Recovery DF - Dilution Factor Amt - Amount (weight or volume)

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Form 4

Method Blank Summary

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

Client Sample ID	Type	Lab Sample ID	File ID	Date Analyzed	BatchID
METHOD BLANK	MBLK	VBLKW-231009	U100907.D	10/09/23 17:09	0
METHOD BLANK	MBLK	VBLKW-231010	U101107.D	10/11/23 13:08	0
VLCSW-231009	LCS	VLCSW-231009	U100905.D	10/09/23 16:25	0
Trip Blank	SAMP	HS23100159-17	U100908.D	10/09/23 17:32	0
50WW22_100223	SAMP	HS23100159-03	U100909.D	10/09/23 17:54	0
50WW08_100223	SAMP	HS23100159-02	U100910.D	10/09/23 18:17	0
50WW22_100223	MS	HS23100159-03MS	U100911.D	10/09/23 18:39	0
50WW22_100223	MSD	HS23100159-03MSD	U100912.D	10/09/23 19:01	0
50WW09_100223	SAMP	HS23100159-01	U100914.D	10/09/23 19:46	0
50WW23_100223	SAMP	HS23100159-04	U100915.D	10/09/23 20:08	0
50WW29_100223	SAMP	HS23100159-05	U100916.D	10/09/23 20:31	0
50WW15_100223	SAMP	HS23100159-07	U100917.D	10/09/23 20:53	0
50WW16_100223	SAMP	HS23100159-08	U100918.D	10/09/23 21:16	0
50WW18_100223	SAMP	HS23100159-09	U100919.D	10/09/23 21:38	0
50WW14_100323	SAMP	HS23100159-10	U100920.D	10/09/23 22:00	0
50WW06_100323	SAMP	HS23100159-15	U100921.D	10/09/23 22:23	0
50WW05_100223	SAMP	HS23100159-06	U100922.D	10/09/23 22:45	0
50WW13_100323	SAMP	HS23100159-11	U100924.D	10/09/23 23:30	0
50WW13_100323_a	SAMP	HS23100159-12	U100925.D	10/09/23 23:52	0
50WW11_100323	SAMP	HS23100159-13	U100927.D	10/10/23 00:37	0
50WW11_100323_a	SAMP	HS23100159-14	U100928.D	10/10/23 00:59	0
50WW12_100323	SAMP	HS23100159-16	U100930.D	10/10/23 01:44	0
VLCSW-231010	LCS	VLCSW-231010	U101105.D	10/11/23 12:24	0
BatchQC	MS	HS23100355-09MS	U101114.D	10/11/23 15:45	0
BatchQC	MSD	HS23100355-09MSD	U101115.D	10/11/23 16:07	0
50WW08_100223	SAMP	HS23100159-02	U101116.D	10/11/23 16:30	0
50WW05_100223	SAMP	HS23100159-06	U101117.D	10/11/23 16:52	0
50WW13_100323	SAMP	HS23100159-11	U101118.D	10/11/23 17:14	0
50WW13_100323_a	SAMP	HS23100159-12	U101119.D	10/11/23 17:37	0
50WW11_100323	SAMP	HS23100159-13	U101120.D	10/11/23 17:59	0
50WW11_100323_a	SAMP	HS23100159-14	U101121.D	10/11/23 18:21	0

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Form 5

Instrument Performance Check

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448459

Volatiles by EPA Volatiles Organics by Method 8260C

Tune File V100801.D 10/08/23 10/8/2023

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	18.4 (18.4)
75	30.0 - 60.0% of mass 95	56.3 (56.3)
95	Base peak, 100% RA	100 (93)
96	5.0 - 9.0% of mass 95	7.5 (7.53)
173	Less than 2.0% of mass 174	0 (0) 1
174	greater than 50.0% of mass 95	107.5 (108) 1
175	5.0 - 9.0% of mass 174	9.6 (8.89) 1
176	> 95% but < 101% of mass 174	103.8 (96.5) 1
177	5.0 - 9.0% of mass 176	7.8 (7.52) 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	10/8/2023	V100802	VSTD000.25
2	VSTD000.5	ICAL2	10/8/2023	V100803	VSTD000.5
3	VSTD001	ICAL3	10/8/2023	V100804	VSTD001
4	VSTD002	ICAL4	10/8/2023	V100805	VSTD002
5	VSTD005	ICAL5	10/8/2023	V100806	VSTD005
6	VSTD020	ICAL6	10/8/2023	V100807	VSTD020
7	VSTD050	ICAL7	10/8/2023	V100808	VSTD050
8	VSTD100	ICAL8	10/8/2023	V100809	VSTD100
9	VSTD150	ICAL9	10/8/2023	V100810	VSTD150
10	VSTD200	ICAL	10/8/2023	V100811	VSTD200
11	ICV	ICV	10/8/2023	V100814	ICV

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

Tune File U100901.D 10/09/23 10/9/2023

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	17.1 (17.1)
75	30.0 - 60.0% of mass 95	56.5 (56.5)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	5.6 (5.6)
173	Less than 2.0% of mass 174	0 (0) 1
174	greater than 50.0% of mass 95	98.7 (98.7) 1
175	5.0 - 9.0% of mass 174	8.5 (8.65) 1
176	> 95% but < 101% of mass 174	99.6 (101) 1
177	5.0 - 9.0% of mass 176	6.1 (6.16) 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	10/9/2023	U100903	CCV
2	CCB	CCB	10/9/2023	U100904	CCB
3	VLCSW-	LCS	10/9/2023	U100905	VLCSW-231009
4	VBLKW-	MBLK	10/9/2023	U100907	VBLKW-231009
5	HS23100159-	SAMP	10/9/2023	U100908	Trip Blank
6	HS23100159-	SAMP	10/9/2023	U100909	50WW22_100223
7	HS23100159-	SAMP	10/9/2023	U100910	50WW08_100223
8	HS23100159-	MS	10/9/2023	U100911	HS23100159-03MS
9	HS23100159-	MSD	10/9/2023	U100912	HS23100159-03MSD
10	HS23100159-	SAMP	10/9/2023	U100914	50WW09_100223
11	HS23100159-	SAMP	10/9/2023	U100915	50WW23_100223
12	HS23100159-	SAMP	10/9/2023	U100916	50WW29_100223
13	HS23100159-	SAMP	10/9/2023	U100917	50WW15_100223
14	HS23100159-	SAMP	10/9/2023	U100918	50WW16_100223
15	HS23100159-	SAMP	10/9/2023	U100919	50WW18_100223
16	HS23100159-	SAMP	10/9/2023	U100920	50WW14_100323
17	HS23100159-	SAMP	10/9/2023	U100921	50WW06_100323
18	HS23100159-	SAMP	10/9/2023	U100922	50WW05_100223
19	HS23100159-	SAMP	10/9/2023	U100924	50WW13_100323
20	HS23100159-	SAMP	10/9/2023	U100925	50WW13_100323_a
21	HS23100159-	SAMP	10/10/2023	U100927	50WW11_100323
22	HS23100159-	SAMP	10/10/2023	U100928	50WW11_100323_a
23	HS23100159-	SAMP	10/10/2023	U100930	50WW12_100323
24	CCV-END	CCV_EN	10/10/2023	U100931	CCV-END

Form 5 - Instrument Performance Check

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448800

Volatiles by EPA Volatiles Organics by Method 8260C

Tune File U101101.D 10/11/23

m / e	Ion Abundance Criterion	%RA
50	15.0 - 40.0% of mass 95	18.7 (18.7)
75	30.0 - 60.0% of mass 95	56.5 (56.5)
95	Base peak, 100% RA	100 (100)
96	5.0 - 9.0% of mass 95	6.5 (6.48)
173	Less than 2.0% of mass 174	0.4 (0.449) 1
174	greater than 50.0% of mass 95	93.8 (93.8) 1
175	5.0 - 9.0% of mass 174	7.6 (8.12) 1
176	> 95% but < 101% of mass 174	92.6 (98.6) 1
177	5.0 - 9.0% of mass 176	6.1 (6.59) 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	10/11/2023	U101102	CCV
2	CCB	CCB	10/11/2023	U101104	CCB
3	VLCSW-	LCS	10/11/2023	U101105	VLCSW-231010
4	VBLKW-	MBLK	10/11/2023	U101107	VBLKW-231010
5	HS23100355-	MS	10/11/2023	U101114	ZZZZZZMS
6	HS23100355-	MSD	10/11/2023	U101115	ZZZZZZMSD
7	HS23100159-	SAMP	10/11/2023	U101116	50WW08_100223
8	HS23100159-	SAMP	10/11/2023	U101117	50WW05_100223
9	HS23100159-	SAMP	10/11/2023	U101118	50WW13_100323
10	HS23100159-	SAMP	10/11/2023	U101119	50WW13_100323_a
11	HS23100159-	SAMP	10/11/2023	U101120	50WW11_100323
12	HS23100159-	SAMP	10/11/2023	U101121	50WW11_100323_a
13	CCV-END	CCV_EN	10/11/2023	U101130	CCV-END

right solutions.
right partner.

Form 6

Initial Calibration Data

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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 LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

Calibration Files

Level 1 ..target\chem\voa9.i\u231008.b\v100802.d **Level 5** ..target\chem\voa9.i\u231008.b\v100806.d
Level 2 ..target\chem\voa9.i\u231008.b\v100803.d **Level 6** ..target\chem\voa9.i\u231008.b\v100807.d
ICAL Start Date 08-OCT-2023 1350 **Level 3** ..target\chem\voa9.i\u231008.b\v100804.d **Level 7** ..target\chem\voa9.i\u231008.b\v100808.d **Level 9** ..target\chem\voa9.i\u231008.b\v100810.d
ICAL End Date 08-OCT-2023 1732 **Level 4** ..target\chem\voa9.i\u231008.b\v100805.d **Level 8** ..target\chem\voa9.i\u231008.b\v100809.d **Level 10** target\chem\voa9.i\u231008.b\v100811.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 211181	2335 554285	4130 1036788	8604 1735562	20402	85283	LINR	0.02022	0.55852		0.99913	
Chloromethane	NE 234994	2960 550291	4611 1050020	9058 1574687	22259	91992	LINR	-0.02299	0.52788		0.99513	
Propionitrile	NE 0.08062	0.08286 0.08139	0.07798 0.08360	0.07440 0.07829	0.08182	0.08344	AVRG		0.08049		3.80003	
Vinyl Chloride	NE 0.78564	0.83425 0.95770	0.72058 NE	0.74561 NE	0.79571	0.78568	AVRG		0.80360		9.59199	
Bromomethane	NE 283418	3461 721761	7766 1376761	13478 NE	34569	117550	LINR	0.00988	0.73561		0.99853	
Chloroethane	NE 0.76927	0.85496 0.74048	0.97220 0.61527	0.75543 NE	0.82729	0.78979	AVRG		0.79059		12.95344	
Trichlorofluoromethane	NE 1.75305	1.97823 1.92885	2.11877 1.54732	1.59913 NE	1.75230	1.90770	AVRG		1.82317		10.69133	
Acrolein	NE 35714	679 90074	895 NE	1686 NE	4110	15273	LINR	0.00225	0.04513		0.99711	
Acetone	NE 374534	6839 763186	11884 NE	18996 NE	46481	161522	LINR	-0.08770	0.38980		0.99652	
1,1-Dichloroethene	NE 1.00890	1.12894 1.05636	1.15402 0.86406	0.99582 0.73323	0.98178	1.06079	AVRG		0.99821		13.12217	

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 LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

ICAL Start Date 08-OCT-2023 1350 **ICAL End Date** 08-OCT-2023 1732

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 0.07277	0.07717 0.09157	0.07062 0.09052	0.07110 0.08103	0.06289	0.07111	AVRG		0.07653		12.53822	
Acetonitrile	NE 0.14171	0.15450 0.13066	0.14240 0.10833	0.15696 NE	0.13589	0.13661	AVRG		0.13838		10.93960	
Allyl Chloride	NE 2.64338	2.93973 2.58272	2.62424 2.10589	2.70912 1.68328	2.58875	2.60218	AVRG		2.49770		14.98409	
Iodomethane	NE 1171064	8077 2873660	15650 NE	22744 NE	70921	361765	QUAD	0.03649	0.80200	-0.02163	0.99925	
Acrylonitrile	NE 0.48025	0.53845 0.46293	0.48206 0.38298	0.46805 0.32039	0.47930	0.46125	AVRG		0.45285		14.06615	
Methylene Chloride	NE 1.34899	1.60636 1.32378	1.70569 1.08115	1.70375 NE	1.58018	1.46199	AVRG		1.47649		14.65810	
Methyl tert-butyl ether	NE 4.04513	4.50268 3.87364	4.58689 3.17798	4.41002 NE	4.21998	4.02490	AVRG		4.10515		10.96966	
Carbon Disulfide	NE 2.97965	3.39483 3.08016	3.34873 2.52101	2.60650 2.10448	2.83422	2.97718	AVRG		2.87186		14.30820	
trans-1,2-Dichloroethene	NE 1.28372	1.46382 1.24258	1.43544 1.03473	1.30016 0.88685	1.30104	1.25118	AVRG		1.24439		14.60820	
Vinyl Acetate	NE 1.54395	2.07120 1.55994	1.76288 1.55035	2.12883 NE	1.71959	2.15261	AVRG		1.81117		14.73217	
1,1-Dichloroethane	NE 1.30024	1.34669 0.98221	1.50984 NE	1.36343 NE	1.29630	1.08454	AVRG		1.26903		14.05753	
Chloroprene	NE 0.34562	0.39777 0.37990	0.35843 0.30435	0.31898 0.25379	0.31908	0.35855	AVRG		0.33738		12.90547	

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 LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

ICAL Start Date 08-OCT-2023 1350 **ICAL End Date** 08-OCT-2023 1732

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 0.22266	0.25375 0.22208	0.26106 0.19647	0.23428 0.20071	0.26225	0.23426	AVRG		0.23195		10.41592	
Methacrylonitrile	NE 0.29567	0.33760 0.31092	0.35184 0.32049	0.35976 0.31869	0.31921	0.32249	AVRG		0.32630		6.15867	
2,2-Dichloropropane	NE 292973	2894 712934	5223 1246693	10443 2265591	25310	112342	LINR	0.01593	0.71130		0.99772	
cis-1,2-Dichloroethene	NE 0.61468	0.64856 0.62309	0.70195 0.58119	0.57824 0.62976	0.67746	0.64976	AVRG		0.63385		6.45052	
Chloroform	NE 1.07541	1.28134 1.13093	1.30330 1.26591	1.06446 1.15559	1.12631	1.06219	AVRG		1.16283		8.28502	
Bromochloromethane	NE 0.32405	0.31984 0.29776	0.27310 0.29506	0.31714 0.29156	0.31469	0.31990	AVRG		0.30590		5.64849	
1,1,1-Trichloroethane	NE 0.81021	0.91538 0.90833	0.82627 0.99140	0.80678 0.96776	0.78637	0.78837	AVRG		0.86676		9.19997	
1,1-Dichloropropene	NE 0.39625	0.47997 0.43196	0.51325 0.42665	0.38761 0.42368	0.39456	0.40346	AVRG		0.42860		9.88522	
1,2-Dichloroethane	NE 0.45751	0.54555 0.47345	0.54000 0.49049	0.48750 0.46966	0.48856	0.49781	AVRG		0.49450		6.07329	
Carbon Tetrachloride	NE 0.38126	0.40329 0.43771	0.35525 0.44912	0.39193 0.44802	0.33987	0.35784	AVRG		0.39603		10.49578	
Benzene	NE 1.27742	1.42525 1.33440	1.49915 1.35306	1.22348 1.28707	1.27859	1.31195	AVRG		1.33226		6.34204	
Trichloroethene	NE 0.34611	0.35080 0.36427	0.35532 0.34908	0.30992 0.34952	0.33294	0.34788	AVRG		0.34509		4.50567	

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 LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

ICAL Start Date 08-OCT-2023 1350 **ICAL End Date** 08-OCT-2023 1732

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 0.43571	0.47812 0.48685	0.48105 0.54112	0.40981 0.49985	0.41767	0.40959	AVRG		0.46220		9.99077	
Methyl Methacrylate	NE 0.49134	0.59727 0.58201	0.46374 0.58755	0.39617 0.50516	0.47173	0.48029	AVRG		0.50836		13.30638	
2-Chloroethylvinyl ether	NE 0.06447	0.05840 0.08131	0.07250 0.08991	0.06769 NE	0.07649	0.06270	AVRG		0.07168		14.66896	
1,2-Dichloropropane	NE 0.32154	0.37641 0.35622	0.33915 0.35777	0.34375 0.31993	0.32414	0.30878	AVRG		0.33863		6.49684	
2-Nitropropane	NE 52971	680 162252	1374 NE	2312 NE	5218	23951	QUAD	-0.02084	9.09603	-8.99514	0.99754	
Dibromomethane	NE 0.25027	0.32278 0.26906	0.27794 0.28472	0.25099 0.26015	0.25747	0.24532	AVRG		0.26874		8.98592	
4-Methyl-2-Pentanone	NE 0.28781	0.32553 0.25582	0.30674 0.28007	0.27623 0.29147	0.33165	0.31375	AVRG		0.29656		8.35960	
cis-1,3-Dichloropropene	NE 0.52265	0.56760 0.59386	0.49475 0.65949	0.52591 0.60126	0.50535	0.48050	AVRG		0.55015		10.76367	
Ethyl Methacrylate	NE 452321	4076 1553942	6765 NE	13068 NE	31950	155032	QUAD	0.00340	1.94172	-0.45772	0.99997	
Toluene	NE 1.34643	1.44489 1.43223	1.32339 1.37229	1.28311 1.37461	1.34652	1.36342	AVRG		1.36521		3.67827	
trans-1,3-Dichloropropene	NE 352232	3775 1288347	6570 NE	13376 NE	33814	125611	QUAD	-0.01003	2.52546	-0.78569	0.99991	
2-Hexanone	NE 0.21045	0.20757 0.20764	0.17950 0.20446	0.20032 0.21168	0.21157	0.21798	AVRG		0.20569		5.34661	

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 LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

ICAL Start Date 08-OCT-2023 1350 **ICAL End Date** 08-OCT-2023 1732

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 0.25992	0.29786 0.27488	0.27361 0.26553	0.27257 0.26889	0.28760	0.28506	AVRG		0.27621		4.30562	
1,3-Dichloropropane	NE 0.54233	0.60667 0.56033	0.67164 0.54778	0.52832 0.55213	0.58051	0.58718	AVRG		0.57521		7.58924	
Dibromochloromethane	NE 0.33604	0.34416 0.36923	0.31937 0.36650	0.29159 0.38639	0.29163	0.30765	AVRG		0.33473		10.37428	
Tetrachloroethene	NE 0.24209	0.28265 0.26250	0.27715 0.25275	0.26670 0.24926	0.25601	0.24641	AVRG		0.25950		5.35570	
1,2-Dibromoethane	NE 0.36753	0.35978 0.37853	0.36425 0.37064	0.33923 0.38519	0.36500	0.33350	AVRG		0.36263		4.63737	
1-Chlorohexane	NE 219605	2796 760460	5368 NE	9455 NE	22806	79931	QUAD	-0.01686	4.05797	-1.98806	0.99985	
Chlorobenzene	NE 0.93431	1.10415 0.96805	1.09452 0.92314	0.90874 0.94172	0.91438	0.93430	AVRG		0.96926		7.81397	
1,1,1,2-Tetrachloroethane	NE 0.31519	0.31745 0.34358	0.33960 0.33825	0.25555 0.34400	0.30948	0.29343	AVRG		0.31739		9.17771	
Ethylbenzene	NE 0.45540	0.48501 0.49895	0.46796 0.46623	0.40545 0.46807	0.46770	0.44469	AVRG		0.46216		5.70362	
m,p-Xylenes	NE 0.68217	0.65935 0.64788	0.60150 0.63037	0.55243 0.63152	0.56943	0.59586	AVRG		0.61895		6.87108	
o-Xylene	NE 0.66842	0.66394 0.64215	0.62104 0.62323	0.60503 0.63724	0.59482	0.56708	AVRG		0.62477		5.22604	
Styrene	NE 1.19403	1.13402 1.13991	0.93810 1.09729	0.92621 1.12342	1.01372	0.99045	AVRG		1.06190		9.11481	

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 LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

ICAL Start Date 08-OCT-2023 1350 **ICAL End Date** 08-OCT-2023 1732

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 NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Bromoform	NE 215148	2877 753576	5629 1318684	9089 1986877	18874	67480	QUAD	0.00303	4.15760	-0.66654	0.99980	
Isopropylbenzene	NE 1.60952	1.66465 1.64715	1.37065 1.54265	1.31626 1.53857	1.35573	1.39197	AVRG		1.49302		9.06702	
1,1,2,2-Tetrachloroethane	NE 513002	3340 1519145	7461 2421796	12079 3494354	38922	164599	LINR	0.00876	0.85327		0.99882	
1,2,3-Trichloropropane	NE 0.66762	0.90554 0.90223	0.84351 0.87948	0.80067 0.90432	0.84966	0.81677	AVRG		0.84109		8.99203	
trans-1,4-Dichloro-2-butene	NE 0.10380	0.11687 0.10947	0.12884 0.10968	0.11907 0.11082	0.09154	0.10452	AVRG		0.11051		9.55628	
n-Propylbenzene	NE 2.48487	3.14375 3.07637	2.40834 2.81000	2.39220 2.77590	2.84729	2.73041	AVRG		2.74101		9.90759	
Bromobenzene	NE 0.60318	0.72234 0.71155	0.72705 0.68944	0.64591 0.71399	0.73077	0.70593	AVRG		0.69446		6.16780	
1,3,5-Trimethylbenzene	NE 1.99513	2.56954 2.32072	1.92976 2.14684	1.81438 2.16786	2.10858	2.01087	AVRG		2.11819		10.59058	
2-Chlorotoluene	NE 1.57306	1.88148 1.84507	1.93358 1.71999	1.47876 1.72126	1.79131	1.68862	AVRG		1.73702		8.40675	
4-Chlorotoluene	NE 2.04336	2.05291 2.28438	1.88835 2.14468	1.92323 2.14394	2.09452	1.98312	AVRG		2.06205		5.94249	
tert-Butylbenzene	NE 1.68745	2.15341 1.99073	1.67046 1.86833	1.56473 1.88935	1.81366	1.70814	AVRG		1.81625		10.02033	

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

ICAL Start Date 08-OCT-2023 1350 **ICAL End Date** 08-OCT-2023 1732

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 2.20320	2.56535 2.44097	2.08330 2.28236	1.87817 2.26537	2.11667	2.12240	AVRG		2.21753		9.15905	
Pentachloroethane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
sec-Butylbenzene	NE 2.35642	2.66140 2.78744	2.35623 2.57150	2.04831 2.54910	2.39103	2.31970	AVRG		2.44901		8.92838	
p-Isopropyltoluene	NE 2.12028	2.43475 2.45709	1.92899 2.28331	1.71090 2.27528	2.14001	2.04564	AVRG		2.15514		11.15242	
1,3-Dichlorobenzene	NE 1.20059	1.46562 1.32926	1.30693 1.25608	1.22437 1.28840	1.35224	1.27070	AVRG		1.29935		6.05885	
1,4-Dichlorobenzene	NE 1.37378	1.70875 1.43651	1.67275 1.36234	1.45145 1.40208	1.44600	1.34220	AVRG		1.46621		9.08088	
bis(2-Chloro-isopropyl)ether	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Benzyl Chloride	NE 708473	4794 2352023	8076 NE	13413 NE	34985	151545	QUAD	0.03397	1.32808	-0.08502	0.99492	
n-Butylbenzene	NE 2.02481	2.42167 2.28497	1.66868 2.11522	1.69090 2.10632	1.80279	1.88408	AVRG		1.99994		13.01310	
1,2-Dichlorobenzene	NE 1.34876	1.58627 1.37185	1.37332 1.32680	1.05698 1.35219	1.31775	1.32098	AVRG		1.33943		10.02084	
1,2-Dibromo-3-Chloropropane	NE 74921	431 245117	899 NE	1660 NE	4226	22269	QUAD	-0.01059	10.11678	-10.52037	0.99855	
1,2,4-Trichlorobenzene	NE 0.67418	0.83121 0.85047	0.77165 0.81886	0.71931 0.83517	0.81902	0.79234	AVRG		0.79025		7.46262	

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Initial Calibration Data

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Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

ICAL Start Date 08-OCT-2023 1350 **ICAL End Date** 08-OCT-2023 1732

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 0.22292	0.30176 0.33744	0.27178 0.30334	0.27144 0.31153	0.32743	0.26973	AVRG		0.29082		12.16489	
Naphthalene	NE 2.09607	2.46773 2.57031	1.89714 2.46013	2.20718 2.48221	2.39227	2.38796	AVRG		2.32900		9.37293	
1,2,3-Trichlorobenzene	NE 0.67226	0.70114 0.84750	0.80745 0.80711	0.73220 0.82512	0.90160	0.78437	AVRG		0.78653		9.27927	
Ethyl Acetate	NE 0.54493	0.41404 0.58634	0.42239 0.60251	0.42980 0.55574	0.48917	0.57191	AVRG		0.51298		14.65306	
Methyl Acrylate	NE 0.64902	0.64757 0.69021	0.69214 0.70680	0.65208 0.66254	0.53532	0.65037	AVRG		0.65401		7.60564	
n-Butanol	NE 113815	1144 325883	926 NE	3708 NE	7641	41160	QUAD	0.08718	85.73212	-38.59899	0.99988	
Ethyl Acrylate	NE 541900	4998 1391896	6993 NE	18733 NE	39091	188325	LINR	0.03246	1.41141		0.99606	
Cyclohexanone	NE 373826	3104 1025987	5880 1556174	9354 2157895	22887	105961	LINR	-0.48709	0.02684		0.99790	
1,4-Dioxane	0.01158 0.00915	0.01142 0.01114	0.01054 0.01178	0.01003 0.01019	0.01067	0.00915	AVRG		0.01056		8.93619	
n-Hexane	NE 401190	4295 1065659	8071 NE	15044 NE	38107	168848	QUAD	-0.01109	1.16548	-0.10968	0.99906	
n-Pentane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
Freon TF	NE 415227	4096 1055638	8629 NE	16888 NE	38021	167596	QUAD	-0.00893	1.11828	-0.08537	0.99960	

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ICAL Start Date 08-OCT-2023 1350 **ICAL End Date** 08-OCT-2023 1732

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 0.89709	1.12105 0.88953	1.09267 0.71566	0.98575 NE	1.02893	0.99333	AVRG		0.96550		13.47277	
Methylcyclohexane	NE 0.71602	0.71099 0.78416	0.65705 0.80505	0.68521 0.72551	0.56398	0.65491	AVRG		0.70032		10.31456	
Isopropyl alcohol	NE 0.07109	0.08958 0.07337	0.09918 NE	0.07193 NE	0.08179	0.07620	AVRG		0.08045		13.07865	
Amyl alcohol	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Allyl alcohol	NE 0.04617	0.05968 0.05432	0.04572 NE	0.04763 NE	0.04888	0.05103	AVRG		0.05049		9.95281	
4-Methyl-2-pentanol	NE 1059067	10609 3748670	11448 NE	22353 NE	72265	355042	QUAD	0.16457	16.57096	-1.69058	0.99994	
Tert-butyl alcohol	NE 0.13388	0.18710 0.13776	0.15662 0.11293	0.14913 NE	0.16138	0.14799	AVRG		0.14835		14.67193	
Diethyl ether	NE 0.85383	1.02561 0.82422	0.84539 0.67621	1.01519 NE	0.93071	0.83309	AVRG		0.87553		12.99516	
1,3-Butadiene	NE 0.71635	0.70404 0.81682	0.80627 0.69341	0.68089 0.57524	0.64159	0.66288	AVRG		0.69972		10.83549	
Cyclohexane	NE 0.57134	0.61749 0.70876	0.66544 0.67369	0.56614 0.64455	0.61838	0.65599	AVRG		0.63575		7.41273	
Tetrahydrofuran	NE 0.10271	0.09642 0.10622	0.09507 0.10993	0.11006 0.09440	0.12018	0.10791	AVRG		0.10477		8.12373	
1-Chlorobutane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	

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Initial Calibration Data

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Project LHAAP Site 50

Workorder HS23100159

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Volatiles by EPA Volatiles Organics by Method 8260C

ICAL Start Date 08-OCT-2023 1350 **ICAL End Date** 08-OCT-2023 1732

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 NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
alpha-Methylstyrene	NE 1.02706	1.31408 1.13193	1.07771 1.07352	0.82901 1.11464	0.96688	0.98508	AVRG		1.05777		12.59074	
Tetraethyl lead	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
2,3-Dichlorobutane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
2-Pentanone	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
Diisopropyl ether	NE 1.61520	1.92916 1.58340	1.81436 1.60528	1.93388 1.41986	1.48909	1.95424	AVRG		1.70494		12.04569	
n-Heptane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Dichlorofluoromethane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Propylene oxide	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
2-Methylnaphthalene	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
3-Methyl-1-butanol	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Butyl acrylate	NE 626040	4706 2000731	6634 NE	14947 NE	34091	174716	LINR	0.02372	0.70962		0.99836	

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Butyl methacrylate	NE 0.71686	0.65927 0.68182	0.58918 0.66747	0.56731 0.67581	0.56435	0.66000	AVRG		0.64245		8.52549	
Dicyclopentadiene	NE 2.89546	2.81163 2.75880	2.43204 2.56261	2.63857 2.51675	2.50210	2.62453	AVRG		2.63805		5.87982	
4-Vinyl-1-cyclohexene	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
1,2,3-Trimethylbenzene	NE 2.47229	2.37194 2.41756	2.06100 2.28614	2.15198 2.24517	1.95768	2.08472	AVRG		2.22761		7.89241	
Ethanol	NE 102840	916 240577	2764 NE	5739 NE	10996	39998	LINR	-0.10612	0.01214		0.99953	
1-Propanol	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
1,3,5-Trichlorobenzene	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
tert-Butyl formate	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
3,3-Dimethyl-1-butanol	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
tert-Amyl methyl ether	NE 1.79620	2.17009 2.21802	1.73836 2.23284	1.64295 2.00822	1.51949	1.65156	AVRG		1.88641		14.57063	
tert-Butyl ethyl ether	NE 1.50326	1.91683 1.50631	1.61242 1.54864	1.65404 1.51124	1.42081	1.45562	AVRG		1.56991		9.47229	
tert-Amyl alcohol	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*

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Dimethyl ether	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Ethylene oxide	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
Hexachloroethane	NE 0.14385	0.14421 0.14661	0.16870 0.13354	0.17079 0.13337	0.16657	0.14851	AVRG		0.15068		9.63139	
1-Methylnaphthalene	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
2-Furfural	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
Epichlorohydrin	NE 63724	546 164509	622 NE	3162 NE	5579	20889	LINR	0.10015	0.02305		0.99678	
2-Methylpropane(1)	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
(2)	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Cyclopentane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
Isoprene	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Isopentane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
n-Amyl acetate	NE 0.66385	0.64887 0.61385	0.56697 0.61018	0.49445 0.62807	0.55957	0.59578	AVRG		0.59795		8.64844	

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Isopropyl acetate	NE 0.82539	0.89037 0.97540	0.79091 0.93716	0.58374 0.86443	0.70951	0.80448	AVRG		0.82015		14.55140	
n-Butyl acetate	NE 0.48816	0.44267 0.49999	0.38086 0.50337	0.37044 0.51109	0.44013	0.50577	AVRG		0.46028		11.88876	
Propanal	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
n-Buteraldehyde	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
Isobuteraldehyde	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
2-Ethyl-1-hexanol	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Acetaldehyde	NE 171333	NE 349347	NE NE	9285 NE	23519	54050	LINR	-0.14219	0.08884		0.99538	
Methyl Amyl Ketone	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
2-Methylpentane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
3-Methylpentane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
Methylcyclopentane	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
1-Hexene	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	

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Dimethyl Disulfide	NE 357164	2912 1168959	4557 NE	9856 NE	20656	93475	QUAD	0.01986	2.60782	-0.24148	0.99775	
1-Butene(1)	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	
(2)	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
Isobutylene	NE NE	NE NE	NE NE	NE NE	NE	NE	AVRG		0.000e+000		0.000e+000	*
2-Ethylhexyl Acrylate	NE 0.47093	0.52527 0.59431	0.41169 0.57383	0.48550 0.60998	0.48602	0.39845	AVRG		0.50622		14.99460	
94 1,2-Dichloroethylene (total)	NE 0.94920	1.05619 0.93284	1.06870 0.80796	0.93920 0.75830	0.98925	0.95047	AVRG		0.93912		10.85755	
95 Xylenes (total)	NE 1794775	14471 5534257	26786 NE	49528 NE	127402	551761	QUAD	0.02756	1.46470	-0.08142	0.99958	
30 Dibromofluoromethane	NE 230912	3477 573846	5286 NE	8870 NE	20955	94694	QUAD	-0.00984	1.98331	-0.22496	0.99955	
35 1,2-Dichloroethane-d4	NE 273135	3327 648141	5363 NE	12195 NE	26138	110471	QUAD	-0.00884	1.63688	-0.08705	0.99977	
48 Toluene-d8	NE 1.03033	1.18485 1.03845	1.39537 NE	1.27690 NE	1.17210	1.20852	AVRG		1.18665		10.81381	
69 4-Bromofluorobenzene	NE 422439	4165 1394794	7376 NE	13272 NE	29176	132497	QUAD	0.00616	2.18396	-0.14951	0.99959	

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Form 6I

Initial Calibration Verification (ICV)

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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 LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

Sample Matrix LIQUID
Lab Smp Id ICV
Data Type MS DATA
File ID V100814.D

Fraction VOA
Client Smp ID ICV
SampleType METHSPIKE
Inj Date 08-OCT-2023 1839

Compound	Conc Added	Conc Recovered	% Recovered	Limits	Q
1,1,1,2-Tetrachloroethane	50.00	49.61	99.23	80-120	
1,1,1-Trichloroethane	50.00	44.77	89.55	80-120	
1,1,2,2-Tetrachloroethane	50.00	52.36	104.74	80-120	
Freon TF	50.00	46.65	93.30	80-120	
Methyl Acetate	50.00	48.32	96.65	80-120	
Cyclohexane	50.00	42.78	85.58	80-120	
Methylcyclohexane	50.00	52.02	104.05	80-120	
Carbon Disulfide	100.00	99.30	99.31	80-120	
2-Hexanone	100.00	95.10	95.10	80-120	
1,1,2-Trichloroethane	50.00	43.28	86.57	80-120	
1,1-Dichloroethane	50.00	57.45	114.91	80-120	
1,1-Dichloroethene	50.00	48.69	97.39	80-120	
1,1-Dichloropropene	50.00	45.75	91.50	80-120	
1,2,3-Trichlorobenzene	50.00	53.01	106.03	80-120	
1,2,3-Trichloropropane	50.00	50.52	101.05	80-120	
1,2,4-Trichlorobenzene	50.00	52.83	105.68	80-120	
1,2,4-Trimethylbenzene	50.00	50.62	101.25	80-120	
1,2-Dibromo-3-Chloropropane	50.00	59.65	119.30	80-120	
1,2-Dibromoethane	50.00	50.73	101.47	80-120	
Acrolein	100.00	105.43	105.43	80-120	
Acrylonitrile	100.00	97.97	97.97	80-120	
1,2-Dichlorobenzene	50.00	49.69	99.40	80-120	
1,2-Dichloroethane	50.00	47.58	95.17	80-120	
1,2-Dichloropropane	50.00	47.01	94.02	80-120	
1,3,5-Trimethylbenzene	50.00	49.59	99.18	80-120	
1,3-Dichlorobenzene	50.00	48.84	97.69	80-120	
1,3-Dichloropropane	50.00	43.41	86.83	80-120	
1,4-Dichlorobenzene	50.00	46.85	93.70	80-120	
1-Chlorohexane	50.00	55.64	111.29	80-120	
2,2-Dichloropropane	50.00	45.95	91.91	80-120	
2-Butanone	100.00	97.83	97.84	80-120	
2-Chloroethylvinyl ether	100.00	102.30	102.30	80-120	
2-Chlorotoluene	50.00	50.62	101.25	80-120	
4-Chlorotoluene	50.00	52.74	105.49	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

Sample Matrix LIQUID
Lab Smp Id ICV
Data Type MS DATA
File ID V100814.D

Fraction VOA
Client Smp ID ICV
SampleType METHSPIKE
Inj Date 08-OCT-2023 1839

Compound	Conc Added	Conc Recovered	% Recovered	Limits	Q
p-Isopropyltoluene	50.00	50.28	100.57	80-120	
4-Methyl-2-Pentanone	100.00	83.67	83.67	80-120	
Acetone	100.00	106.20	106.20	80-120	
Acetonitrile	500.00	479.44	95.89	80-120	
Allyl Chloride	50.00	50.55	101.11	80-120	
Benzene	50.00	46.71	93.42	80-120	
Bromobenzene	50.00	49.28	98.56	80-120	
Bromochloromethane	50.00	50.73	101.47	80-120	
Bromodichloromethane	50.00	49.59	99.18	80-120	
Bromoform	50.00	48.08	96.16	80-120	
Bromomethane	50.00	51.93	103.86	80-120	
Carbon Tetrachloride	50.00	45.49	91.00	80-120	
Chlorobenzene	50.00	46.41	92.83	80-120	
Chloroethane	50.00	46.47	92.94	80-120	
Chloroform	50.00	44.49	88.99	80-120	
Chloromethane	50.00	56.28	112.57	80-120	
Chloroprene	50.00	47.61	95.24	80-120	
cis-1,2-Dichloroethene	50.00	46.93	93.87	80-120	
cis-1,3-Dichloropropene	50.00	50.36	100.74	80-120	
Dibromochloromethane	50.00	47.23	94.47	80-120	
Dibromomethane	50.00	46.12	92.25	80-120	
Dichlorodifluoromethane	50.00	48.87	97.74	80-120	
Ethylbenzene	50.00	48.22	96.46	80-120	
Ethyl Methacrylate	50.00	58.54	117.09	80-120	
Iodomethane	100.00	95.09	95.10	80-120	
Isobutyl Alcohol	1000.00	1036.92	103.69	70-130	
Propionitrile	500.00	496.72	99.34	70-130	
Hexachlorobutadiene	50.00	47.79	95.59	80-120	
Isopropylbenzene	50.00	48.85	97.71	80-120	
m,p-Xylenes	100.00	97.46	97.47	80-120	
Methyl tert-butyl ether	50.00	47.57	95.15	80-120	
Methylene Chloride	50.00	44.11	88.24	80-120	
Methacrylonitrile	50.00	47.32	94.65	80-120	
Methyl Methacrylate	50.00	50.40	100.80	80-120	

Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448459

Volatiles by EPA Volatiles Organics by Method 8260C

Sample Matrix LIQUID
Lab Smp Id ICV
Data Type MS DATA
File ID V100814.D

Fraction VOA
Client Smp ID ICV
SampleType METHSPIKE
Inj Date 08-OCT-2023 1839

Compound	Conc Added	Conc Recovered	% Recovered	Limits	Q
n-Butylbenzene	50.00	49.17	98.36	80-120	
n-Propylbenzene	50.00	51.84	103.69	80-120	
Naphthalene	50.00	55.06	110.14	80-120	
o-Xylene	50.00	48.44	96.89	80-120	
sec-Butylbenzene	50.00	48.92	97.85	80-120	
Styrene	50.00	50.58	101.18	80-120	
tert-Butylbenzene	50.00	47.98	95.97	80-120	
Tetrachloroethene	50.00	40.18	80.36	80-120	
Toluene	50.00	42.90	85.81	80-120	
trans-1,2-Dichloroethene	50.00	48.00	96.00	80-120	
trans-1,3-Dichloropropene	50.00	57.76	115.53	80-120	
trans-1,4-Dichloro-2-butene	50.00	47.82	95.65	80-120	
Trichloroethene	50.00	49.52	99.05	80-120	
Trichlorofluoromethane	50.00	46.35	92.71	80-120	
Vinyl Acetate	100.00	88.68	88.69	80-120	
Vinyl Chloride	50.00	53.52	107.05	80-120	
1,2-Dichloroethylene (total)	100.00	95.28	95.28	80-120	
Xylenes (total)	150.00	170.60	113.74	80-120	
1,4-Dioxane	1000.00	918.15	91.82	80-120	
Dibromofluoromethane	50.00	53.39	106.79	71-125	
1,2-Dichloroethane-d4	50.00	51.93	103.87	70-125	
Toluene-d8	50.00	40.64	81.29	75-125	
4-Bromofluorobenzene	50.00	54.15	108.30	72-125	

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Form 7

Continuing Calibration Verification (CCV)

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448564

Volatiles by EPA Volatiles Organics by Method 8260C

Instrument ID VOA9.i
Lab File ID U100903.D
Analysis Type WATER
Lab Sample ID CCV

Injection Date 09-OCT-2023 1540
ICAL Date(s) 08-OCT-2023, 08-OCT-2023
ICAL Times 13:50, 17:32
Quant Type ISTD

Compound	$\overline{RRF}$ / Conc	RF50 / Conc	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
30 Dibromofluoromethane	50.0	56.51743	0.61824	0.100	-13.03487	20.0	Quadratic	
35 1,2-Dichloroethane-d4	50.0	55.58750	0.71151	0.100	-11.17499	20.0	Quadratic	
48 Toluene-d8	1.18665	1.06551	1.06551	0.100	10.20843	20.0	Averaged	
69 4-Bromofluorobenzene	50.0	58.98865	0.55875	0.100	-17.97730	20.0	Quadratic	
Vinyl Chloride	0.80360	0.96336	0.96336	0.100	-19.88169	20.0	Averaged	
1,1-Dichloroethene	0.99821	1.07817	1.07817	0.100	-8.01044	20.0	Averaged	
trans-1,2-Dichloroethene	1.24439	1.28274	1.28274	0.100	-3.08166	20.0	Averaged	
cis-1,2-Dichloroethene	0.63385	0.65686	0.65686	0.100	-3.62925	20.0	Averaged	
1,2-Dichloroethane	0.49450	0.49692	0.49692	0.100	-0.48930	20.0	Averaged	
Trichloroethene	0.34509	0.36403	0.36403	0.200	-5.48676	20.0	Averaged	
Tetrachloroethene	0.25950	0.25253	0.25253	0.200	2.68782	20.0	Averaged	
Acrylonitrile	0.45285	0.49084	0.49084	0.050	-8.38825	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448564

Volatiles by EPA Volatiles Organics by Method 8260C

Instrument ID VOA9.i
Lab File ID U100931.D
Analysis Type WATER
Lab Sample ID CCV-END

Injection Date 10-OCT-2023 0206
ICAL Date(s) 08-OCT-2023, 08-OCT-2023
ICAL Times 13:50, 17:32
Quant Type ISTD

Compound	$\overline{RRF}$ / Conc	RF50 / Conc	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
30 Dibromofluoromethane	50.0	55.78531	0.60967	0.100	-11.57061	50.0	Quadratic	
35 1,2-Dichloroethane-d4	50.0	55.00951	0.70388	0.100	-10.01903	50.0	Quadratic	
48 Toluene-d8	1.18665	1.16877	1.16877	0.100	1.50626	50.0	Averaged	
69 4-Bromofluorobenzene	50.0	48.89693	0.45941	0.100	2.20615	50.0	Quadratic	
Vinyl Chloride	0.80360	0.76589	0.76589	0.100	4.69217	50.0	Averaged	
1,1-Dichloroethene	0.99821	1.09222	1.09222	0.100	-9.41759	50.0	Averaged	
trans-1,2-Dichloroethene	1.24439	1.34366	1.34366	0.100	-7.97732	50.0	Averaged	
cis-1,2-Dichloroethene	0.63385	0.67215	0.67215	0.100	-6.04197	50.0	Averaged	
1,2-Dichloroethane	0.49450	0.47438	0.47438	0.100	4.07011	50.0	Averaged	
Trichloroethene	0.34509	0.38097	0.38097	0.200	-10.39683	50.0	Averaged	
Tetrachloroethene	0.25950	0.23179	0.23179	0.200	10.68050	50.0	Averaged	
Acrylonitrile	0.45285	0.47175	0.47175	0.050	-4.17397	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448800

Volatiles by EPA Volatiles Organics by Method 8260C

Instrument ID VOA9.i
Lab File ID U101102.D
Analysis Type WATER
Lab Sample ID CCV

Injection Date 11-OCT-2023 1117
ICAL Date(s) 08-OCT-2023, 08-OCT-2023
ICAL Times 13:50, 17:32
Quant Type ISTD

Compound	$\overline{RRF}$ / Conc	RF50 / Conc	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Dichlorodifluoromethane	50.0	44.85090	0.48971	0.100	10.29821	20.0	Linear	
Chloromethane	50.0	47.61524	0.51484	0.100	4.76951	20.0	Linear	
Vinyl Chloride	0.80360	0.71510	0.71510	0.100	11.01204	20.0	Averaged	
Bromomethane	50.0	43.28160	0.62950	0.100	13.43680	20.0	Linear	
Chloroethane	0.79059	0.72397	0.72397	0.100	8.42573	20.0	Averaged	
Trichlorofluoromethane	1.82317	1.70803	1.70803	0.100	6.31506	20.0	Averaged	
Acrolein	100	111	0.04984	0.010	-10.54699	20.0	Linear	
Acetone	100	110	0.44428	0.100	-9.59261	20.0	Linear	
1,1-Dichloroethene	0.99821	0.99981	0.99981	0.100	-0.16044	20.0	Averaged	
Iodomethane	100	85.52612	1.11014	0.100	14.47388	20.0	Quadratic	
Acrylonitrile	0.45285	0.44534	0.44534	0.050	1.65791	20.0	Averaged	
Methylene Chloride	1.47649	1.36955	1.36955	0.100	7.24271	20.0	Averaged	
Methyl tert-butyl ether	4.10515	3.79347	3.79347	0.100	7.59254	20.0	Averaged	
Carbon Disulfide	2.87186	2.90140	2.90140	0.100	-1.02854	20.0	Averaged	
trans-1,2-Dichloroethene	1.24439	1.21115	1.21115	0.100	2.67116	20.0	Averaged	
Vinyl Acetate	1.81117	1.86653	1.86653	0.010	-3.05693	20.0	Averaged	
1,1-Dichloroethane	1.26903	1.93093	1.93093	0.200	-52.15767	20.0	Averaged	*
2-Butanone	0.23195	0.23119	0.23119	0.100	0.32591	20.0	Averaged	
2,2-Dichloropropane	50.0	49.80964	0.69726	0.100	0.38073	20.0	Linear	
cis-1,2-Dichloroethene	0.63385	0.62305	0.62305	0.100	1.70487	20.0	Averaged	
Chloroform	1.16283	1.09670	1.09670	0.200	5.68642	20.0	Averaged	
Bromochloromethane	0.30590	0.32426	0.32426	0.100	-6.00301	20.0	Averaged	
30 Dibromofluoromethane	50.0	53.21964	0.57976	0.100	-6.43928	20.0	Quadratic	
1,1,1-Trichloroethane	0.86676	0.79632	0.79632	0.100	8.12761	20.0	Averaged	
1,1-Dichloropropene	0.42860	0.42768	0.42768	0.100	0.21498	20.0	Averaged	
1,2-Dichloroethane	0.49450	0.48611	0.48611	0.100	1.69723	20.0	Averaged	
Carbon Tetrachloride	0.39603	0.37894	0.37894	0.100	4.31471	20.0	Averaged	
35 1,2-Dichloroethane-d4	50.0	53.97303	0.69020	0.100	-7.94607	20.0	Quadratic	
Benzene	1.33226	1.33688	1.33688	0.500	-0.34695	20.0	Averaged	
Trichloroethene	0.34509	0.35849	0.35849	0.200	-3.88184	20.0	Averaged	
Bromodichloromethane	0.46220	0.47065	0.47065	0.200	-1.82911	20.0	Averaged	
2-Chloroethylvinyl ether	0.07168	0.05455	0.05455	0.001	23.89859	20.0	Averaged	*
1,2-Dichloropropane	0.33863	0.33983	0.33983	0.100	-0.35453	20.0	Averaged	
Dibromomethane	0.26874	0.26694	0.26694	0.100	0.67124	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448800

Volatiles by EPA Volatiles Organics by Method 8260C

Instrument ID VOA9.i
Lab File ID U101102.D
Analysis Type WATER
Lab Sample ID CCV

Injection Date 11-OCT-2023 1117
ICAL Date(s) 08-OCT-2023, 08-OCT-2023
ICAL Times 13:50, 17:32
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	0.29656	0.30943	0.30943	0.100	-4.33718	20.0	Averaged	
cis-1,3-Dichloropropene	0.55015	0.56395	0.56395	0.200	-2.50866	20.0	Averaged	
48 Toluene-d8	1.17226	1.20274	1.20274	0.100	-2.60020	20.0	Averaged	
Toluene	1.36521	1.41088	1.41088	0.400	-3.34511	20.0	Averaged	
trans-1,3-Dichloropropene	50.0	53.87063	0.51222	0.100	-7.74126	20.0	Quadratic	
2-Hexanone	0.20569	0.22220	0.22220	0.100	-8.02701	20.0	Averaged	
1,1,2-Trichloroethane	0.27621	0.28020	0.28020	0.100	-1.44435	20.0	Averaged	
1,3-Dichloropropane	0.57521	0.58675	0.58675	0.100	-2.00656	20.0	Averaged	
Dibromochloromethane	0.33473	0.35252	0.35252	0.100	-5.31379	20.0	Averaged	
Tetrachloroethene	0.25950	0.25319	0.25319	0.200	2.43040	20.0	Averaged	
1,2-Dibromoethane	0.36263	0.37150	0.37150	0.100	-2.44658	20.0	Averaged	
1-Chlorohexane	50.0	52.63968	0.31097	0.100	-5.27936	20.0	Quadratic	
Chlorobenzene	0.96926	0.96236	0.96236	0.500	0.71109	20.0	Averaged	
1,1,1,2-Tetrachloroethane	0.31739	0.33474	0.33474	0.100	-5.46560	20.0	Averaged	
Ethylbenzene	0.46216	0.48643	0.48643	0.100	-5.24979	20.0	Averaged	
m,p-Xylenes	0.61895	0.66603	0.66603	0.100	-7.60702	20.0	Averaged	
o-Xylene	0.62477	0.64910	0.64910	0.300	-3.89446	20.0	Averaged	
Styrene	1.06190	1.17903	1.17903	0.300	-11.02935	20.0	Averaged	
Bromoform	50.0	49.71358	0.24830	0.100	0.57284	20.0	Quadratic	
Isopropylbenzene	1.49302	1.62056	1.62056	0.100	-8.54272	20.0	Averaged	
1,1,2,2-Tetrachloroethane	50.0	45.69170	0.77227	0.300	8.61660	20.0	Linear	
69 4-Bromofluorobenzene	50.0	54.78482	0.51719	0.100	-9.56964	20.0	Quadratic	
1,2,3-Trichloropropane	0.84109	0.73432	0.73432	0.100	12.69354	20.0	Averaged	
n-Propylbenzene	2.74101	2.72835	2.72835	0.100	0.46194	20.0	Averaged	
Bromobenzene	0.69446	0.62349	0.62349	0.100	10.22026	20.0	Averaged	
1,3,5-Trimethylbenzene	2.11819	2.05513	2.05513	0.100	2.97704	20.0	Averaged	
2-Chlorotoluene	1.73702	1.64774	1.64774	0.100	5.13988	20.0	Averaged	
4-Chlorotoluene	2.06205	2.12823	2.12823	0.100	-3.20901	20.0	Averaged	
tert-Butylbenzene	1.81625	1.72495	1.72495	0.100	5.02688	20.0	Averaged	
1,2,4-Trimethylbenzene	2.21753	2.24602	2.24602	0.100	-1.28454	20.0	Averaged	
sec-Butylbenzene	2.44901	2.39696	2.39696	0.100	2.12545	20.0	Averaged	
p-Isopropyltoluene	2.15514	2.20844	2.20844	0.100	-2.47319	20.0	Averaged	
1,3-Dichlorobenzene	1.29935	1.23210	1.23210	0.600	5.17597	20.0	Averaged	
1,4-Dichlorobenzene	1.46621	1.47067	1.47067	0.400	-0.30418	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448800

Volatiles by EPA Volatiles Organics by Method 8260C

Instrument ID VOA9.i
Lab File ID U101102.D
Analysis Type WATER
Lab Sample ID CCV

Injection Date 11-OCT-2023 1117
ICAL Date(s) 08-OCT-2023, 08-OCT-2023
ICAL Times 13:50, 17:32
Quant Type ISTD

Compound	$\overline{RRF}$ / Conc	RF50 / Conc	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
n-Butylbenzene	1.99994	2.20815	2.20815	0.500	-10.41116	20.0	Averaged	
1,2-Dichlorobenzene	1.33943	1.40099	1.40099	0.400	-4.59541	20.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	47.70336	0.10733	0.050	4.59327	20.0	Quadratic	
1,2,4-Trichlorobenzene	0.79025	0.71977	0.71977	0.200	8.91873	20.0	Averaged	
Hexachlorobutadiene	0.29082	0.28664	0.28664	0.100	1.43688	20.0	Averaged	
Naphthalene	2.32900	2.15466	2.15466	0.200	7.48580	20.0	Averaged	
1,2,3-Trichlorobenzene	0.78653	0.72770	0.72770	0.100	7.47961	20.0	Averaged	
94 1,2-Dichloroethylene (total	0.93912	0.91710	0.91710	0.200	2.34506	20.0	Averaged	
95 Xylenes (total)	150	148	0.76632	0.100	1.18131	20.0	Quadratic	
1,4-Dioxane	0.01056	0.00887	0.00887	0.001	16.01905	20.0	Averaged	
Cyclohexane	0.63575	0.57511	0.57511	0.100	9.53802	20.0	Averaged	
Freon TF	50.0	48.39308	0.94110	0.100	3.21385	20.0	Quadratic	
1,3-Butadiene	0.69972	0.66267	0.66267	0.100	5.29465	20.0	Averaged	
Methylcyclohexane	0.70032	0.70637	0.70637	0.100	-0.86402	20.0	Averaged	
Methyl Acetate	0.96550	0.96519	0.96519	0.100	0.03236	20.0	Averaged	
Tert-butyl alcohol	0.14835	0.12925	0.12925	0.005	12.87344	20.0	Averaged	
Isopropyl alcohol	0.08045	0.07118	0.07118	0.005	11.51608	20.0	Averaged	
trans-1,4-Dichloro-2-butene	0.11051	0.10635	0.10635	0.050	3.76332	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448800

Volatiles by EPA Volatiles Organics by Method 8260C

Instrument ID VOA9.i
Lab File ID U101130.D
Analysis Type WATER
Lab Sample ID CCV-END

Injection Date 11-OCT-2023 2143
ICAL Date(s) 08-OCT-2023, 08-OCT-2023
ICAL Times 13:50, 17:32
Quant Type ISTD

Compound	$\overline{RRF}$ / Conc	RF50 / Conc	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
Dichlorodifluoromethane	50.0	46.52860	0.50845	0.100	6.94280	50.0	Linear	
Chloromethane	50.0	54.61174	0.58870	0.100	-9.22347	50.0	Linear	
Vinyl Chloride	0.80360	0.78915	0.78915	0.100	1.79717	50.0	Averaged	
Bromomethane	50.0	47.34335	0.68926	0.100	5.31330	50.0	Linear	
Chloroethane	0.79059	0.81725	0.81725	0.100	-3.37247	50.0	Averaged	
Trichlorofluoromethane	1.82317	1.99237	1.99237	0.100	-9.28067	50.0	Averaged	
Acrolein	100	145	0.06524	0.010	-44.67951	50.0	Linear	
Acetone	100	107	0.43445	0.100	-7.07069	50.0	Linear	
1,1-Dichloroethene	0.99821	1.15944	1.15944	0.100	-16.15205	50.0	Averaged	
Iodomethane	100	94.37471	1.23646	0.100	5.62529	50.0	Quadratic	
Acrylonitrile	0.45285	0.49250	0.49250	0.050	-8.75612	50.0	Averaged	
Methylene Chloride	1.47649	1.56800	1.56800	0.100	-6.19815	50.0	Averaged	
Methyl tert-butyl ether	4.10515	4.13679	4.13679	0.100	-0.77069	50.0	Averaged	
Carbon Disulfide	2.87186	3.10216	3.10216	0.100	-8.01924	50.0	Averaged	
trans-1,2-Dichloroethene	1.24439	1.39250	1.39250	0.100	-11.90170	50.0	Averaged	
Vinyl Acetate	1.81117	1.81277	1.81277	0.010	-0.08840	50.0	Averaged	
1,1-Dichloroethane	1.26903	2.23368	2.23368	0.200	-76.01394	50.0	Averaged	
2-Butanone	0.23195	0.22757	0.22757	0.100	1.88808	50.0	Averaged	
2,2-Dichloropropane	50.0	42.57117	0.59428	0.100	14.85766	50.0	Linear	
cis-1,2-Dichloroethene	0.63385	0.73852	0.73852	0.100	-16.51234	50.0	Averaged	
Chloroform	1.16283	1.13149	1.13149	0.200	2.69509	50.0	Averaged	
Bromochloromethane	0.30590	0.33688	0.33688	0.100	-10.12804	50.0	Averaged	
30 Dibromofluoromethane	50.0	55.66656	0.60828	0.100	-11.33312	50.0	Quadratic	
1,1,1-Trichloroethane	0.86676	0.86503	0.86503	0.100	0.19987	50.0	Averaged	
1,1-Dichloropropene	0.42860	0.41462	0.41462	0.100	3.26063	50.0	Averaged	
1,2-Dichloroethane	0.49450	0.47291	0.47291	0.100	4.36739	50.0	Averaged	
Carbon Tetrachloride	0.39603	0.38443	0.38443	0.100	2.93012	50.0	Averaged	
35 1,2-Dichloroethane-d4	50.0	54.47925	0.69687	0.100	-8.95850	50.0	Quadratic	
Benzene	1.33226	1.31822	1.31822	0.500	1.05423	50.0	Averaged	
Trichloroethene	0.34509	0.35812	0.35812	0.200	-3.77586	50.0	Averaged	
Bromodichloromethane	0.46220	0.44389	0.44389	0.200	3.96054	50.0	Averaged	
2-Chloroethylvinyl ether	0.07168	0.05002	0.05002	0.001	30.22462	50.0	Averaged	
1,2-Dichloropropane	0.33863	0.34103	0.34103	0.100	-0.70869	50.0	Averaged	
Dibromomethane	0.26874	0.25293	0.25293	0.100	5.88352	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448800

Volatiles by EPA Volatiles Organics by Method 8260C

Instrument ID VOA9.i
Lab File ID U101130.D
Analysis Type WATER
Lab Sample ID CCV-END

Injection Date 11-OCT-2023 2143
ICAL Date(s) 08-OCT-2023, 08-OCT-2023
ICAL Times 13:50, 17:32
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	0.29656	0.29730	0.29730	0.100	-0.24758	50.0	Averaged	
cis-1,3-Dichloropropene	0.55015	0.51546	0.51546	0.200	6.30680	50.0	Averaged	
48 Toluene-d8	1.17226	1.17808	1.17808	0.100	-0.49646	50.0	Averaged	
Toluene	1.36521	1.39810	1.39810	0.400	-2.40942	50.0	Averaged	
trans-1,3-Dichloropropene	50.0	47.74330	0.44317	0.100	4.51340	50.0	Quadratic	
2-Hexanone	0.20569	0.20704	0.20704	0.100	-0.65963	50.0	Averaged	
1,1,2-Trichloroethane	0.27621	0.27524	0.27524	0.100	0.35081	50.0	Averaged	
1,3-Dichloropropane	0.57521	0.57584	0.57584	0.100	-0.11028	50.0	Averaged	
Dibromochloromethane	0.33473	0.32145	0.32145	0.100	3.96583	50.0	Averaged	
Tetrachloroethene	0.25950	0.25367	0.25367	0.200	2.24585	50.0	Averaged	
1,2-Dibromoethane	0.36263	0.34971	0.34971	0.100	3.56140	50.0	Averaged	
1-Chlorohexane	50.0	48.38971	0.28146	0.100	3.22057	50.0	Quadratic	
Chlorobenzene	0.96926	0.94005	0.94005	0.500	3.01349	50.0	Averaged	
1,1,1,2-Tetrachloroethane	0.31739	0.31122	0.31122	0.100	1.94382	50.0	Averaged	
Ethylbenzene	0.46216	0.45562	0.45562	0.100	1.41508	50.0	Averaged	
m,p-Xylenes	0.61895	0.62669	0.62669	0.100	-1.25072	50.0	Averaged	
o-Xylene	0.62477	0.61567	0.61567	0.300	1.45751	50.0	Averaged	
Styrene	1.06190	1.07402	1.07402	0.300	-1.14090	50.0	Averaged	
Bromoform	50.0	44.42618	0.22080	0.100	11.14765	50.0	Quadratic	
Isopropylbenzene	1.49302	1.48753	1.48753	0.100	0.36750	50.0	Averaged	
1,1,2,2-Tetrachloroethane	50.0	48.79427	0.82522	0.300	2.41146	50.0	Linear	
69 4-Bromofluorobenzene	50.0	47.00509	0.44095	0.100	5.98982	50.0	Quadratic	
1,2,3-Trichloropropane	0.84109	0.74985	0.74985	0.100	10.84763	50.0	Averaged	
n-Propylbenzene	2.74101	2.67006	2.67006	0.100	2.58855	50.0	Averaged	
Bromobenzene	0.69446	0.65623	0.65623	0.100	5.50471	50.0	Averaged	
1,3,5-Trimethylbenzene	2.11819	2.05319	2.05319	0.100	3.06846	50.0	Averaged	
2-Chlorotoluene	1.73702	1.61895	1.61895	0.100	6.79678	50.0	Averaged	
4-Chlorotoluene	2.06205	2.02543	2.02543	0.100	1.77628	50.0	Averaged	
tert-Butylbenzene	1.81625	1.77569	1.77569	0.100	2.23311	50.0	Averaged	
1,2,4-Trimethylbenzene	2.21753	2.19384	2.19384	0.100	1.06824	50.0	Averaged	
sec-Butylbenzene	2.44901	2.45858	2.45858	0.100	-0.39078	50.0	Averaged	
p-Isopropyltoluene	2.15514	2.16792	2.16792	0.100	-0.59308	50.0	Averaged	
1,3-Dichlorobenzene	1.29935	1.19752	1.19752	0.600	7.83729	50.0	Averaged	
1,4-Dichlorobenzene	1.46621	1.41621	1.41621	0.400	3.40994	50.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID VOA9_448800

Volatiles by EPA Volatiles Organics by Method 8260C

Instrument ID VOA9.i
Lab File ID U101130.D
Analysis Type WATER
Lab Sample ID CCV-END

Injection Date 11-OCT-2023 2143
ICAL Date(s) 08-OCT-2023, 08-OCT-2023
ICAL Times 13:50, 17:32
Quant Type ISTD

Compound	$\overline{RRF}$ / Conc	RF50 / Conc	CCV RRF50	Min RRF	%D / %Drift	Max %D / %Drift	Curve Type	Q
n-Butylbenzene	1.99994	2.01085	2.01085	0.500	-0.54544	50.0	Averaged	
1,2-Dichlorobenzene	1.33943	1.35015	1.35015	0.400	-0.79999	50.0	Averaged	
1,2-Dibromo-3-Chloropropane	50.0	49.91225	0.11300	0.050	0.17550	50.0	Quadratic	
1,2,4-Trichlorobenzene	0.79025	0.75479	0.75479	0.200	4.48714	50.0	Averaged	
Hexachlorobutadiene	0.29082	0.27085	0.27085	0.100	6.86532	50.0	Averaged	
Naphthalene	2.32900	2.21603	2.21603	0.200	4.85070	50.0	Averaged	
1,2,3-Trichlorobenzene	0.78653	0.75706	0.75706	0.100	3.74660	50.0	Averaged	
94 1,2-Dichloroethylene (total	0.93912	1.06551	1.06551	0.200	-13.45766	50.0	Averaged	
95 Xylenes (total)	150	138	0.70726	0.100	7.70665	50.0	Quadratic	
1,4-Dioxane	0.01056	0.00978	0.00978	0.001	7.43247	50.0	Averaged	
Cyclohexane	0.63575	0.61806	0.61806	0.100	2.78208	50.0	Averaged	
Freon TF	50.0	54.66777	1.07372	0.100	-9.33554	50.0	Quadratic	
1,3-Butadiene	0.69972	0.60254	0.60254	0.100	13.88927	50.0	Averaged	
Methylcyclohexane	0.70032	0.67529	0.67529	0.100	3.57456	50.0	Averaged	
Methyl Acetate	0.96550	1.07309	1.07309	0.100	-11.14300	50.0	Averaged	
Tert-butyl alcohol	0.14835	0.13349	0.13349	0.005	10.01937	50.0	Averaged	
Isopropyl alcohol	0.08045	0.07658	0.07658	0.005	4.81037	50.0	Averaged	
trans-1,4-Dichloro-2-butene	0.11051	0.08683	0.08683	0.050	21.42501	50.0	Averaged	

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Form 8

Internal Standard Area and RT Summary

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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 LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

VOA9_448564		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)	U100903.D	458272	#	4.81	#	812103	#	5.55	#	1081635	#	8.19	#	755209	#	10.17	#
HS23100159-01	U100914.D	533373		4.82		818965		5.55		749917		8.19		377721		10.17	
HS23100159-02	U100910.D	523272		4.82		822728		5.56		750517		8.19		382534		10.17	
HS23100159-03	U100909.D	534287		4.82		830113		5.55		778039		8.19		392383		10.17	
HS23100159-03MS	U100911.D	554407		4.82		860023		5.55		829053		8.19		477358		10.17	
HS23100159-03MSD	U100912.D	569502		4.82		895510		5.55		891674		8.19		500769		10.17	
HS23100159-04	U100915.D	526472		4.82		820817		5.55		756603		8.19		378704		10.17	
HS23100159-05	U100916.D	511659		4.82		788647		5.56		731080		8.19		379225		10.17	
HS23100159-06	U100922.D	514303		4.82		796248		5.55		725667		8.19		379532		10.17	
HS23100159-07	U100917.D	505530		4.82		801814		5.55		724604		8.19		379762		10.17	
HS23100159-08	U100918.D	507278		4.82		795995		5.55		726233		8.19		379104		10.17	
HS23100159-09	U100919.D	508265		4.82		780345		5.55		728066		8.19		379587		10.17	
HS23100159-10	U100920.D	493524		4.82		778893		5.55		714883		8.19		372586		10.17	
HS23100159-11	U100924.D	502783		4.82		785665		5.55		752800		8.19		385135		10.17	
HS23100159-12	U100925.D	516123		4.82		800661		5.55		752778		8.19		384601		10.17	
HS23100159-13	U100927.D	508807		4.82		806315		5.55		725319		8.19		379540		10.17	
HS23100159-14	U100928.D	510636		4.82		793473		5.55		733490		8.19		383194		10.17	
HS23100159-15	U100921.D	495230		4.82		767459		5.55		717930		8.19		373728		10.17	
HS23100159-16	U100930.D	488425		4.82		764681		5.55		704770		8.19		368736		10.17	
HS23100159-17	U100908.D	542370		4.82		852863		5.56		763471		8.19		381022		10.17	
VBLKW-231009	U100907.D	565892		4.82		858347		5.55		795920		8.19		397631		10.17	
VLCSW-231009	U100905.D	462036		4.82		808193		5.55		876967		8.19		506894		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

Form 8 - Internal Standard Area and RT Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Volatiles by EPA Volatiles Organics by Method 8260C

VOA9_448800		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)	U101102.D	442168	#	4.82	#	746667	#	5.55	#	866443	#	8.19	#	649707	#	10.17	#
HS23100159-02	U101116.D	517268		4.82		824994		5.55		767955		8.19		380334		10.17	
HS23100159-06	U101117.D	513899		4.82		800600		5.55		733412		8.19		369011		10.17	
HS23100159-11	U101118.D	494807		4.82		785070		5.55		723304		8.19		357755		10.17	
HS23100159-12	U101119.D	496506		4.82		762253		5.56		716412		8.19		351614		10.17	
HS23100159-13	U101120.D	482725		4.82		756267		5.56		702609		8.19		364462		10.17	
HS23100159-14	U101121.D	485441		4.82		742277		5.55		703028		8.19		354324		10.17	
VBLKW-231010	U101107.D	507539		4.82		783121		5.56		730730		8.19		376295		10.17	
VLCSW-231010	U101105.D	416224		4.82		717240		5.55		785093		8.19		446923		10.17	
MS-ZZZZZZMS	U101114.D	522526		4.82		788786		5.55		783495		8.19		439928		10.17	
ZZZZZZMSD	U101115.D	526341		4.81		824650		5.55		803137		8.19		442591		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

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Analysis Run Log

Volatiles by EPA Volatiles Organics by Method 8260C

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448459

Volatiles by EPA Volatiles Organics by Method 8260C

Run ID VOA9_448459 **Start Date** 10/08/23 **EndDate** 10/08/23

Inj. Time	Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
13:27	BFB	TUNE	BFB	V100801.D	10/08/23	1
13:50	VSTD000.25	ICAL1	VSTD000.25	V100802.D	10/08/23	1
14:12	VSTD000.5	ICAL2	VSTD000.5	V100803.D	10/08/23	1
14:56	VSTD001	ICAL3	VSTD001	V100804.D	10/08/23	1
15:19	VSTD002	ICAL4	VSTD002	V100805.D	10/08/23	1
15:41	VSTD005	ICAL5	VSTD005	V100806.D	10/08/23	1
16:03	VSTD020	ICAL6	VSTD020	V100807.D	10/08/23	1
16:25	VSTD050	ICAL7	VSTD050	V100808.D	10/08/23	1
16:47	VSTD100	ICAL8	VSTD100	V100809.D	10/08/23	1
17:10	VSTD150	ICAL9	VSTD150	V100810.D	10/08/23	1
17:32	VSTD200	ICAL	VSTD200	V100811.D	10/08/23	1
18:39	ICV	ICV	ICV	V100814.D	10/08/23	1

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448564

Volatiles by EPA Volatiles Organics by Method 8260C

Run ID VOA9_448564 **Start Date** 10/09/23 **EndDate** 10/10/23

Inj. Time	Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
14:56	BFB	TUNE	BFB	U100901.D	10/09/23	1
15:40	CCV	CCV	CCV	U100903.D	10/09/23	1
16:02	CCB	CCB	CCB	U100904.D	10/09/23	1
16:25	VLCSW-231009	LCS	VLCSW-231009	U100905.D	10/09/23	1
17:09	VBLKW-231009	MBLK	VBLKW-231009	U100907.D	10/09/23	1
17:32	HS23100159-17	SAMP	Trip Blank	U100908.D	10/09/23	1
17:54	HS23100159-03	SAMP	50WW22_100223	U100909.D	10/09/23	1
18:17	HS23100159-02	SAMP	50WW08_100223	U100910.D	10/09/23	1
18:39	HS23100159-03MS	MS	HS23100159-03MS	U100911.D	10/09/23	1
19:01	HS23100159-03MSD	MSD	HS23100159-03MSD	U100912.D	10/09/23	1
19:46	HS23100159-01	SAMP	50WW09_100223	U100914.D	10/09/23	1
20:08	HS23100159-04	SAMP	50WW23_100223	U100915.D	10/09/23	1
20:31	HS23100159-05	SAMP	50WW29_100223	U100916.D	10/09/23	1
20:53	HS23100159-07	SAMP	50WW15_100223	U100917.D	10/09/23	1
21:16	HS23100159-08	SAMP	50WW16_100223	U100918.D	10/09/23	1
21:38	HS23100159-09	SAMP	50WW18_100223	U100919.D	10/09/23	1
22:00	HS23100159-10	SAMP	50WW14_100323	U100920.D	10/09/23	1
22:23	HS23100159-15	SAMP	50WW06_100323	U100921.D	10/09/23	1
22:45	HS23100159-06	SAMP	50WW05_100223	U100922.D	10/09/23	1
23:30	HS23100159-11	SAMP	50WW13_100323	U100924.D	10/09/23	1
23:52	HS23100159-12	SAMP	50WW13_100323_a	U100925.D	10/09/23	1
00:37	HS23100159-13	SAMP	50WW11_100323	U100927.D	10/10/23	1
00:59	HS23100159-14	SAMP	50WW11_100323_a	U100928.D	10/10/23	1
01:44	HS23100159-16	SAMP	50WW12_100323	U100930.D	10/10/23	1
02:06	CCV-END	CCV_END	CCV-END	U100931.D	10/10/23	1

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
VOA9-448800

Volatiles by EPA Volatiles Organics by Method 8260C

Run ID VOA9_448800 **Start Date** 10/11/23 **EndDate** 10/11/23

Inj. Time	Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
10:30	BFB	TUNE	BFB	U101101.D	10/11/23	1
11:17	CCV	CCV	CCV	U101102.D	10/11/23	1
12:01	CCB	CCB	CCB	U101104.D	10/11/23	1
12:24	VLCSW-231010	LCS	VLCSW-231010	U101105.D	10/11/23	1
13:08	VBLKW-231010	MBLK	VBLKW-231010	U101107.D	10/11/23	1
13:31	HS23100355-01	SAMP	ZZZZZZZZZZ	U101108.D	10/11/23	1
13:53	HS23100087-05	SAMP	ZZZZZZZZZZ	U101109.D	10/11/23	1
14:15	HS23100355-09	SAMP	ZZZZZZZZZZ	U101110.D	10/11/23	1
14:38	HS23100355-02	SAMP	ZZZZZZZZZZ	U101111.D	10/11/23	1
15:00	HS23100355-03	SAMP	ZZZZZZZZZZ	U101112.D	10/11/23	1
15:45	HS23100355-09MS	MS	ZZZZZZMS	U101114.D	10/11/23	1
16:07	HS23100355-09MSD	MSD	ZZZZZZMSD	U101115.D	10/11/23	1
16:30	HS23100159-02	SAMP	50WW08_100223	U101116.D	10/11/23	20
16:52	HS23100159-06	SAMP	50WW05_100223	U101117.D	10/11/23	5
17:14	HS23100159-11	SAMP	50WW13_100323	U101118.D	10/11/23	50
17:37	HS23100159-12	SAMP	50WW13_100323_a	U101119.D	10/11/23	50
17:59	HS23100159-13	SAMP	50WW11_100323	U101120.D	10/11/23	50
18:21	HS23100159-14	SAMP	50WW11_100323_a	U101121.D	10/11/23	50
19:06	HS23100355-10	SAMP	ZZZZZZZZZZ	U101123.D	10/11/23	1
19:29	HS23100355-12	SAMP	ZZZZZZZZZZ	U101124.D	10/11/23	1
19:51	HS23100355-06	SAMP	ZZZZZZZZZZ	U101125.D	10/11/23	1
21:43	CCV-END	CCV_END	CCV-END	U101130.D	10/11/23	1

right solutions.
right partner.

Raw Data VOA9 448459

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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\U231008.b\V100801.D Page 1
Report Date: 09-Oct-2023 08:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100801.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 08-OCT-2023 13:27
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\U231008.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	89656			0.00- 100.00	92.99
9.194	9.180	(0.000)	50	16528			15.00- 40.00	18.43
9.194	9.180	(0.000)	75	50504			30.00- 60.00	56.33
9.194	9.180	(0.000)	96	6749			5.00- 9.00	7.53
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	96416			50.00- 0.00	107.54
9.194	9.180	(0.000)	175	8572			5.00- 9.00	8.89
9.194	9.180	(0.000)	176	93064			95.00- 101.00	96.52
9.194	9.180	(0.000)	177	6998			5.00- 9.00	7.52

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	18.43
75	30.00 - 60.00% of mass 95	56.33
96	5.00 - 9.00% of mass 95	7.53
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	107.54
175	5.00 - 9.00% of mass 174	9.56 (8.89)
176	95.00 - 101.00% of mass 174	103.80 (96.52)
177	5.00 - 9.00% of mass 176	7.81 (7.52)

Data File: V100801.D
Spectrum: Scan 2297 (9.20)
Location of Maximum: 173.90
Number of points: 281

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1660	102.60	485	171.30	598	253.60	131
37.00	5119	104.00	912	173.90	96416	254.00	102
38.00	5288	104.90	433	174.90	8572	255.10	164
39.00	4870	106.00	854	175.80	93064	255.60	118
39.80	1025	107.20	478	176.90	6998	258.00	150
40.50	785	108.10	154	177.80	95	261.70	217
41.30	899	109.10	134	178.50	114	263.10	74
42.10	768	109.90	430	179.10	163	264.30	297
43.00	555	110.80	418	180.50	171	265.10	66
44.00	2052	111.80	293	181.10	117	267.30	216
44.80	847	112.80	491	181.70	269	267.60	205
46.00	845	113.60	114	182.80	213	268.10	229
47.10	1051	114.50	685	183.80	194	268.80	81
48.20	1210	115.80	633	184.90	182	272.70	214
49.00	4213	116.80	1104	185.40	96	274.30	134
50.00	16528	118.00	753	187.40	281	275.30	229
50.90	4918	118.60	903	188.20	179	276.80	62
51.70	729	118.90	1072	190.30	179	277.70	161
53.20	415	119.90	221	191.70	271	281.40	145
53.60	608	120.90	283	192.50	251	281.90	65
54.90	1081	121.80	211	193.50	159	282.40	82
56.00	2921	122.90	120	194.20	96	283.70	79
56.90	4629	123.40	196	196.40	81	284.40	106
58.70	558	124.80	363	198.80	66	286.20	55
59.80	1319	126.20	232	199.90	168	286.90	128
61.00	6041	127.60	531	200.70	144	291.40	51
62.00	5708	128.40	312	201.70	145	293.50	180
63.00	4920	128.80	191	203.40	112	296.00	143
63.90	636	129.80	776	206.00	65	296.30	136
64.40	364	131.00	512	206.90	112	296.80	52
65.00	257	132.00	127	207.60	204	297.50	80
66.80	786	133.60	174	208.30	114	298.10	87
67.90	10442	134.90	397	209.00	165	298.60	113
69.00	12206	135.40	401	210.00	78	299.10	167
70.00	1088	136.40	383	210.70	152	300.20	78
70.60	471	137.00	253	211.10	130	301.40	194
71.50	476	137.80	224	212.30	201	302.30	61
72.20	1039	138.50	185	212.80	110	302.80	58
73.00	6502	139.20	162	213.30	114	303.20	54
74.00	22832	140.90	1495	214.50	175	304.70	103
74.90	50504	141.90	450	215.30	143	305.10	111
76.10	4398	142.80	1640	216.30	97	306.50	56
76.70	901	143.90	201	216.90	63	307.30	140
77.00	942	145.00	230	217.90	157	307.90	71
78.80	6031	145.60	464	218.40	121	308.70	184

79.90	1954	146.50	321	218.90	85	309.80	124
80.80	6309	147.60	300	220.00	153	310.30	93
81.90	1637	148.10	224	220.60	122	311.20	86
82.50	482	148.50	275	221.60	132	311.90	127
83.10	415	150.00	413	222.70	206	312.50	230
83.50	314	151.10	243	225.10	60	318.50	80
84.50	80	151.50	360	226.90	82	319.50	125
85.20	275	152.30	132	227.70	249	322.30	167
86.90	4946	153.10	665	229.00	86	324.80	54
88.00	3945	154.80	288	231.30	82	326.50	160
88.90	271	155.80	287	231.60	89	327.90	72
89.60	515	157.00	291	232.40	199	329.40	148
90.70	837	157.90	157	233.10	86	330.50	154
91.90	3956	158.60	421	233.80	207	332.00	59
92.90	5475	159.70	175	235.40	203	336.60	206
93.90	15348	161.00	370	237.40	113	338.20	71
95.00	89656	162.00	152	238.30	127	338.90	68
96.00	6749	163.40	202	239.00	95	340.30	172
97.10	399	163.90	196	241.10	59	341.30	96
98.10	357	165.10	197	241.70	268	344.40	277
98.80	149	166.30	196	242.50	132	348.10	96
99.50	191	167.40	166	244.90	80	348.70	104
100.10	111	168.00	81	245.90	230	349.00	122
100.90	183	168.70	149	247.40	135		
101.20	217	169.70	139	248.80	436		
101.90	402	170.70	429	251.40	229		

Data File: \\nahstws005\target\chem\voa9.i\u231008.b\v100801.d Page 1

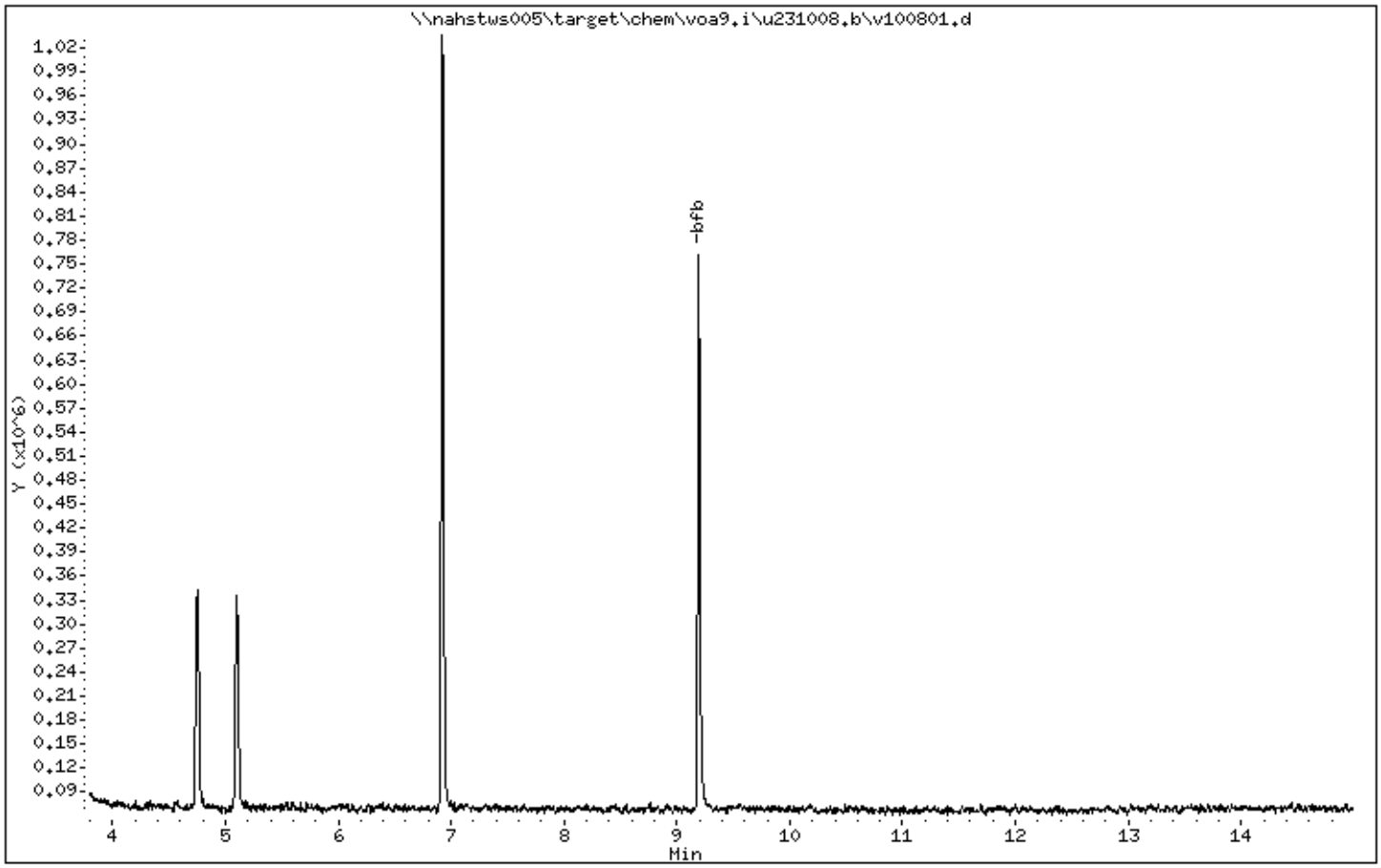
Date : 08-OCT-2023 13:27

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\u231008.b\v100801.d
Inj Date : 08-OCT-2023 13:27
InstruID : VOA9.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100802.D Page 1
Report Date: 13-Oct-2023 16:59

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100802.D
Lab Smp Id: VSTD000.25 Client Smp ID: VSTD000.25
Inj Date : 08-OCT-2023 13:50
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\U231008.b\8260C.m
Meth Date : 13-Oct-2023 16:59 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 2 Calibration Sample, Level: 1
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

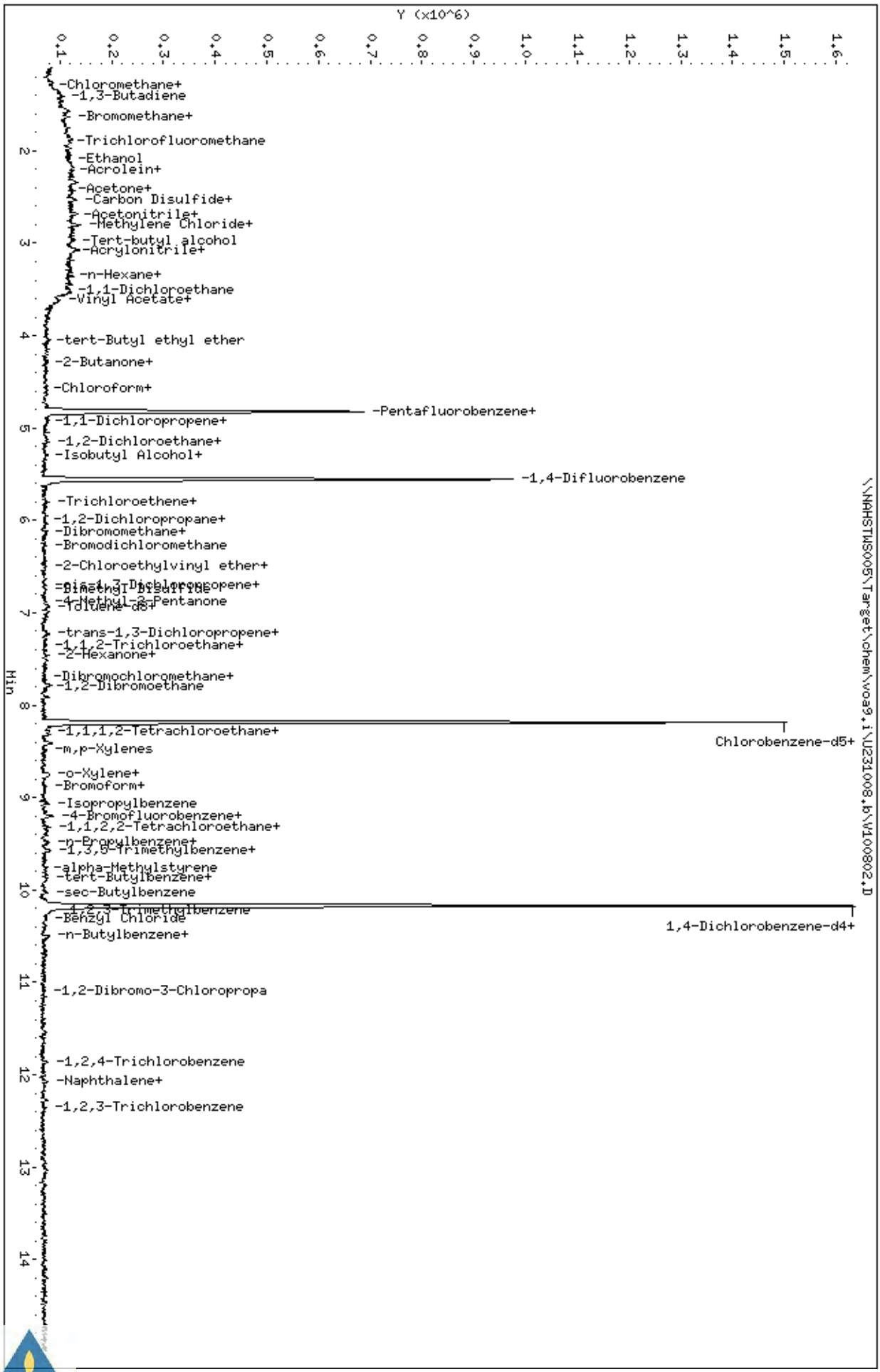
		QUANT SIG					AMOUNTS	
Compounds		MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
*	1 Pentafluorobenzene	168	4.819	4.819	(1.000)	427542	50.0000	
	2 Dichlorodifluoromethane	85	1.175	1.175	(0.244)	1467	0.25000	1.31(a)
	6 Bromomethane	94	1.629	1.629	(0.338)	3514	0.25000	1.05(a)
	9 Acrolein	56	2.206	2.206	(0.458)	3057	0.50000	8.03(a)
	15 Iodomethane	142	2.487	2.487	(0.516)	4153	0.50000	2.21(a)
	26 2,2-Dichloropropane	77	4.193	4.193	(0.870)	2604	0.25000	1.22(a)
$	30 Dibromofluoromethane	113	4.759	4.759	(0.988)	1253	0.25000	(a)
$	35 1,2-Dichloroethane-d4	65	5.111	5.111	(1.061)	4424	0.25000	0.40(a)
*	36 1,4-Difluorobenzene	114	5.557	5.557	(1.000)	720224	50.0000	
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	739072	50.0000	
$	48 Toluene-d8	98	6.930	6.930	(0.847)	8446	0.25000	0.48(a)
	53 1,1,2-Trichloroethane	83	7.353	7.353	(0.898)	2048	0.25000	0.50(a)
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	3696	0.25000	0.43(a)
	57 1,2-Dibromoethane	107	7.792	7.792	(0.952)	3021	0.25000	0.56(a)
	58 1-Chlorohexane	55	8.182	8.182	(1.472)	11160	0.25000	2.27(a)
	68 1,1,2,2-Tetrachloroethane	83	9.340	9.340	(0.918)	3187	0.25000	0.91(a)
$	69 4-Bromofluorobenzene	95	9.197	9.197	(1.124)	5852	0.25000	1.17(a)
*	70 1,4-Dichlorobenzene-d4	152	10.172	10.172	(1.000)	387408	50.0000	
	90 1,2,4-Trichlorobenzene	180	11.870	11.870	(1.167)	3980	0.25000	0.65(a)
M	94 1,2-Dichloroethylene (total)	96				4769	0.50000	(a)

140 1,3-Butadiene	54	1.411	1.411 (0.293)	1863	0.25000	0.31(a)
146 Methyl Acetate	43	2.727	2.727 (0.566)	7279	0.25000	0.88(a)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
72	trans-1,4-Dichloro-2-butene	53	9.291	9.291	(1.135)	842	0.25000	0.51(a)
13	Acetonitrile	39	2.690	2.690	(0.558)	6960	2.50000	5.88(a)
4	Propionitrile	54	4.358	4.358	(0.904)	4136	2.50000	6.00(a)
200	Dimethyl Disulfide	94	6.746	6.746	(0.824)	1513	0.25000	1.25(a)
145	alpha-Methylstyrene	118	9.767	9.767	(0.960)	4282	0.25000	0.52(a)
151	4-Methyl-2-pentanol	45	7.222	7.222	(1.299)	4750	5.00000	13.68
86	Benzyl Chloride	91	10.311	10.311	(1.260)	1695	0.25000	1.85(a)
162	Butyl acrylate	55	8.748	8.748	(1.069)	1391	0.25000	1.31(a)
203	2-Ethylhexyl Acrylate	55	12.043	12.043	(1.184)	3089	0.25000	0.78(a)
182	Epichlorohydrin	57	6.637	6.637	(1.194)	1282	1.00000	8.86
132	n-Butanol	56	5.839	5.839	(1.212)	706	5.00000	11.43(a)
133	Ethyl Acrylate	55	5.955	5.955	(1.236)	2835	0.25000	1.85(a)
163	Butyl methacrylate	41	9.659	9.659	(0.950)	3917	0.25000	0.78(a)
187	n-Amyl acetate	43	8.931	8.931	(1.091)	6212	0.25000	0.70(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS005\Target\chem\voa9,i\U231008,b\V100802,D
Date : 08-OCT-2023 13:50
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

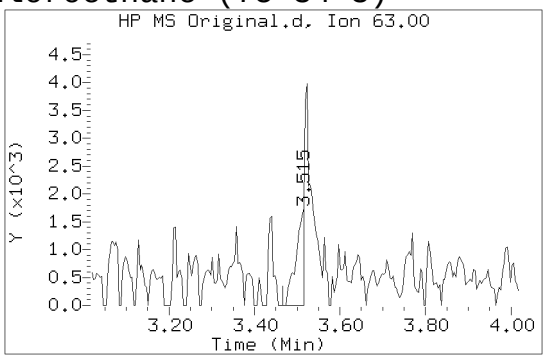
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Inj Date : 08-OCT-2023 13:50
InstruID : VOA9.i
LabSampID : VSTD000.25

1,1-Dichloroethane (75-34-3)

Reason Code:

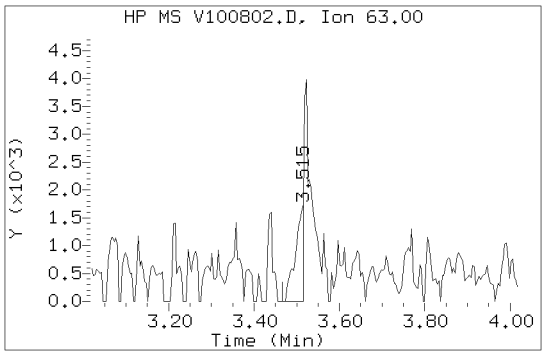
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MASS
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2317
HEIGHT
1733
13-Oct-2023
16:58
linh
pham



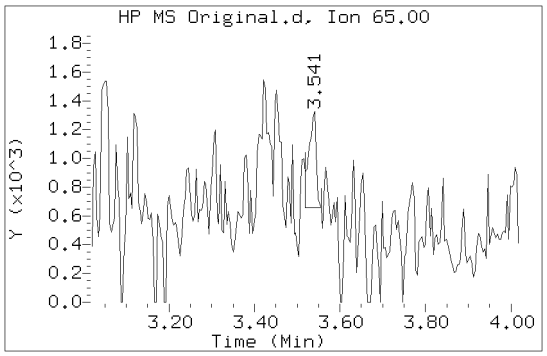
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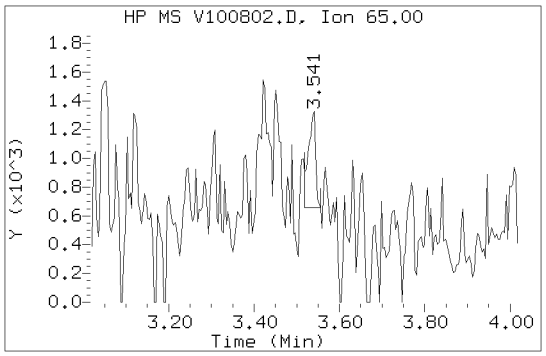
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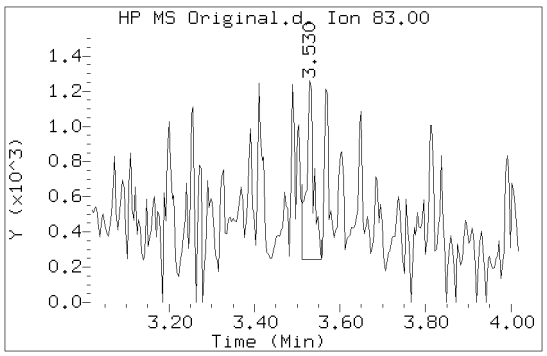
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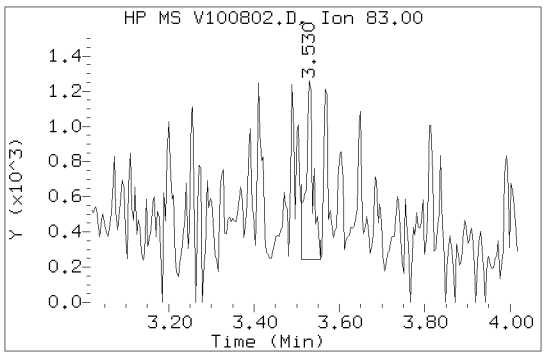
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13-Oct-2023
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AFTER

MASS
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13-Oct-2023
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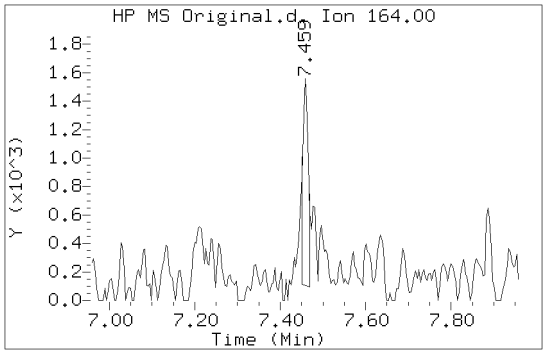


Tetrachloroethene (127-18-4)

Reason Code:

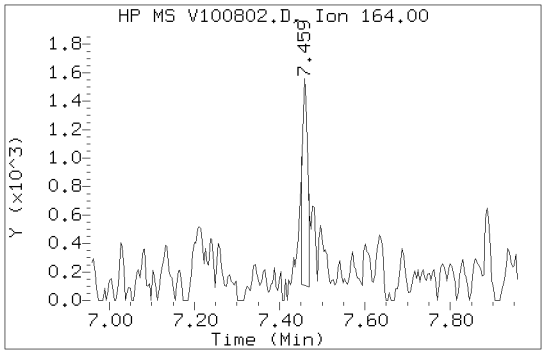
BEFORE

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13-Oct-2023
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AFTER

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13-Oct-2023
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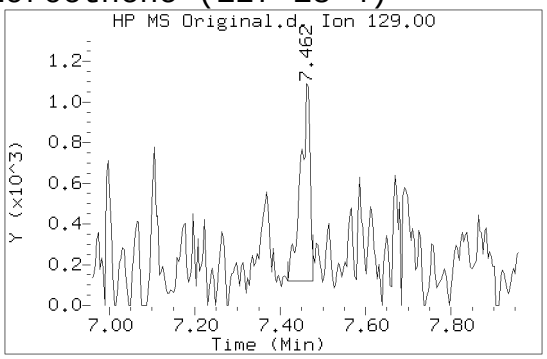
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Inj Date : 08-OCT-2023 13:50
InstruID : VOA9.i
LabSampID : VSTD000.25

Tetrachloroethene (127-18-4)

Reason Code:

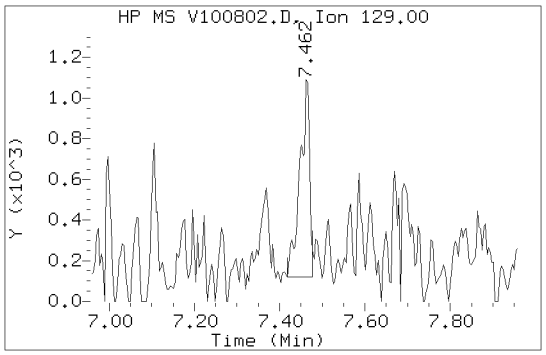
BEFORE

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HEIGHT
971
13-Oct-2023
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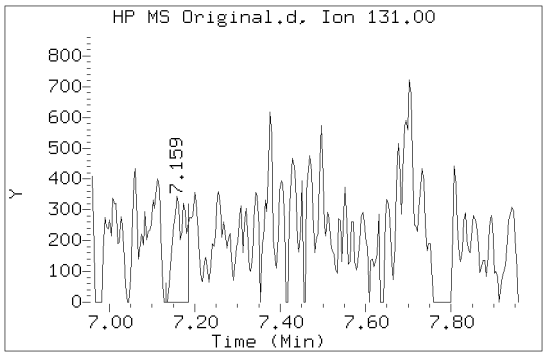
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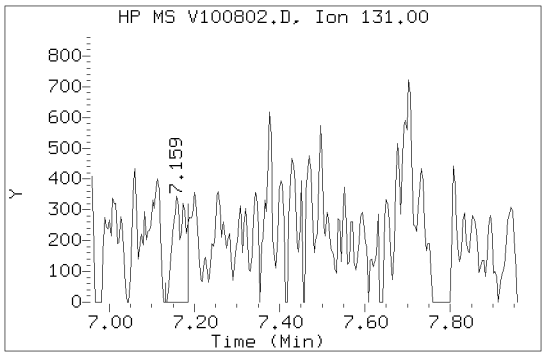
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AFTER

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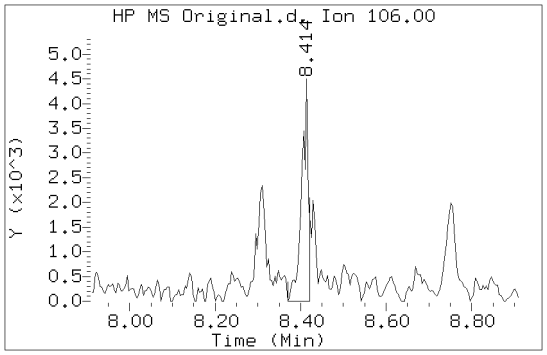


m,p-Xylenes ()

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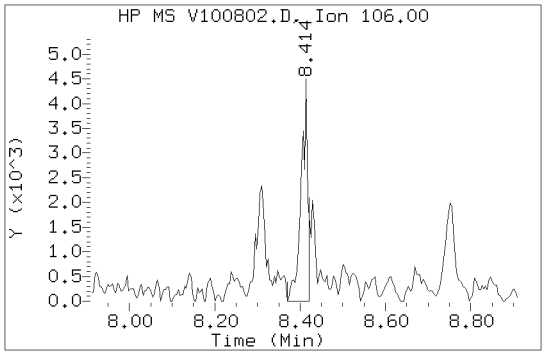
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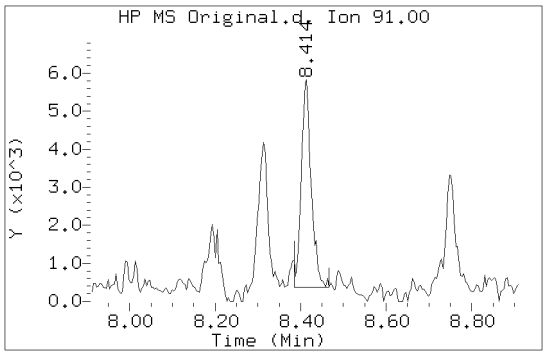
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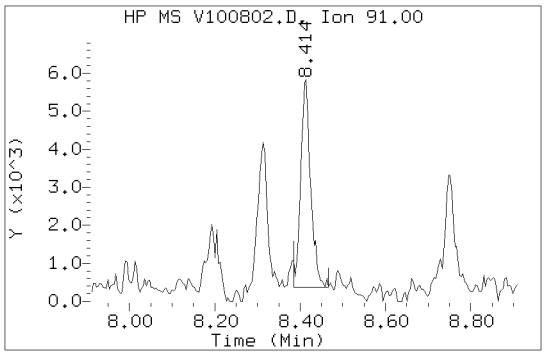
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AFTER

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13-Oct-2023
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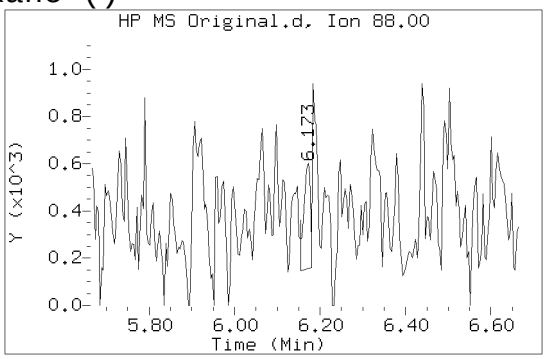
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Inj Date : 08-OCT-2023 13:50
InstruID : VOA9.i
LabSampID : VSTD000.25

1,4-Dioxane ()

Reason Code:

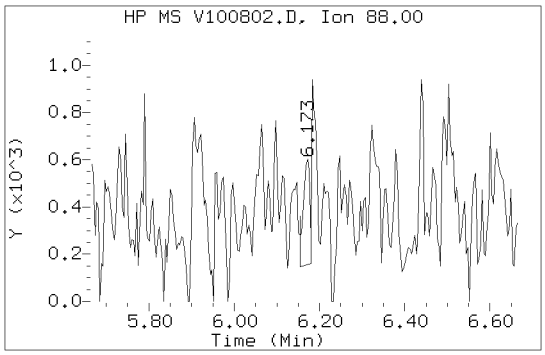
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16:58
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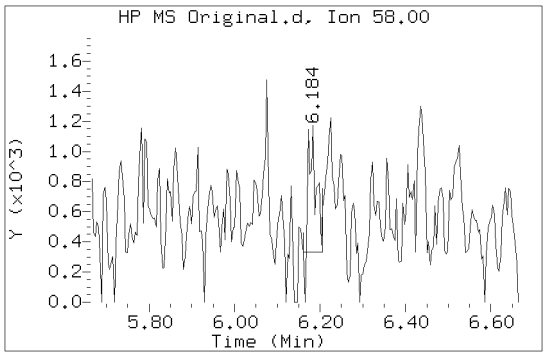
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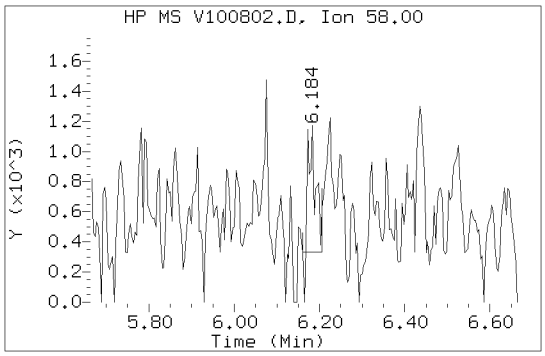
BEFORE

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13-Oct-2023
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AFTER

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13-Oct-2023
16:58
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D Page 1
Report Date: 13-Oct-2023 16:59

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
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Inj Date : 08-OCT-2023 14:12
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\U231008.b\8260C.m
Meth Date : 13-Oct-2023 16:59 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 13:50 Cal File: V100802.D
Als bottle: 3 Calibration Sample, Level: 2
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	4.819	4.819	(1.000)	405514	50.0000	
	2 Dichlorodifluoromethane	85	1.167	1.167	(0.242)	2335	0.50000	1.52(aM)
	5 Vinyl Chloride	62	1.381	1.381	(0.287)	3383	0.50000	0.51(aM)
	6 Bromomethane	94	1.629	1.629	(0.338)	3461	0.50000	1.07(aM)
	7 Chloroethane	64	1.704	1.704	(0.354)	3467	0.50000	0.54(aM)
	15 Iodomethane	142	2.472	2.472	(0.513)	8077	1.00000	2.62(aM)
	19 Carbon Disulfide	76	2.524	2.524	(0.524)	27533	1.00000	1.18(a)
	20 trans-1,2-Dichloroethene	96	3.068	3.068	(0.637)	5936	0.50000	0.58(aM)
	22 1,1-Dichloroethane	63	3.514	3.514	(0.729)	5461	0.50000	0.53(aM)
	24 2-Butanone	43	4.260	4.260	(0.884)	2058	1.00000	1.09(aM)
	26 2,2-Dichloropropane	77	4.185	4.185	(0.869)	2894	0.50000	1.29(aM)
	29 Bromochloromethane	128	4.470	4.470	(0.928)	1297	0.50000	0.52(aM)
$	30 Dibromofluoromethane	113	4.755	4.755	(0.987)	3477	0.50000	0.35(aM)
	31 1,1,1-Trichloroethane	97	4.751	4.751	(0.986)	3712	0.50000	0.52(aM)
	32 1,1-Dichloropropene	75	4.931	4.931	(0.888)	3374	0.50000	0.55(a)
$	35 1,2-Dichloroethane-d4	65	5.107	5.107	(1.060)	3327	0.50000	0.22(aM)
*	36 1,4-Difluorobenzene	114	5.553	5.553	(1.000)	702966	50.0000	
	44 Dibromomethane	93	6.131	6.131	(1.104)	2269	0.50000	0.60(a)
	45 4-Methyl-2-Pentanone	43	6.858	6.858	(0.838)	4752	1.00000	1.09(aM)
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	729883	50.0000	

$	48	Toluene-d8	98	6.929	6.929 (0.847)	8648	0.50000	0.49(a)
	50	Toluene	91	6.982	6.982 (0.853)	10546	0.50000	0.52(aM)

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D Page 2
Report Date: 13-Oct-2023 16:59

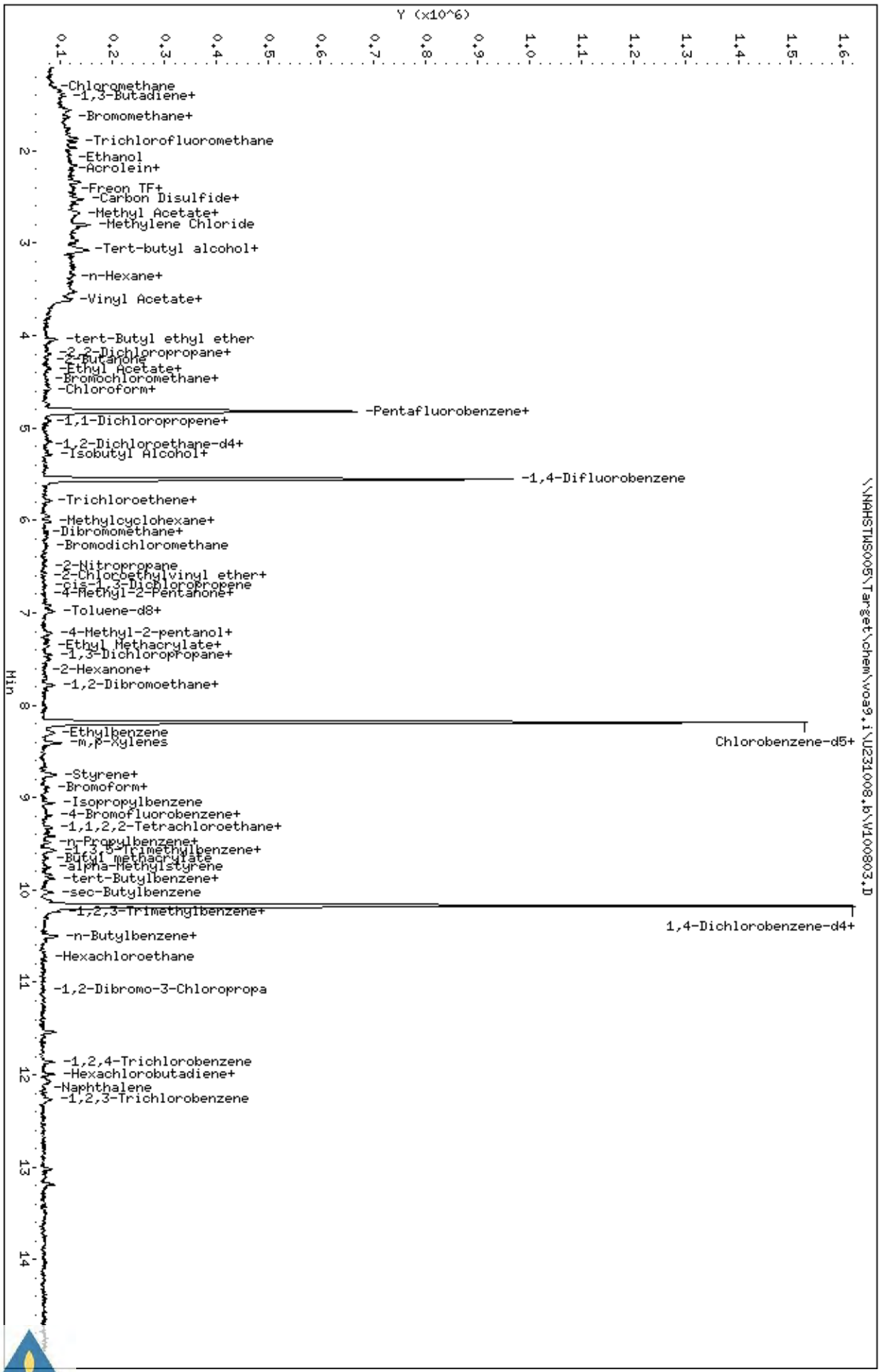
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
52	2-Hexanone	43	7.615	7.615	(0.930)	3030	1.00000	1.00(aM)
53	1,1,2-Trichloroethane	83	7.357	7.357	(0.899)	2174	0.50000	0.53(aM)
54	1,3-Dichloropropane	76	7.514	7.514	(0.918)	4428	0.50000	0.52(aM)
55	Dibromochloromethane	129	7.690	7.690	(0.940)	2512	0.50000	0.51(aM)
57	1,2-Dibromoethane	107	7.784	7.784	(0.951)	2626	0.50000	0.49(a)
59	Chlorobenzene	112	8.211	8.211	(1.003)	8059	0.50000	0.56(aM)
60	1,1,1,2-Tetrachloroethane	131	8.282	8.282	(1.012)	2317	0.50000	0.50(a)
61	Ethylbenzene	106	8.305	8.305	(1.015)	3540	0.50000	0.52(aM)
62	m,p-Xylenes	106	8.410	8.410	(1.027)	9625	1.00000	1.06(aM)
63	o-Xylene	106	8.751	8.751	(1.069)	4846	0.50000	0.53(aM)
64	Styrene	104	8.766	8.766	(1.071)	8277	0.50000	0.53(a)
66	Bromoform	173	8.920	8.920	(1.090)	2877	0.50000	0.97(TaM)
67	Isopropylbenzene	105	9.062	9.062	(1.107)	12150	0.50000	0.55(a)
68	1,1,2,2-Tetrachloroethane	83	9.328	9.328	(0.917)	3340	0.50000	0.95(aM)
$ 69	4-Bromofluorobenzene	95	9.197	9.197	(1.124)	4165	0.50000	0.93(a)
* 70	1,4-Dichlorobenzene-d4	152	10.172	10.172	(1.000)	382092	50.0000	
73	n-Propylbenzene	91	9.415	9.415	(0.926)	12012	0.50000	0.57(aM)
74	Bromobenzene	156	9.321	9.321	(0.916)	2760	0.50000	0.52(aM)
75	1,3,5-Trimethylbenzene	105	9.565	9.565	(0.940)	9818	0.50000	0.60(a)
79	1,2,4-Trimethylbenzene	105	9.879	9.879	(0.971)	9802	0.50000	0.57(aM)
82	p-Isopropyltoluene	119	10.149	10.149	(0.998)	9303	0.50000	0.56(aM)
83	1,3-Dichlorobenzene	146	10.119	10.119	(0.995)	5600	0.50000	0.56(aM)
93	1,2,3-Trichlorobenzene	180	12.271	12.271	(1.206)	2679	0.50000	0.44(aM)
M 94	1,2-Dichloroethylene (total)	96				8566	1.00000	(a)
140	1,3-Butadiene	54	1.407	1.407	(0.292)	2855	0.50000	0.50(a)
72	trans-1,4-Dichloro-2-butene	53	9.332	9.332	(1.140)	853	0.50000	0.52(aMH)
12	Isobutyl Alcohol	43	5.295	5.295	(1.099)	6259	10.0000	10.08(a)
13	Acetonitrile	39	2.678	2.678	(0.556)	6265	5.00000	5.58(aM)
40	Methyl Methacrylate	41	6.161	6.161	(1.278)	2422	0.50000	0.58(aM)
4	Propionitrile	54	4.346	4.346	(0.902)	3360	5.00000	5.14(aM)
200	Dimethyl Disulfide	94	6.757	6.757	(0.826)	2912	0.50000	1.51(aM)
166	1,2,3-Trimethylbenzene	105	10.232	10.232	(1.006)	9063	0.50000	0.53(aM)
164	Dicyclopentadiene	66	10.198	10.198	(1.003)	10743	0.50000	0.53(aM)
145	alpha-Methylstyrene	118	9.756	9.756	(0.959)	5021	0.50000	0.62(a)
156	Diisopropyl ether	45	3.623	3.623	(0.752)	7823	0.50000	0.56(aM)
151	4-Methyl-2-pentanol	45	7.218	7.218	(1.300)	10609	10.0000	20.71
150	Allyl alcohol	57	3.357	3.357	(0.697)	4840	10.0000	11.81(M)
86	Benzyl Chloride	91	10.310	10.310	(1.260)	4794	0.50000	2.13(aM)
162	Butyl acrylate	55	8.740	8.740	(1.068)	4706	0.50000	1.64(aM)
139	Diethyl ether	59	2.153	2.153	(0.447)	4159	0.50000	0.58(aM)
203	2-Ethylhexyl Acrylate	55	12.057	12.057	(1.185)	2007	0.50000	0.51(aM)
182	Epichlorohydrin	57	6.648	6.648	(1.197)	546	2.00000	6.69(M)
132	n-Butanol	56	5.842	5.842	(1.212)	1144	10.0000	16.43(a)
133	Ethyl Acrylate	55	5.951	5.951	(1.235)	4998	0.50000	2.05(a)
163	Butyl methacrylate	41	9.662	9.662	(0.950)	2519	0.50000	0.51(aM)
174	tert-Amyl methyl ether	73	5.291	5.291	(1.098)	8800	0.50000	0.57(aM)
175	tert-Butyl ethyl ether	59	4.065	4.065	(0.844)	7773	0.50000	0.61(a)
187	n-Amyl acetate	43	8.938	8.938	(1.092)	4736	0.50000	0.54(aM)
188	Isopropyl acetate	43	5.295	5.295	(0.953)	6259	0.50000	0.54(a)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).

QC Flag Legend

M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa9,i\U231008,b\V100803,D
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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

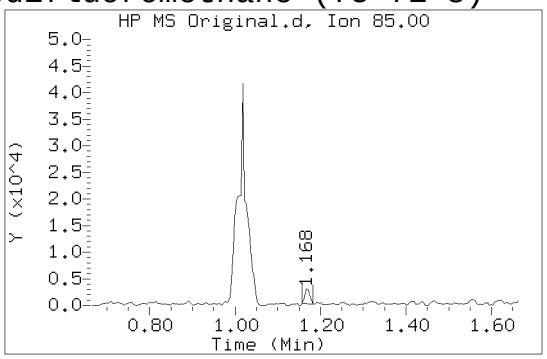
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Dichlorodifluoromethane (75-71-8)

Reason Code:

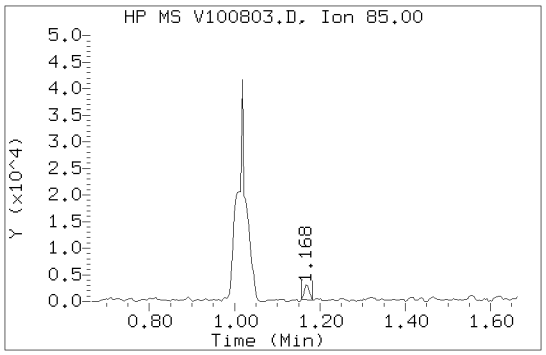
BEFORE

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AREA
2335
HEIGHT
2806
13-Oct-2023
16:58
linh
pham



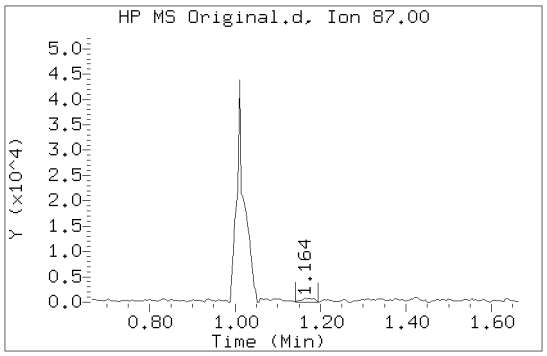
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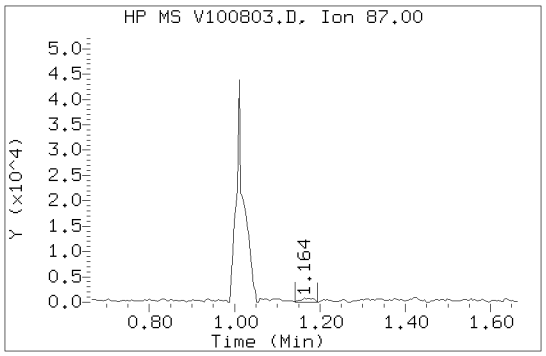
BEFORE

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AREA
1745
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13-Oct-2023
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AFTER

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829
13-Oct-2023
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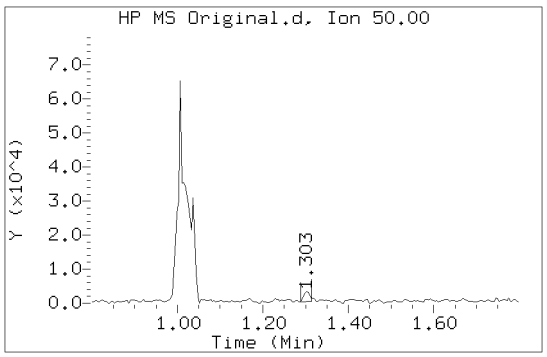


Chloromethane (74-87-3)

Reason Code:

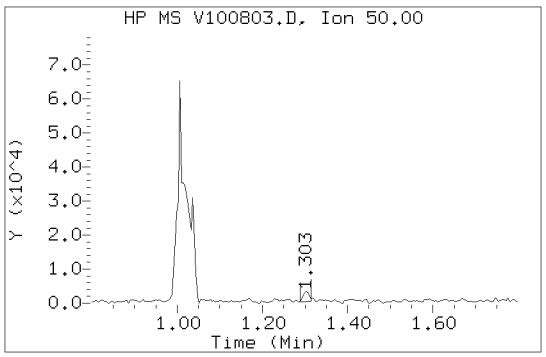
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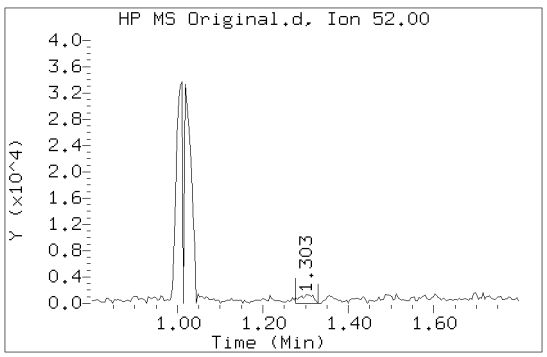
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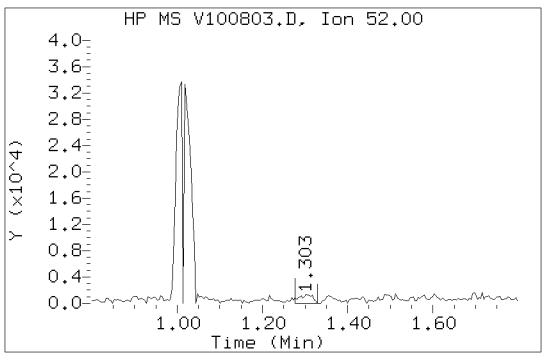
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AFTER

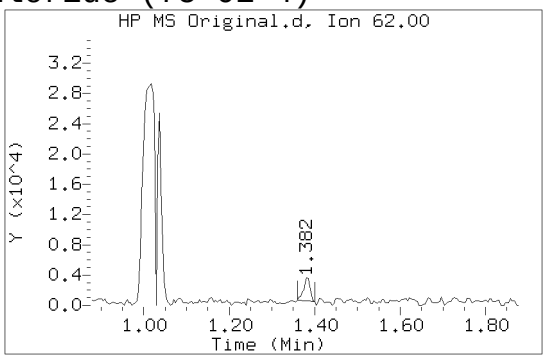
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pham



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InstruID : VOA9.i
LabSampID : VSTD000.5

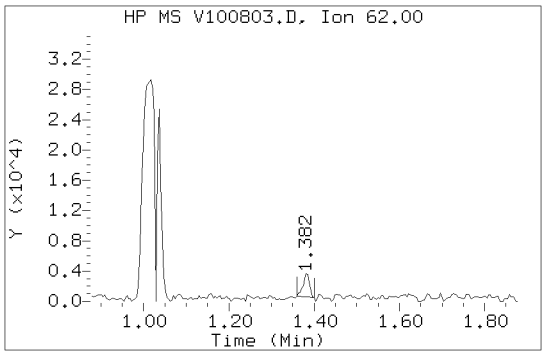
Vinyl Chloride (75-01-4)

BEFORE
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62
AREA
3383
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13-Oct-2023
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linh
pham

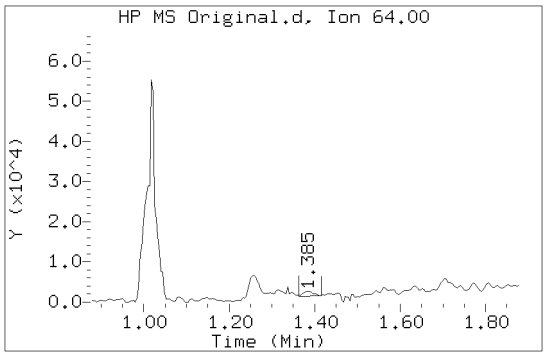


Reason Code:

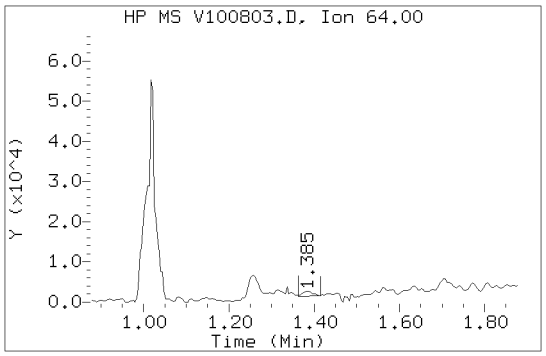
AFTER
MASS
62
AREA
3383
HEIGHT
3078
13-Oct-2023
16:58
linh
pham



BEFORE
MASS
64
AREA
2135
HEIGHT
1182
13-Oct-2023
16:58
linh
pham



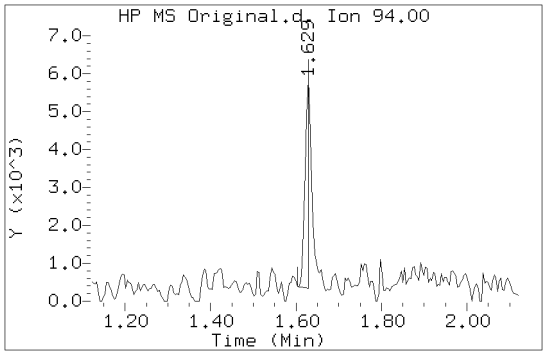
AFTER
MASS
64
AREA
2135
HEIGHT
1182
13-Oct-2023
16:58
linh
pham



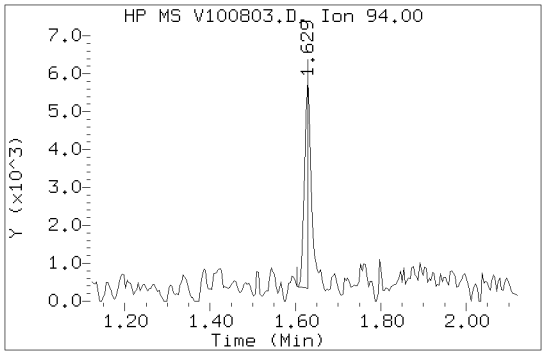
Bromomethane (74-83-9)

Reason Code:

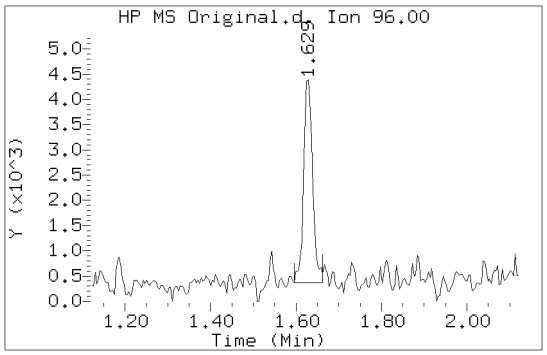
BEFORE
MASS
94
AREA
3461
HEIGHT
5518
13-Oct-2023
16:58
linh
pham



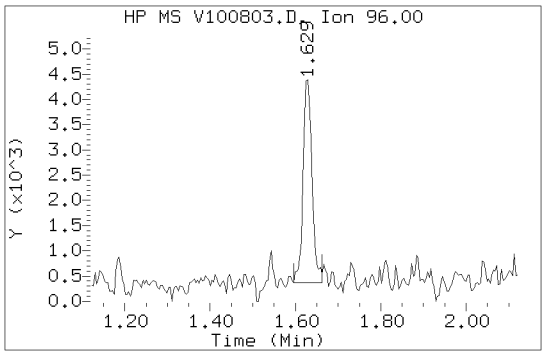
AFTER
MASS
94
AREA
3461
HEIGHT
5518
13-Oct-2023
16:58
linh
pham



BEFORE
MASS
96
AREA
5936
HEIGHT
4020
13-Oct-2023
16:58
linh
pham



AFTER
MASS
96
AREA
5936
HEIGHT
4020
13-Oct-2023
16:58
linh
pham



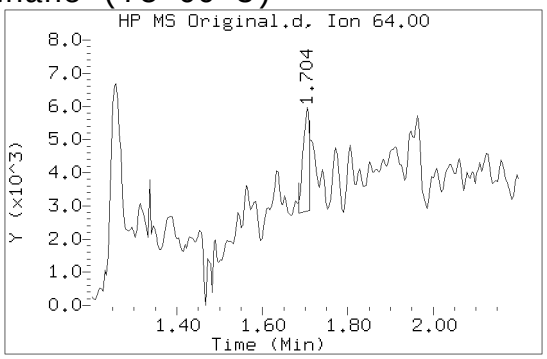
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Chloroethane (75-00-3)

Reason Code:

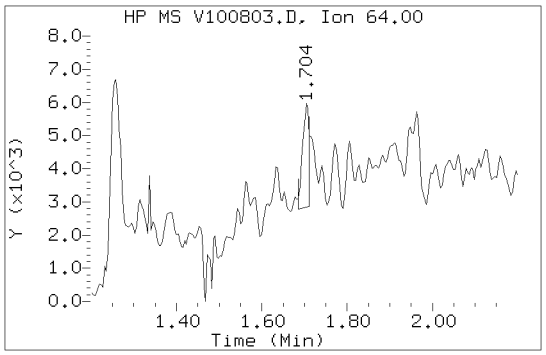
BEFORE

MASS
64
AREA
3467
HEIGHT
3136
13-Oct-2023
16:58
linh
pham



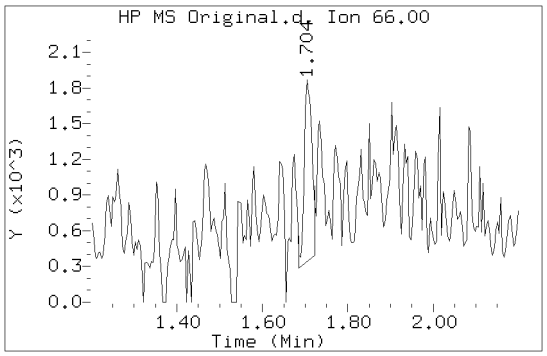
AFTER

MASS
64
AREA
3467
HEIGHT
3136
13-Oct-2023
16:58
linh
pham



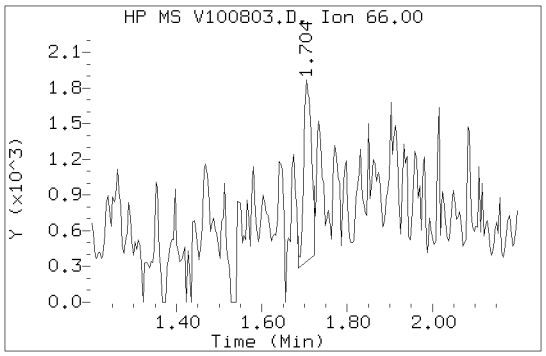
BEFORE

MASS
66
AREA
1981
HEIGHT
1530
13-Oct-2023
16:58
linh
pham



AFTER

MASS
66
AREA
1981
HEIGHT
1530
13-Oct-2023
16:58
linh
pham

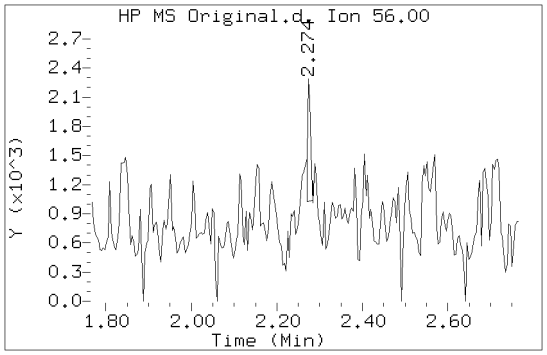


Acrolein (107-02-8)

Reason Code:

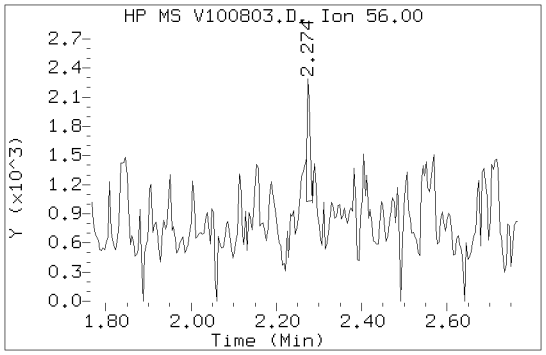
BEFORE

MASS
56
AREA
679
HEIGHT
1258
13-Oct-2023
16:58
linh
pham



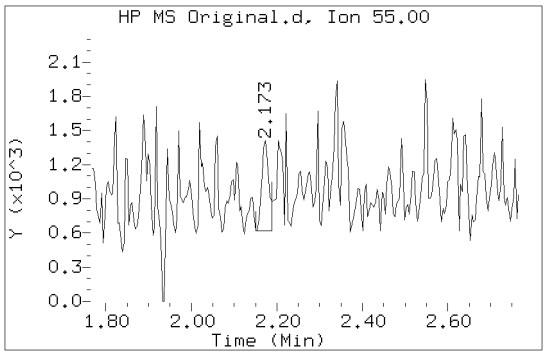
AFTER

MASS
56
AREA
679
HEIGHT
1258
13-Oct-2023
16:58
linh
pham



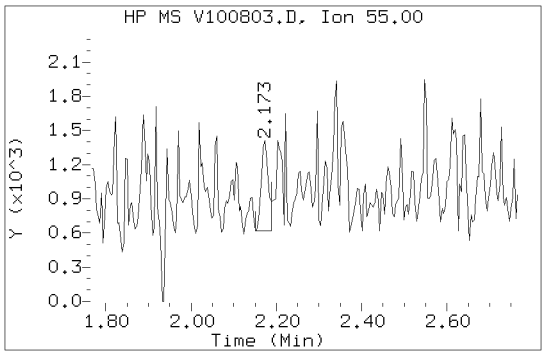
BEFORE

MASS
55
AREA
915
HEIGHT
794
13-Oct-2023
16:58
linh
pham



AFTER

MASS
55
AREA
915
HEIGHT
794
13-Oct-2023
16:58
linh
pham



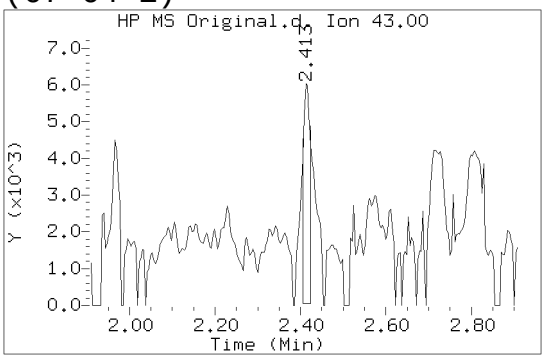
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Acetone (67-64-1)

Reason Code:

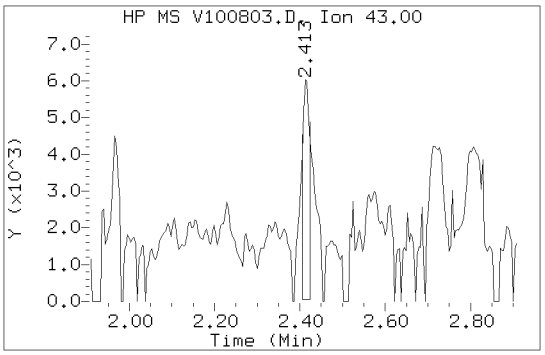
BEFORE

MASS
43
AREA
6839
HEIGHT
5973
13-Oct-2023
16:58
linh
pham



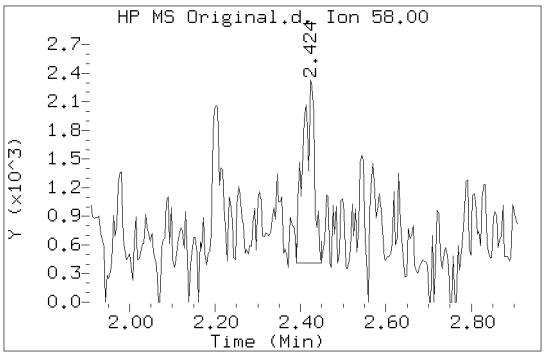
AFTER

MASS
43
AREA
6839
HEIGHT
5973
13-Oct-2023
16:58
linh
pham



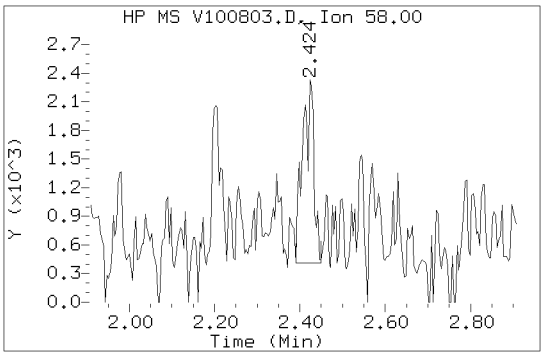
BEFORE

MASS
58
AREA
3573
HEIGHT
1916
13-Oct-2023
16:58
linh
pham



AFTER

MASS
58
AREA
3573
HEIGHT
1916
13-Oct-2023
16:58
linh
pham

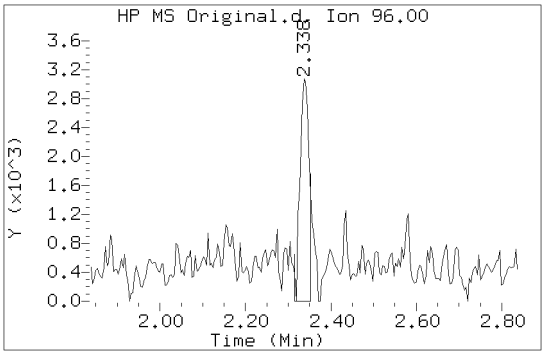


1,1-Dichloroethene (75-35-4)

Reason Code:

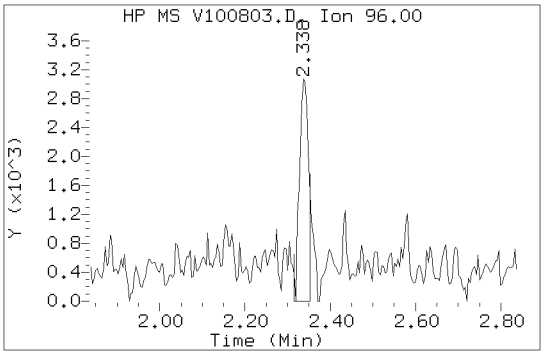
BEFORE

MASS
96
AREA
4578
HEIGHT
3073
13-Oct-2023
16:58
linh
pham



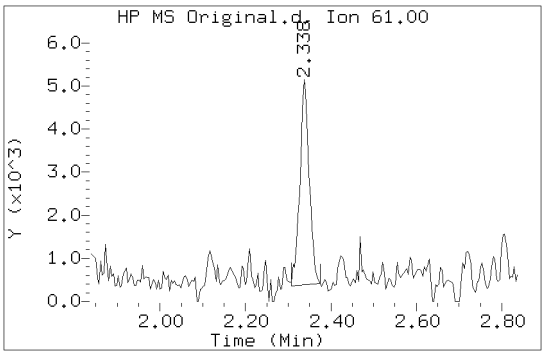
AFTER

MASS
96
AREA
4578
HEIGHT
3073
13-Oct-2023
16:58
linh
pham



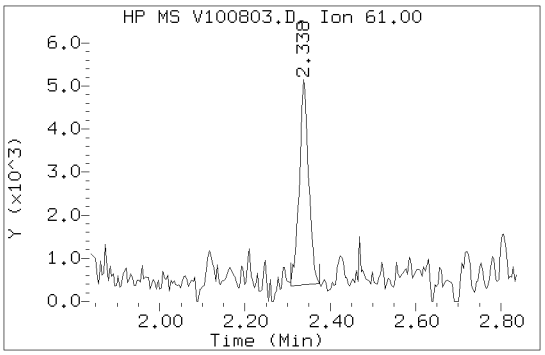
BEFORE

MASS
61
AREA
7343
HEIGHT
4765
13-Oct-2023
16:58
linh
pham



AFTER

MASS
61
AREA
7343
HEIGHT
4765
13-Oct-2023
16:58
linh
pham

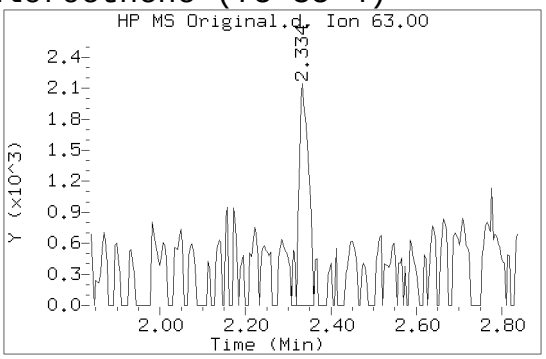


Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,1-Dichloroethene (75-35-4)

BEFORE

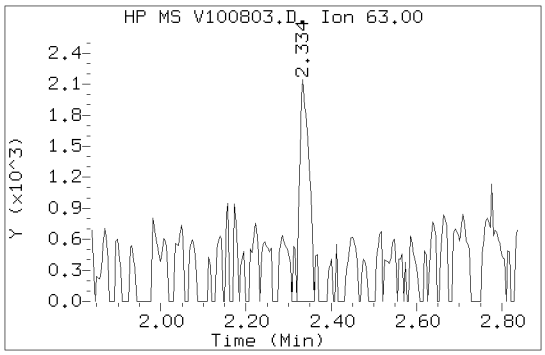
MASS
63
AREA
3518
HEIGHT
2143
13-Oct-2023
16:58
linh
pham



Reason Code:

AFTER

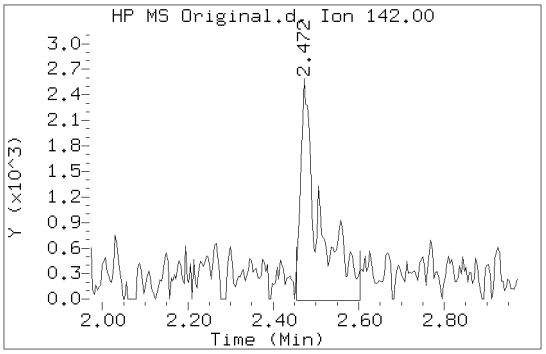
MASS
63
AREA
3518
HEIGHT
2143
13-Oct-2023
16:58
linh
pham



Iodomethane (74-88-4)

BEFORE

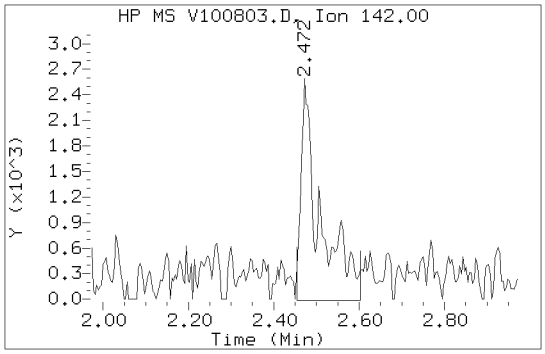
MASS
142
AREA
8077
HEIGHT
2602
13-Oct-2023
16:58
linh
pham



Reason Code:

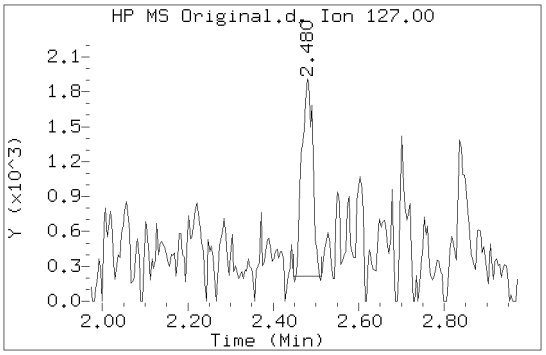
AFTER

MASS
142
AREA
8077
HEIGHT
2602
13-Oct-2023
16:58
linh
pham



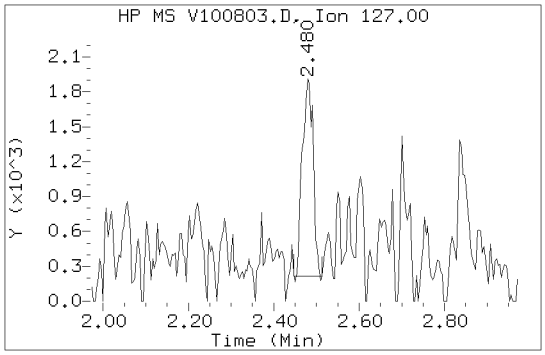
BEFORE

MASS
127
AREA
3018
HEIGHT
1696
13-Oct-2023
16:58
linh
pham



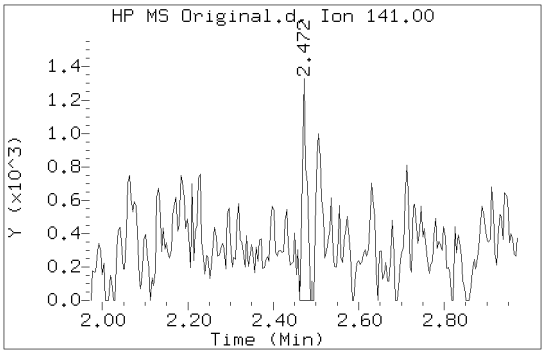
AFTER

MASS
127
AREA
3018
HEIGHT
1696
13-Oct-2023
16:58
linh
pham



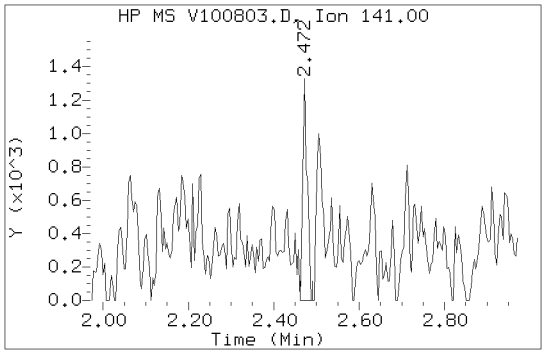
BEFORE

MASS
141
AREA
1015
HEIGHT
1328
13-Oct-2023
16:58
linh
pham



AFTER

MASS
141
AREA
1015
HEIGHT
1328
13-Oct-2023
16:58
linh
pham



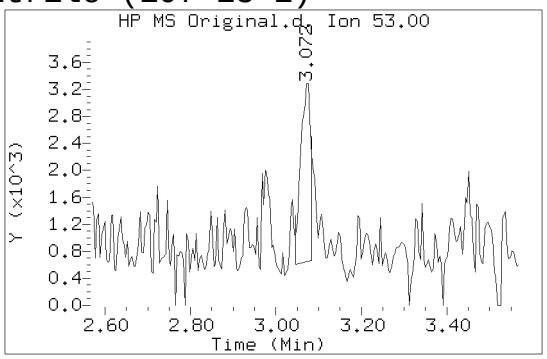
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Acrylonitrile (107-13-1)

Reason Code:

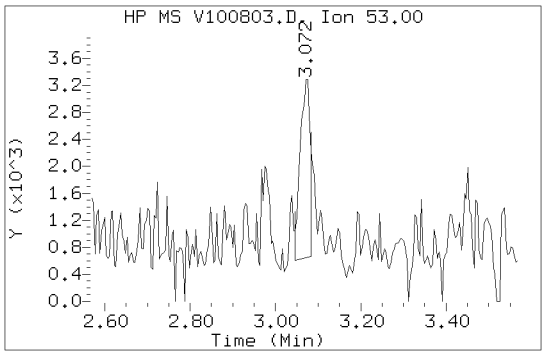
BEFORE

MASS
53
AREA
4367
HEIGHT
2637
13-Oct-2023
16:58
linh
pham



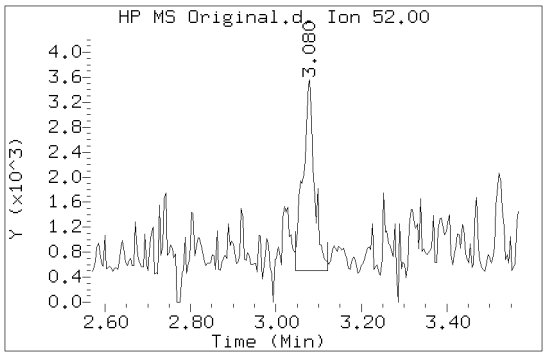
AFTER

MASS
53
AREA
4367
HEIGHT
2637
13-Oct-2023
16:58
linh
pham



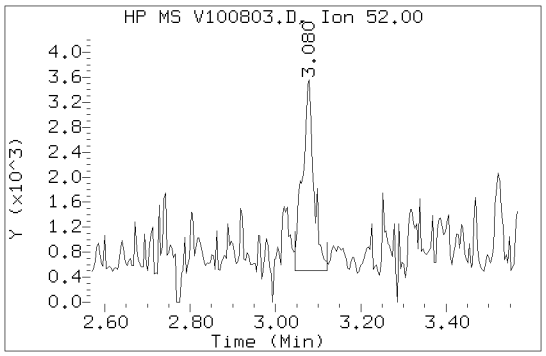
BEFORE

MASS
52
AREA
5745
HEIGHT
3054
13-Oct-2023
16:58
linh
pham



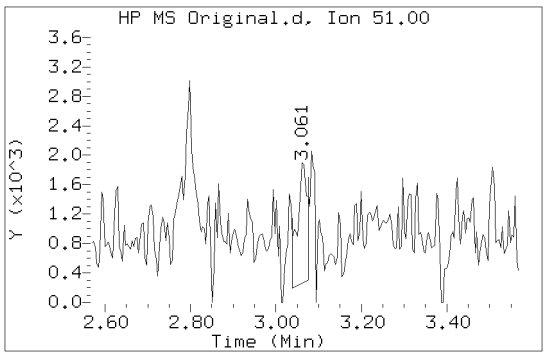
AFTER

MASS
52
AREA
5745
HEIGHT
3054
13-Oct-2023
16:58
linh
pham



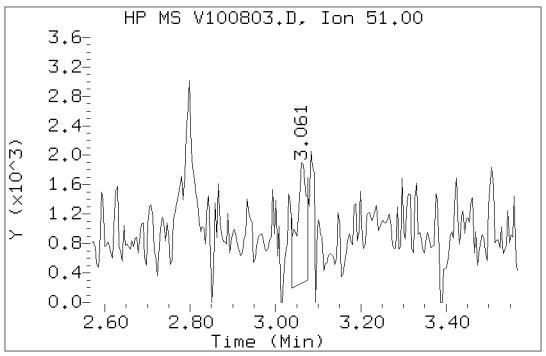
BEFORE

MASS
51
AREA
2699
HEIGHT
1636
13-Oct-2023
16:58
linh
pham



AFTER

MASS
51
AREA
2699
HEIGHT
1636
13-Oct-2023
16:58
linh
pham

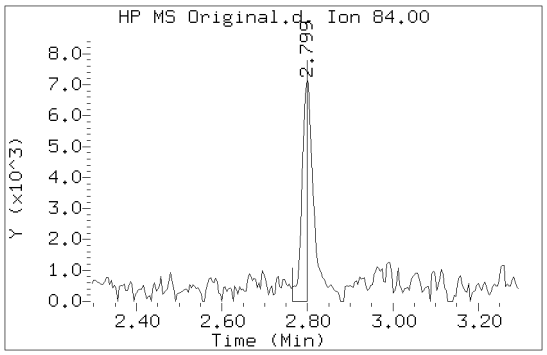


Methylene Chloride (75-09-2)

Reason Code:

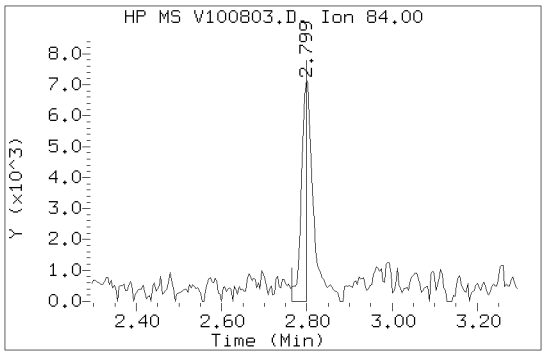
BEFORE

MASS
84
AREA
6514
HEIGHT
7164
13-Oct-2023
16:58
linh
pham



AFTER

MASS
84
AREA
6514
HEIGHT
7164
13-Oct-2023
16:58
linh
pham



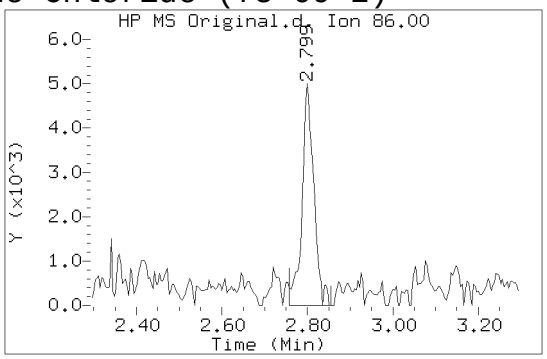
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Methylene Chloride (75-09-2)

Reason Code:

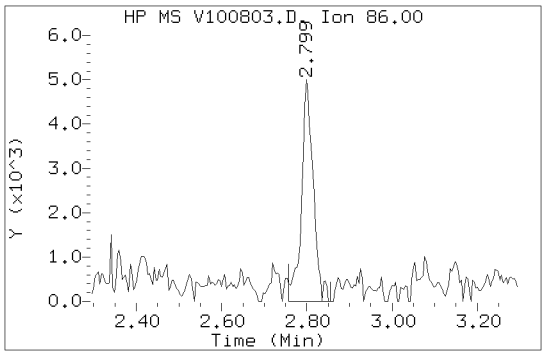
BEFORE

MASS
86
AREA
9773
HEIGHT
5003
13-Oct-2023
16:58
linh
pham



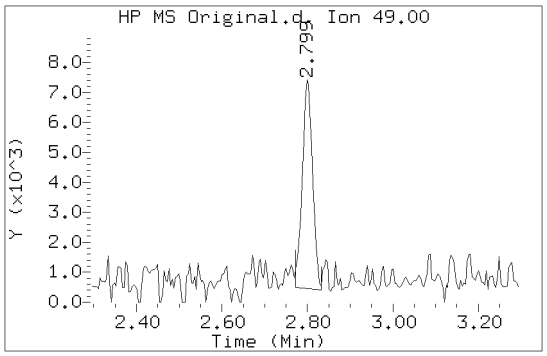
AFTER

MASS
86
AREA
9773
HEIGHT
5003
13-Oct-2023
16:58
linh
pham



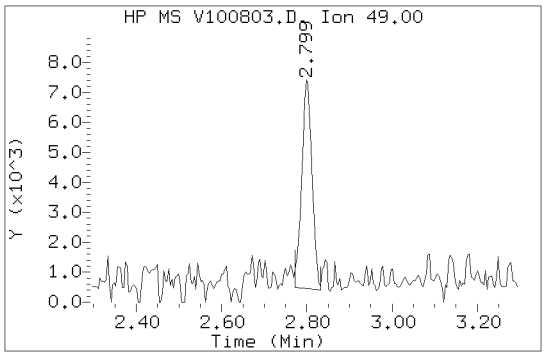
BEFORE

MASS
49
AREA
11948
HEIGHT
6962
13-Oct-2023
16:58
linh
pham



AFTER

MASS
49
AREA
11948
HEIGHT
6962
13-Oct-2023
16:58
linh
pham

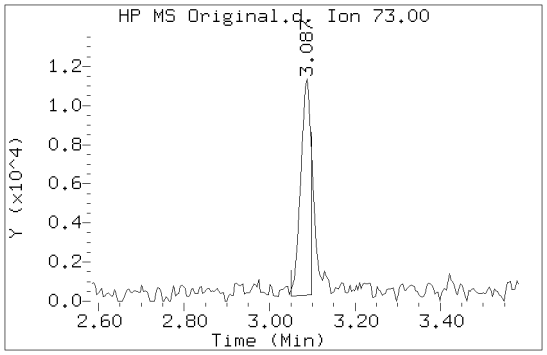


Methyl tert-butyl ether (1634-04-4)

Reason Code:

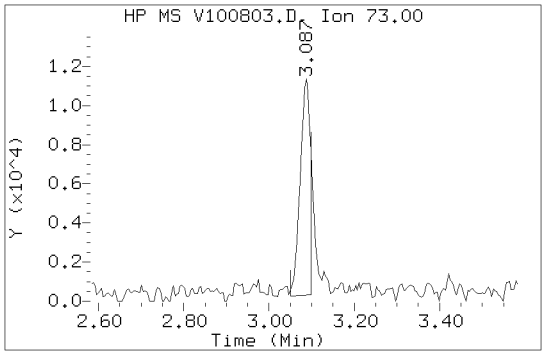
BEFORE

MASS
73
AREA
18259
HEIGHT
11039
13-Oct-2023
16:58
linh
pham



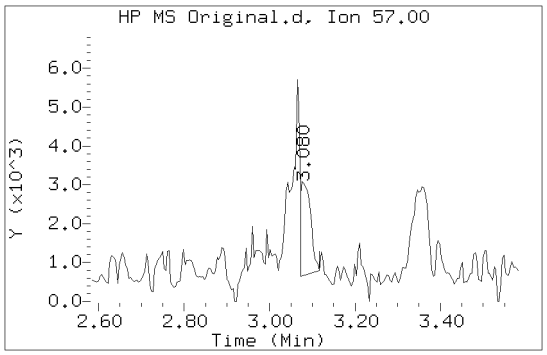
AFTER

MASS
73
AREA
18259
HEIGHT
11039
13-Oct-2023
16:58
linh
pham



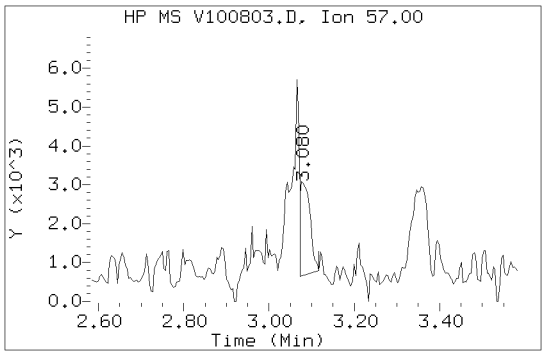
BEFORE

MASS
57
AREA
4044
HEIGHT
2368
13-Oct-2023
16:58
linh
pham



AFTER

MASS
57
AREA
4044
HEIGHT
2368
13-Oct-2023
16:58
linh
pham



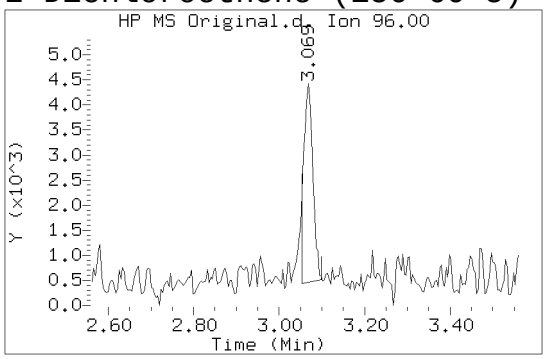
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

trans-1,2-Dichloroethene (156-60-5)

Reason Code:

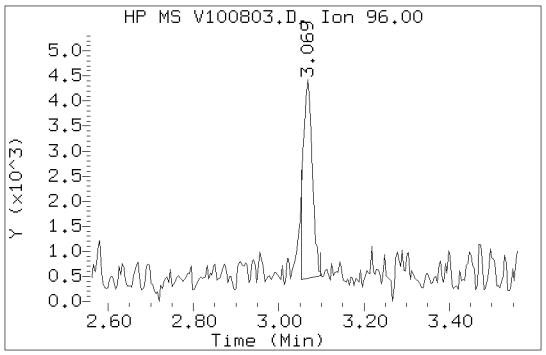
BEFORE

MASS
96
AREA
5936
HEIGHT
3964
13-Oct-2023
16:58
linh
pham



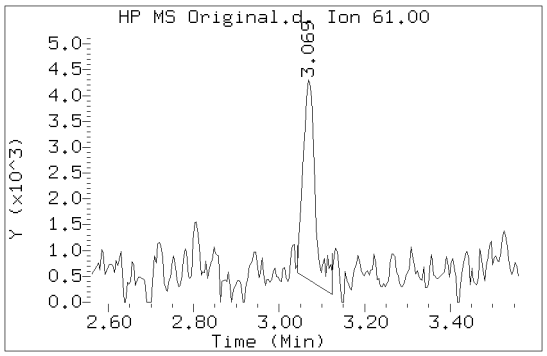
AFTER

MASS
96
AREA
5936
HEIGHT
3964
13-Oct-2023
16:58
linh
pham



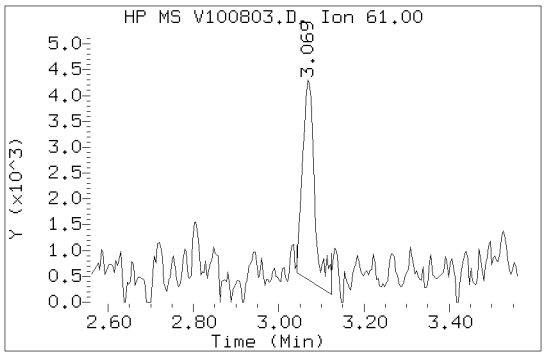
BEFORE

MASS
61
AREA
7806
HEIGHT
3862
13-Oct-2023
16:58
linh
pham



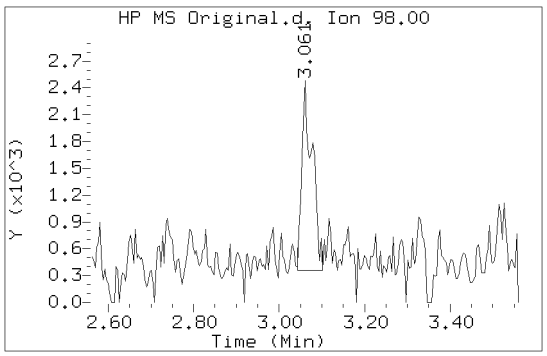
AFTER

MASS
61
AREA
7806
HEIGHT
3862
13-Oct-2023
16:58
linh
pham



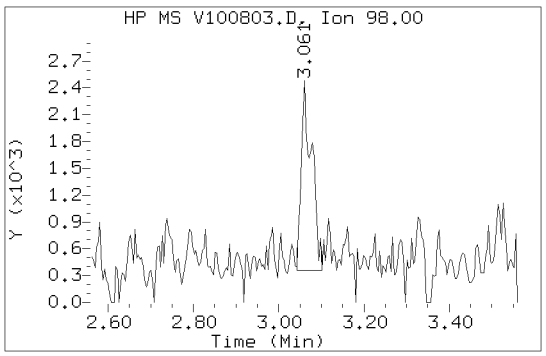
BEFORE

MASS
98
AREA
3654
HEIGHT
2123
13-Oct-2023
16:58
linh
pham



AFTER

MASS
98
AREA
3654
HEIGHT
2123
13-Oct-2023
16:58
linh
pham

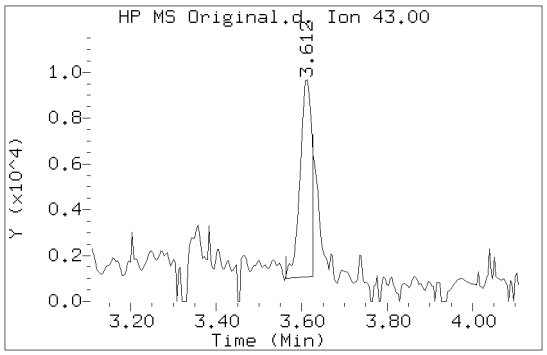


Vinyl Acetate (108-05-4)

Reason Code:

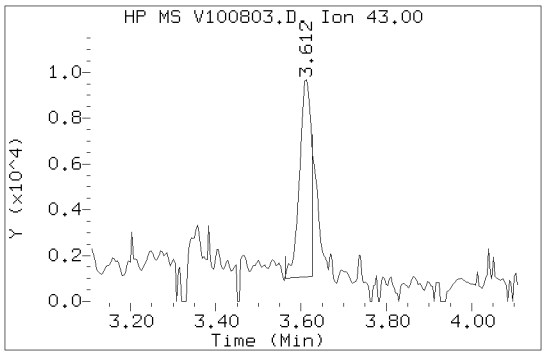
BEFORE

MASS
43
AREA
16798
HEIGHT
8611
13-Oct-2023
16:58
linh
pham



AFTER

MASS
43
AREA
16798
HEIGHT
8611
13-Oct-2023
16:58
linh
pham



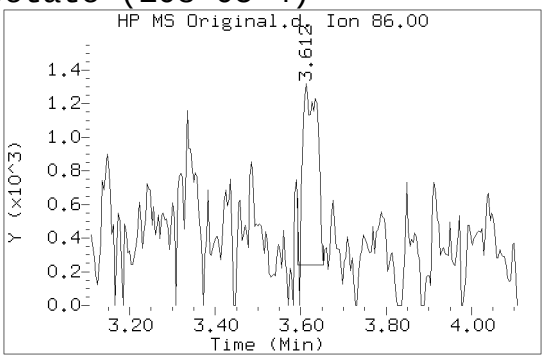
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Vinyl Acetate (108-05-4)

Reason Code:

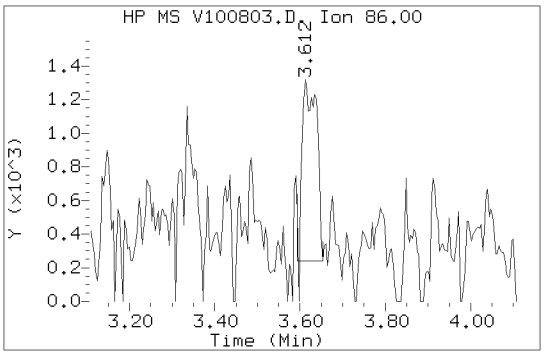
BEFORE

MASS
86
AREA
2552
HEIGHT
1077
13-Oct-2023
16:58
linh
pham



AFTER

MASS
86
AREA
2552
HEIGHT
1077
13-Oct-2023
16:58
linh
pham

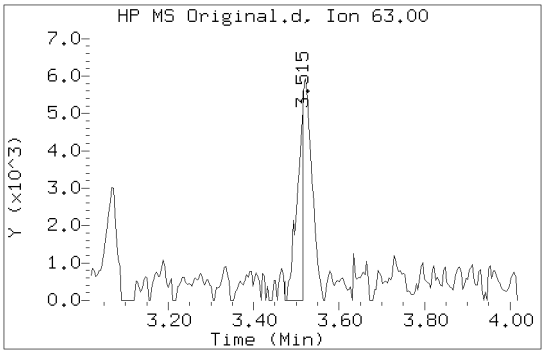


1,1-Dichloroethane (75-34-3)

Reason Code:

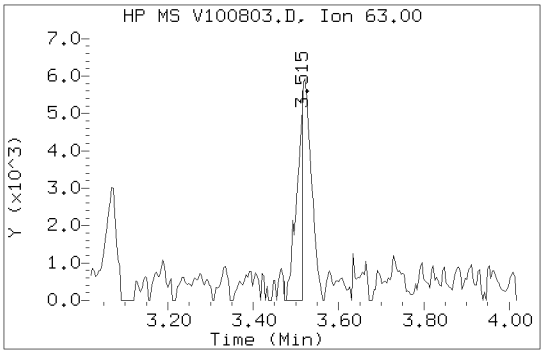
BEFORE

MASS
63
AREA
5461
HEIGHT
5099
13-Oct-2023
16:58
linh
pham



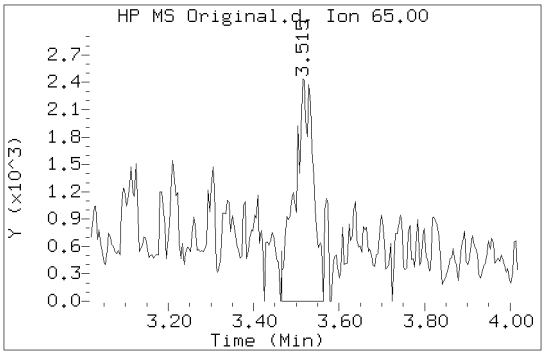
AFTER

MASS
63
AREA
5461
HEIGHT
5099
13-Oct-2023
16:58
linh
pham



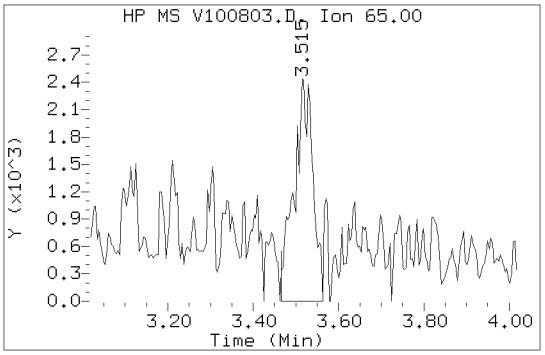
BEFORE

MASS
65
AREA
7526
HEIGHT
2437
13-Oct-2023
16:58
linh
pham



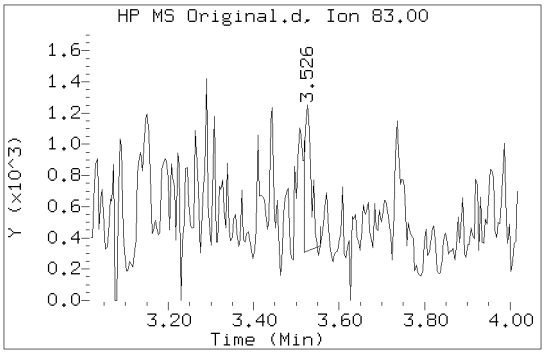
AFTER

MASS
65
AREA
7526
HEIGHT
2437
13-Oct-2023
16:58
linh
pham



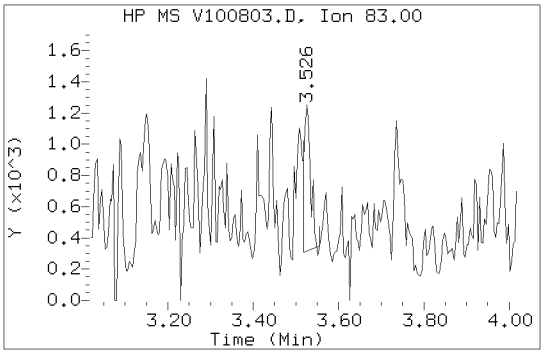
BEFORE

MASS
83
AREA
991
HEIGHT
937
13-Oct-2023
16:58
linh
pham



AFTER

MASS
83
AREA
991
HEIGHT
937
13-Oct-2023
16:58
linh
pham



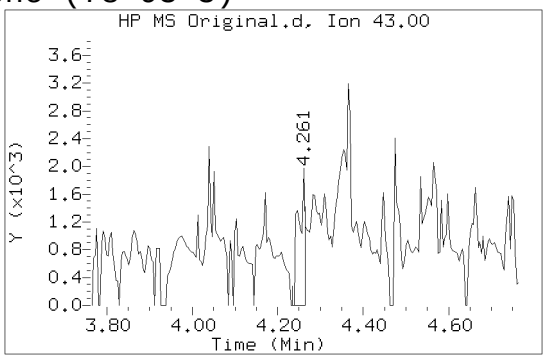
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

2-Butanone (78-93-3)

Reason Code:

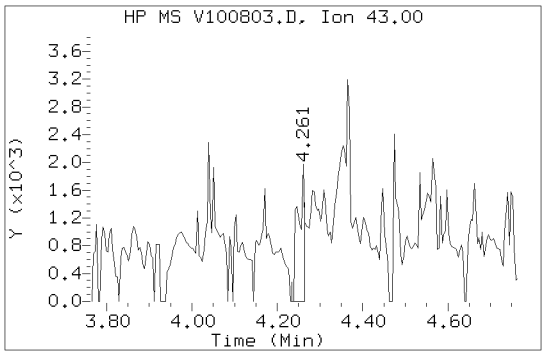
BEFORE

MASS
43
AREA
2058
HEIGHT
1976
13-Oct-2023
16:58
linh
pham



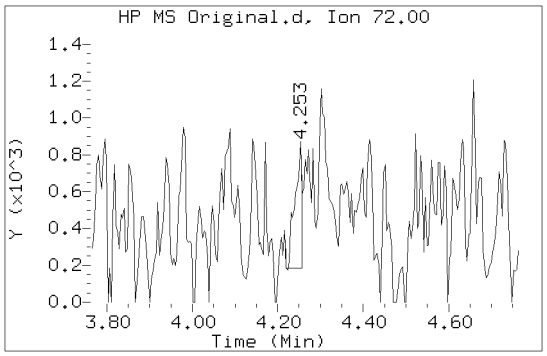
AFTER

MASS
43
AREA
2058
HEIGHT
1976
13-Oct-2023
16:58
linh
pham



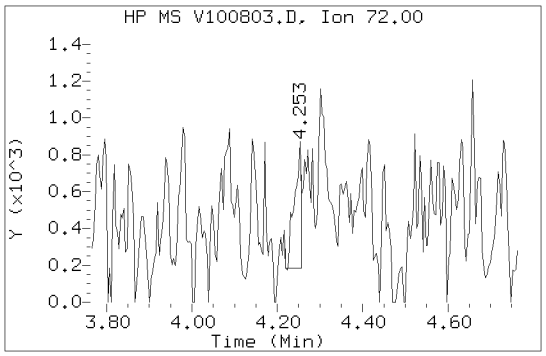
BEFORE

MASS
72
AREA
757
HEIGHT
686
13-Oct-2023
16:58
linh
pham



AFTER

MASS
72
AREA
757
HEIGHT
686
13-Oct-2023
16:58
linh
pham

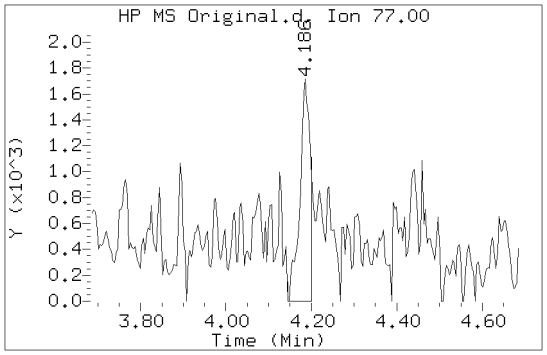


2,2-Dichloropropane (594-20-7)

Reason Code:

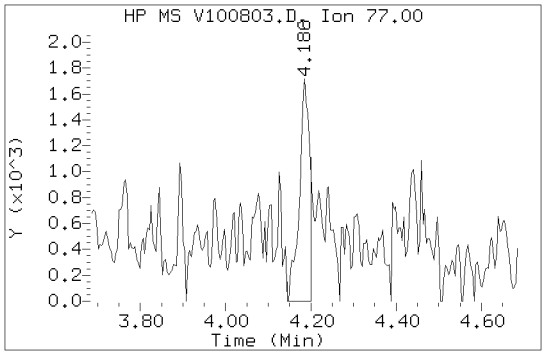
BEFORE

MASS
77
AREA
2894
HEIGHT
1716
13-Oct-2023
16:58
linh
pham



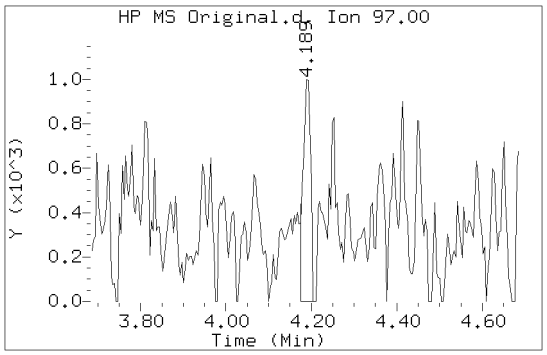
AFTER

MASS
77
AREA
2894
HEIGHT
1716
13-Oct-2023
16:58
linh
pham



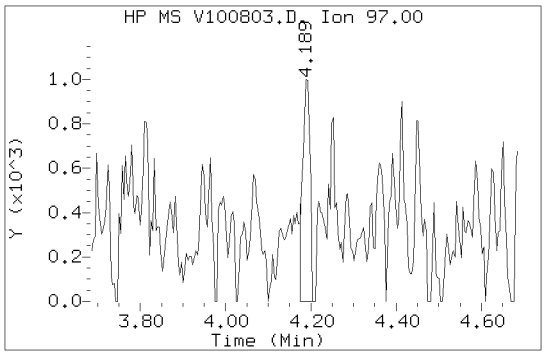
BEFORE

MASS
97
AREA
1280
HEIGHT
999
13-Oct-2023
16:58
linh
pham



AFTER

MASS
97
AREA
1280
HEIGHT
999
13-Oct-2023
16:58
linh
pham



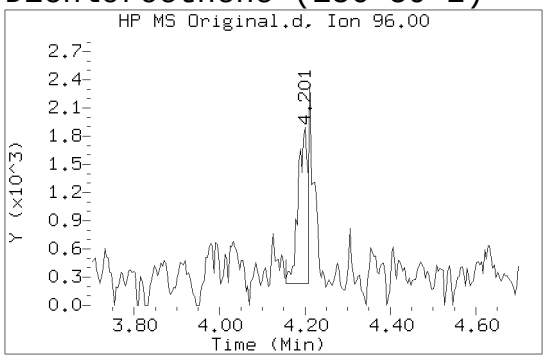
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

cis-1,2-Dichloroethene (156-59-2)

Reason Code:

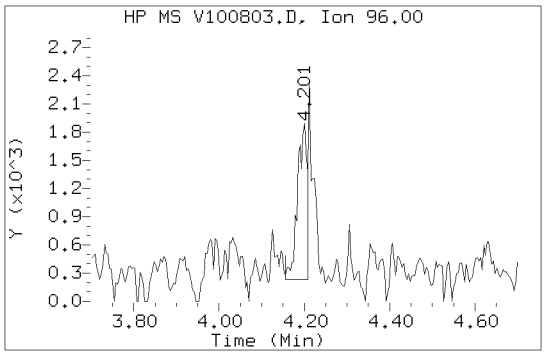
BEFORE

MASS
96
AREA
2630
HEIGHT
1662
13-Oct-2023
16:58
linh
pham



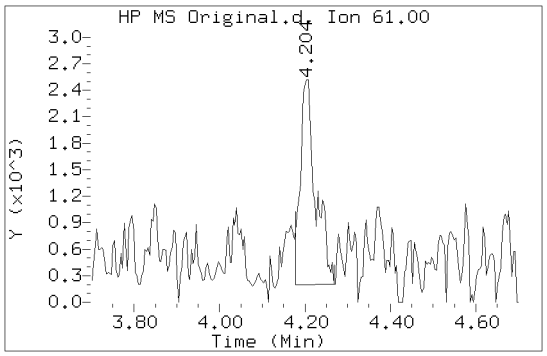
AFTER

MASS
96
AREA
2630
HEIGHT
1662
13-Oct-2023
16:58
linh
pham



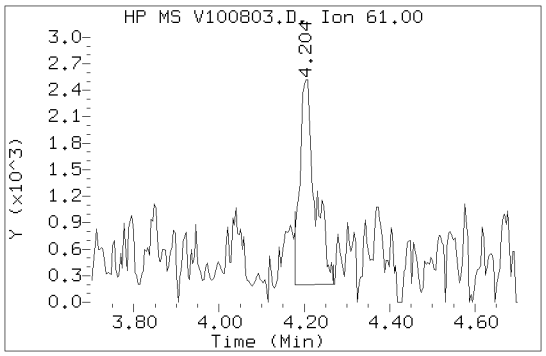
BEFORE

MASS
61
AREA
5930
HEIGHT
2320
13-Oct-2023
16:58
linh
pham



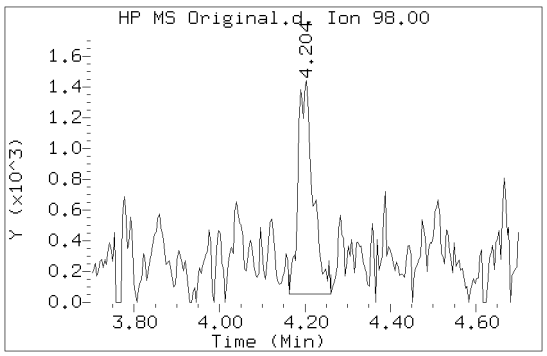
AFTER

MASS
61
AREA
5930
HEIGHT
2320
13-Oct-2023
16:58
linh
pham



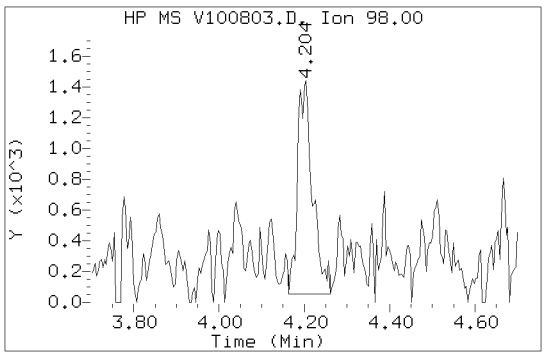
BEFORE

MASS
98
AREA
3425
HEIGHT
1386
13-Oct-2023
16:58
linh
pham



AFTER

MASS
98
AREA
3425
HEIGHT
1386
13-Oct-2023
16:58
linh
pham

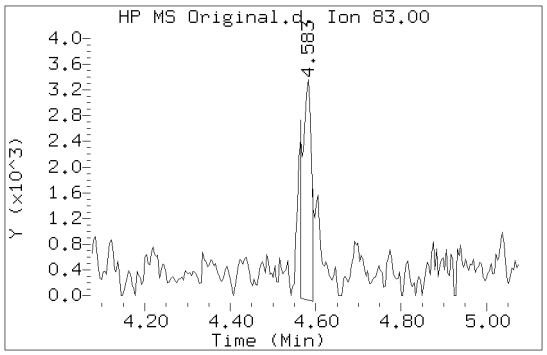


Chloroform (67-66-3)

Reason Code:

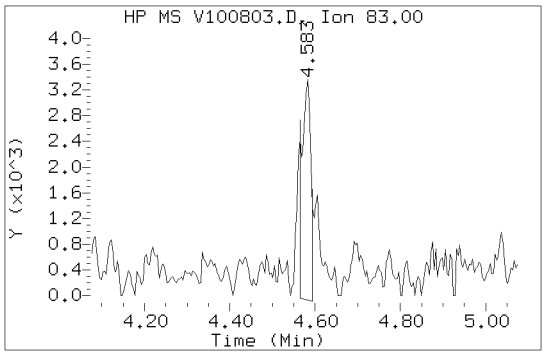
BEFORE

MASS
83
AREA
5196
HEIGHT
3431
13-Oct-2023
16:58
linh
pham



AFTER

MASS
83
AREA
5196
HEIGHT
3431
13-Oct-2023
16:58
linh
pham



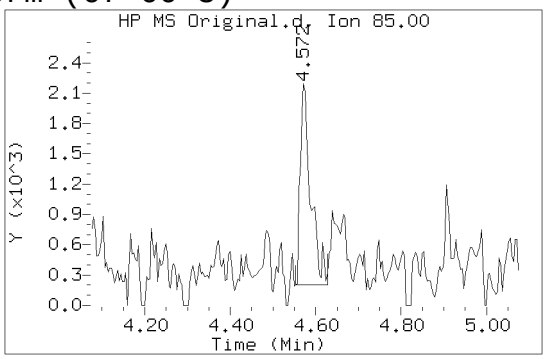
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Chloroform (67-66-3)

Reason Code:

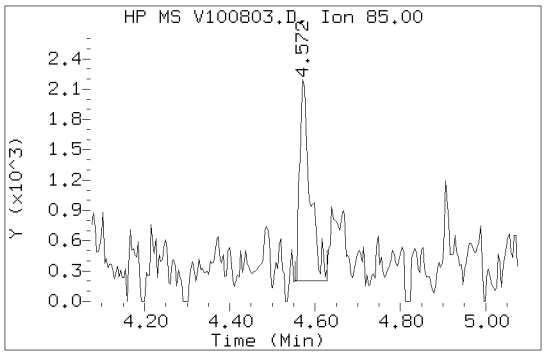
BEFORE

MASS
85
AREA
3437
HEIGHT
1992
13-Oct-2023
16:58
linh
pham



AFTER

MASS
85
AREA
3437
HEIGHT
1992
13-Oct-2023
16:58
linh
pham

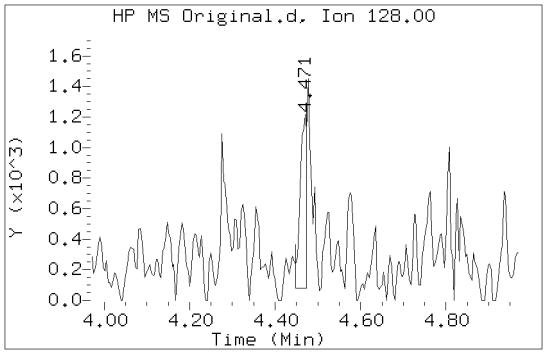


Bromochloromethane (74-97-5)

Reason Code:

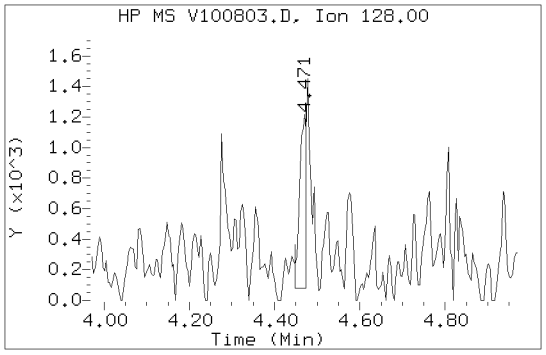
BEFORE

MASS
128
AREA
1297
HEIGHT
1139
13-Oct-2023
16:58
linh
pham



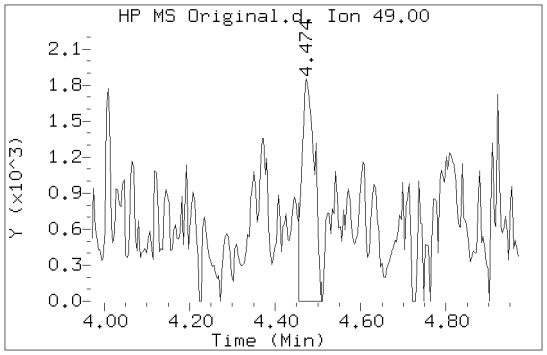
AFTER

MASS
128
AREA
1297
HEIGHT
1139
13-Oct-2023
16:58
linh
pham



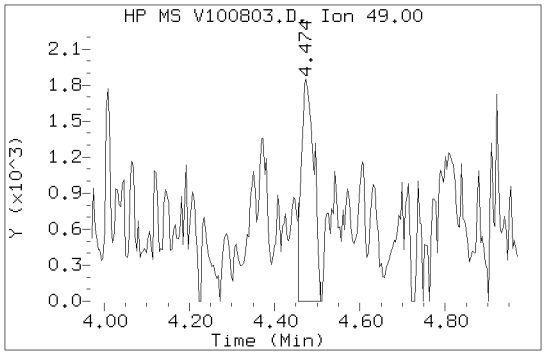
BEFORE

MASS
49
AREA
3893
HEIGHT
1851
13-Oct-2023
16:58
linh
pham



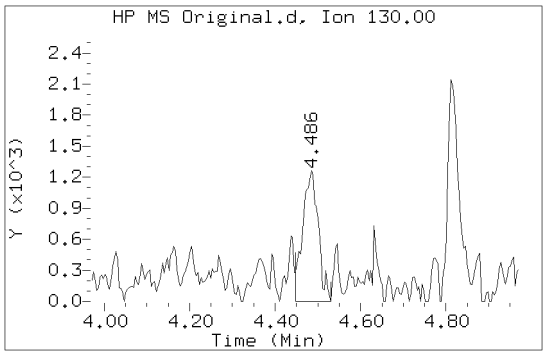
AFTER

MASS
49
AREA
3893
HEIGHT
1851
13-Oct-2023
16:58
linh
pham



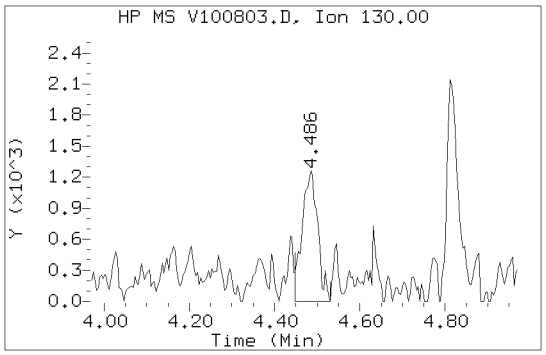
BEFORE

MASS
130
AREA
3245
HEIGHT
1265
13-Oct-2023
16:58
linh
pham



AFTER

MASS
130
AREA
3245
HEIGHT
1265
13-Oct-2023
16:58
linh
pham



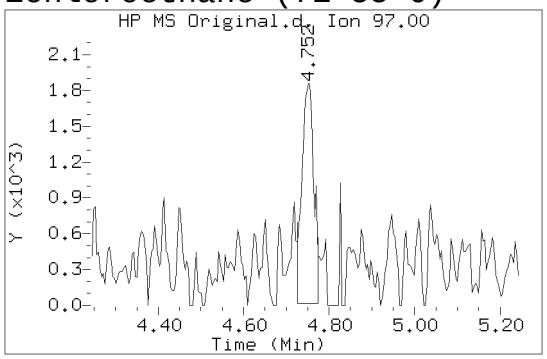
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,1,1-Trichloroethane (71-55-6)

Reason Code:

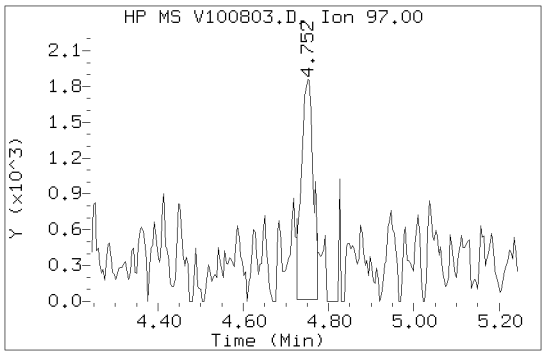
BEFORE

MASS
97
AREA
3712
HEIGHT
1842
13-Oct-2023
16:58
linh
pham



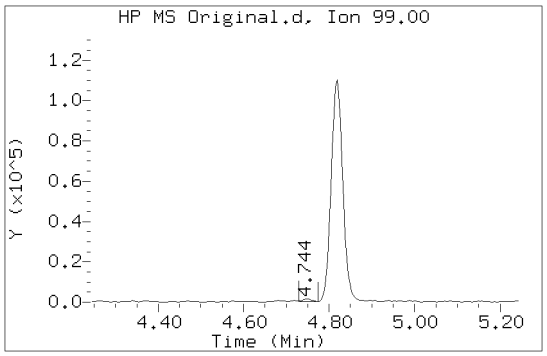
AFTER

MASS
97
AREA
3712
HEIGHT
1842
13-Oct-2023
16:58
linh
pham



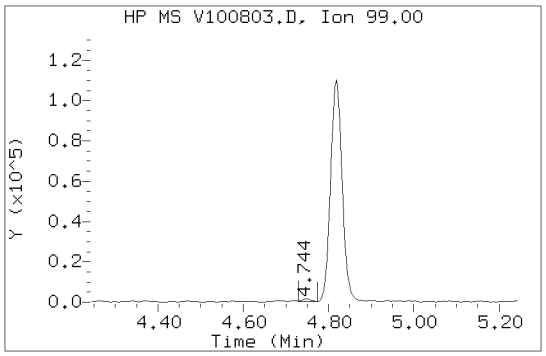
BEFORE

MASS
99
AREA
1550
HEIGHT
1184
13-Oct-2023
16:58
linh
pham



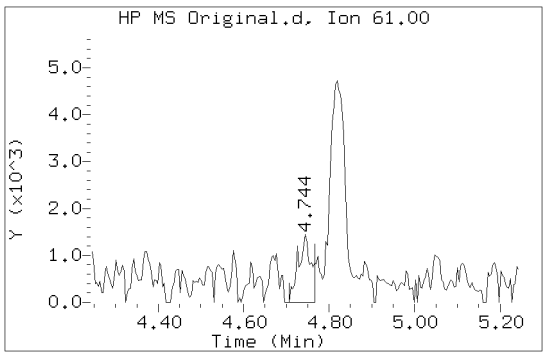
AFTER

MASS
99
AREA
1550
HEIGHT
1184
13-Oct-2023
16:58
linh
pham



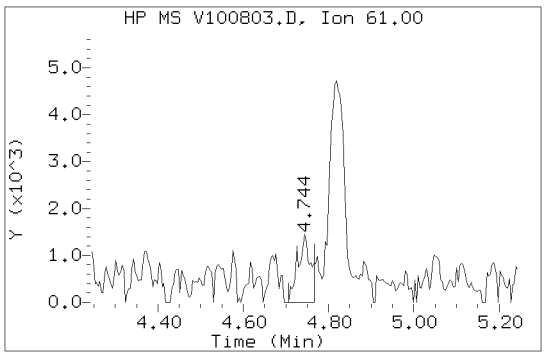
BEFORE

MASS
61
AREA
2989
HEIGHT
1446
13-Oct-2023
16:58
linh
pham



AFTER

MASS
61
AREA
2989
HEIGHT
1446
13-Oct-2023
16:58
linh
pham

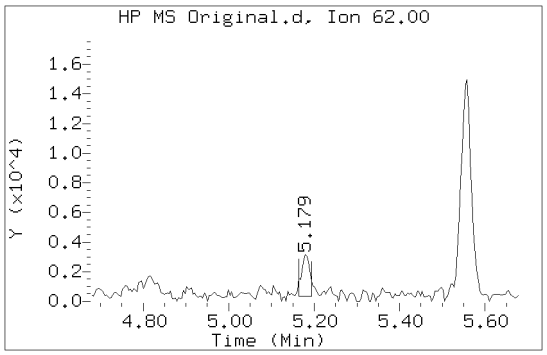


1,2-Dichloroethane (107-06-2)

Reason Code:

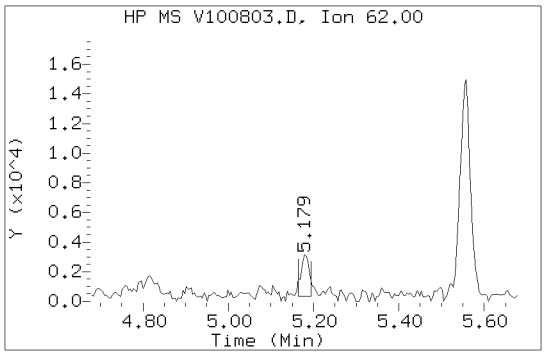
BEFORE

MASS
62
AREA
3835
HEIGHT
2785
13-Oct-2023
16:58
linh
pham



AFTER

MASS
62
AREA
3835
HEIGHT
2785
13-Oct-2023
16:58
linh
pham



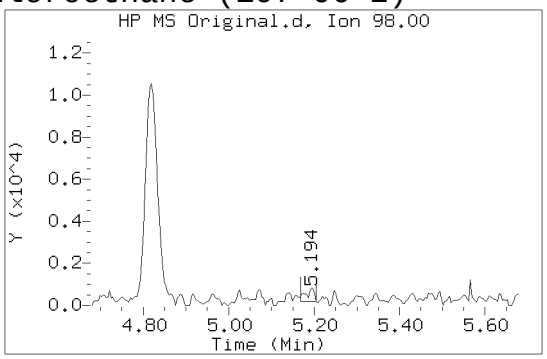
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,2-Dichloroethane (107-06-2)

Reason Code:

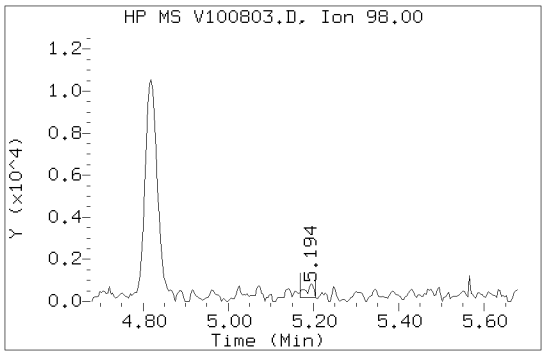
BEFORE

MASS
98
AREA
856
HEIGHT
621
13-Oct-2023
16:58
linh
pham



AFTER

MASS
98
AREA
856
HEIGHT
621
13-Oct-2023
16:58
linh
pham

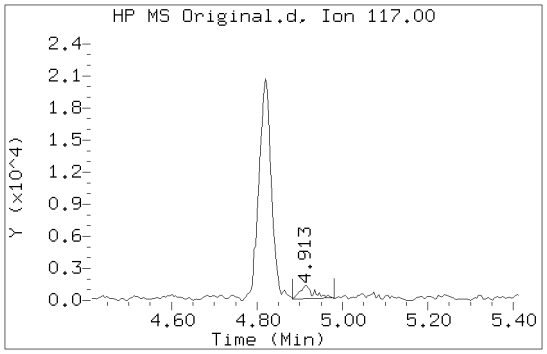


Carbon Tetrachloride (56-23-5)

Reason Code:

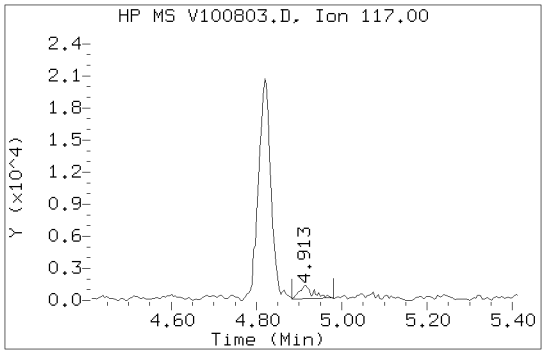
BEFORE

MASS
117
AREA
2835
HEIGHT
1263
13-Oct-2023
16:58
linh
pham



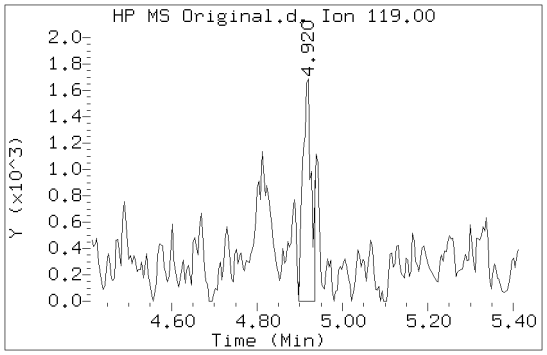
AFTER

MASS
117
AREA
2835
HEIGHT
1263
13-Oct-2023
16:58
linh
pham



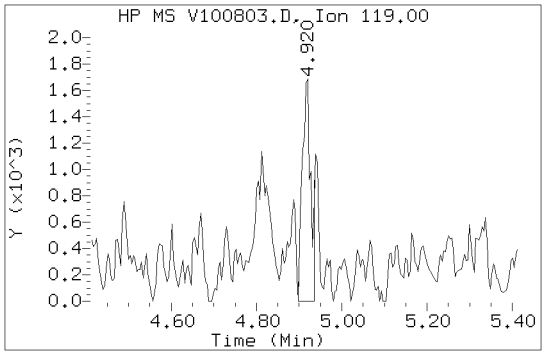
BEFORE

MASS
119
AREA
2348
HEIGHT
1688
13-Oct-2023
16:58
linh
pham



AFTER

MASS
119
AREA
2348
HEIGHT
1688
13-Oct-2023
16:58
linh
pham

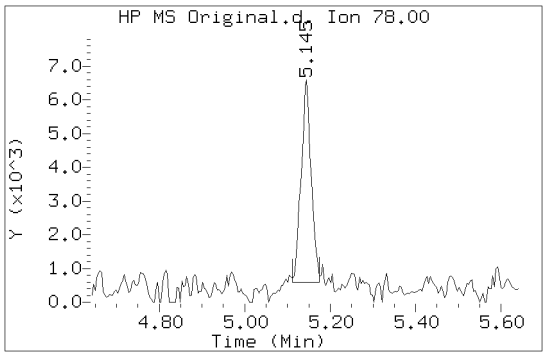


Benzene (71-43-2)

Reason Code:

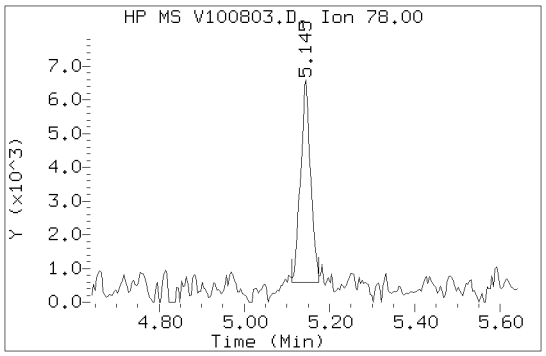
BEFORE

MASS
78
AREA
10019
HEIGHT
5994
13-Oct-2023
16:58
linh
pham



AFTER

MASS
78
AREA
10019
HEIGHT
5994
13-Oct-2023
16:58
linh
pham



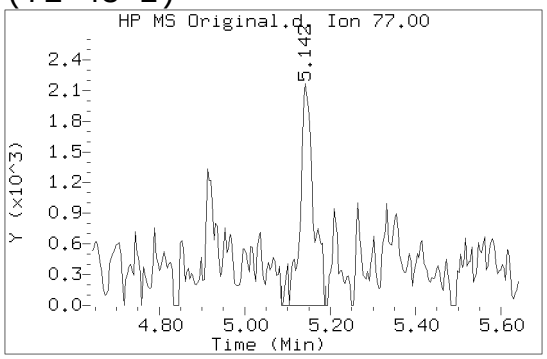
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Benzene (71-43-2)

Reason Code:

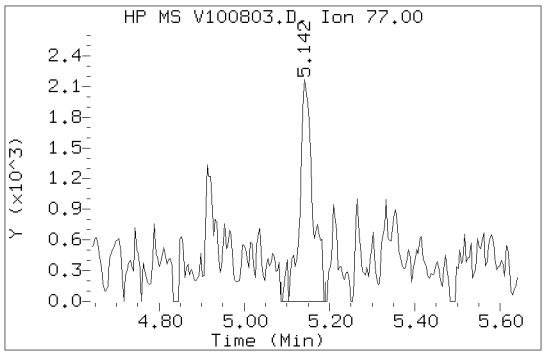
BEFORE

MASS
77
AREA
4880
HEIGHT
2167
13-Oct-2023
16:58
linh
pham



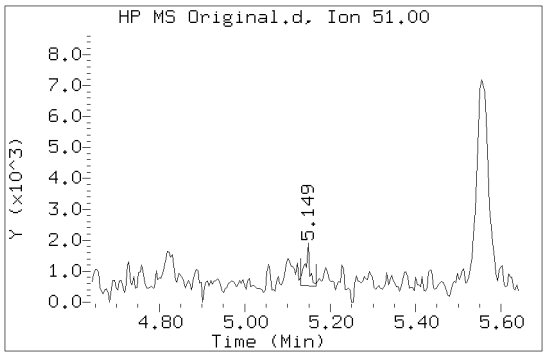
AFTER

MASS
77
AREA
4880
HEIGHT
2167
13-Oct-2023
16:58
linh
pham



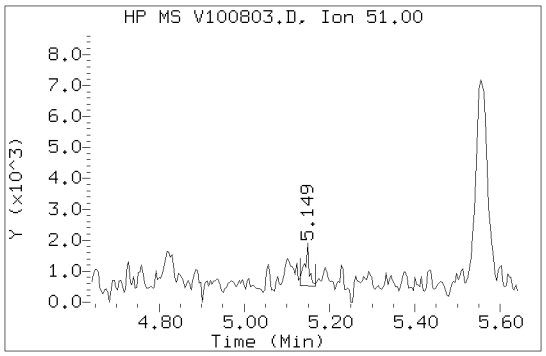
BEFORE

MASS
51
AREA
1109
HEIGHT
1367
13-Oct-2023
16:58
linh
pham



AFTER

MASS
51
AREA
1109
HEIGHT
1367
13-Oct-2023
16:58
linh
pham

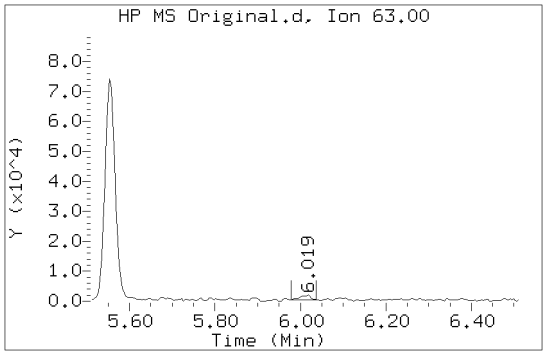


1,2-Dichloropropane (78-87-5)

Reason Code:

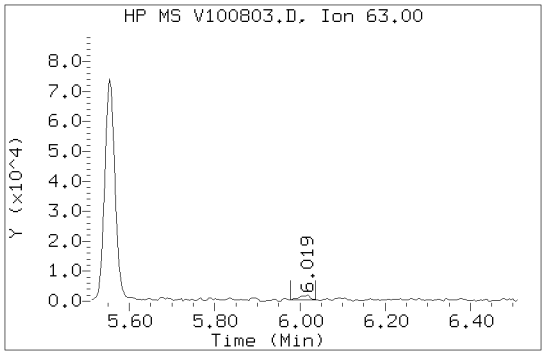
BEFORE

MASS
63
AREA
2646
HEIGHT
1614
13-Oct-2023
16:58
linh
pham



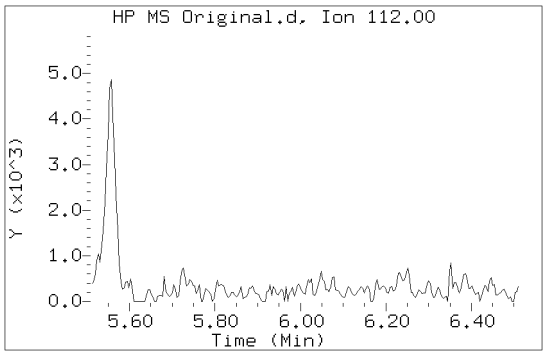
AFTER

MASS
63
AREA
2646
HEIGHT
1614
13-Oct-2023
16:58
linh
pham



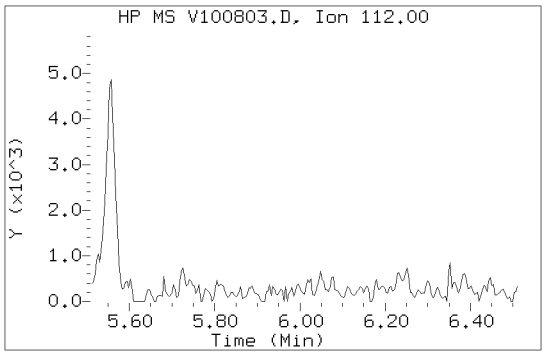
BEFORE

MASS
112
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



AFTER

MASS
112
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



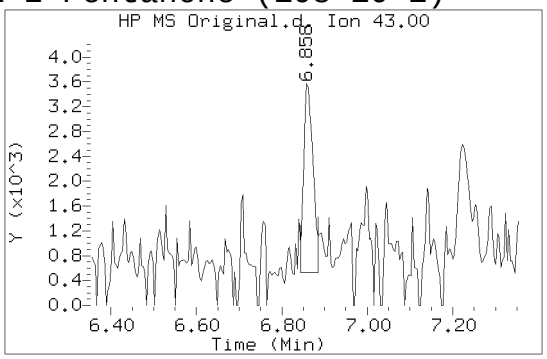
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

4-Methyl-2-Pentanone (108-10-1)

Reason Code:

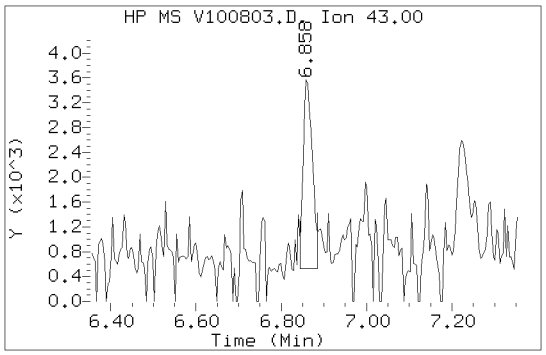
BEFORE

MASS
43
AREA
4752
HEIGHT
3050
13-Oct-2023
16:58
linh
pham



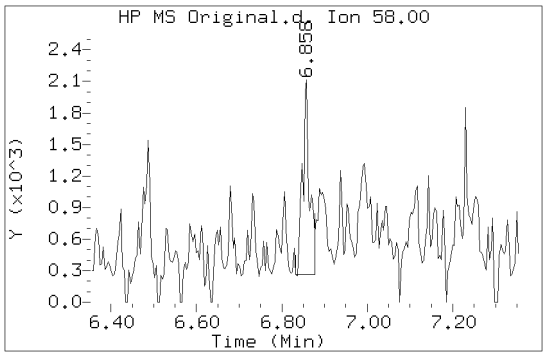
AFTER

MASS
43
AREA
4752
HEIGHT
3050
13-Oct-2023
16:58
linh
pham



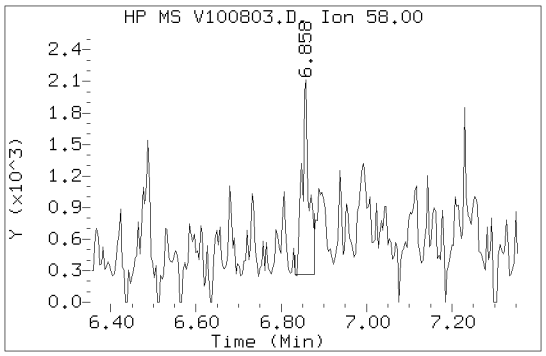
BEFORE

MASS
58
AREA
2148
HEIGHT
1850
13-Oct-2023
16:58
linh
pham



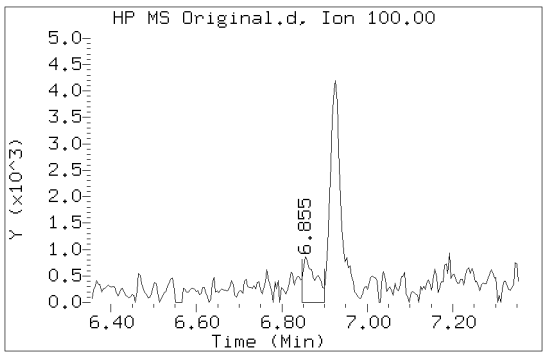
AFTER

MASS
58
AREA
2148
HEIGHT
1850
13-Oct-2023
16:58
linh
pham



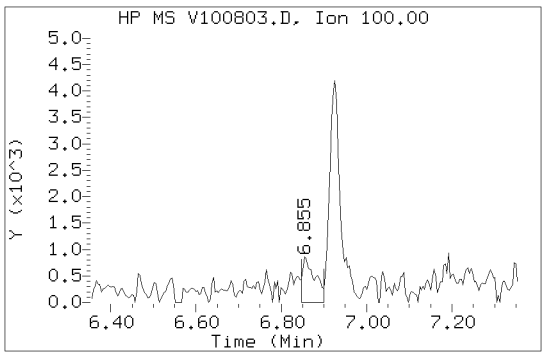
BEFORE

MASS
100
AREA
1813
HEIGHT
864
13-Oct-2023
16:58
linh
pham



AFTER

MASS
100
AREA
1813
HEIGHT
864
13-Oct-2023
16:58
linh
pham

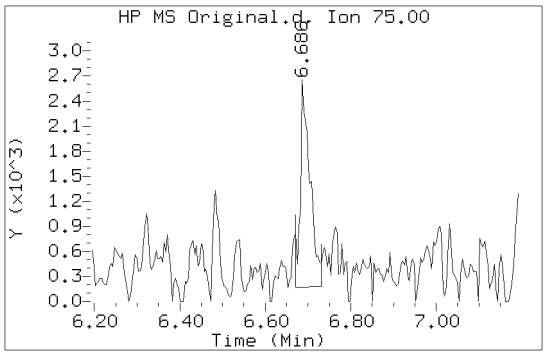


cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

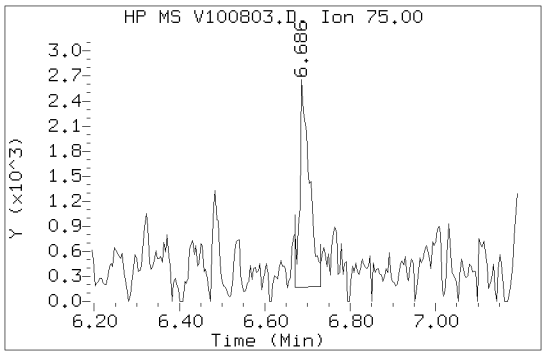
BEFORE

MASS
75
AREA
3990
HEIGHT
2485
13-Oct-2023
16:58
linh
pham



AFTER

MASS
75
AREA
3990
HEIGHT
2485
13-Oct-2023
16:58
linh
pham



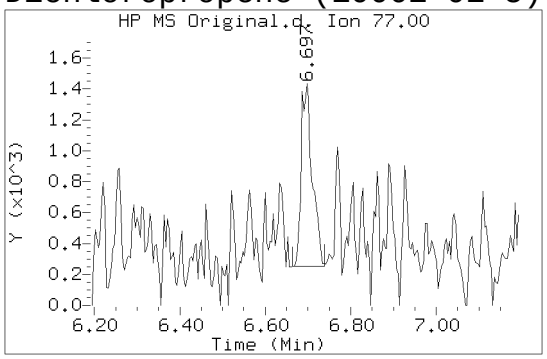
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

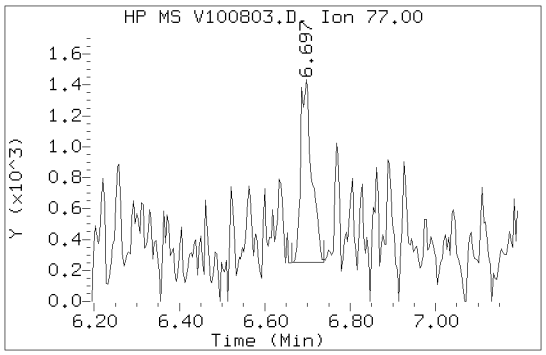
BEFORE

MASS
77
AREA
2145
HEIGHT
1179
13-Oct-2023
16:58
linh
pham



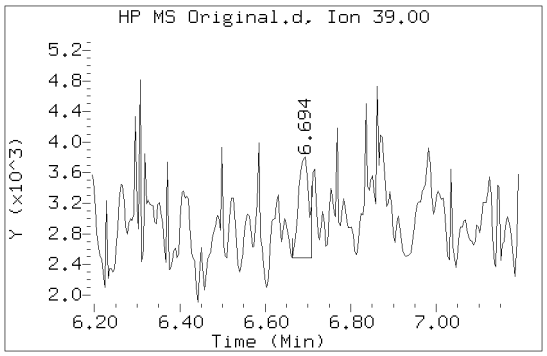
AFTER

MASS
77
AREA
2145
HEIGHT
1179
13-Oct-2023
16:58
linh
pham



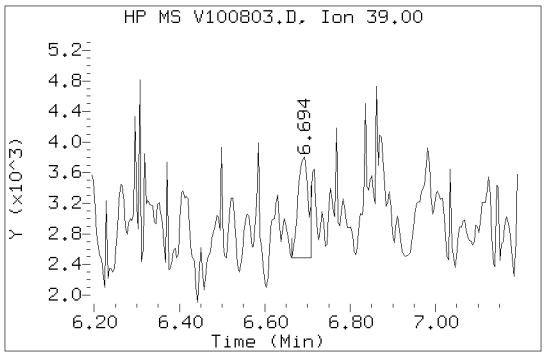
BEFORE

MASS
39
AREA
2241
HEIGHT
1317
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
2241
HEIGHT
1317
13-Oct-2023
16:58
linh
pham

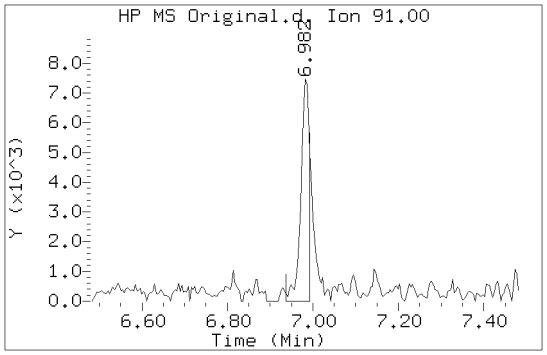


Toluene (108-88-3)

Reason Code:

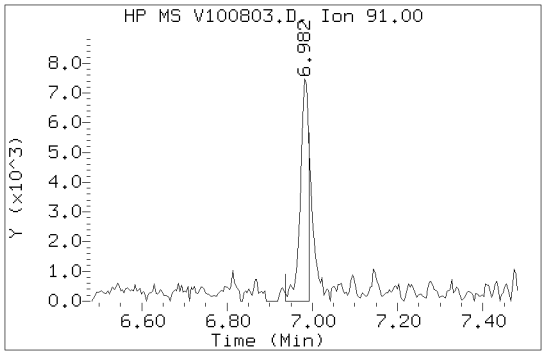
BEFORE

MASS
91
AREA
10546
HEIGHT
7477
13-Oct-2023
16:58
linh
pham



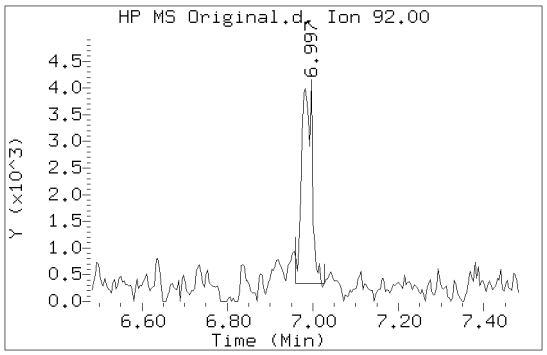
AFTER

MASS
91
AREA
10546
HEIGHT
7477
13-Oct-2023
16:58
linh
pham



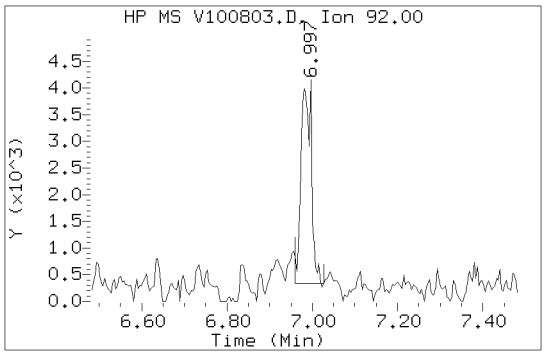
BEFORE

MASS
92
AREA
6433
HEIGHT
3819
13-Oct-2023
16:58
linh
pham



AFTER

MASS
92
AREA
6433
HEIGHT
3819
13-Oct-2023
16:58
linh
pham



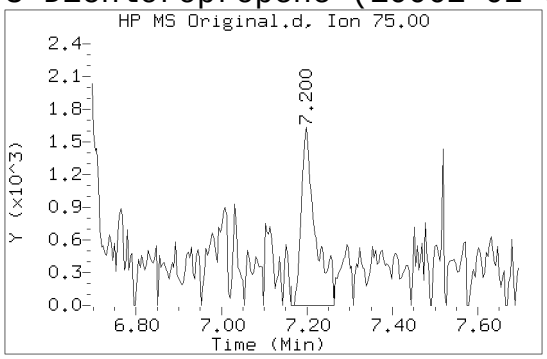
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

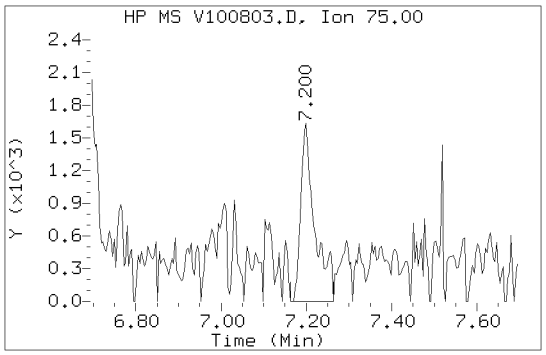
BEFORE

MASS
75
AREA
3775
HEIGHT
1636
13-Oct-2023
16:58
linh
pham



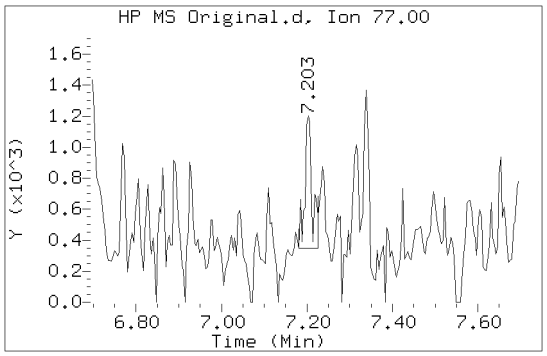
AFTER

MASS
75
AREA
3775
HEIGHT
1636
13-Oct-2023
16:58
linh
pham



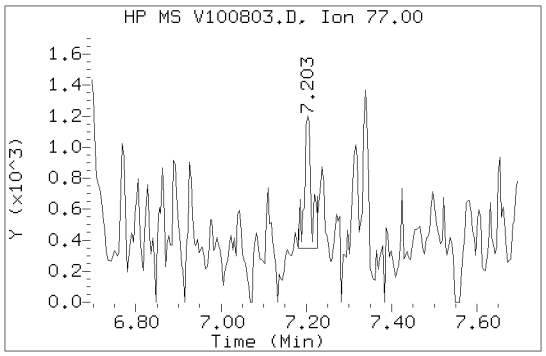
BEFORE

MASS
77
AREA
1008
HEIGHT
855
13-Oct-2023
16:58
linh
pham



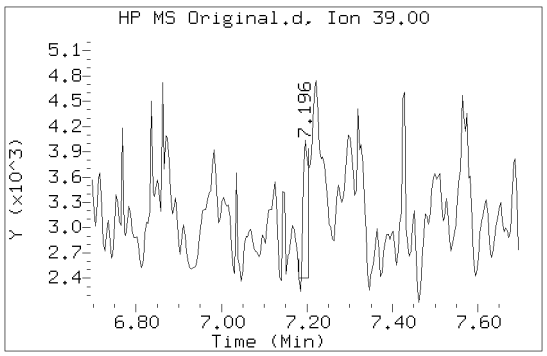
AFTER

MASS
77
AREA
1008
HEIGHT
855
13-Oct-2023
16:58
linh
pham



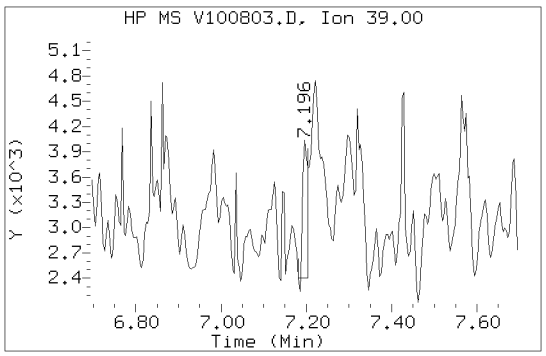
BEFORE

MASS
39
AREA
1283
HEIGHT
1632
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
1283
HEIGHT
1632
13-Oct-2023
16:58
linh
pham

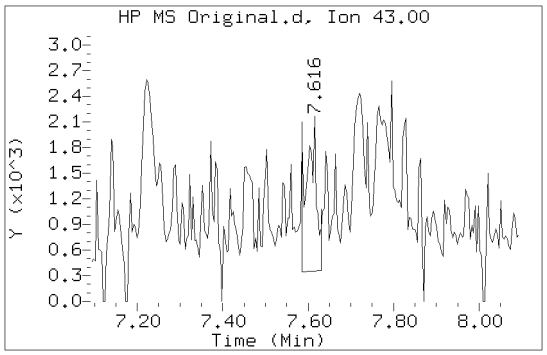


2-Hexanone (591-78-6)

Reason Code:

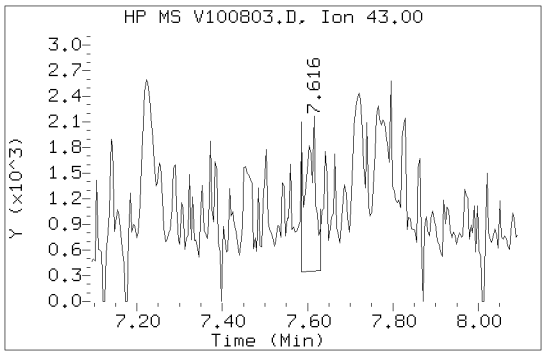
BEFORE

MASS
43
AREA
3030
HEIGHT
1817
13-Oct-2023
16:58
linh
pham



AFTER

MASS
43
AREA
3030
HEIGHT
1817
13-Oct-2023
16:58
linh
pham

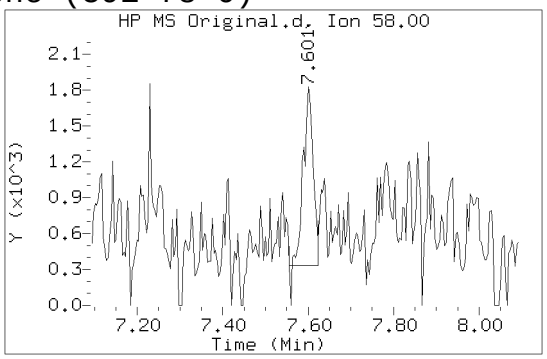


Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

2-Hexanone (591-78-6)

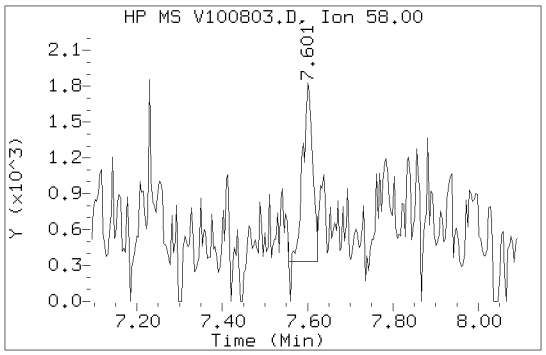
BEFORE

MASS
58
AREA
2392
HEIGHT
1495
13-Oct-2023
16:58
linh
pham



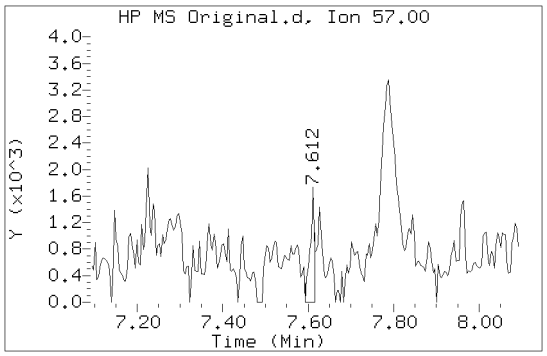
AFTER

MASS
58
AREA
2392
HEIGHT
1495
13-Oct-2023
16:58
linh
pham



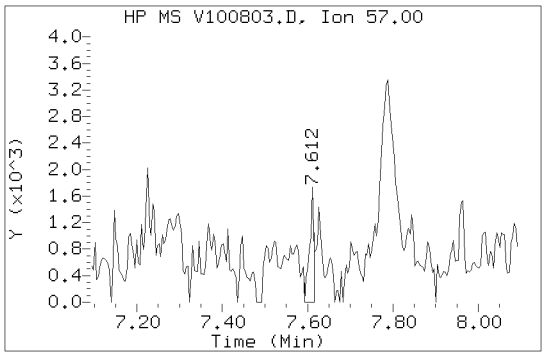
BEFORE

MASS
57
AREA
1162
HEIGHT
1733
13-Oct-2023
16:58
linh
pham



AFTER

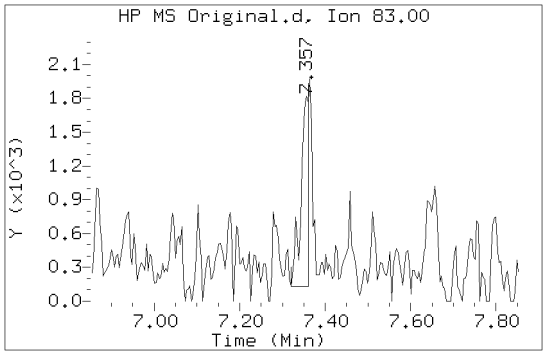
MASS
57
AREA
1162
HEIGHT
1733
13-Oct-2023
16:58
linh
pham



1,1,2-Trichloroethane (79-00-5)

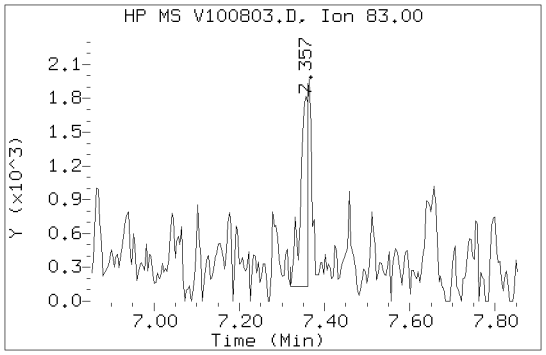
BEFORE

MASS
83
AREA
2174
HEIGHT
1689
13-Oct-2023
16:58
linh
pham



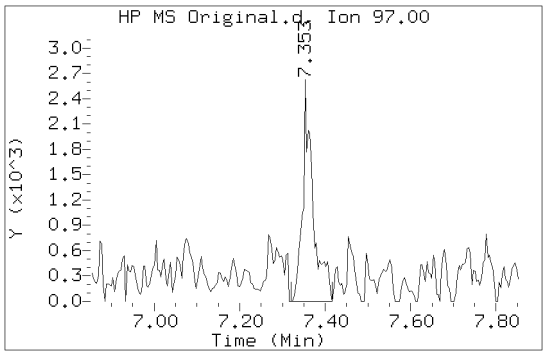
AFTER

MASS
83
AREA
2174
HEIGHT
1689
13-Oct-2023
16:58
linh
pham



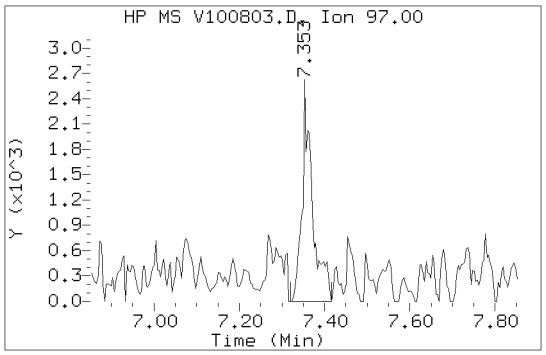
BEFORE

MASS
97
AREA
4505
HEIGHT
2626
13-Oct-2023
16:58
linh
pham



AFTER

MASS
97
AREA
4505
HEIGHT
2626
13-Oct-2023
16:58
linh
pham



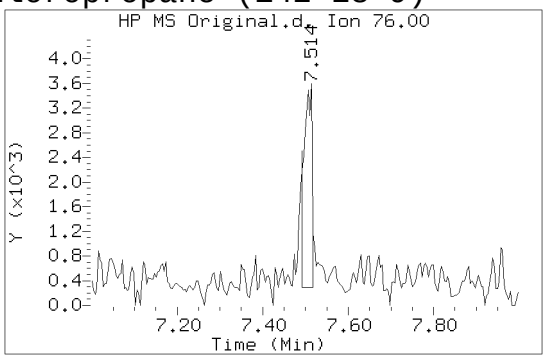
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,3-Dichloropropane (142-28-9)

Reason Code:

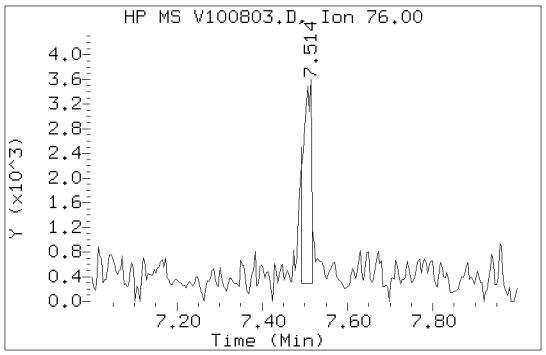
BEFORE

MASS
76
AREA
4428
HEIGHT
3303
13-Oct-2023
16:58
linh
pham



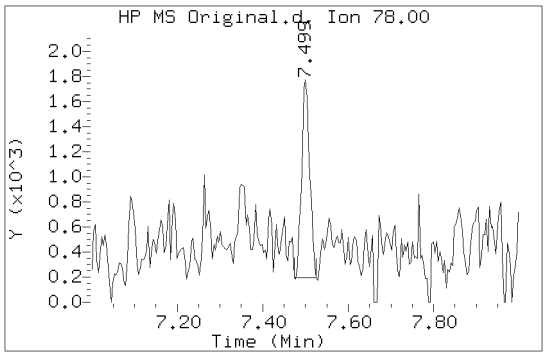
AFTER

MASS
76
AREA
4428
HEIGHT
3303
13-Oct-2023
16:58
linh
pham



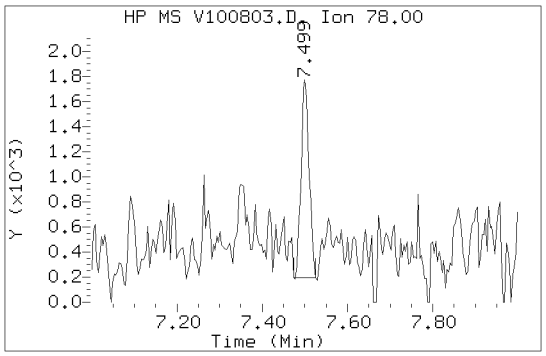
BEFORE

MASS
78
AREA
2101
HEIGHT
1577
13-Oct-2023
16:58
linh
pham



AFTER

MASS
78
AREA
2101
HEIGHT
1577
13-Oct-2023
16:58
linh
pham

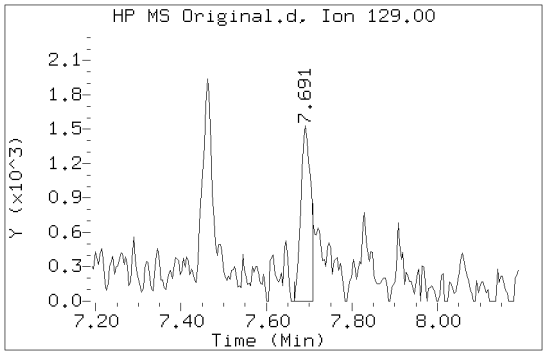


Dibromochloromethane (124-48-1)

Reason Code:

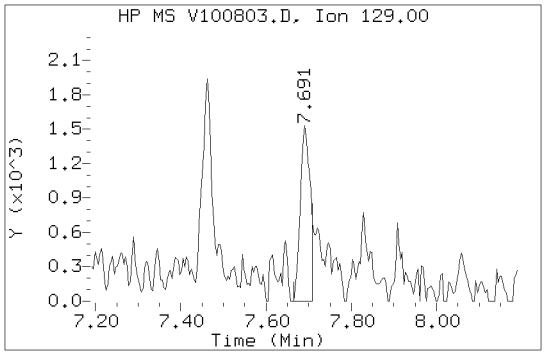
BEFORE

MASS
129
AREA
2512
HEIGHT
1532
13-Oct-2023
16:58
linh
pham



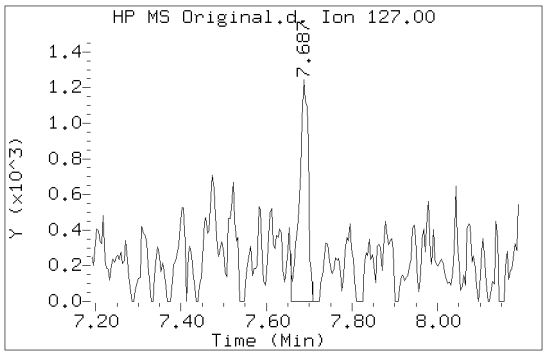
AFTER

MASS
129
AREA
2512
HEIGHT
1532
13-Oct-2023
16:58
linh
pham



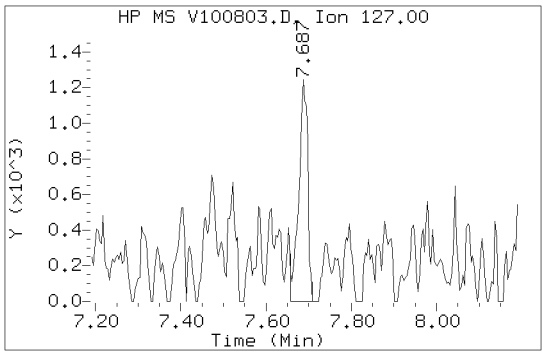
BEFORE

MASS
127
AREA
1849
HEIGHT
1244
13-Oct-2023
16:58
linh
pham



AFTER

MASS
127
AREA
1849
HEIGHT
1244
13-Oct-2023
16:58
linh
pham



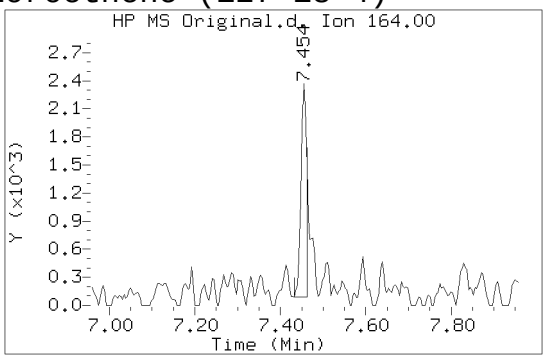
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Tetrachloroethene (127-18-4)

Reason Code:

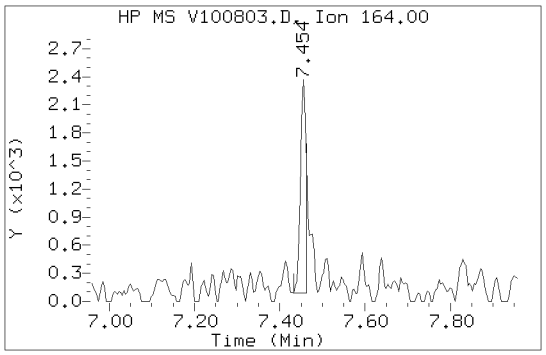
BEFORE

MASS
164
AREA
2063
HEIGHT
2278
13-Oct-2023
16:58
linh
pham



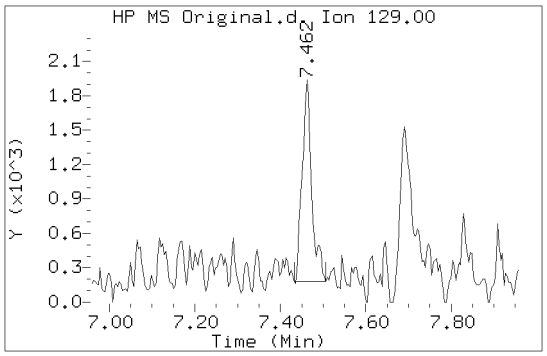
AFTER

MASS
164
AREA
2063
HEIGHT
2278
13-Oct-2023
16:58
linh
pham



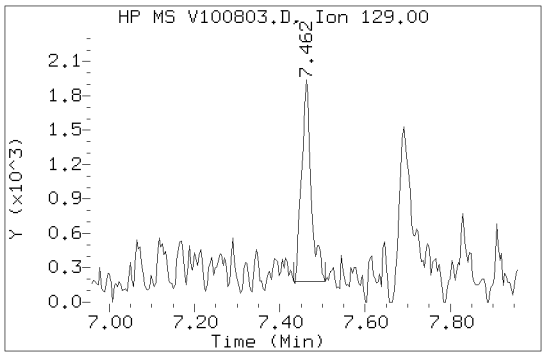
BEFORE

MASS
129
AREA
2820
HEIGHT
1762
13-Oct-2023
16:58
linh
pham



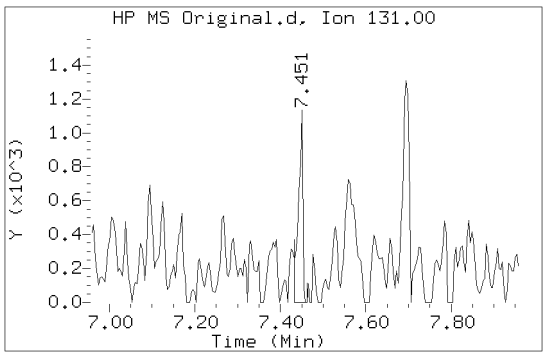
AFTER

MASS
129
AREA
2820
HEIGHT
1762
13-Oct-2023
16:58
linh
pham



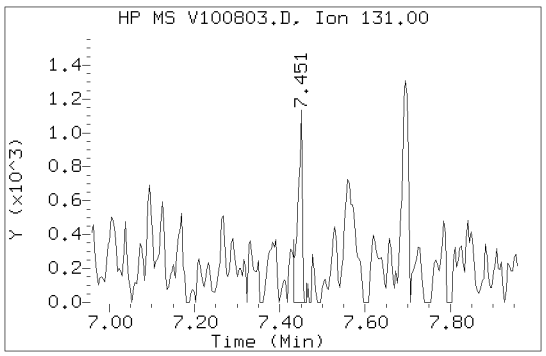
BEFORE

MASS
131
AREA
821
HEIGHT
1135
13-Oct-2023
16:58
linh
pham



AFTER

MASS
131
AREA
821
HEIGHT
1135
13-Oct-2023
16:58
linh
pham

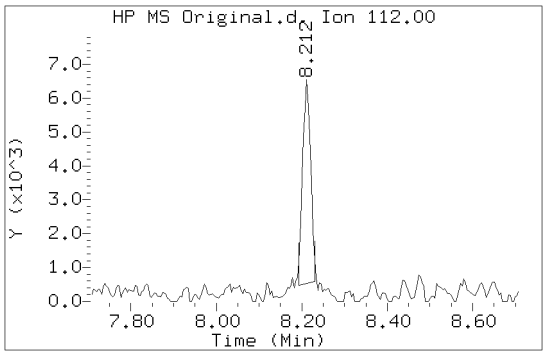


Chlorobenzene (108-90-7)

Reason Code:

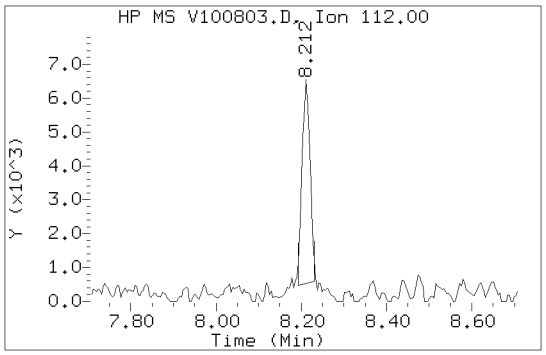
BEFORE

MASS
112
AREA
8059
HEIGHT
6012
13-Oct-2023
16:58
linh
pham



AFTER

MASS
112
AREA
8059
HEIGHT
6012
13-Oct-2023
16:58
linh
pham



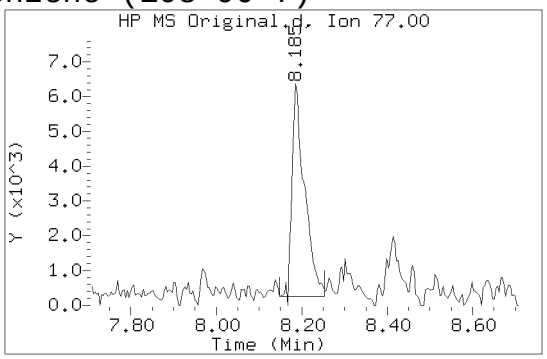
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Chlorobenzene (108-90-7)

Reason Code:

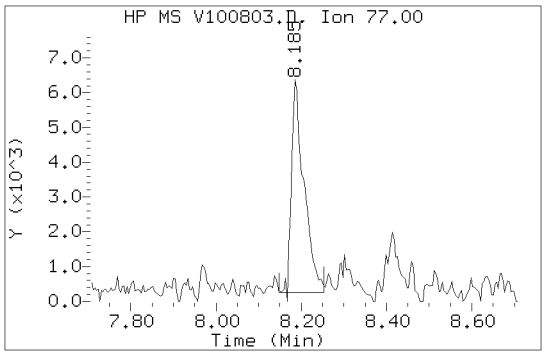
BEFORE

MASS
77
AREA
12535
HEIGHT
6110
13-Oct-2023
16:58
linh
pham



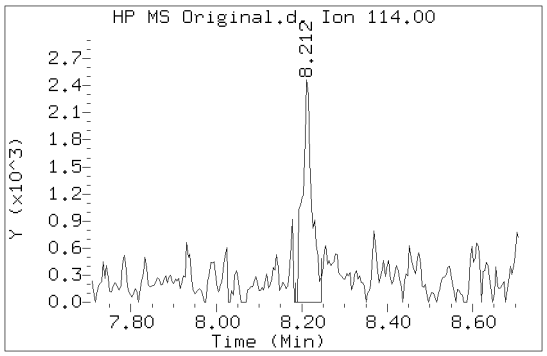
AFTER

MASS
77
AREA
12535
HEIGHT
6110
13-Oct-2023
16:58
linh
pham



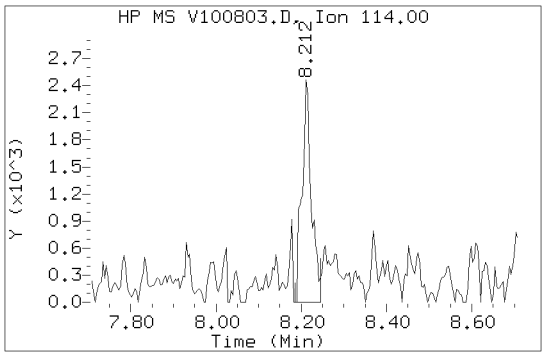
BEFORE

MASS
114
AREA
3828
HEIGHT
2465
13-Oct-2023
16:58
linh
pham



AFTER

MASS
114
AREA
3828
HEIGHT
2465
13-Oct-2023
16:58
linh
pham

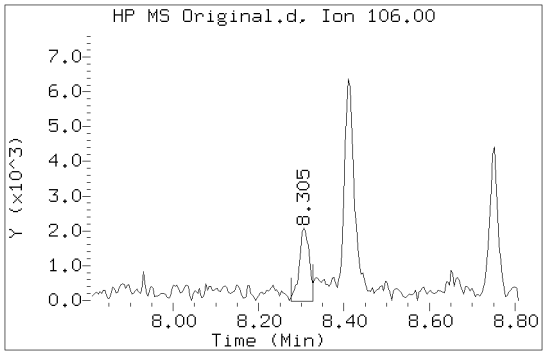


Ethylbenzene (100-41-4)

Reason Code:

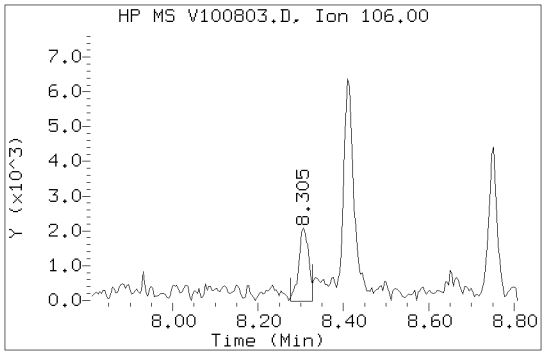
BEFORE

MASS
106
AREA
3540
HEIGHT
2115
13-Oct-2023
16:58
linh
pham



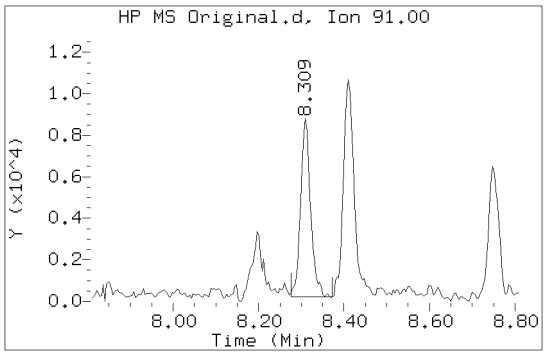
AFTER

MASS
106
AREA
3540
HEIGHT
2115
13-Oct-2023
16:58
linh
pham



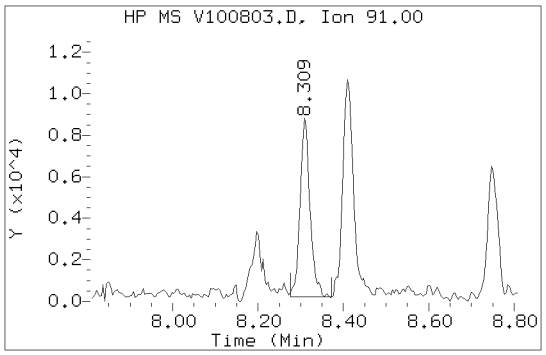
BEFORE

MASS
91
AREA
14300
HEIGHT
8634
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
14300
HEIGHT
8634
13-Oct-2023
16:58
linh
pham



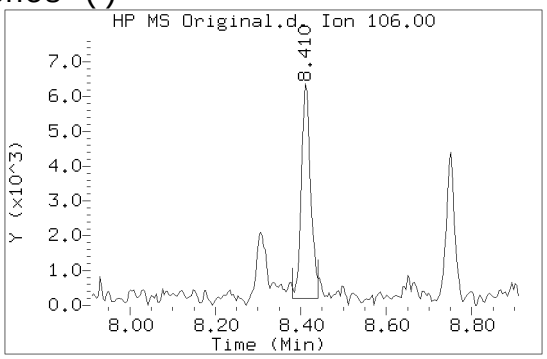
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

m,p-Xylenes ()

Reason Code:

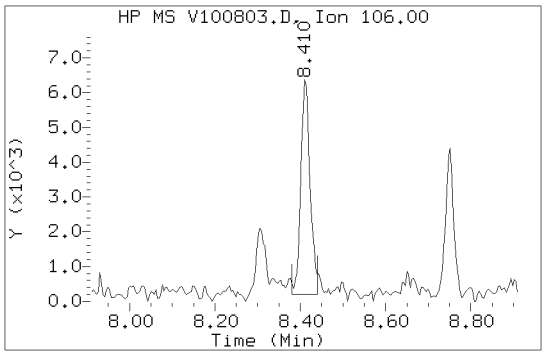
BEFORE

MASS
106
AREA
9625
HEIGHT
6177
13-Oct-2023
16:58
linh
pham



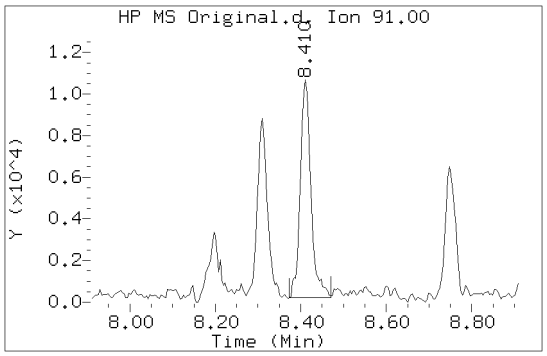
AFTER

MASS
106
AREA
9625
HEIGHT
6177
13-Oct-2023
16:58
linh
pham



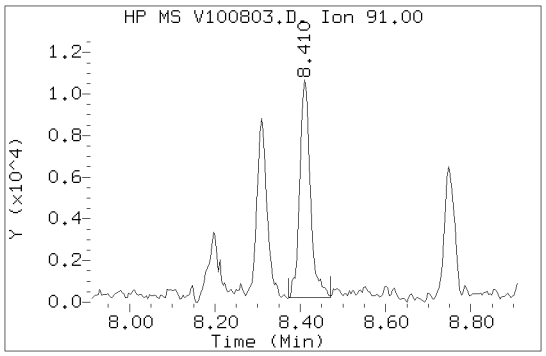
BEFORE

MASS
91
AREA
18583
HEIGHT
10469
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
18583
HEIGHT
10469
13-Oct-2023
16:58
linh
pham

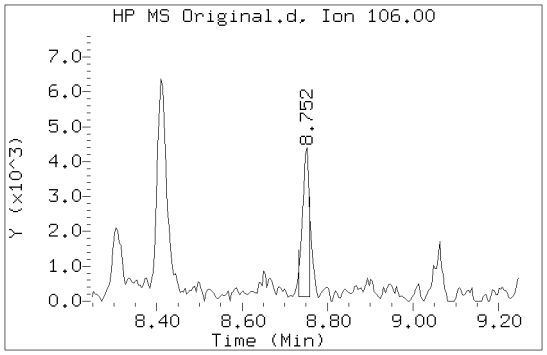


o-Xylene (95-47-6)

Reason Code:

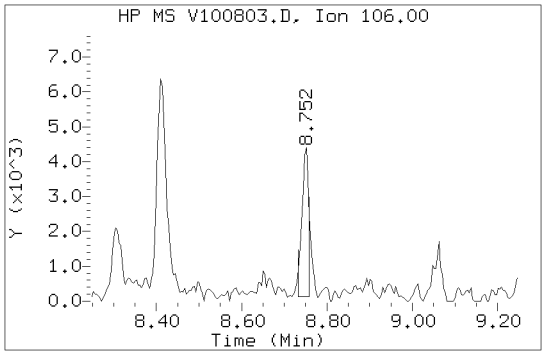
BEFORE

MASS
106
AREA
4846
HEIGHT
4284
13-Oct-2023
16:58
linh
pham



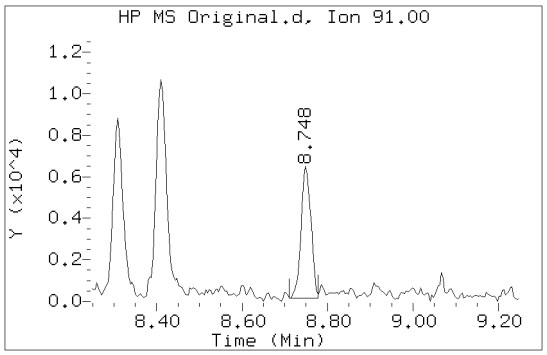
AFTER

MASS
106
AREA
4846
HEIGHT
4284
13-Oct-2023
16:58
linh
pham



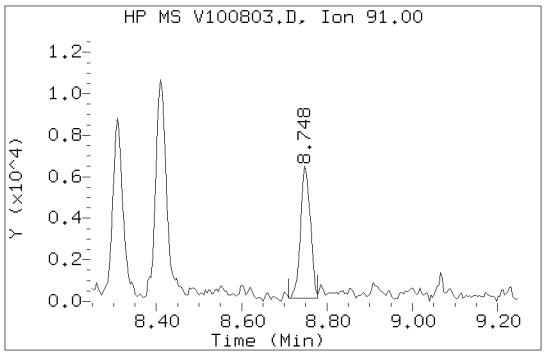
BEFORE

MASS
91
AREA
10439
HEIGHT
6369
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
10439
HEIGHT
6369
13-Oct-2023
16:58
linh
pham



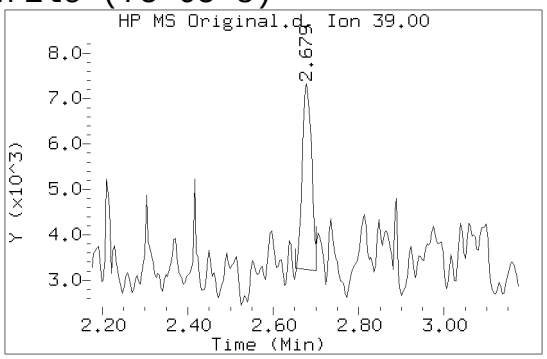
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Acetonitrile (75-05-8)

Reason Code:

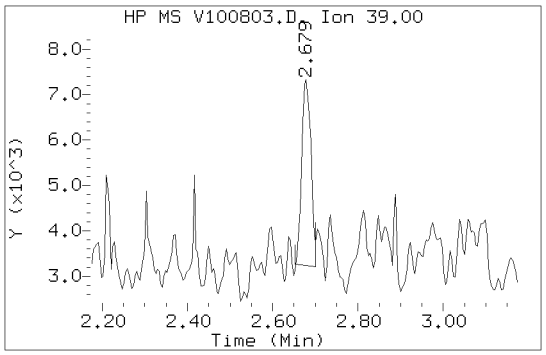
BEFORE

MASS
39
AREA
6265
HEIGHT
4093
13-Oct-2023
16:58
linh
pham



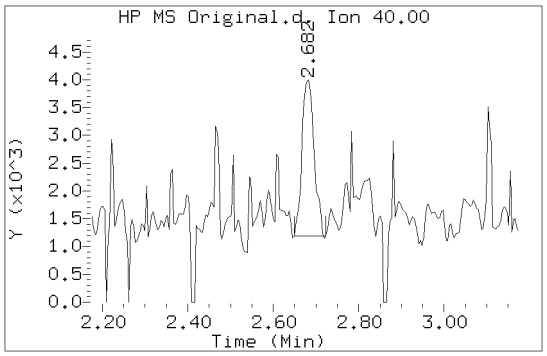
AFTER

MASS
39
AREA
6265
HEIGHT
4093
13-Oct-2023
16:58
linh
pham



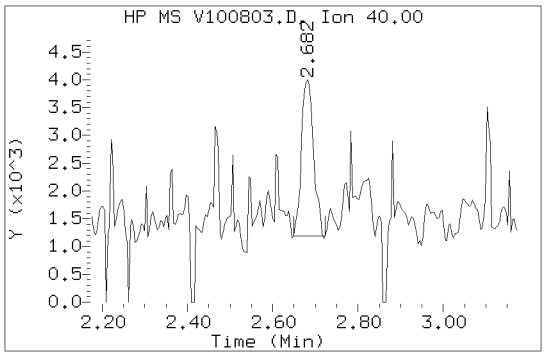
BEFORE

MASS
40
AREA
5602
HEIGHT
2803
13-Oct-2023
16:58
linh
pham



AFTER

MASS
40
AREA
5602
HEIGHT
2803
13-Oct-2023
16:58
linh
pham

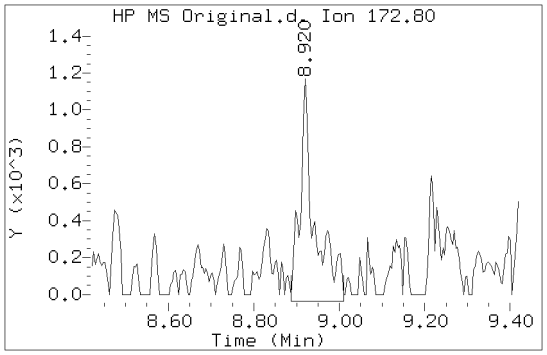


Bromoform (75-25-2)

Reason Code:

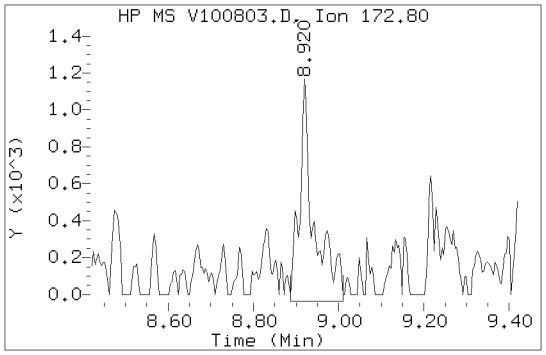
BEFORE

MASS
172.8
AREA
2877
HEIGHT
1204
13-Oct-2023
16:58
linh
pham



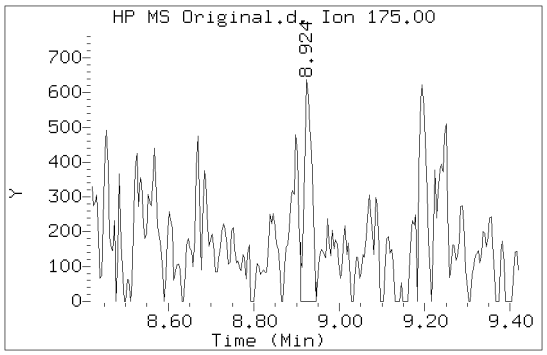
AFTER

MASS
172.8
AREA
2877
HEIGHT
1204
13-Oct-2023
16:58
linh
pham



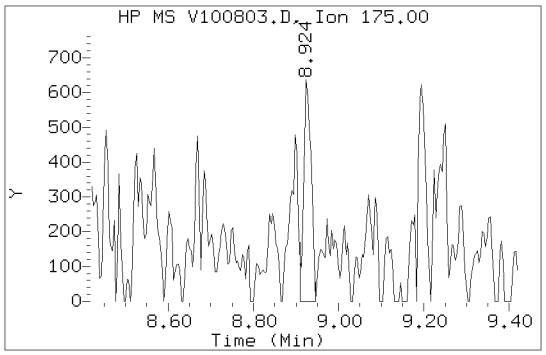
BEFORE

MASS
175
AREA
780
HEIGHT
637
13-Oct-2023
16:58
linh
pham



AFTER

MASS
175
AREA
780
HEIGHT
637
13-Oct-2023
16:58
linh
pham



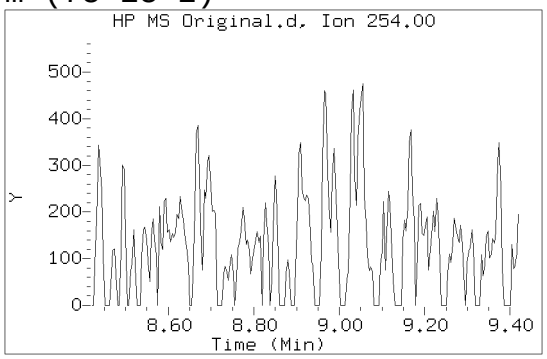
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Bromoform (75-25-2)

Reason Code:

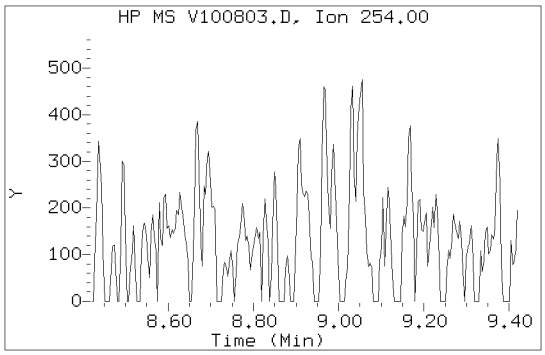
BEFORE

MASS
254
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



AFTER

MASS
254
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham

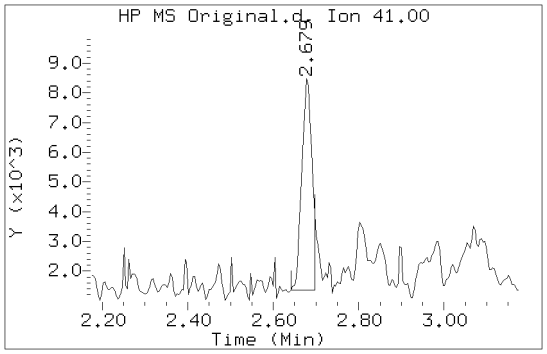


Allyl Chloride (107-05-1)

Reason Code:

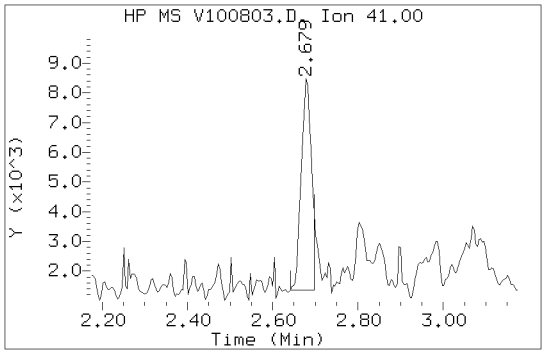
BEFORE

MASS
41
AREA
11921
HEIGHT
7118
13-Oct-2023
16:58
linh
pham



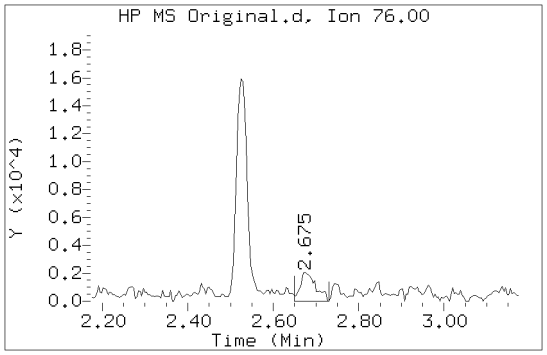
AFTER

MASS
41
AREA
11921
HEIGHT
7118
13-Oct-2023
16:58
linh
pham



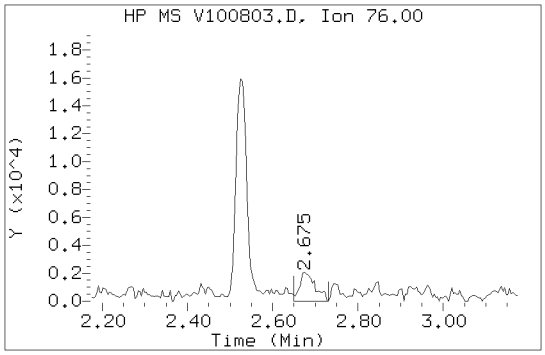
BEFORE

MASS
76
AREA
5316
HEIGHT
2072
13-Oct-2023
16:58
linh
pham



AFTER

MASS
76
AREA
5316
HEIGHT
2072
13-Oct-2023
16:58
linh
pham

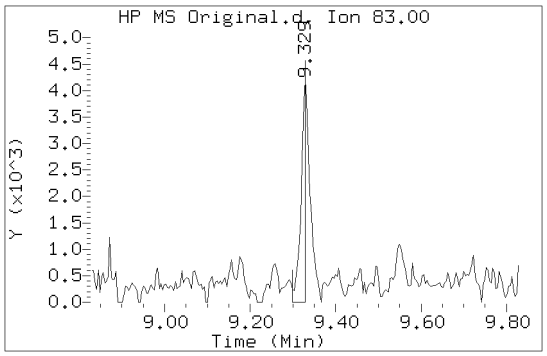


1,1,2,2-Tetrachloroethane (79-34-5)

Reason Code:

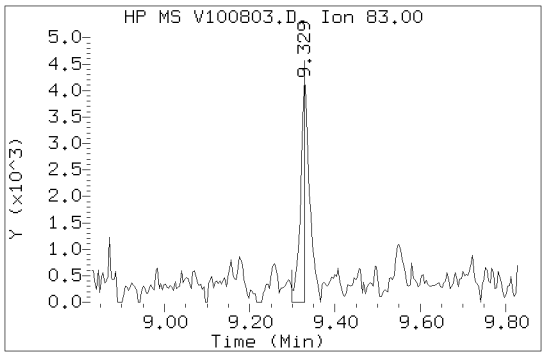
BEFORE

MASS
83
AREA
3340
HEIGHT
4201
13-Oct-2023
16:58
linh
pham



AFTER

MASS
83
AREA
3340
HEIGHT
4201
13-Oct-2023
16:58
linh
pham

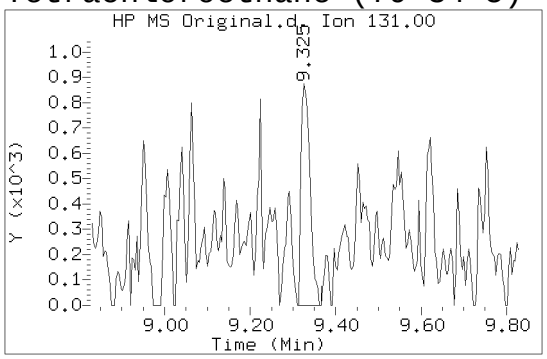


Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,1,2,2-Tetrachloroethane (79-34-5)

BEFORE

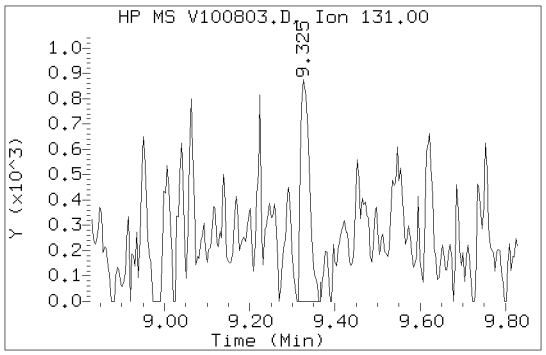
MASS
131
AREA
1317
HEIGHT
875
13-Oct-2023
16:58
linh
pham



Reason Code:

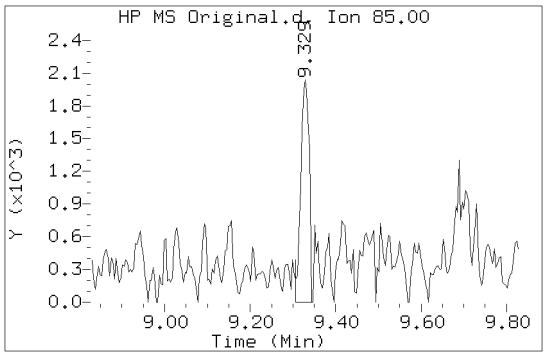
AFTER

MASS
131
AREA
1317
HEIGHT
875
13-Oct-2023
16:58
linh
pham



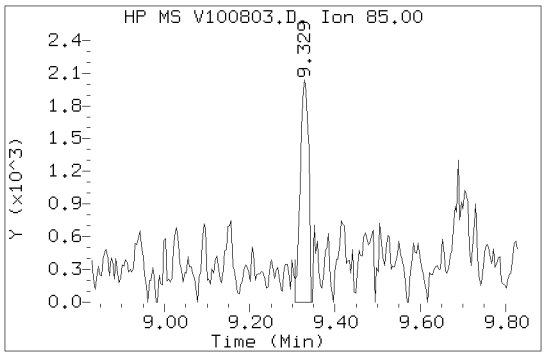
BEFORE

MASS
85
AREA
2844
HEIGHT
2038
13-Oct-2023
16:58
linh
pham



AFTER

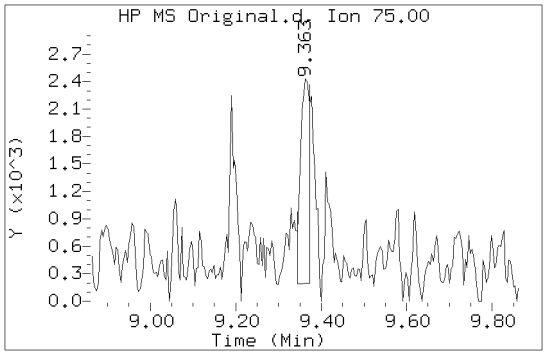
MASS
85
AREA
2844
HEIGHT
2038
13-Oct-2023
16:58
linh
pham



1,2,3-Trichloropropane (96-18-4)

BEFORE

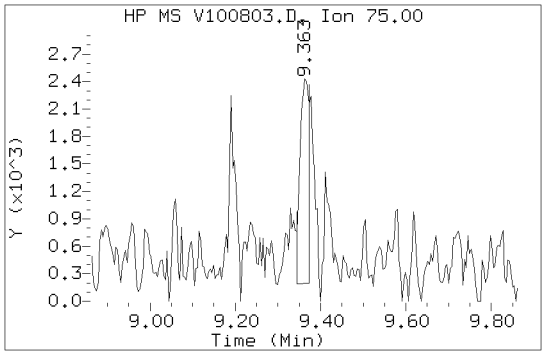
MASS
75
AREA
3460
HEIGHT
2234
13-Oct-2023
16:58
linh
pham



Reason Code:

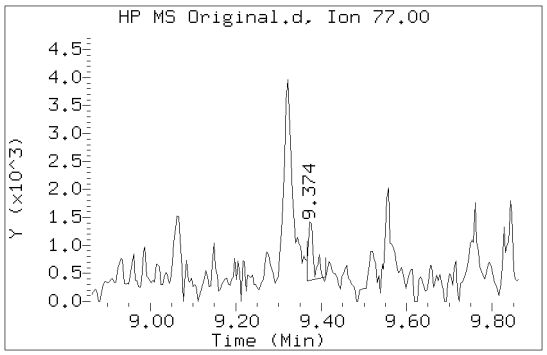
AFTER

MASS
75
AREA
3460
HEIGHT
2234
13-Oct-2023
16:58
linh
pham



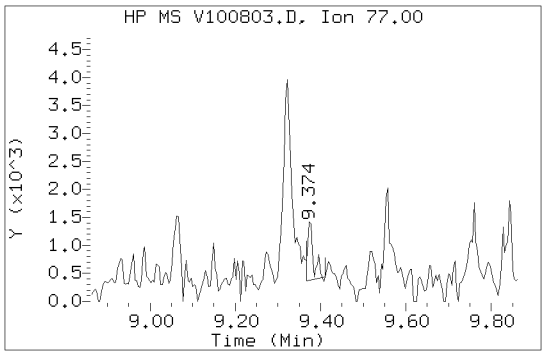
BEFORE

MASS
77
AREA
1011
HEIGHT
1042
13-Oct-2023
16:58
linh
pham



AFTER

MASS
77
AREA
1011
HEIGHT
1042
13-Oct-2023
16:58
linh
pham



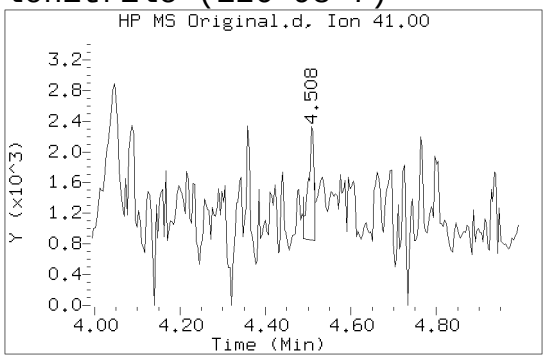
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Methacrylonitrile (126-98-7)

Reason Code:

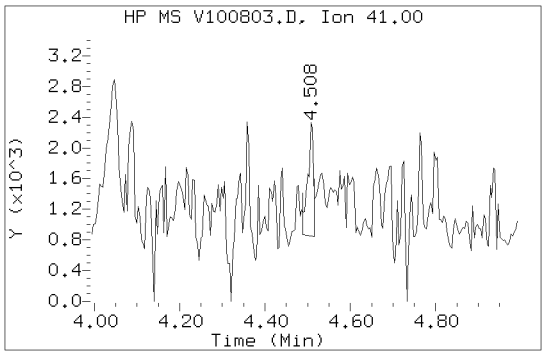
BEFORE

MASS
41
AREA
1369
HEIGHT
1474
13-Oct-2023
16:58
linh
pham



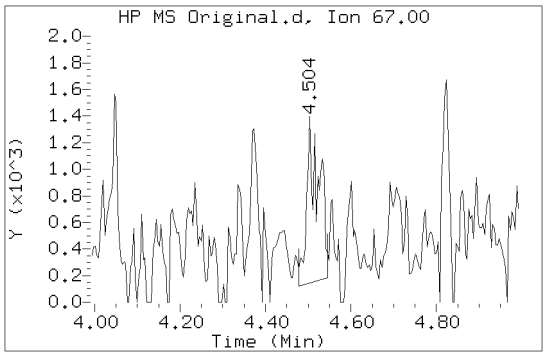
AFTER

MASS
41
AREA
1369
HEIGHT
1474
13-Oct-2023
16:58
linh
pham



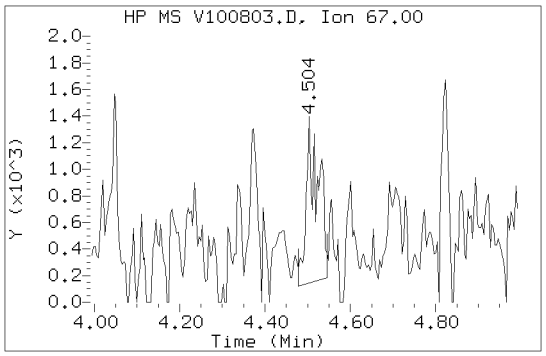
BEFORE

MASS
67
AREA
2462
HEIGHT
1253
13-Oct-2023
16:58
linh
pham



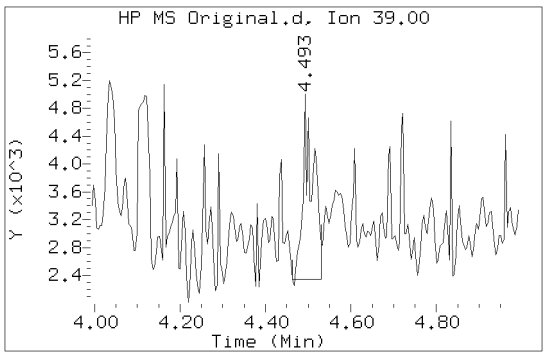
AFTER

MASS
67
AREA
2462
HEIGHT
1253
13-Oct-2023
16:58
linh
pham



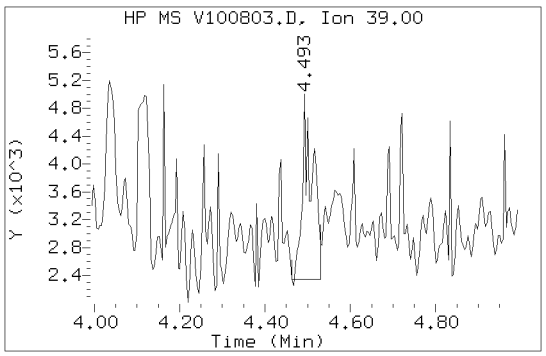
BEFORE

MASS
39
AREA
4442
HEIGHT
2662
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
4442
HEIGHT
2662
13-Oct-2023
16:58
linh
pham

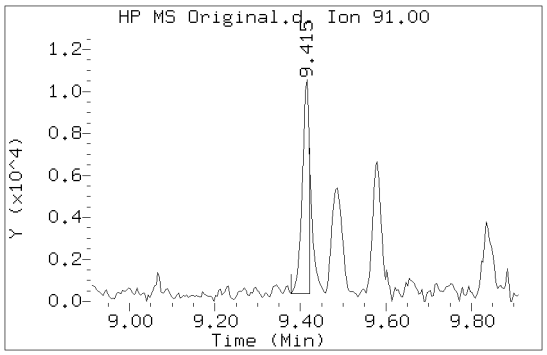


n-Propylbenzene (106-65-1)

Reason Code:

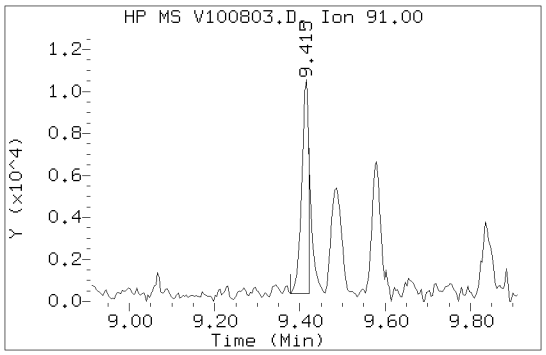
BEFORE

MASS
91
AREA
12012
HEIGHT
10201
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
12012
HEIGHT
10201
13-Oct-2023
16:58
linh
pham



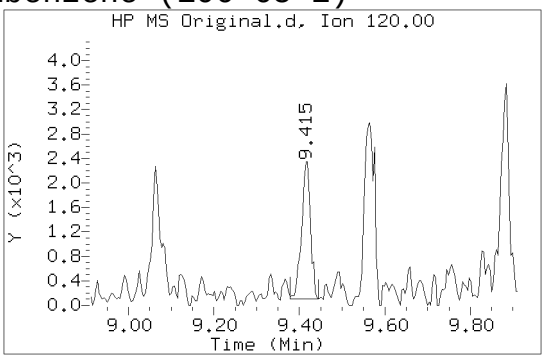
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

n-Propylbenzene (106-65-1)

Reason Code:

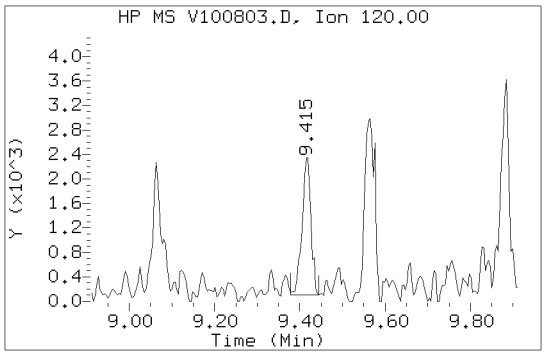
BEFORE

MASS
120
AREA
3358
HEIGHT
2245
13-Oct-2023
16:58
linh
pham



AFTER

MASS
120
AREA
3358
HEIGHT
2245
13-Oct-2023
16:58
linh
pham

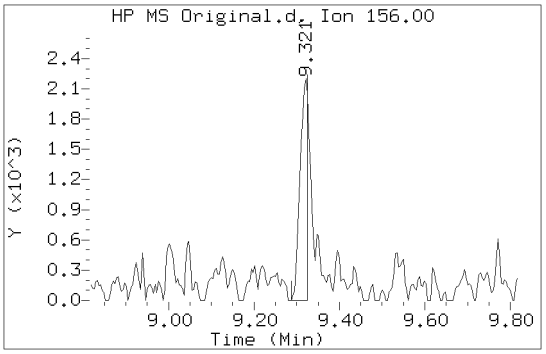


Bromobenzene (108-86-1)

Reason Code:

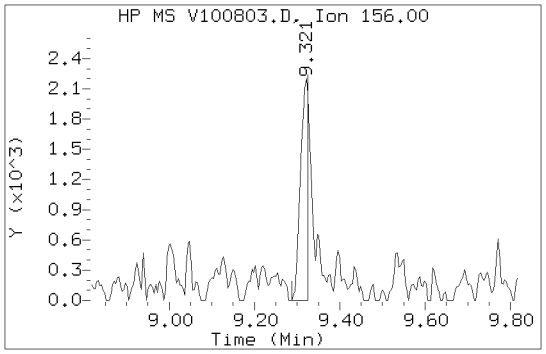
BEFORE

MASS
156
AREA
2760
HEIGHT
2201
13-Oct-2023
16:58
linh
pham



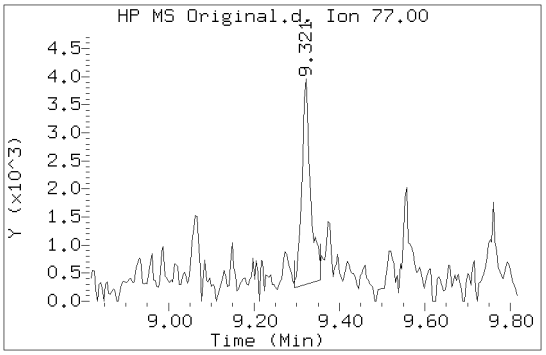
AFTER

MASS
156
AREA
2760
HEIGHT
2201
13-Oct-2023
16:58
linh
pham



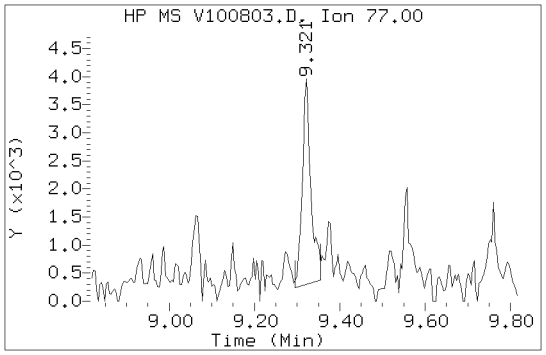
BEFORE

MASS
77
AREA
5295
HEIGHT
3661
13-Oct-2023
16:58
linh
pham



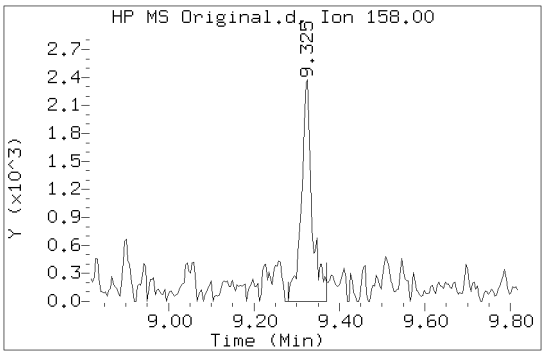
AFTER

MASS
77
AREA
5295
HEIGHT
3661
13-Oct-2023
16:58
linh
pham



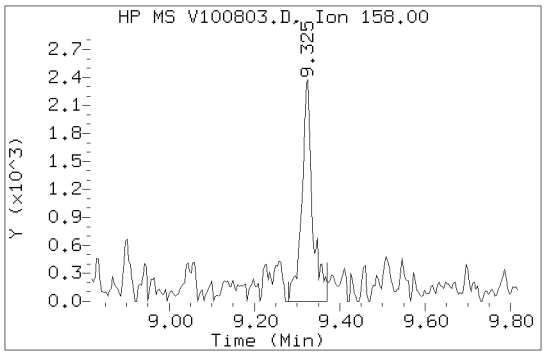
BEFORE

MASS
158
AREA
4253
HEIGHT
2376
13-Oct-2023
16:58
linh
pham



AFTER

MASS
158
AREA
4253
HEIGHT
2376
13-Oct-2023
16:58
linh
pham



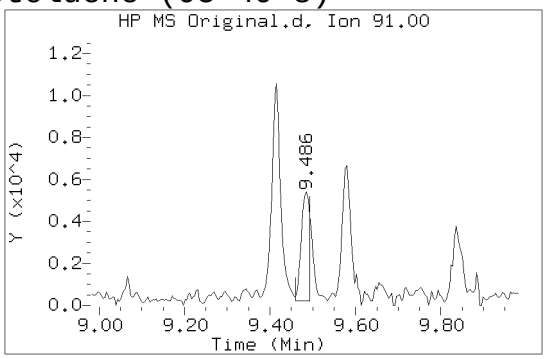
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

2-Chlorotoluene (95-49-8)

Reason Code:

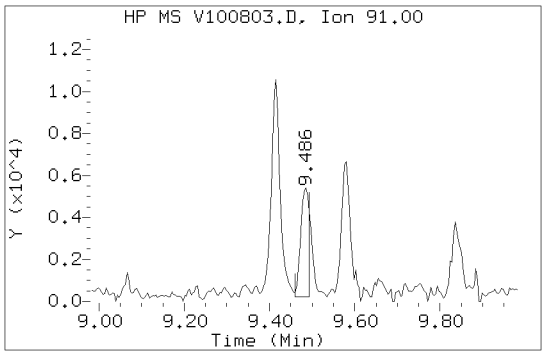
BEFORE

MASS
91
AREA
7189
HEIGHT
5198
13-Oct-2023
16:58
linh
pham



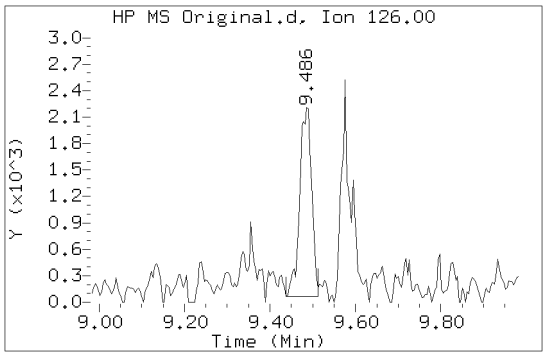
AFTER

MASS
91
AREA
7189
HEIGHT
5198
13-Oct-2023
16:58
linh
pham



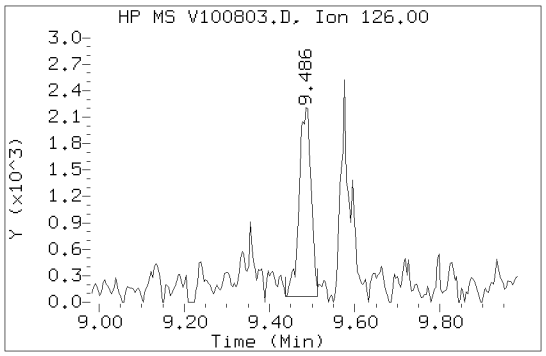
BEFORE

MASS
126
AREA
4256
HEIGHT
2142
13-Oct-2023
16:58
linh
pham



AFTER

MASS
126
AREA
4256
HEIGHT
2142
13-Oct-2023
16:58
linh
pham

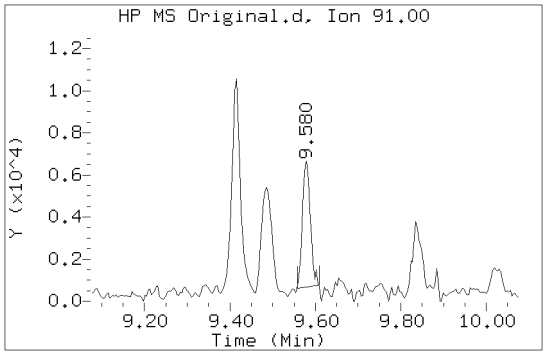


4-Chlorotoluene (106-43-4)

Reason Code:

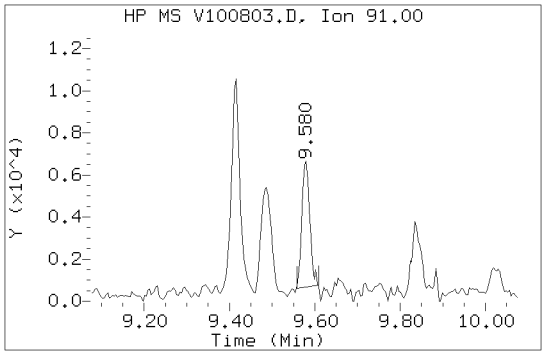
BEFORE

MASS
91
AREA
7844
HEIGHT
5990
13-Oct-2023
16:58
linh
pham



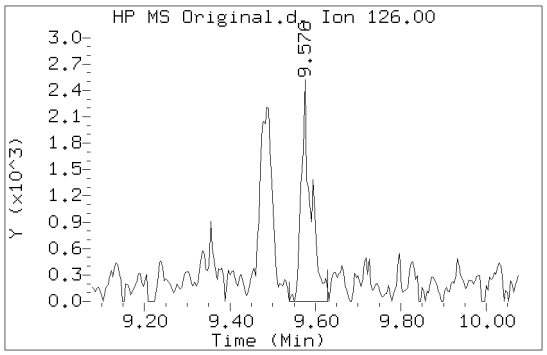
AFTER

MASS
91
AREA
7844
HEIGHT
5990
13-Oct-2023
16:58
linh
pham



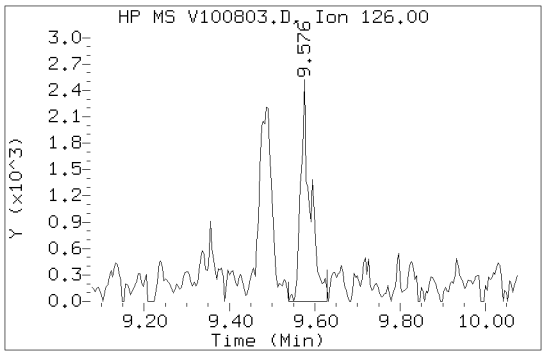
BEFORE

MASS
126
AREA
3980
HEIGHT
2522
13-Oct-2023
16:58
linh
pham



AFTER

MASS
126
AREA
3980
HEIGHT
2522
13-Oct-2023
16:58
linh
pham



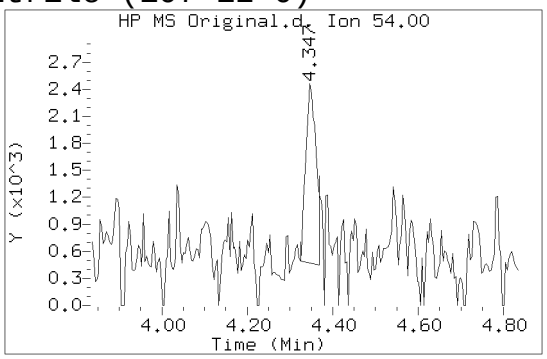
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Propionitrile (107-12-0)

Reason Code:

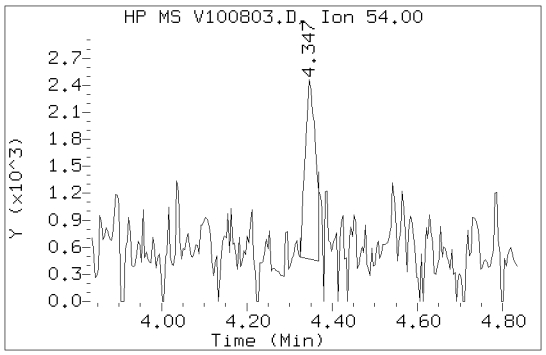
BEFORE

MASS
54
AREA
3360
HEIGHT
1991
13-Oct-2023
16:58
linh
pham



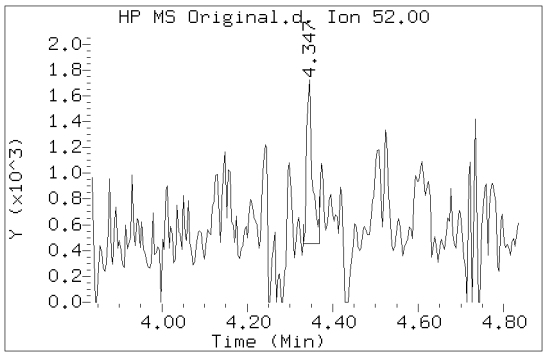
AFTER

MASS
54
AREA
3360
HEIGHT
1991
13-Oct-2023
16:58
linh
pham



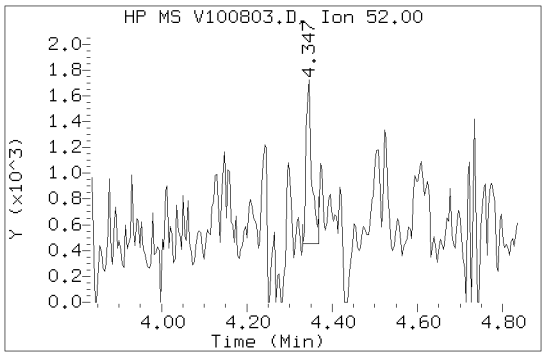
BEFORE

MASS
52
AREA
1186
HEIGHT
1271
13-Oct-2023
16:58
linh
pham



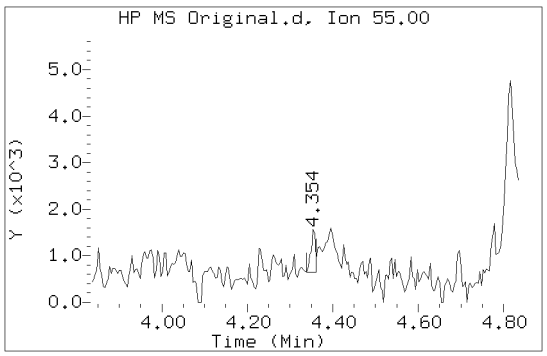
AFTER

MASS
52
AREA
1186
HEIGHT
1271
13-Oct-2023
16:58
linh
pham



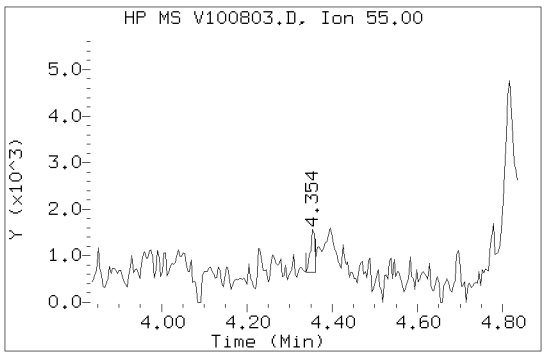
BEFORE

MASS
55
AREA
680
HEIGHT
918
13-Oct-2023
16:58
linh
pham



AFTER

MASS
55
AREA
680
HEIGHT
918
13-Oct-2023
16:58
linh
pham

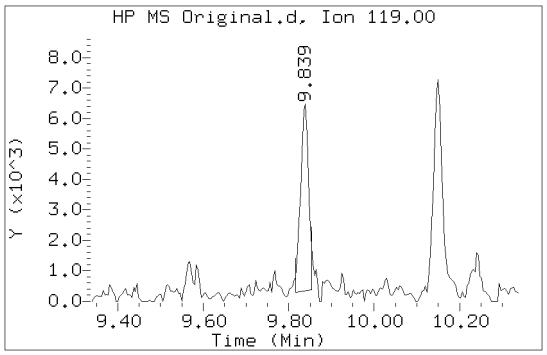


tert-Butylbenzene (98-06-6)

Reason Code:

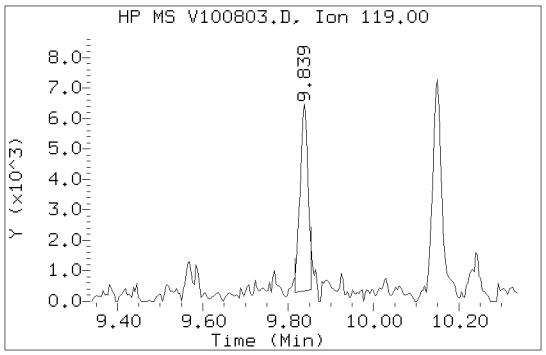
BEFORE

MASS
119
AREA
8228
HEIGHT
6125
13-Oct-2023
16:58
linh
pham



AFTER

MASS
119
AREA
8228
HEIGHT
6125
13-Oct-2023
16:58
linh
pham



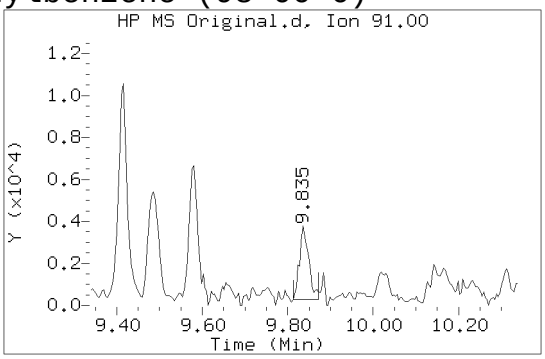
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

tert-Butylbenzene (98-06-6)

Reason Code:

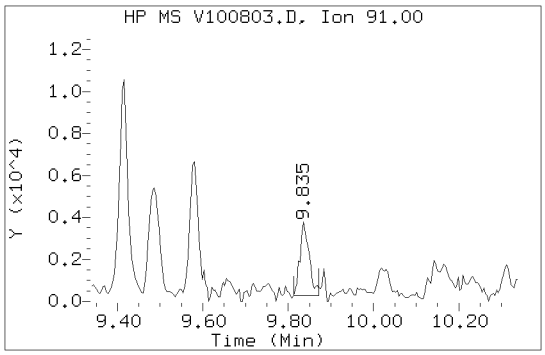
BEFORE

MASS
91
AREA
5476
HEIGHT
3511
13-Oct-2023
16:58
linh
pham



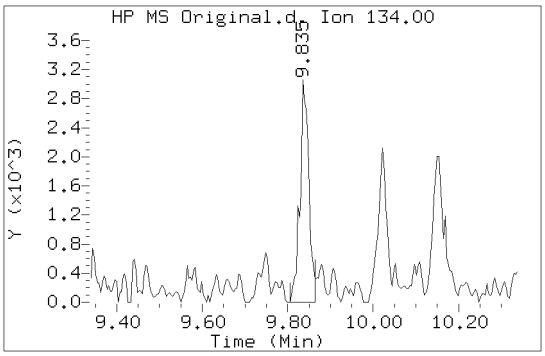
AFTER

MASS
91
AREA
5476
HEIGHT
3511
13-Oct-2023
16:58
linh
pham



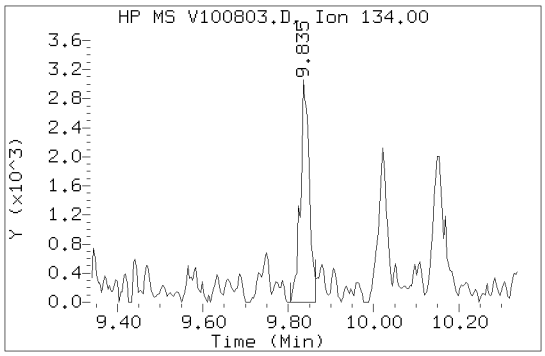
BEFORE

MASS
134
AREA
4520
HEIGHT
3058
13-Oct-2023
16:58
linh
pham



AFTER

MASS
134
AREA
4520
HEIGHT
3058
13-Oct-2023
16:58
linh
pham

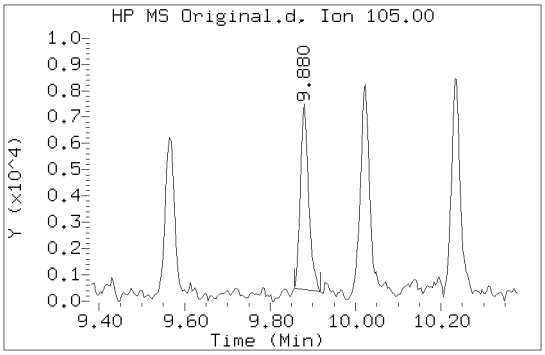


1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

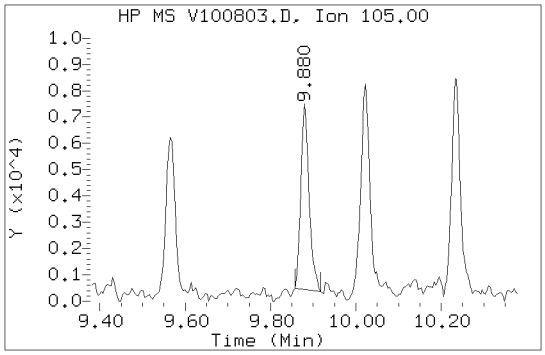
BEFORE

MASS
105
AREA
9802
HEIGHT
7052
13-Oct-2023
16:58
linh
pham



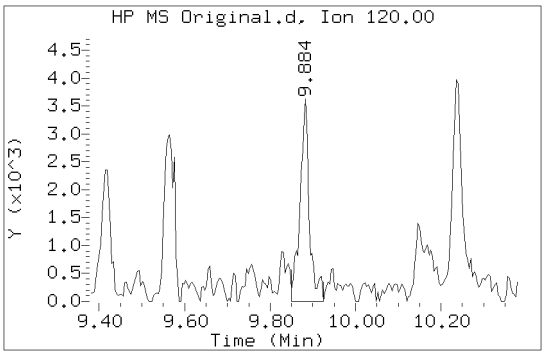
AFTER

MASS
105
AREA
9802
HEIGHT
7052
13-Oct-2023
16:58
linh
pham



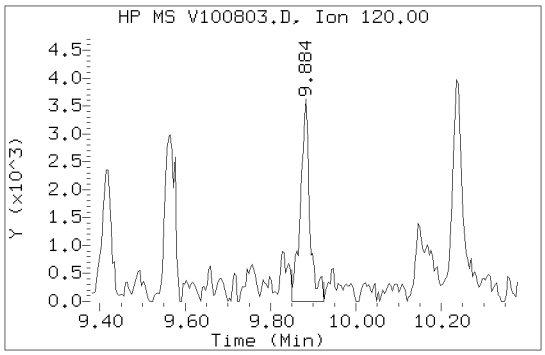
BEFORE

MASS
120
AREA
5651
HEIGHT
3622
13-Oct-2023
16:58
linh
pham



AFTER

MASS
120
AREA
5651
HEIGHT
3622
13-Oct-2023
16:58
linh
pham



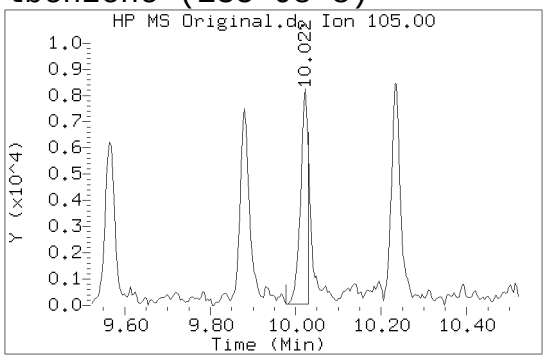
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

sec-Butylbenzene (135-98-8)

Reason Code:

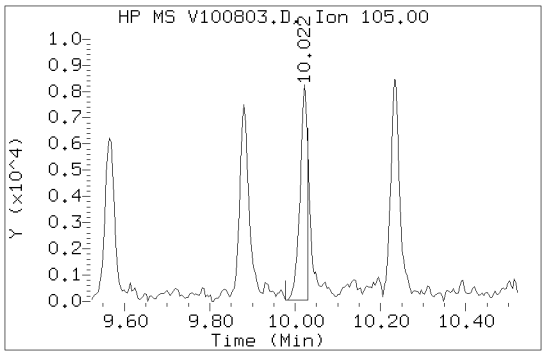
BEFORE

MASS
105
AREA
10169
HEIGHT
8204
13-Oct-2023
16:58
linh
pham



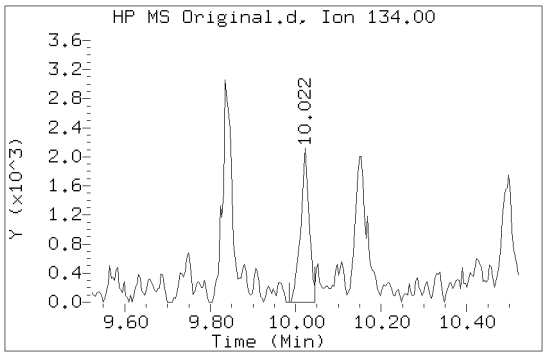
AFTER

MASS
105
AREA
10169
HEIGHT
8204
13-Oct-2023
16:58
linh
pham



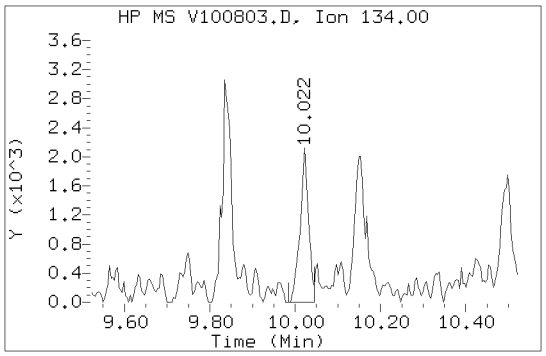
BEFORE

MASS
134
AREA
3031
HEIGHT
2123
13-Oct-2023
16:58
linh
pham



AFTER

MASS
134
AREA
3031
HEIGHT
2123
13-Oct-2023
16:58
linh
pham

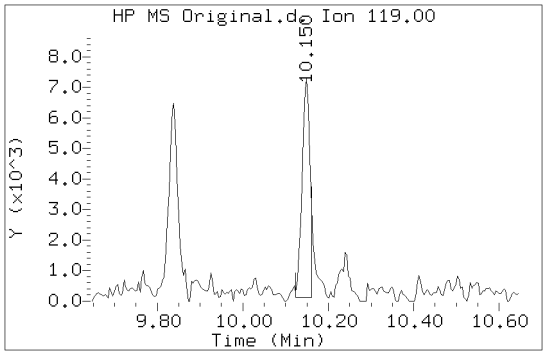


p-Isopropyltoluene (99-87-6)

Reason Code:

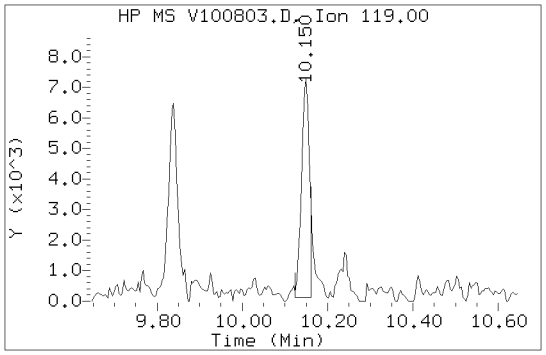
BEFORE

MASS
119
AREA
9303
HEIGHT
7147
13-Oct-2023
16:58
linh
pham



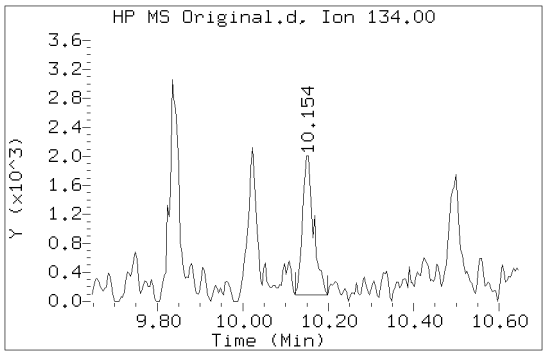
AFTER

MASS
119
AREA
9303
HEIGHT
7147
13-Oct-2023
16:58
linh
pham



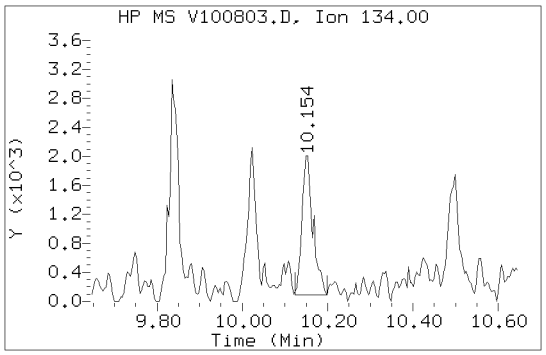
BEFORE

MASS
134
AREA
3466
HEIGHT
1921
13-Oct-2023
16:58
linh
pham



AFTER

MASS
134
AREA
3466
HEIGHT
1921
13-Oct-2023
16:58
linh
pham



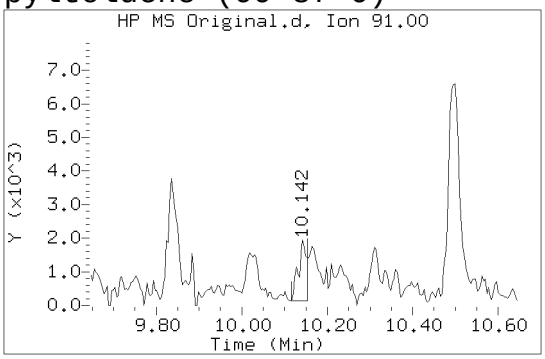
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

p-Isopropyltoluene (99-87-6)

Reason Code:

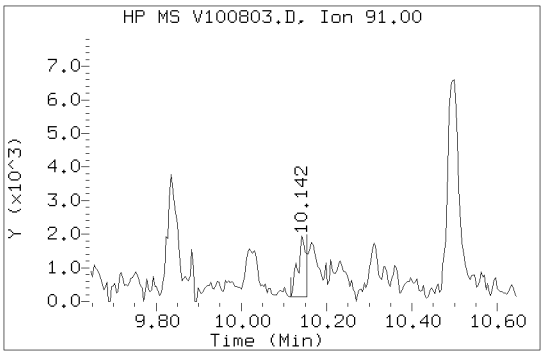
BEFORE

MASS
91
AREA
2449
HEIGHT
1815
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
2449
HEIGHT
1815
13-Oct-2023
16:58
linh
pham

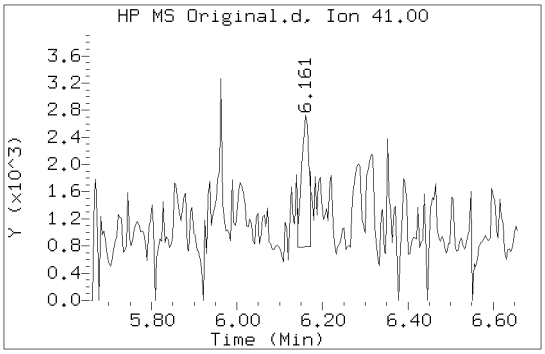


Methyl Methacrylate (80-62-6)

Reason Code:

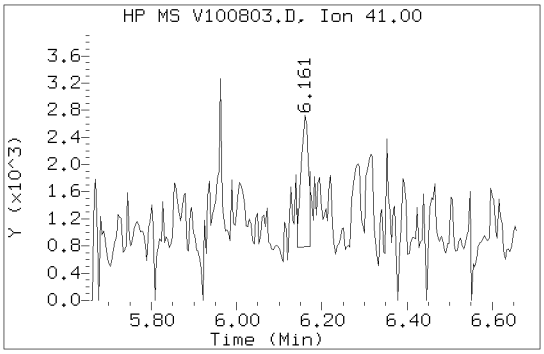
BEFORE

MASS
41
AREA
2422
HEIGHT
1941
13-Oct-2023
16:58
linh
pham



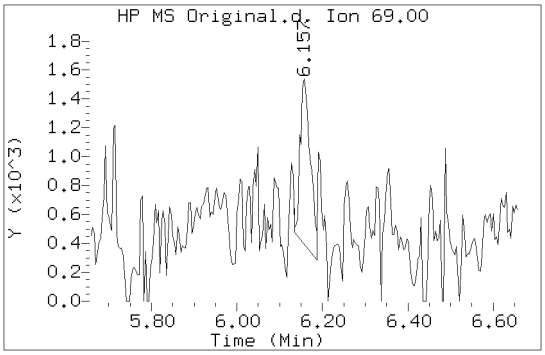
AFTER

MASS
41
AREA
2422
HEIGHT
1941
13-Oct-2023
16:58
linh
pham



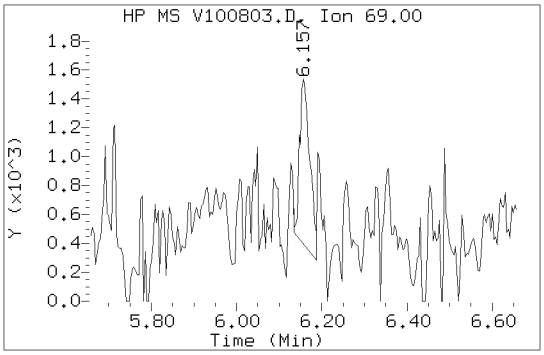
BEFORE

MASS
69
AREA
1939
HEIGHT
1145
13-Oct-2023
16:58
linh
pham



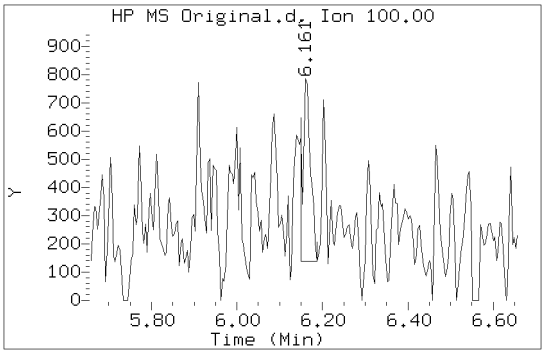
AFTER

MASS
69
AREA
1939
HEIGHT
1145
13-Oct-2023
16:58
linh
pham



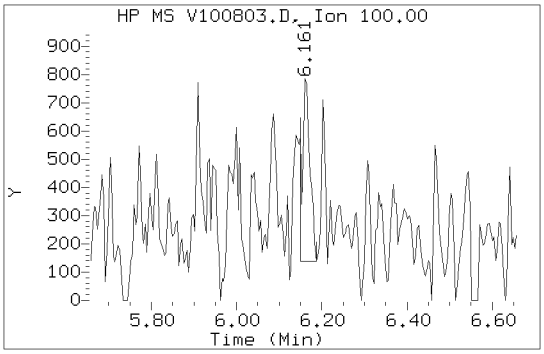
BEFORE

MASS
100
AREA
825
HEIGHT
647
13-Oct-2023
16:58
linh
pham



AFTER

MASS
100
AREA
825
HEIGHT
647
13-Oct-2023
16:58
linh
pham



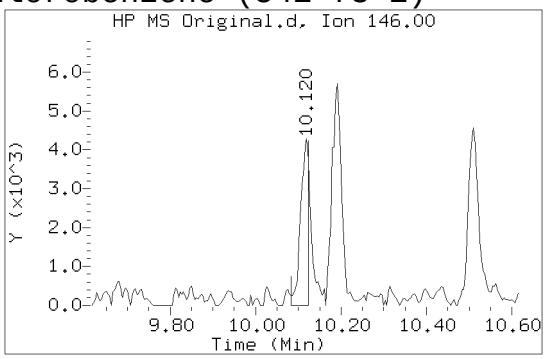
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,3-Dichlorobenzene (541-73-1)

Reason Code:

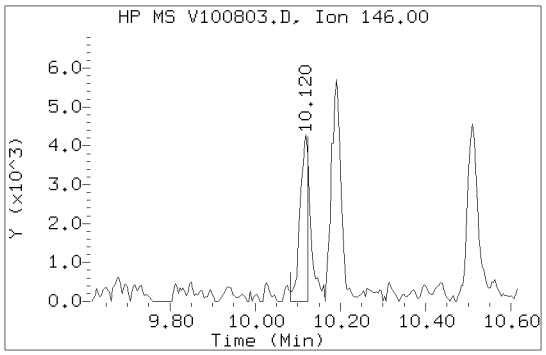
BEFORE

MASS
146
AREA
5600
HEIGHT
4288
13-Oct-2023
16:58
linh
pham



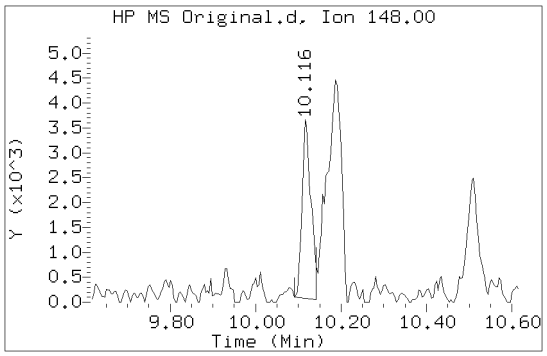
AFTER

MASS
146
AREA
5600
HEIGHT
4288
13-Oct-2023
16:58
linh
pham



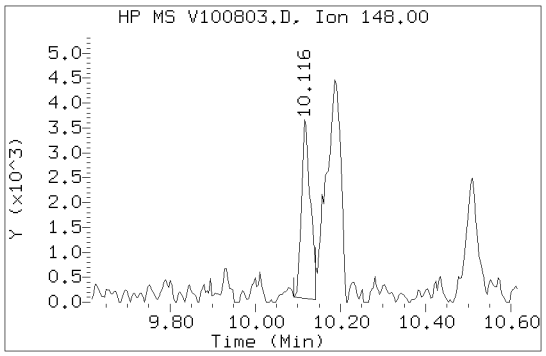
BEFORE

MASS
148
AREA
5345
HEIGHT
3585
13-Oct-2023
16:58
linh
pham



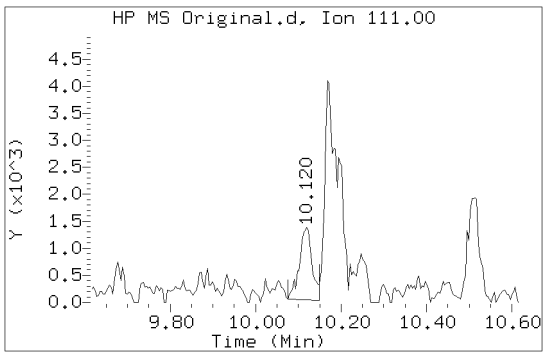
AFTER

MASS
148
AREA
5345
HEIGHT
3585
13-Oct-2023
16:58
linh
pham



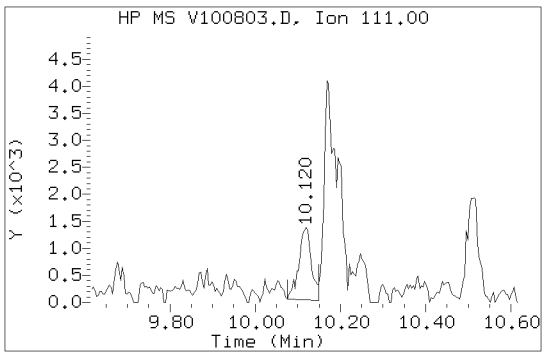
BEFORE

MASS
111
AREA
2863
HEIGHT
1349
13-Oct-2023
16:58
linh
pham



AFTER

MASS
111
AREA
2863
HEIGHT
1349
13-Oct-2023
16:58
linh
pham

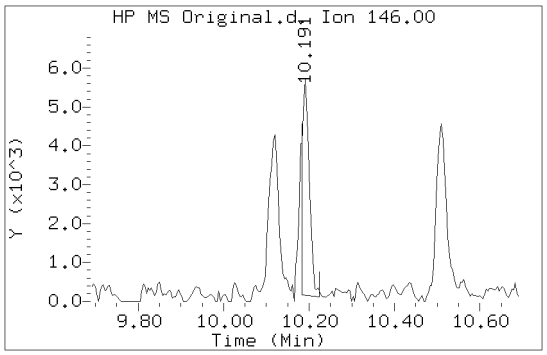


1,4-Dichlorobenzene (106-46-7)

Reason Code:

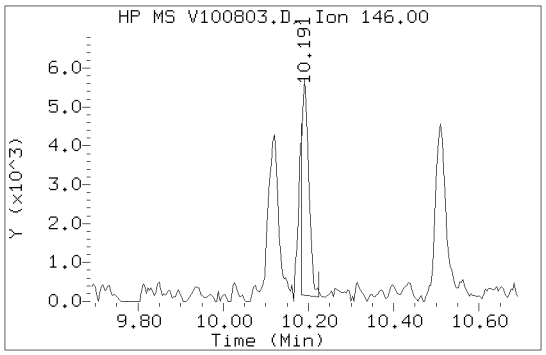
BEFORE

MASS
146
AREA
6529
HEIGHT
5538
13-Oct-2023
16:58
linh
pham



AFTER

MASS
146
AREA
6529
HEIGHT
5538
13-Oct-2023
16:58
linh
pham



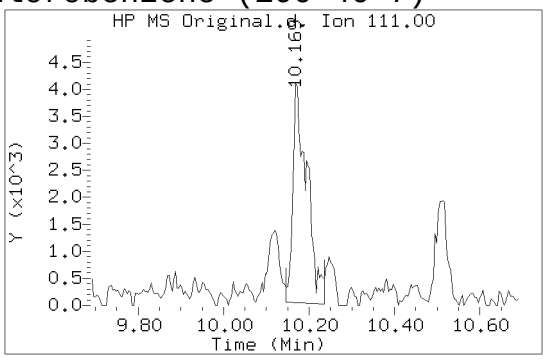
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,4-Dichlorobenzene (106-46-7)

Reason Code:

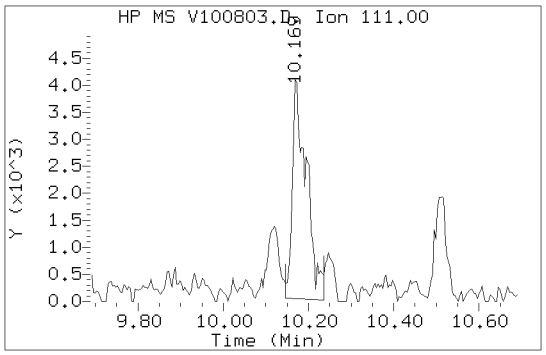
BEFORE

MASS
111
AREA
9520
HEIGHT
4052
13-Oct-2023
16:58
linh
pham



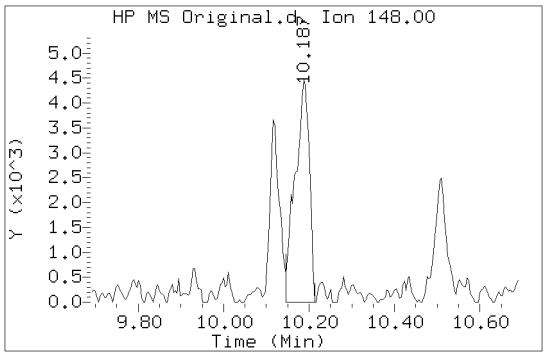
AFTER

MASS
111
AREA
9520
HEIGHT
4052
13-Oct-2023
16:58
linh
pham



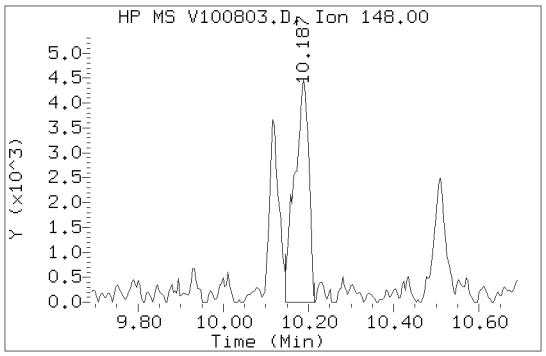
BEFORE

MASS
148
AREA
10528
HEIGHT
4465
13-Oct-2023
16:58
linh
pham



AFTER

MASS
148
AREA
10528
HEIGHT
4465
13-Oct-2023
16:58
linh
pham

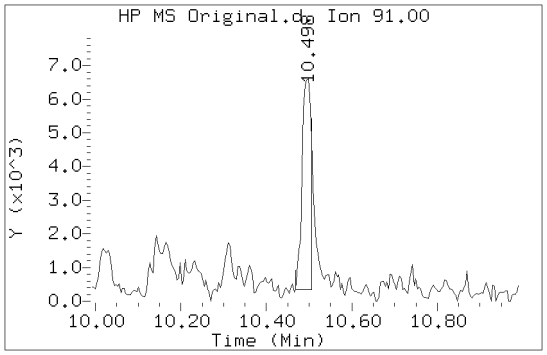


n-Butylbenzene (104-51-8)

Reason Code:

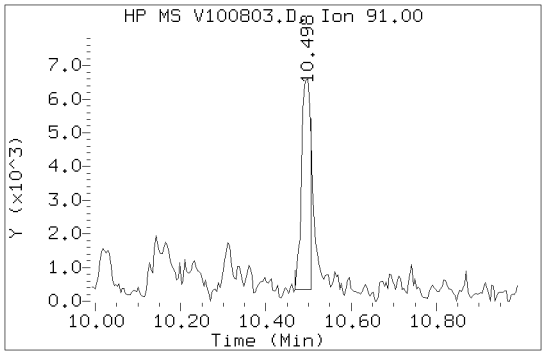
BEFORE

MASS
91
AREA
9253
HEIGHT
6256
13-Oct-2023
16:58
linh
pham



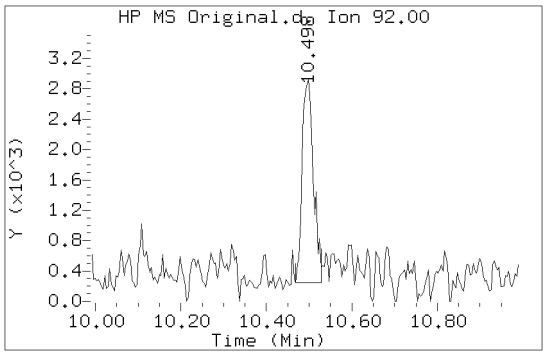
AFTER

MASS
91
AREA
9253
HEIGHT
6256
13-Oct-2023
16:58
linh
pham



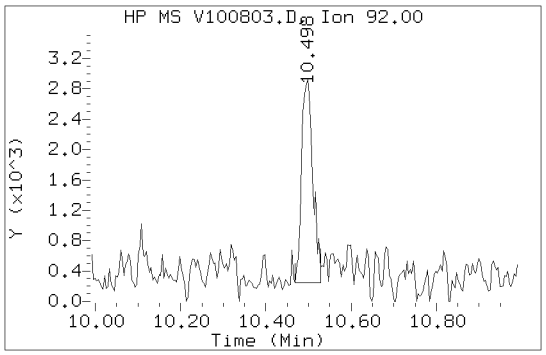
BEFORE

MASS
92
AREA
4974
HEIGHT
2678
13-Oct-2023
16:58
linh
pham



AFTER

MASS
92
AREA
4974
HEIGHT
2678
13-Oct-2023
16:58
linh
pham



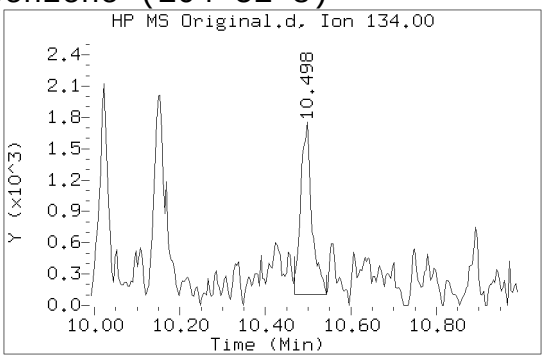
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

n-Butylbenzene (104-51-8)

Reason Code:

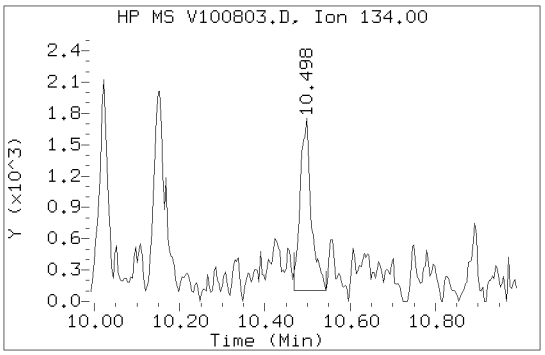
BEFORE

MASS
134
AREA
3017
HEIGHT
1647
13-Oct-2023
16:58
linh
pham



AFTER

MASS
134
AREA
3017
HEIGHT
1647
13-Oct-2023
16:58
linh
pham

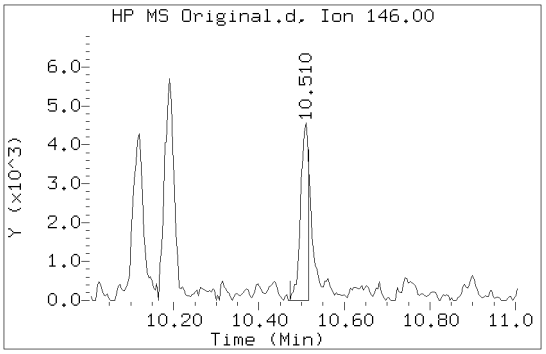


1,2-Dichlorobenzene (95-50-1)

Reason Code:

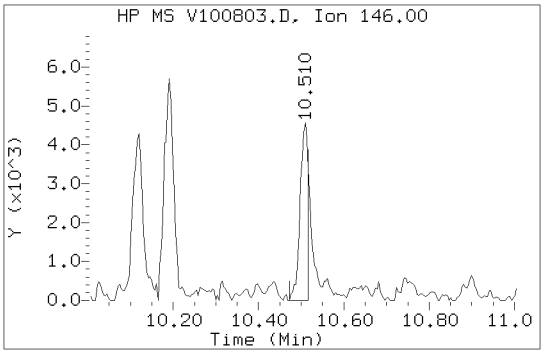
BEFORE

MASS
146
AREA
6061
HEIGHT
4563
13-Oct-2023
16:58
linh
pham



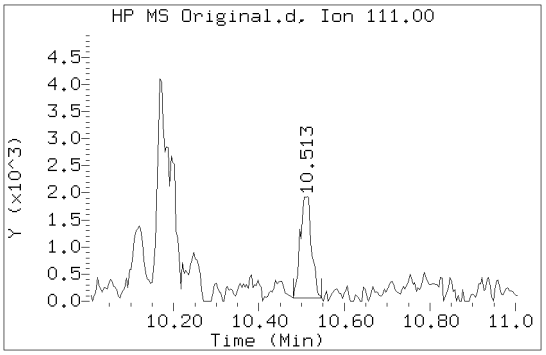
AFTER

MASS
146
AREA
6061
HEIGHT
4563
13-Oct-2023
16:58
linh
pham



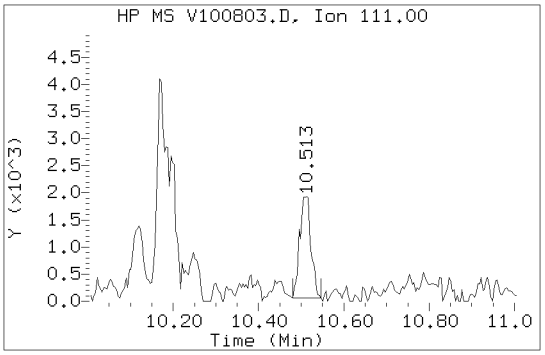
BEFORE

MASS
111
AREA
3538
HEIGHT
1879
13-Oct-2023
16:58
linh
pham



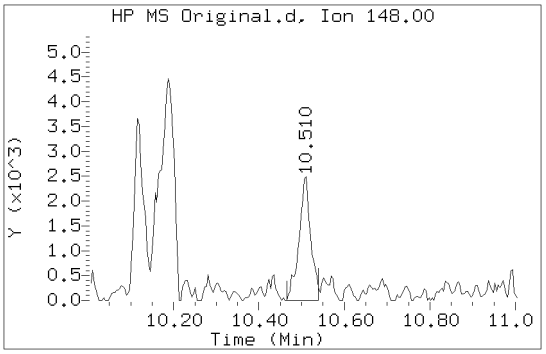
AFTER

MASS
111
AREA
3538
HEIGHT
1879
13-Oct-2023
16:58
linh
pham



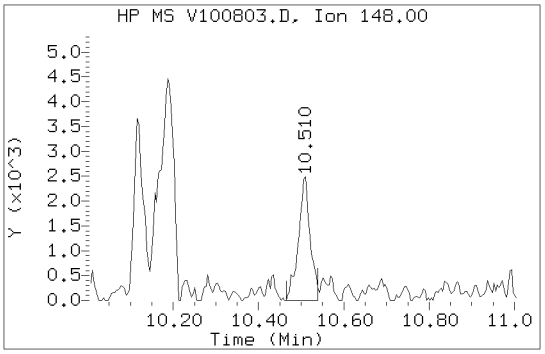
BEFORE

MASS
148
AREA
4864
HEIGHT
2490
13-Oct-2023
16:58
linh
pham



AFTER

MASS
148
AREA
4864
HEIGHT
2490
13-Oct-2023
16:58
linh
pham



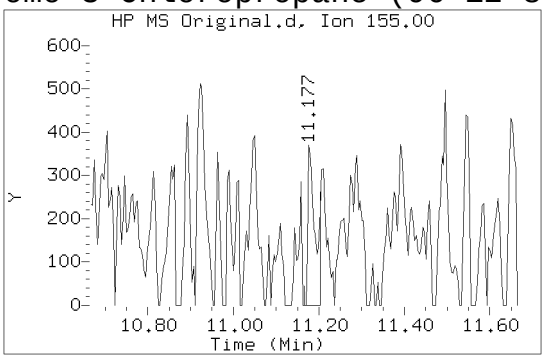
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

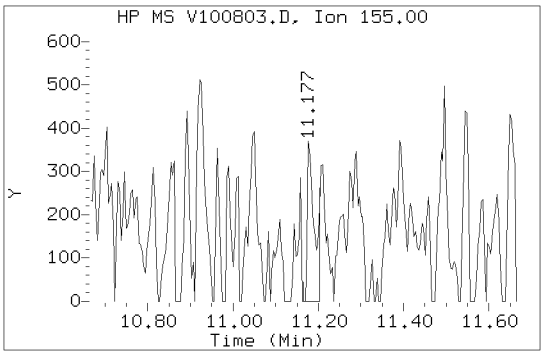
BEFORE

MASS
155
AREA
431
HEIGHT
370
13-Oct-2023
16:58
linh
pham



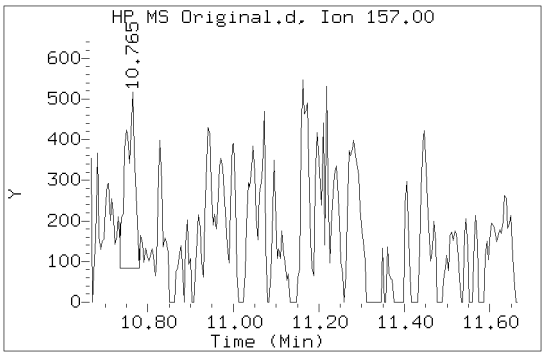
AFTER

MASS
155
AREA
431
HEIGHT
370
13-Oct-2023
16:58
linh
pham



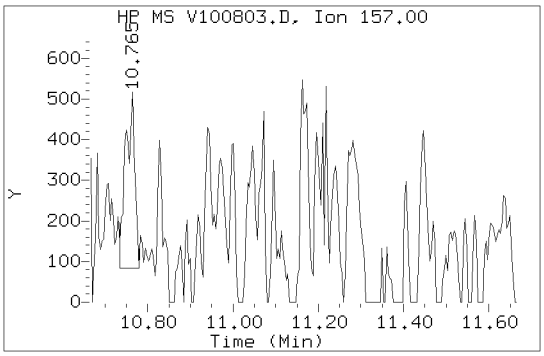
BEFORE

MASS
157
AREA
649
HEIGHT
433
13-Oct-2023
16:58
linh
pham



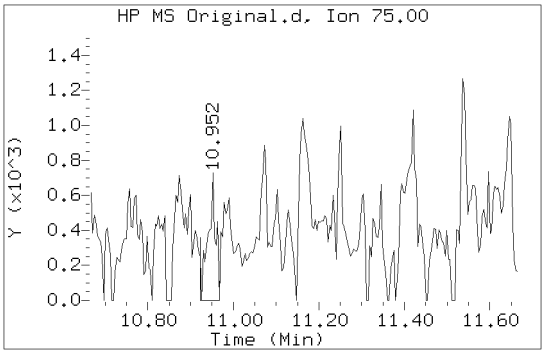
AFTER

MASS
157
AREA
649
HEIGHT
433
13-Oct-2023
16:58
linh
pham



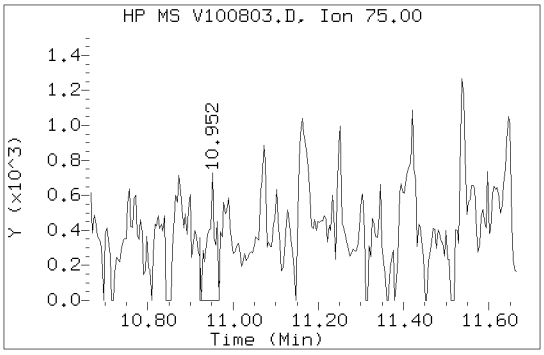
BEFORE

MASS
75
AREA
925
HEIGHT
728
13-Oct-2023
16:58
linh
pham



AFTER

MASS
75
AREA
925
HEIGHT
728
13-Oct-2023
16:58
linh
pham

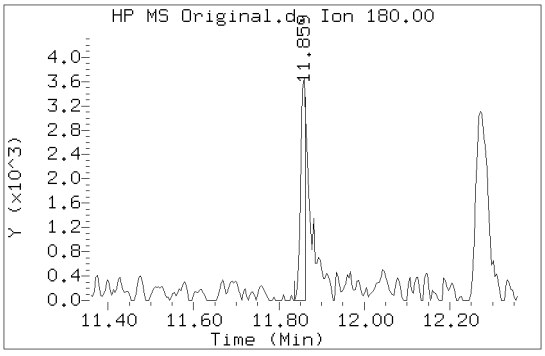


1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

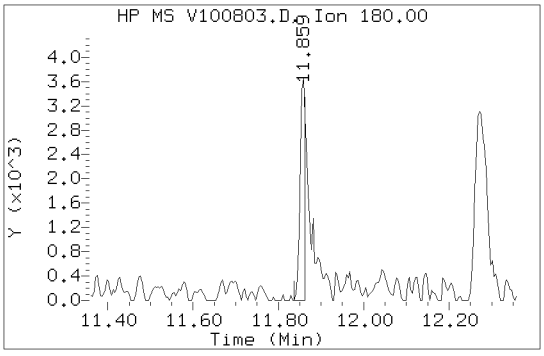
BEFORE

MASS
180
AREA
3176
HEIGHT
3648
13-Oct-2023
16:58
linh
pham



AFTER

MASS
180
AREA
3176
HEIGHT
3648
13-Oct-2023
16:58
linh
pham



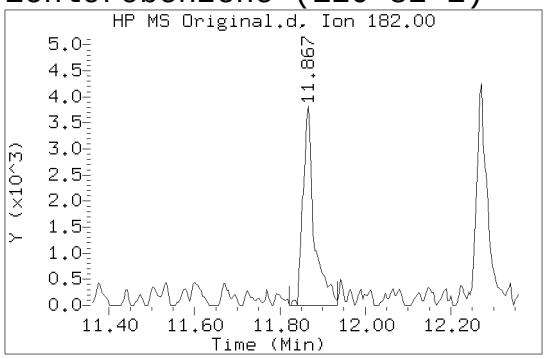
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

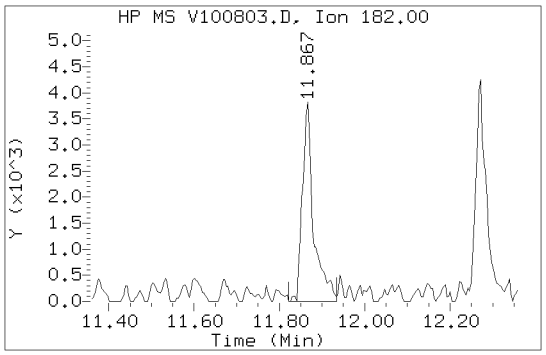
BEFORE

MASS
182
AREA
7057
HEIGHT
3822
13-Oct-2023
16:58
linh
pham



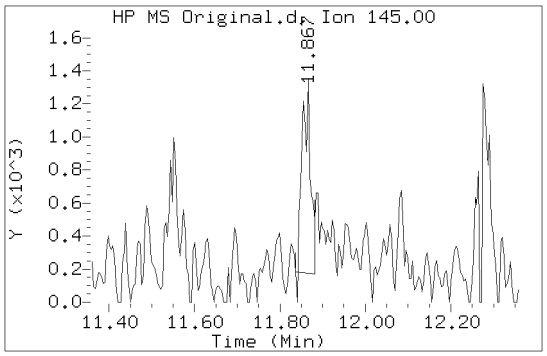
AFTER

MASS
182
AREA
7057
HEIGHT
3822
13-Oct-2023
16:58
linh
pham



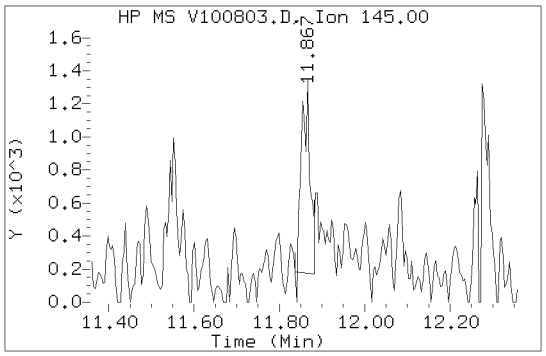
BEFORE

MASS
145
AREA
1608
HEIGHT
1169
13-Oct-2023
16:58
linh
pham



AFTER

MASS
145
AREA
1608
HEIGHT
1169
13-Oct-2023
16:58
linh
pham

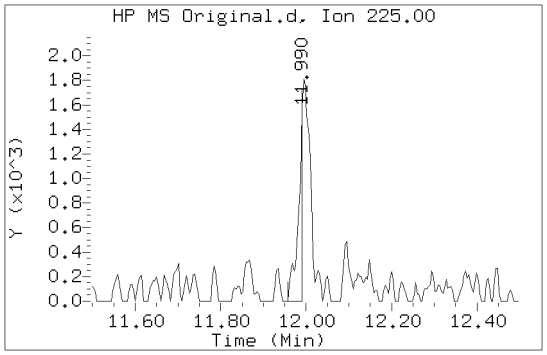


Hexachlorobutadiene (87-68-3)

Reason Code:

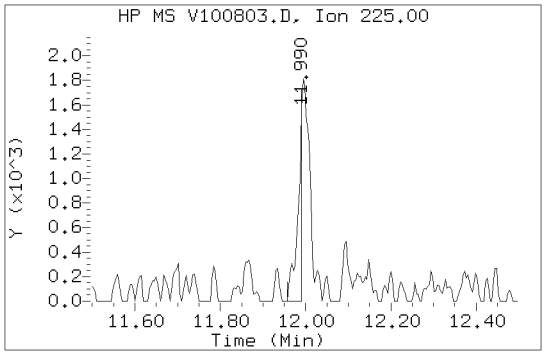
BEFORE

MASS
225
AREA
1153
HEIGHT
1579
13-Oct-2023
16:58
linh
pham



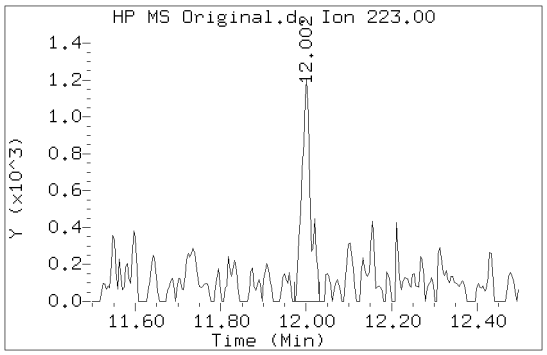
AFTER

MASS
225
AREA
1153
HEIGHT
1579
13-Oct-2023
16:58
linh
pham



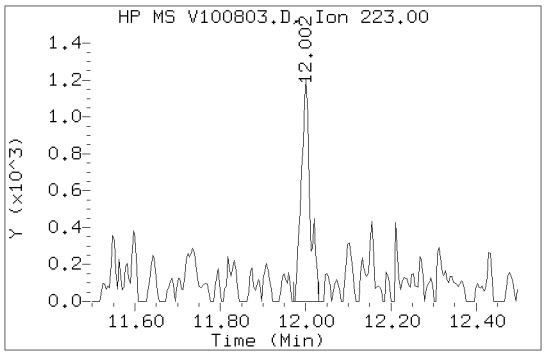
BEFORE

MASS
223
AREA
1783
HEIGHT
1202
13-Oct-2023
16:58
linh
pham



AFTER

MASS
223
AREA
1783
HEIGHT
1202
13-Oct-2023
16:58
linh
pham



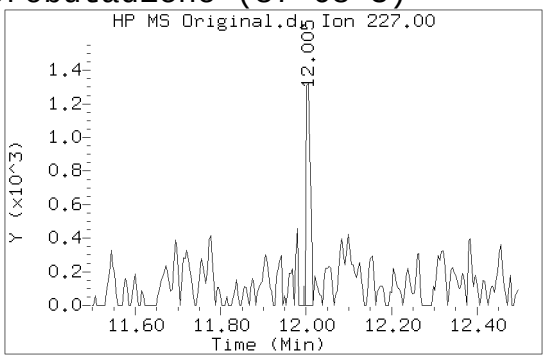
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Hexachlorobutadiene (87-68-3)

Reason Code:

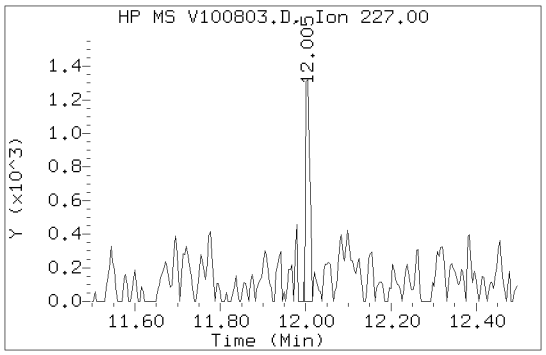
BEFORE

MASS
227
AREA
912
HEIGHT
1320
13-Oct-2023
16:58
linh
pham



AFTER

MASS
227
AREA
912
HEIGHT
1320
13-Oct-2023
16:58
linh
pham

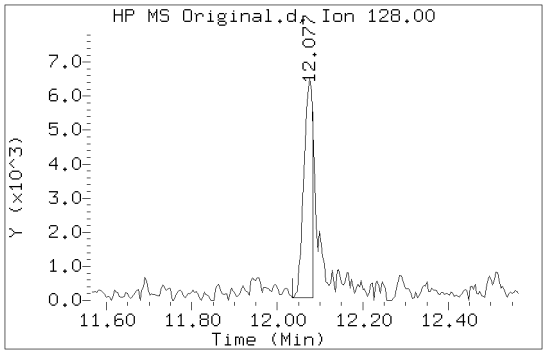


Naphthalene (91-20-3)

Reason Code:

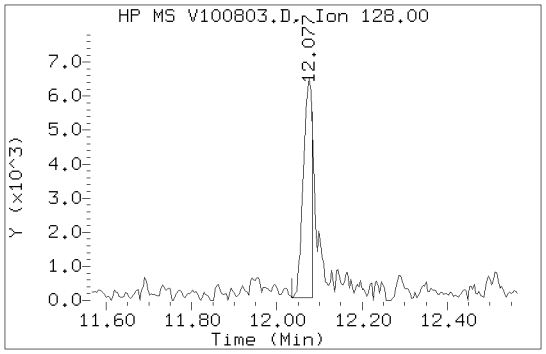
BEFORE

MASS
128
AREA
9429
HEIGHT
6432
13-Oct-2023
16:58
linh
pham



AFTER

MASS
128
AREA
9429
HEIGHT
6432
13-Oct-2023
16:58
linh
pham

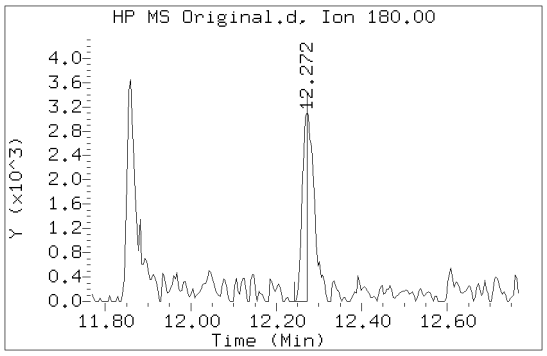


1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

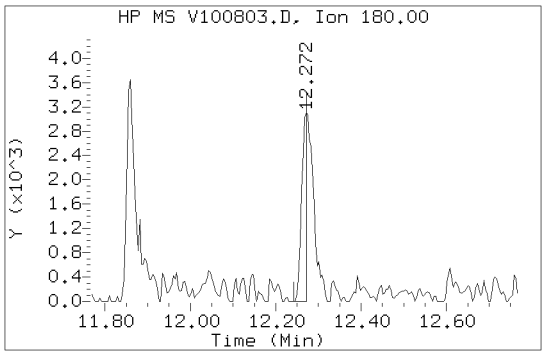
BEFORE

MASS
180
AREA
2679
HEIGHT
3117
13-Oct-2023
16:58
linh
pham



AFTER

MASS
180
AREA
2679
HEIGHT
3117
13-Oct-2023
16:58
linh
pham



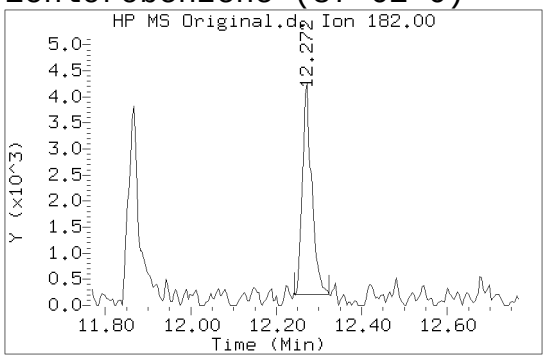
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,2,3-Trichlorobenzene (87-61-6)

Reason Code:

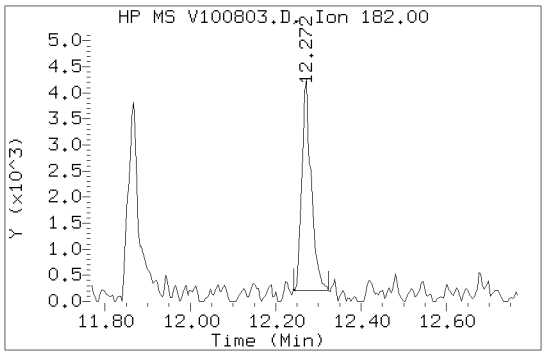
BEFORE

MASS
182
AREA
6228
HEIGHT
4039
13-Oct-2023
16:58
linh
pham



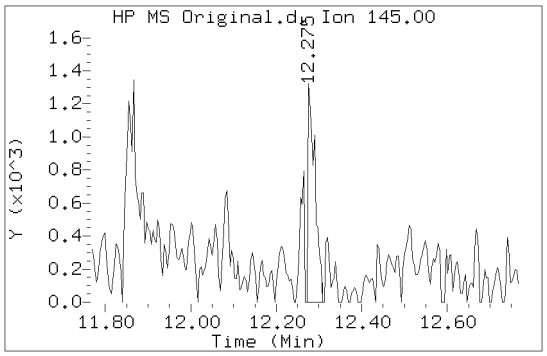
AFTER

MASS
182
AREA
6228
HEIGHT
4039
13-Oct-2023
16:58
linh
pham



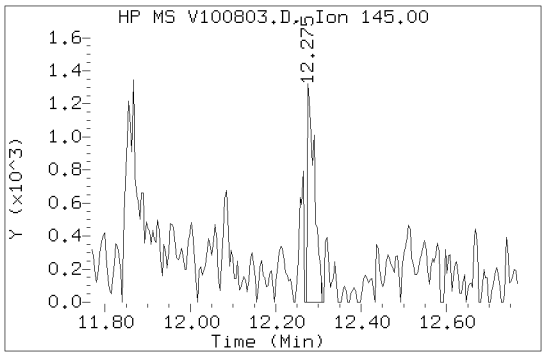
BEFORE

MASS
145
AREA
1537
HEIGHT
1322
13-Oct-2023
16:58
linh
pham



AFTER

MASS
145
AREA
1537
HEIGHT
1322
13-Oct-2023
16:58
linh
pham

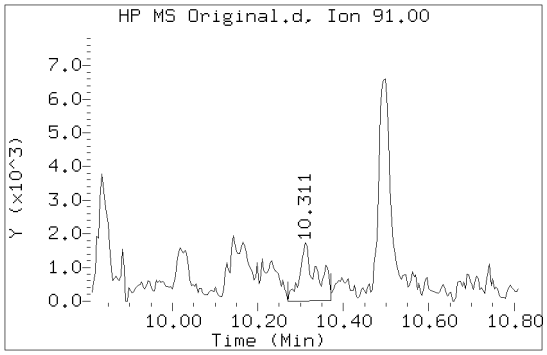


Benzyl Chloride (100-44-7)

Reason Code:

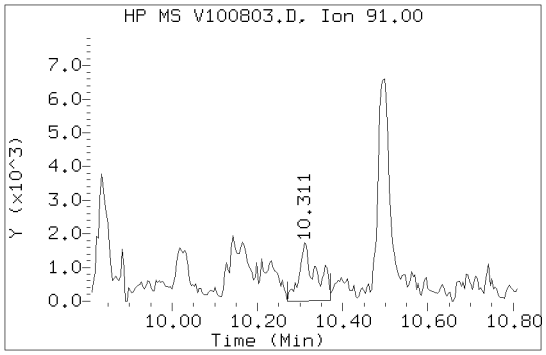
BEFORE

MASS
91
AREA
4794
HEIGHT
1724
13-Oct-2023
16:58
linh
pham



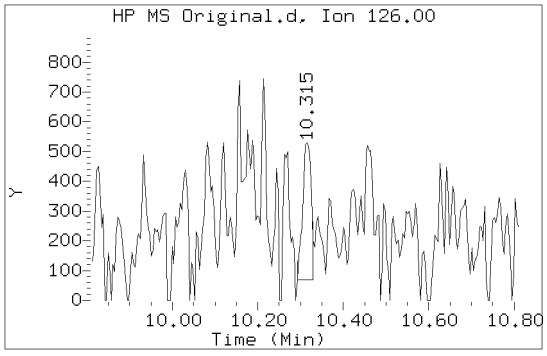
AFTER

MASS
91
AREA
4794
HEIGHT
1724
13-Oct-2023
16:58
linh
pham



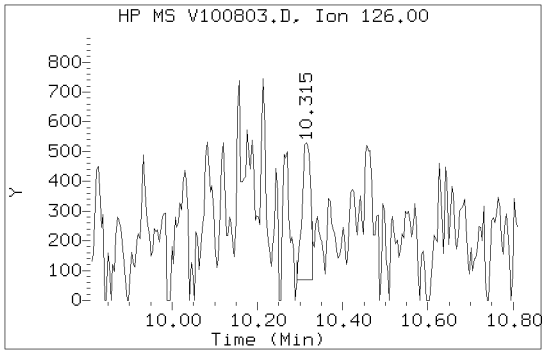
BEFORE

MASS
126
AREA
662
HEIGHT
462
13-Oct-2023
16:58
linh
pham



AFTER

MASS
126
AREA
662
HEIGHT
462
13-Oct-2023
16:58
linh
pham



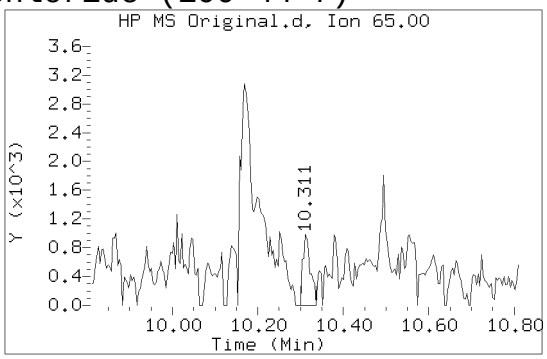
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Benzyl Chloride (100-44-7)

Reason Code:

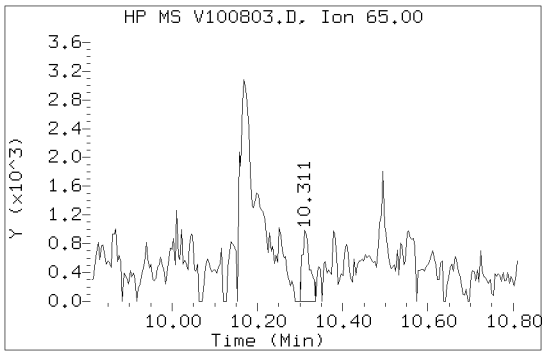
BEFORE

MASS
65
AREA
1234
HEIGHT
987
13-Oct-2023
16:58
linh
pham



AFTER

MASS
65
AREA
1234
HEIGHT
987
13-Oct-2023
16:58
linh
pham

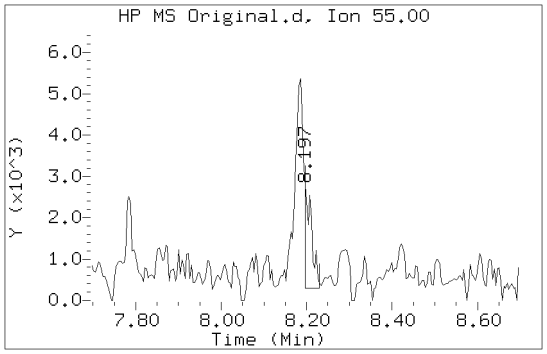


1-Chlorohexane (544-10-5)

Reason Code:

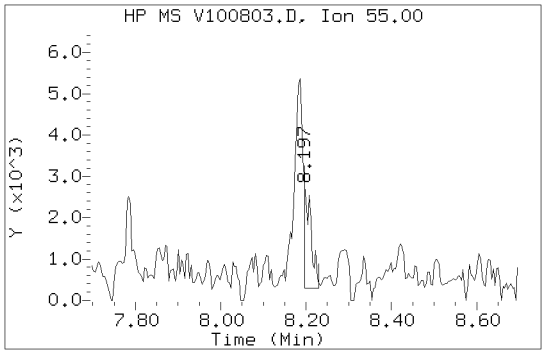
BEFORE

MASS
55
AREA
2796
HEIGHT
2499
13-Oct-2023
16:58
linh
pham



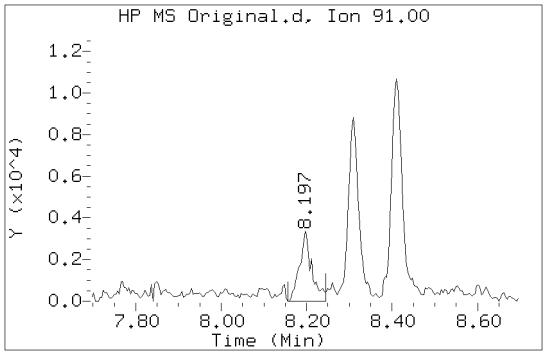
AFTER

MASS
55
AREA
2796
HEIGHT
2499
13-Oct-2023
16:58
linh
pham



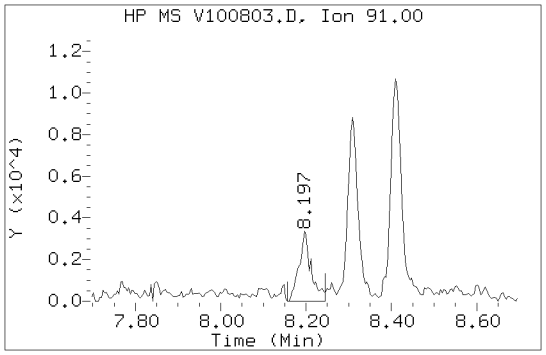
BEFORE

MASS
91
AREA
6751
HEIGHT
3371
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
6751
HEIGHT
3371
13-Oct-2023
16:58
linh
pham

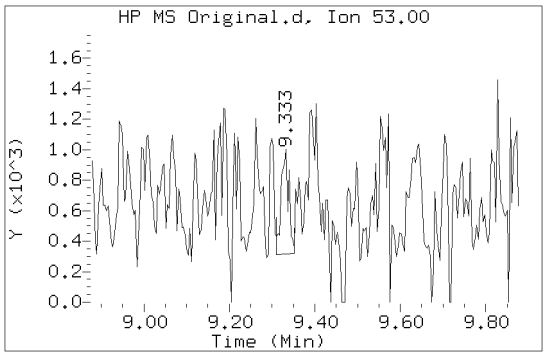


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

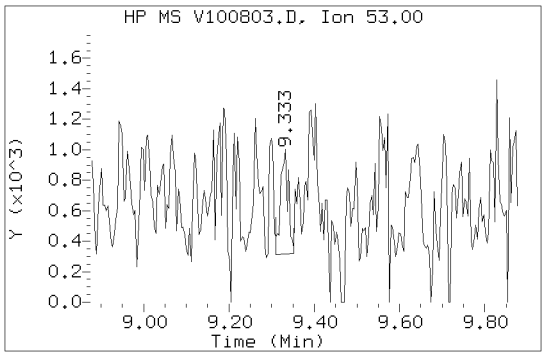
BEFORE

MASS
53
AREA
853
HEIGHT
685
13-Oct-2023
16:58
linh
pham



AFTER

MASS
53
AREA
853
HEIGHT
685
13-Oct-2023
16:58
linh
pham



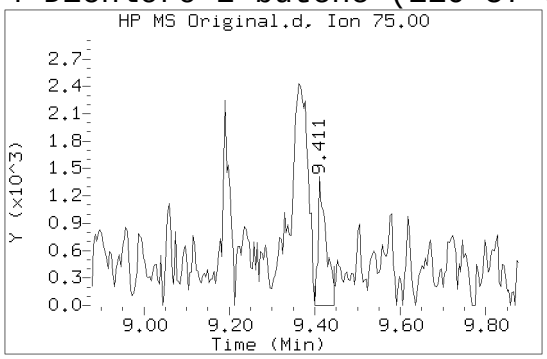
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

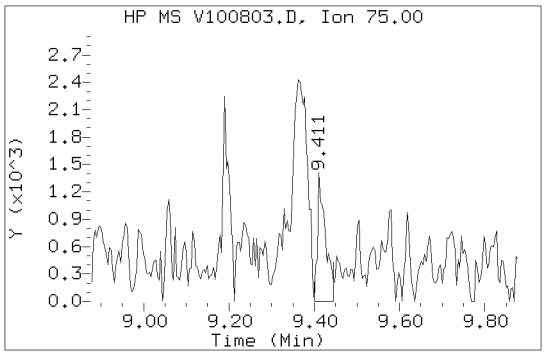
BEFORE

MASS
75
AREA
1824
HEIGHT
1412
13-Oct-2023
16:58
linh
pham



AFTER

MASS
75
AREA
1824
HEIGHT
1412
13-Oct-2023
16:58
linh
pham

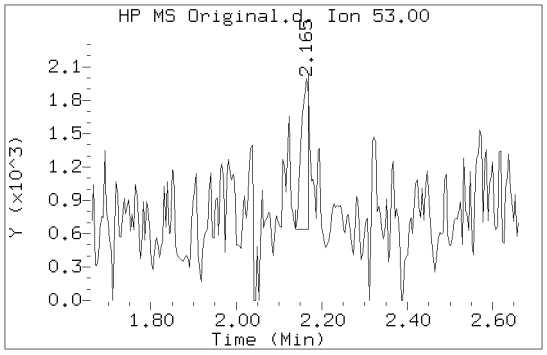


Chloroprene (126-99-8)

Reason Code:

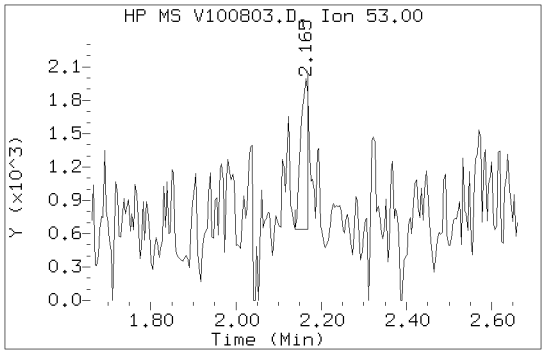
BEFORE

MASS
53
AREA
1613
HEIGHT
1355
13-Oct-2023
16:58
linh
pham



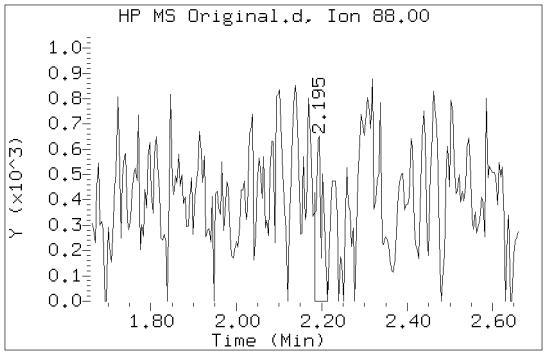
AFTER

MASS
53
AREA
1613
HEIGHT
1355
13-Oct-2023
16:58
linh
pham



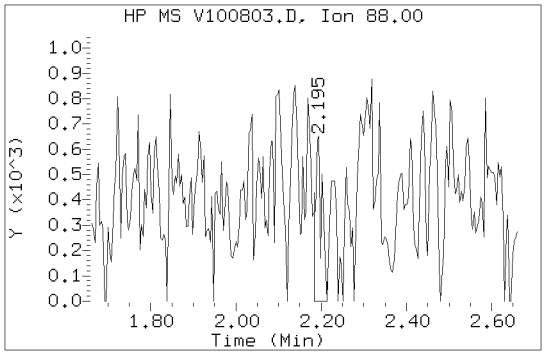
BEFORE

MASS
88
AREA
707
HEIGHT
652
13-Oct-2023
16:58
linh
pham



AFTER

MASS
88
AREA
707
HEIGHT
652
13-Oct-2023
16:58
linh
pham

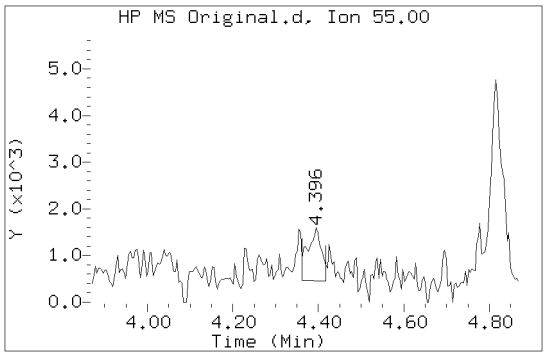


Methyl Acrylate (96-33-3)

Reason Code:

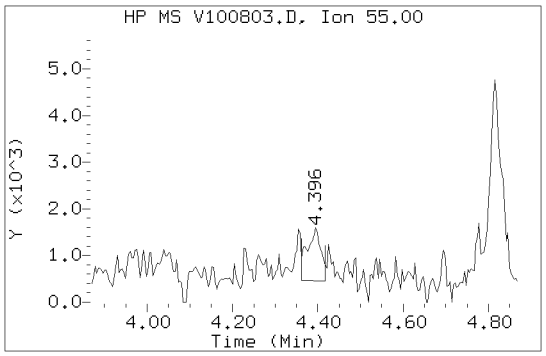
BEFORE

MASS
55
AREA
2626
HEIGHT
1139
13-Oct-2023
16:58
linh
pham



AFTER

MASS
55
AREA
2626
HEIGHT
1139
13-Oct-2023
16:58
linh
pham



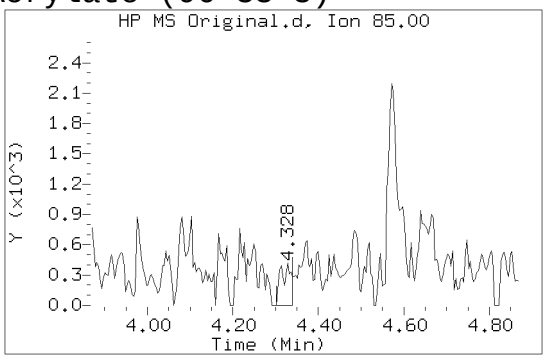
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Methyl Acrylate (96-33-3)

Reason Code:

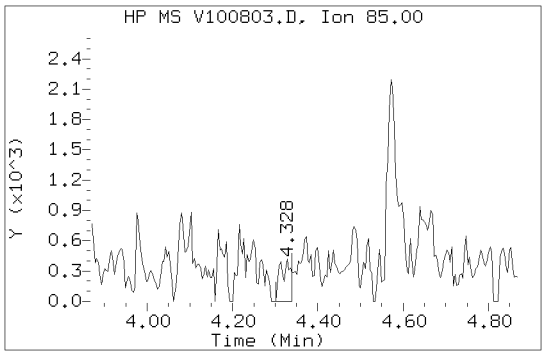
BEFORE

MASS
85
AREA
696
HEIGHT
418
13-Oct-2023
16:58
linh
pham



AFTER

MASS
85
AREA
696
HEIGHT
418
13-Oct-2023
16:58
linh
pham

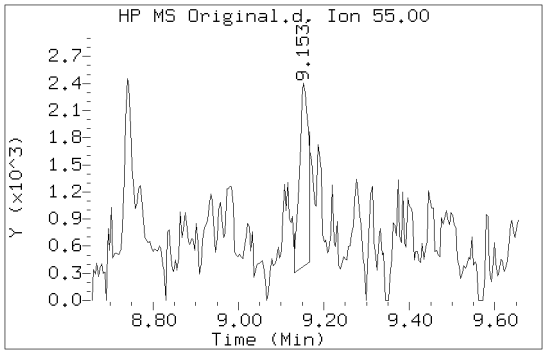


Cyclohexanone (108-94-1)

Reason Code:

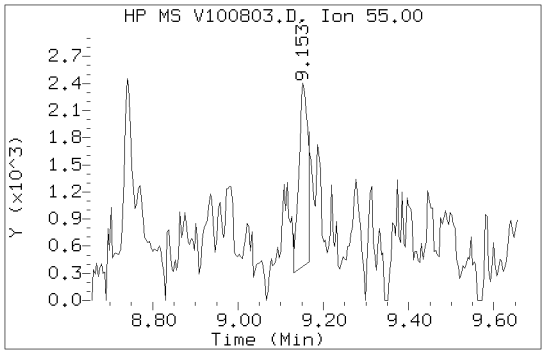
BEFORE

MASS
55
AREA
3104
HEIGHT
2030
13-Oct-2023
16:58
linh
pham



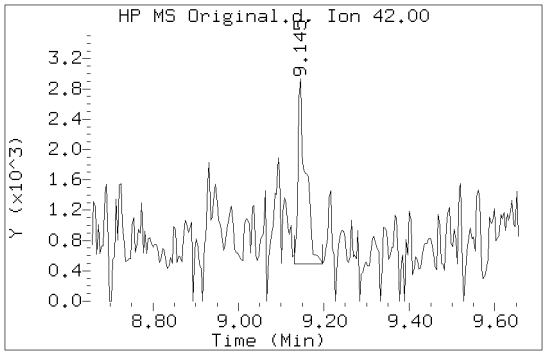
AFTER

MASS
55
AREA
3104
HEIGHT
2030
13-Oct-2023
16:58
linh
pham



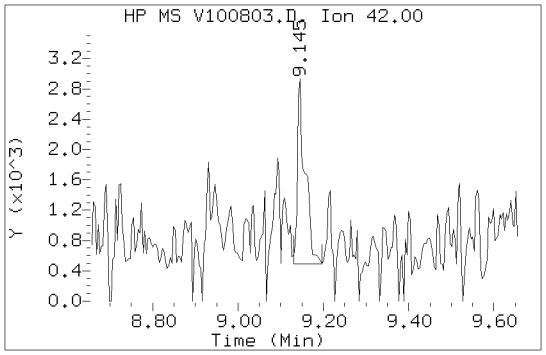
BEFORE

MASS
42
AREA
3114
HEIGHT
2443
13-Oct-2023
16:58
linh
pham



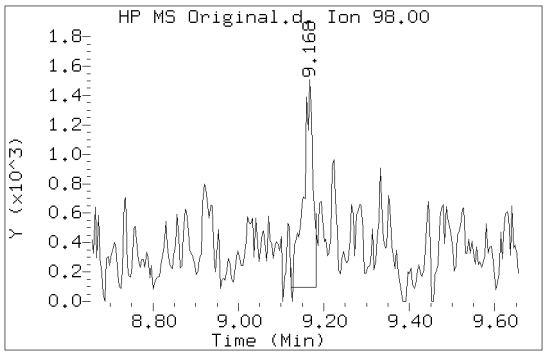
AFTER

MASS
42
AREA
3114
HEIGHT
2443
13-Oct-2023
16:58
linh
pham



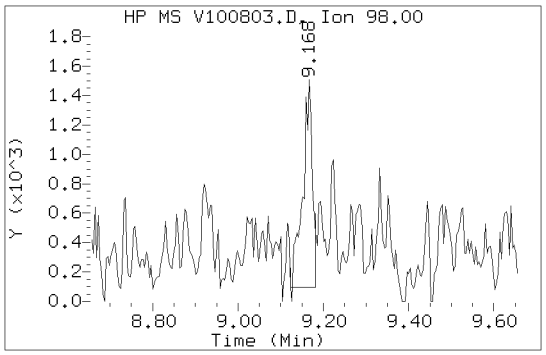
BEFORE

MASS
98
AREA
2230
HEIGHT
1413
13-Oct-2023
16:58
linh
pham



AFTER

MASS
98
AREA
2230
HEIGHT
1413
13-Oct-2023
16:58
linh
pham



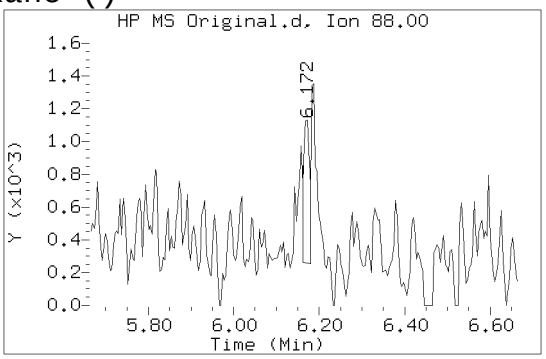
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

1,4-Dioxane ()

Reason Code:

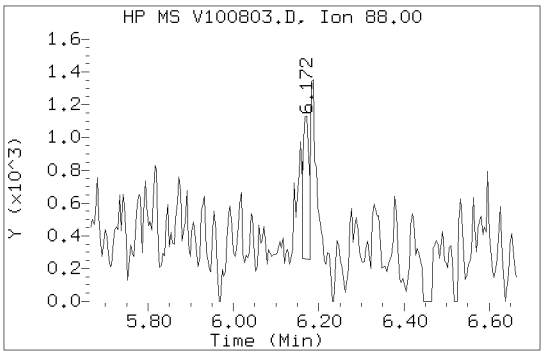
BEFORE

MASS
88
AREA
926
HEIGHT
874
13-Oct-2023
16:58
linh
pham



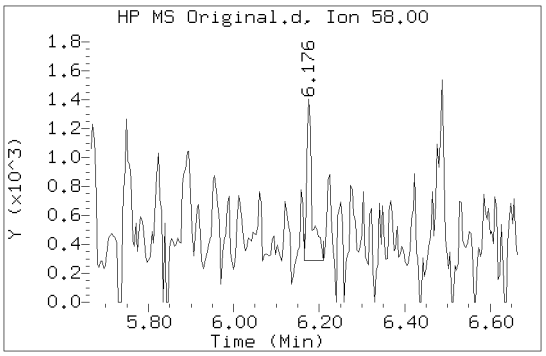
AFTER

MASS
88
AREA
926
HEIGHT
874
13-Oct-2023
16:58
linh
pham



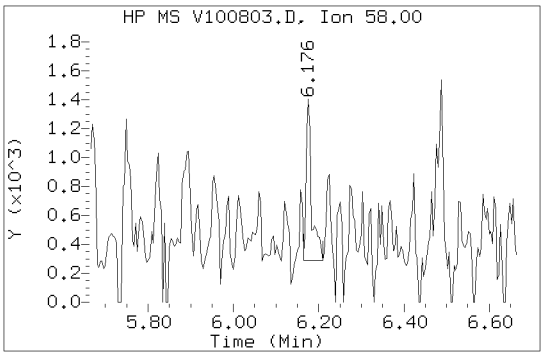
BEFORE

MASS
58
AREA
997
HEIGHT
1116
13-Oct-2023
16:58
linh
pham



AFTER

MASS
58
AREA
997
HEIGHT
1116
13-Oct-2023
16:58
linh
pham

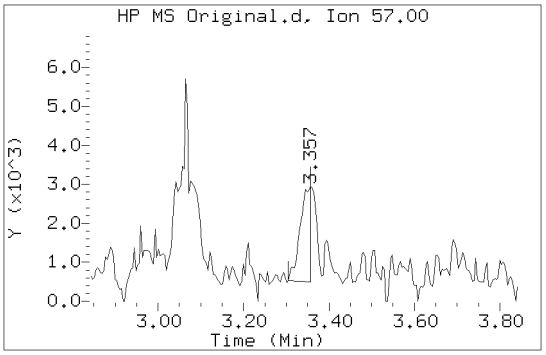


n-Hexane (110-54-3)

Reason Code:

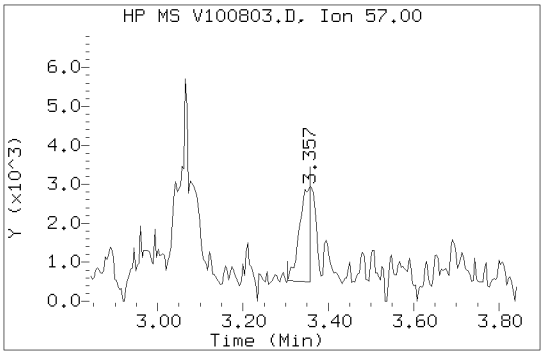
BEFORE

MASS
57
AREA
4295
HEIGHT
2454
13-Oct-2023
16:58
linh
pham



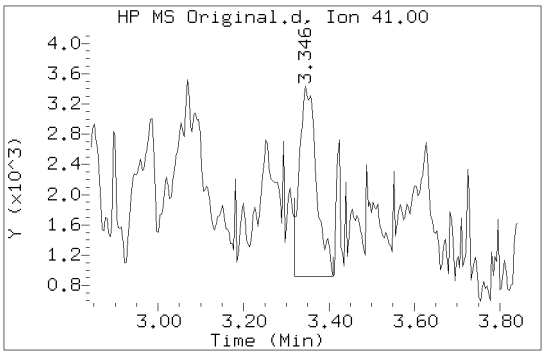
AFTER

MASS
57
AREA
4295
HEIGHT
2454
13-Oct-2023
16:58
linh
pham



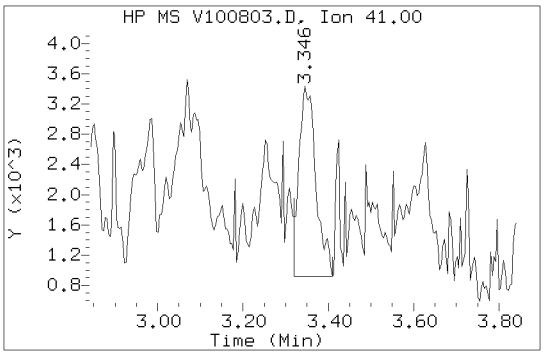
BEFORE

MASS
41
AREA
7058
HEIGHT
2516
13-Oct-2023
16:58
linh
pham



AFTER

MASS
41
AREA
7058
HEIGHT
2516
13-Oct-2023
16:58
linh
pham



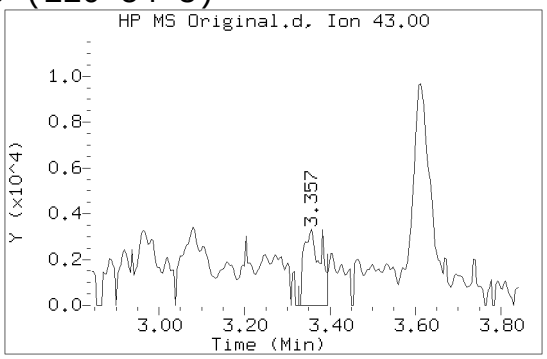
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

n-Hexane (110-54-3)

Reason Code:

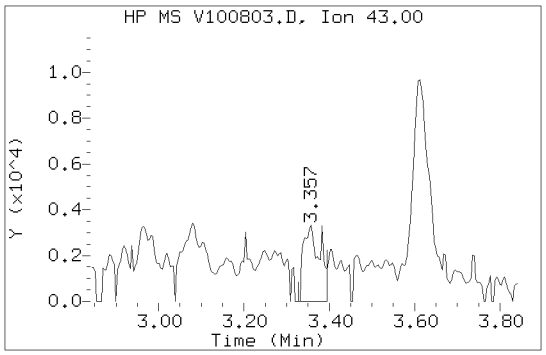
BEFORE

MASS
43
AREA
8960
HEIGHT
3341
13-Oct-2023
16:58
linh
pham



AFTER

MASS
43
AREA
8960
HEIGHT
3341
13-Oct-2023
16:58
linh
pham

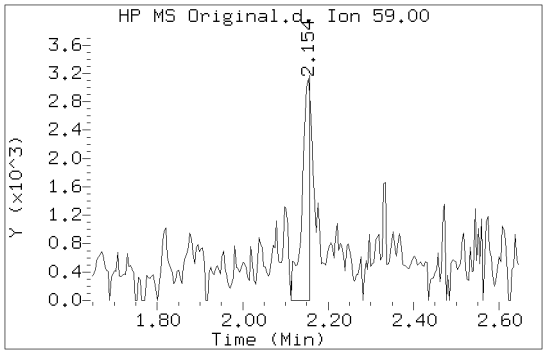


Diethyl ether (60-29-7)

Reason Code:

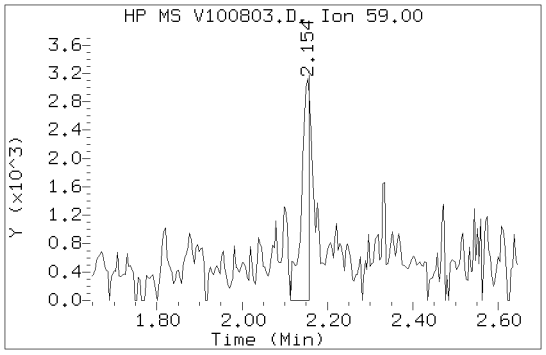
BEFORE

MASS
59
AREA
4159
HEIGHT
3126
13-Oct-2023
16:58
linh
pham



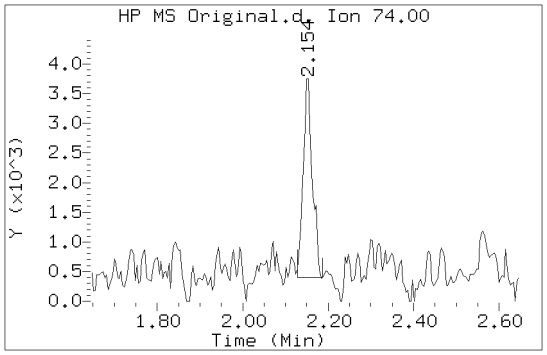
AFTER

MASS
59
AREA
4159
HEIGHT
3126
13-Oct-2023
16:58
linh
pham



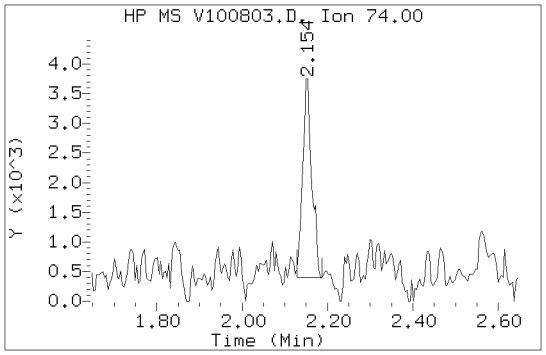
BEFORE

MASS
74
AREA
5046
HEIGHT
3349
13-Oct-2023
16:58
linh
pham



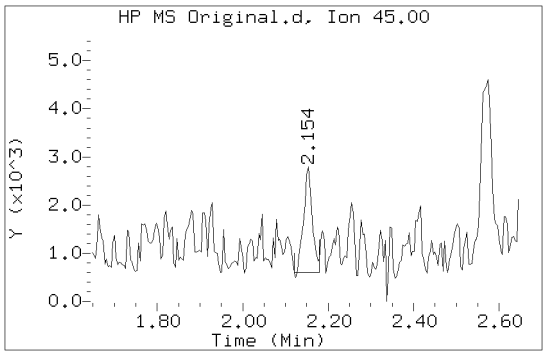
AFTER

MASS
74
AREA
5046
HEIGHT
3349
13-Oct-2023
16:58
linh
pham



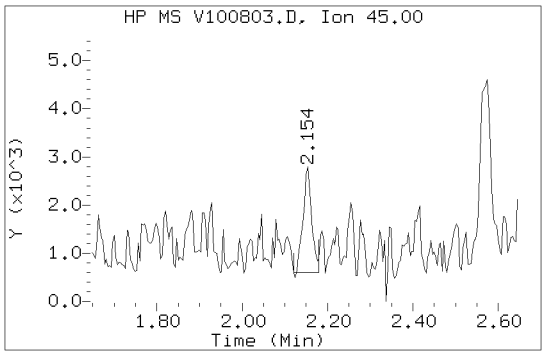
BEFORE

MASS
45
AREA
3156
HEIGHT
2202
13-Oct-2023
16:58
linh
pham



AFTER

MASS
45
AREA
3156
HEIGHT
2202
13-Oct-2023
16:58
linh
pham



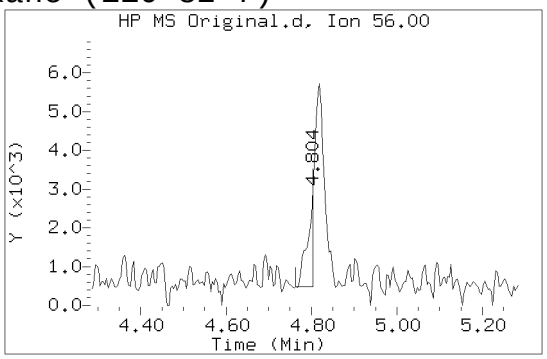
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Cyclohexane (110-82-7)

Reason Code:

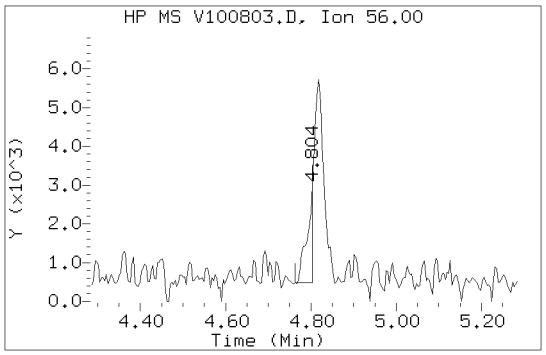
BEFORE

MASS
56
AREA
2504
HEIGHT
2551
13-Oct-2023
16:58
linh
pham



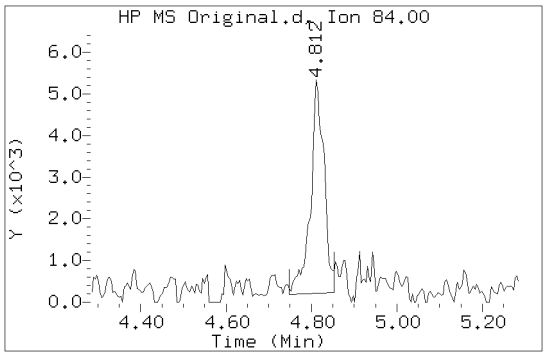
AFTER

MASS
56
AREA
2504
HEIGHT
2551
13-Oct-2023
16:58
linh
pham



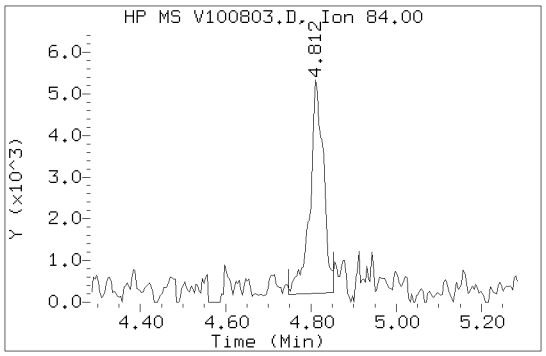
BEFORE

MASS
84
AREA
11383
HEIGHT
5124
13-Oct-2023
16:58
linh
pham



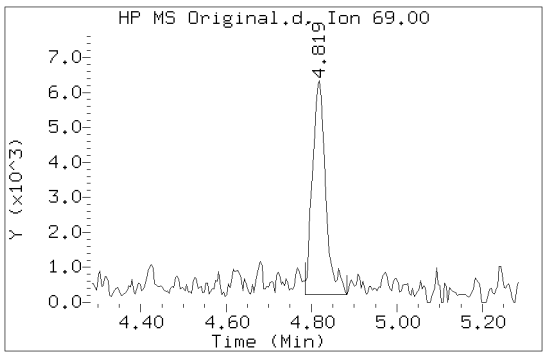
AFTER

MASS
84
AREA
11383
HEIGHT
5124
13-Oct-2023
16:58
linh
pham



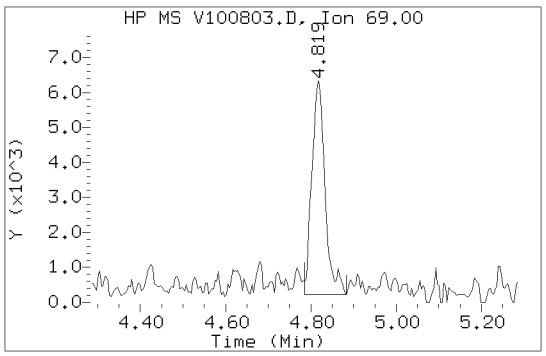
BEFORE

MASS
69
AREA
13236
HEIGHT
6122
13-Oct-2023
16:58
linh
pham



AFTER

MASS
69
AREA
13236
HEIGHT
6122
13-Oct-2023
16:58
linh
pham

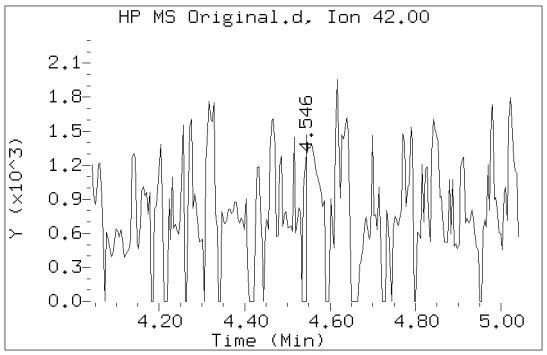


Tetrahydrofuran (109-99-9)

Reason Code:

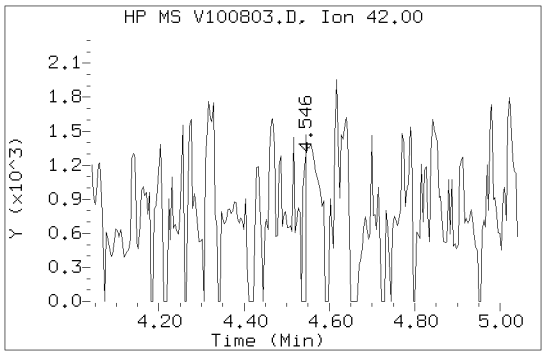
BEFORE

MASS
42
AREA
782
HEIGHT
1301
13-Oct-2023
16:58
linh
pham



AFTER

MASS
42
AREA
782
HEIGHT
1301
13-Oct-2023
16:58
linh
pham



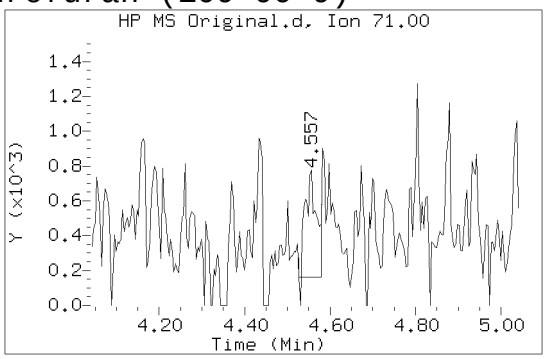
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Tetrahydrofuran (109-99-9)

Reason Code:

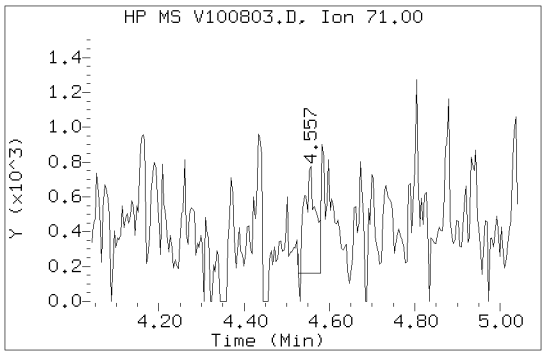
BEFORE

MASS
71
AREA
1107
HEIGHT
615
13-Oct-2023
16:58
linh
pham



AFTER

MASS
71
AREA
1107
HEIGHT
615
13-Oct-2023
16:58
linh
pham

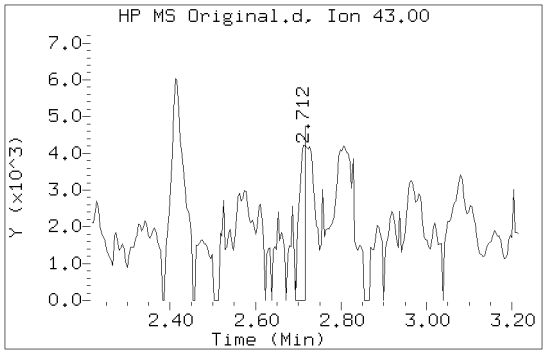


Methyl Acetate (79-20-9)

Reason Code:

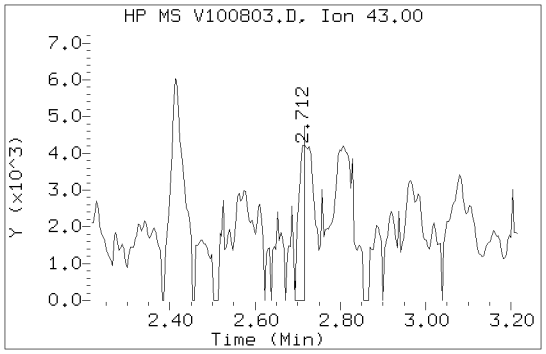
BEFORE

MASS
43
AREA
4546
HEIGHT
4215
13-Oct-2023
16:58
linh
pham



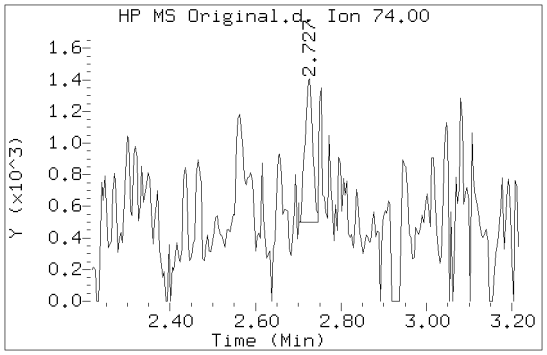
AFTER

MASS
43
AREA
4546
HEIGHT
4215
13-Oct-2023
16:58
linh
pham



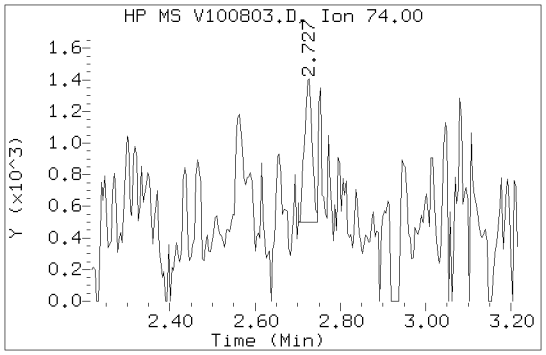
BEFORE

MASS
74
AREA
1138
HEIGHT
905
13-Oct-2023
16:58
linh
pham



AFTER

MASS
74
AREA
1138
HEIGHT
905
13-Oct-2023
16:58
linh
pham

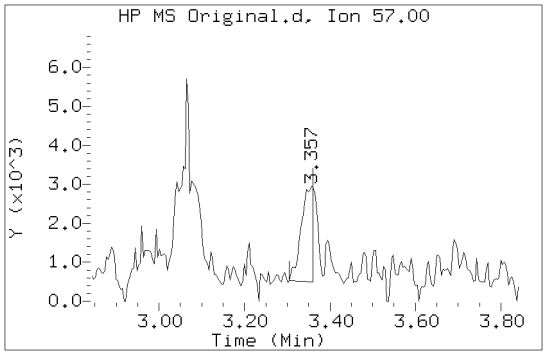


Allyl alcohol (107-18-6)

Reason Code:

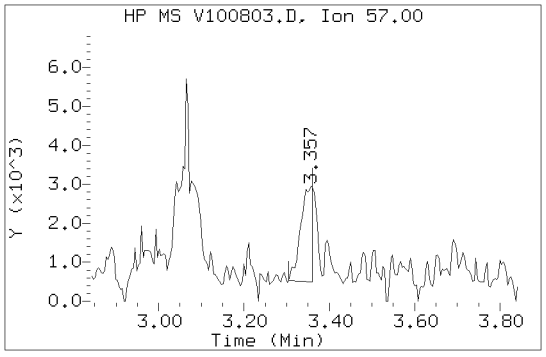
BEFORE

MASS
57
AREA
4840
HEIGHT
2453
13-Oct-2023
16:58
linh
pham



AFTER

MASS
57
AREA
4840
HEIGHT
2453
13-Oct-2023
16:58
linh
pham



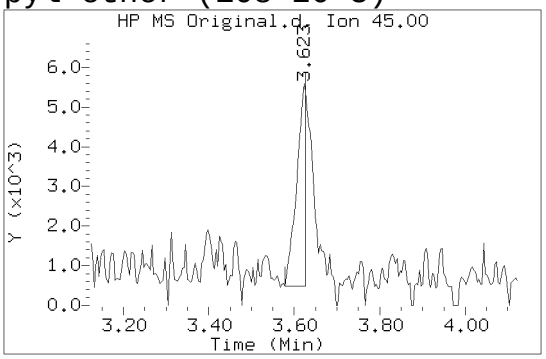
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Diisopropyl ether (108-20-3)

Reason Code:

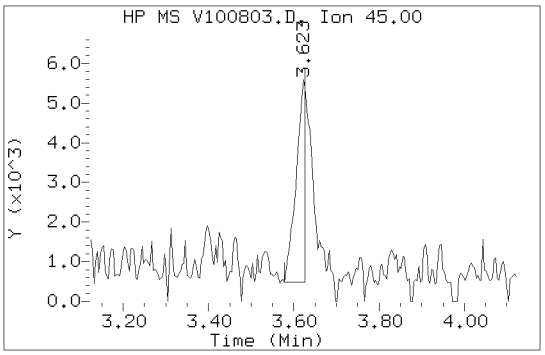
BEFORE

MASS
45
AREA
7823
HEIGHT
5109
13-Oct-2023
16:58
linh
pham



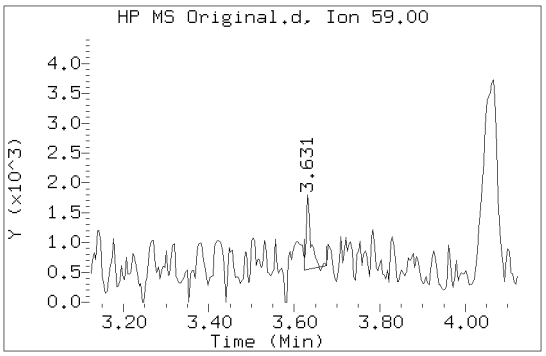
AFTER

MASS
45
AREA
7823
HEIGHT
5109
13-Oct-2023
16:58
linh
pham



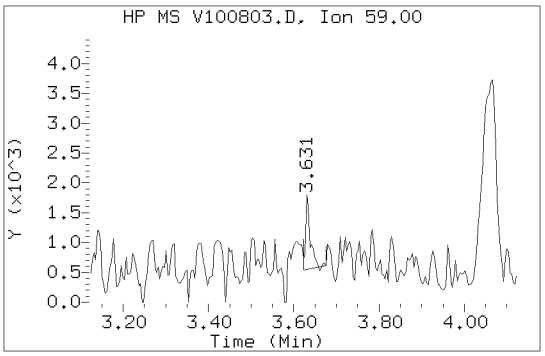
BEFORE

MASS
59
AREA
935
HEIGHT
1249
13-Oct-2023
16:58
linh
pham



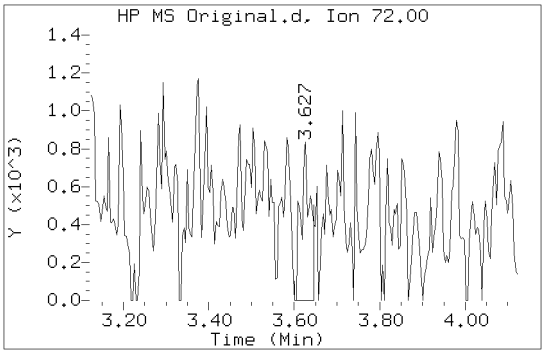
AFTER

MASS
59
AREA
935
HEIGHT
1249
13-Oct-2023
16:58
linh
pham



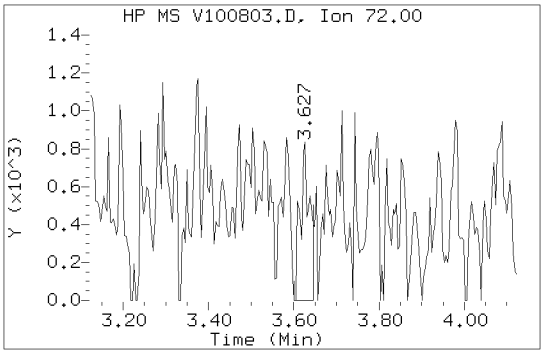
BEFORE

MASS
72
AREA
1287
HEIGHT
836
13-Oct-2023
16:58
linh
pham



AFTER

MASS
72
AREA
1287
HEIGHT
836
13-Oct-2023
16:58
linh
pham

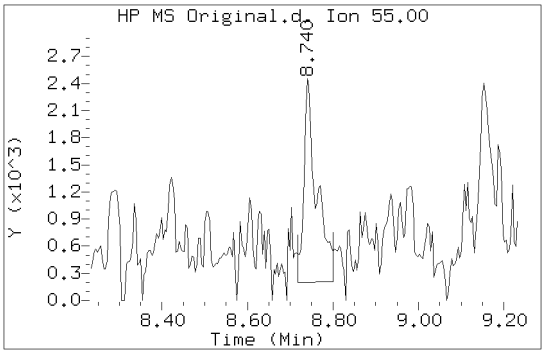


Butyl acrylate (141-32-2)

Reason Code:

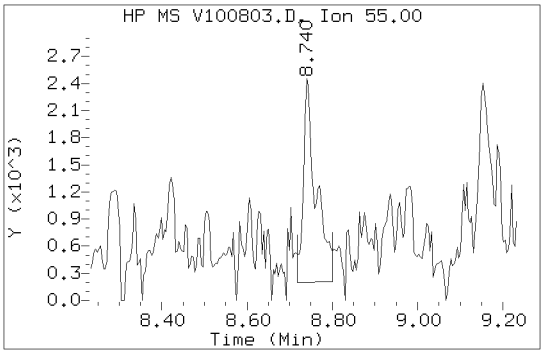
BEFORE

MASS
55
AREA
4706
HEIGHT
2253
13-Oct-2023
16:58
linh
pham



AFTER

MASS
55
AREA
4706
HEIGHT
2253
13-Oct-2023
16:58
linh
pham



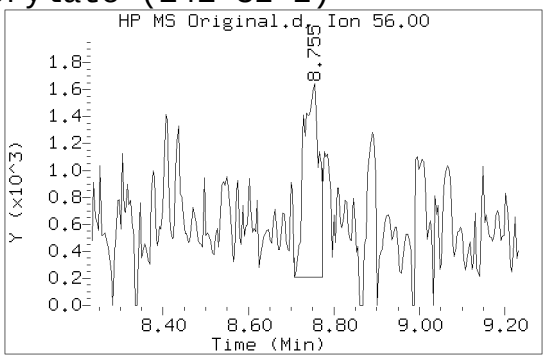
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Butyl acrylate (141-32-2)

Reason Code:

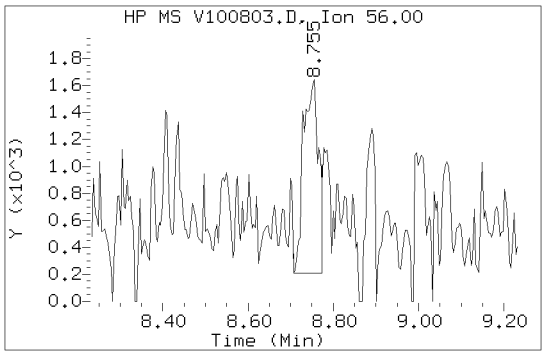
BEFORE

MASS
56
AREA
3584
HEIGHT
1432
13-Oct-2023
16:58
linh
pham



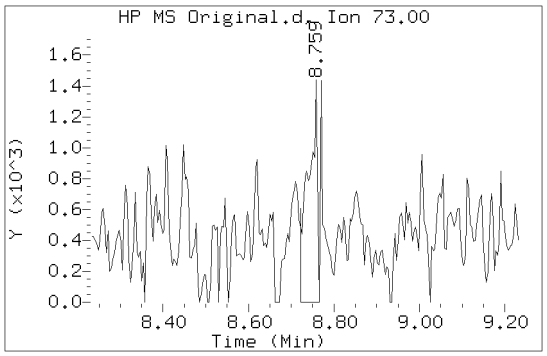
AFTER

MASS
56
AREA
3584
HEIGHT
1432
13-Oct-2023
16:58
linh
pham



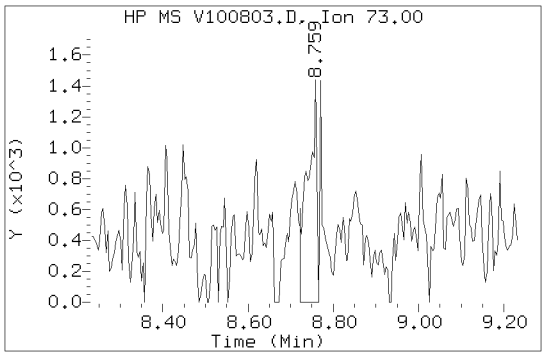
BEFORE

MASS
73
AREA
2163
HEIGHT
1439
13-Oct-2023
16:58
linh
pham



AFTER

MASS
73
AREA
2163
HEIGHT
1439
13-Oct-2023
16:58
linh
pham

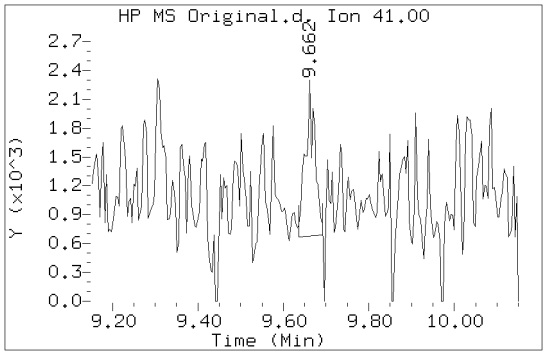


Butyl methacrylate (97-88-1)

Reason Code:

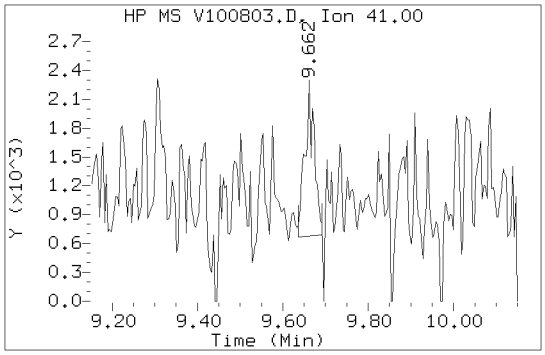
BEFORE

MASS
41
AREA
2519
HEIGHT
1618
13-Oct-2023
16:58
linh
pham



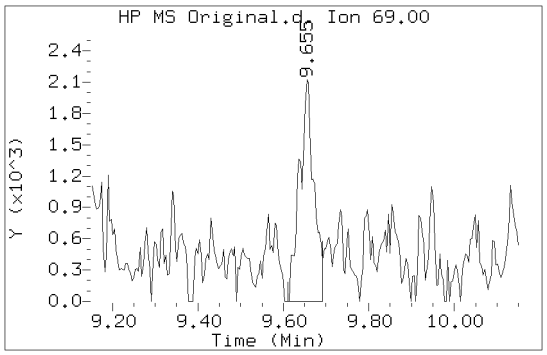
AFTER

MASS
41
AREA
2519
HEIGHT
1618
13-Oct-2023
16:58
linh
pham



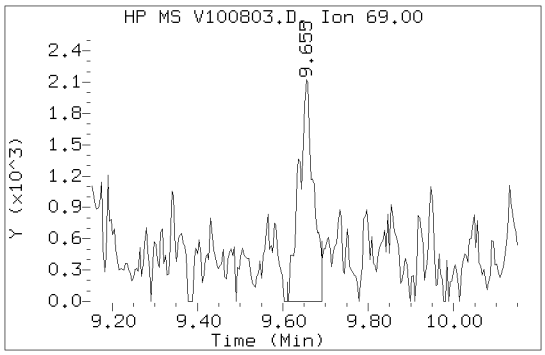
BEFORE

MASS
69
AREA
5092
HEIGHT
2123
13-Oct-2023
16:58
linh
pham



AFTER

MASS
69
AREA
5092
HEIGHT
2123
13-Oct-2023
16:58
linh
pham



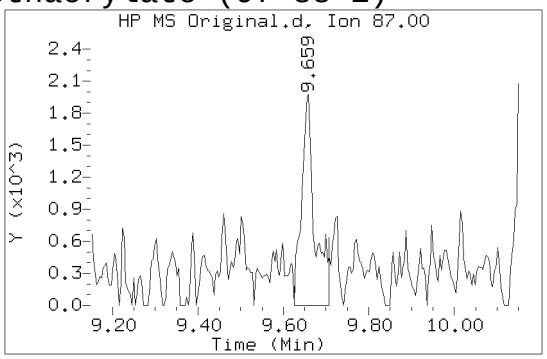
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Butyl methacrylate (97-88-1)

Reason Code:

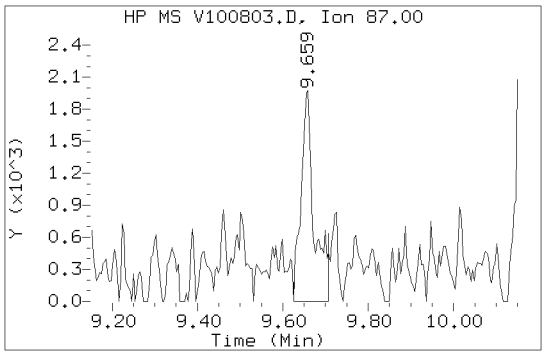
BEFORE

MASS
87
AREA
4290
HEIGHT
1974
13-Oct-2023
16:58
linh
pham



AFTER

MASS
87
AREA
4290
HEIGHT
1974
13-Oct-2023
16:58
linh
pham

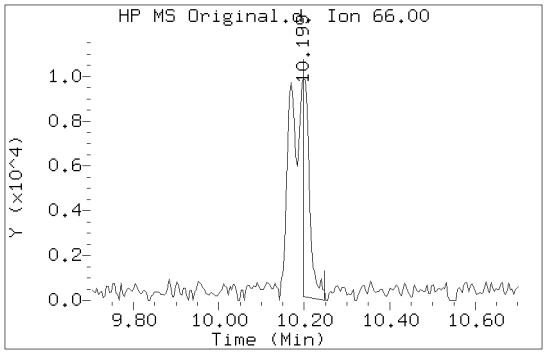


Dicyclopentadiene (77-73-6)

Reason Code:

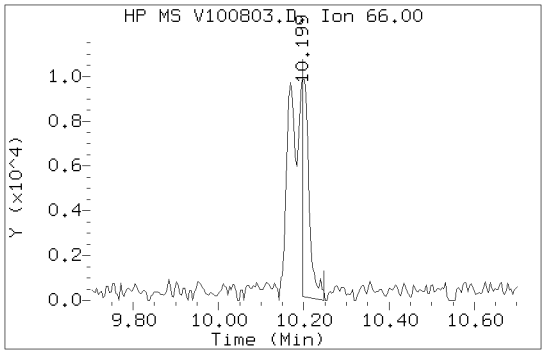
BEFORE

MASS
66
AREA
10743
HEIGHT
9731
13-Oct-2023
16:58
linh
pham



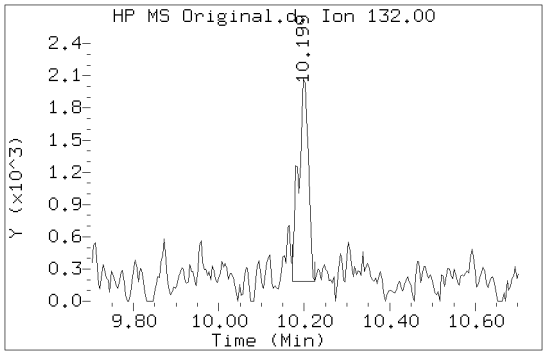
AFTER

MASS
66
AREA
10743
HEIGHT
9731
13-Oct-2023
16:58
linh
pham



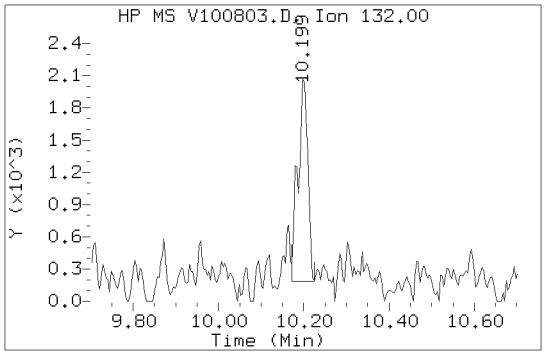
BEFORE

MASS
132
AREA
3133
HEIGHT
1888
13-Oct-2023
16:58
linh
pham



AFTER

MASS
132
AREA
3133
HEIGHT
1888
13-Oct-2023
16:58
linh
pham

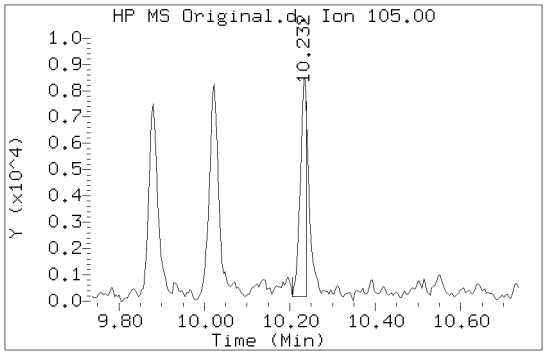


1,2,3-Trimethylbenzene (526-73-8)

Reason Code:

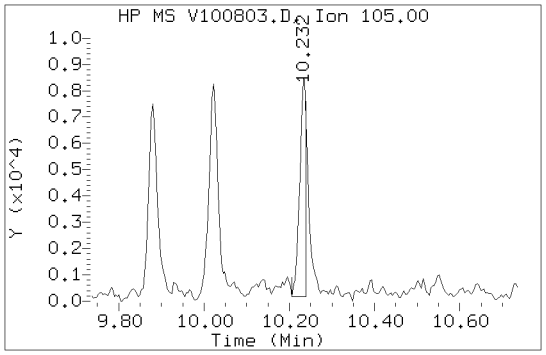
BEFORE

MASS
105
AREA
9063
HEIGHT
8277
13-Oct-2023
16:58
linh
pham



AFTER

MASS
105
AREA
9063
HEIGHT
8277
13-Oct-2023
16:58
linh
pham



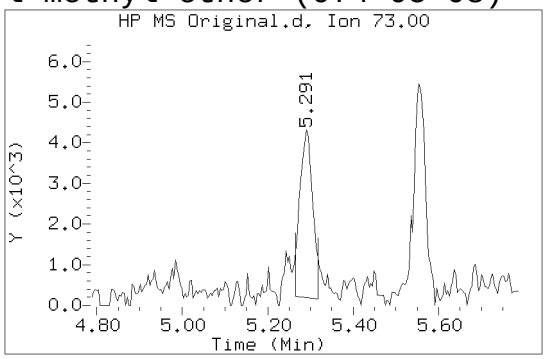
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

tert-Amyl methyl ether (974-05-08)

Reason Code:

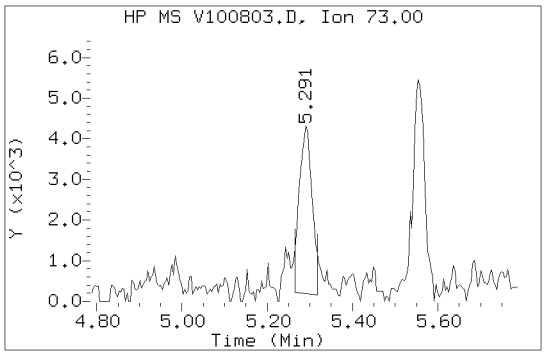
BEFORE

MASS
73
AREA
8800
HEIGHT
4135
13-Oct-2023
16:58
linh
pham



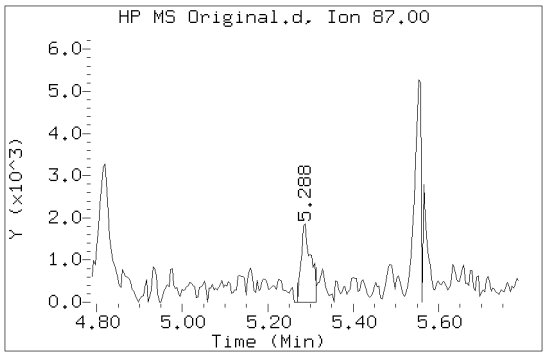
AFTER

MASS
73
AREA
8800
HEIGHT
4135
13-Oct-2023
16:58
linh
pham



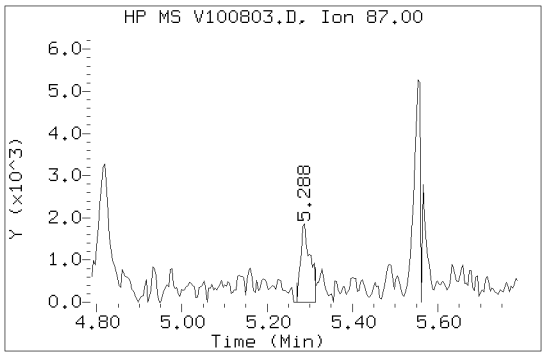
BEFORE

MASS
87
AREA
2960
HEIGHT
1859
13-Oct-2023
16:58
linh
pham



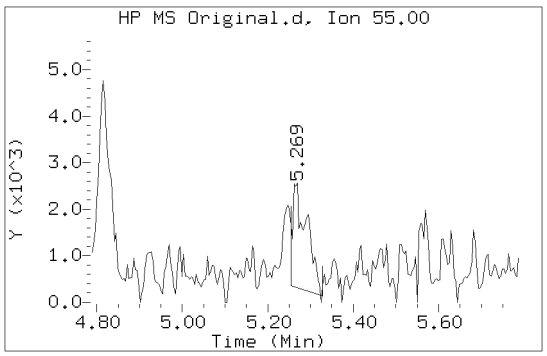
AFTER

MASS
87
AREA
2960
HEIGHT
1859
13-Oct-2023
16:58
linh
pham



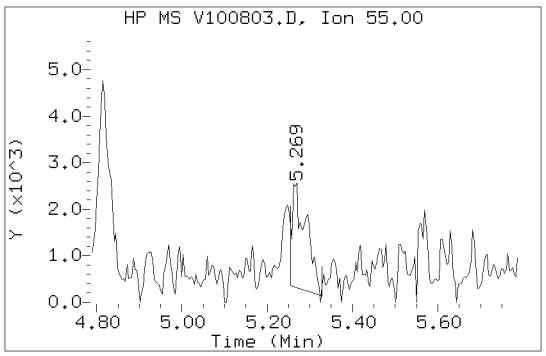
BEFORE

MASS
55
AREA
5362
HEIGHT
2247
13-Oct-2023
16:58
linh
pham



AFTER

MASS
55
AREA
5362
HEIGHT
2247
13-Oct-2023
16:58
linh
pham

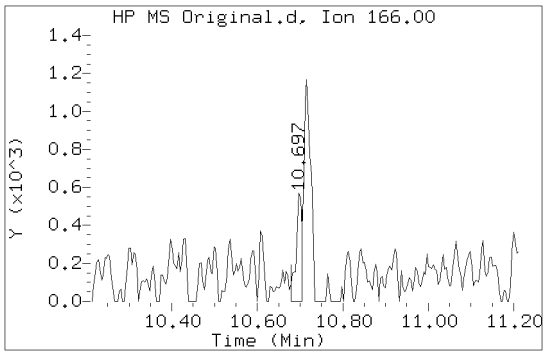


Hexachloroethane (67-72-1)

Reason Code:

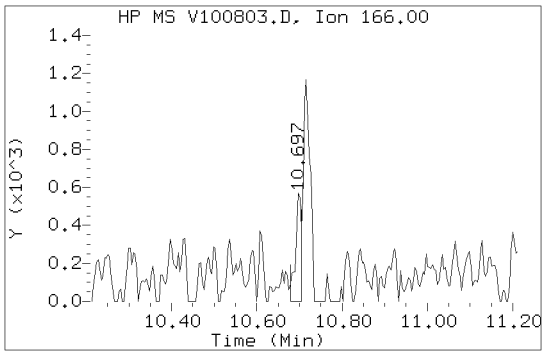
BEFORE

MASS
166
AREA
551
HEIGHT
570
13-Oct-2023
16:58
linh
pham



AFTER

MASS
166
AREA
551
HEIGHT
570
13-Oct-2023
16:58
linh
pham



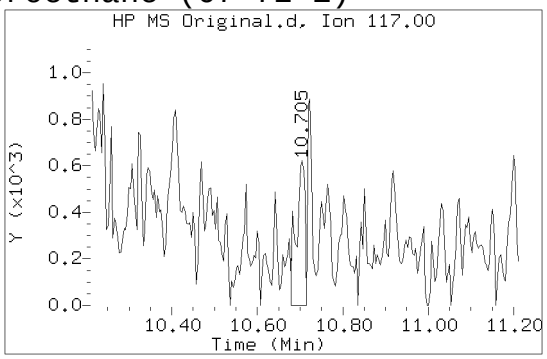
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Hexachloroethane (67-72-1)

Reason Code:

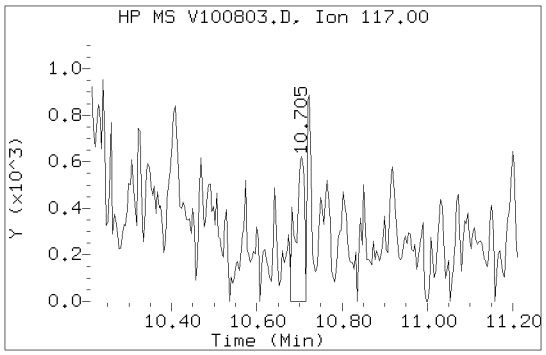
BEFORE

MASS
117
AREA
900
HEIGHT
623
13-Oct-2023
16:58
linh
pham



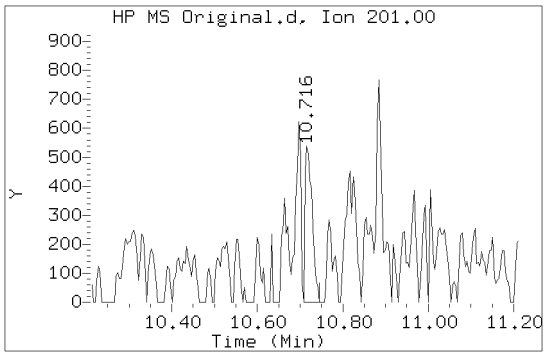
AFTER

MASS
117
AREA
900
HEIGHT
623
13-Oct-2023
16:58
linh
pham



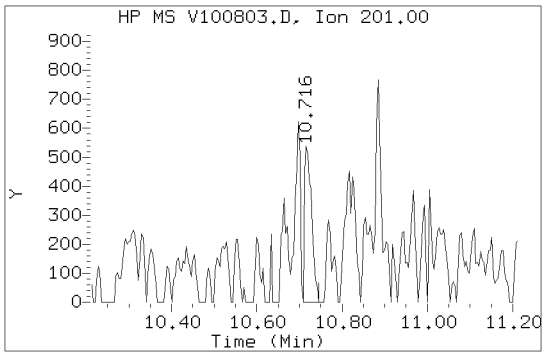
BEFORE

MASS
201
AREA
636
HEIGHT
540
13-Oct-2023
16:58
linh
pham



AFTER

MASS
201
AREA
636
HEIGHT
540
13-Oct-2023
16:58
linh
pham

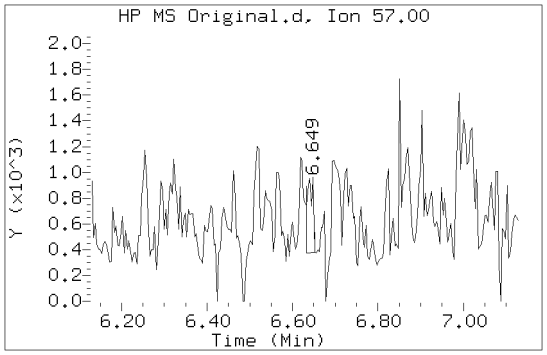


Epichlorohydrin (106-89-8)

Reason Code:

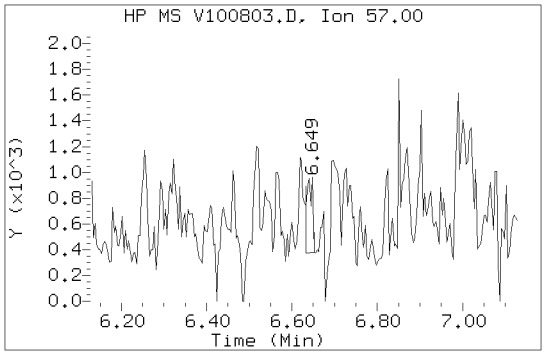
BEFORE

MASS
57
AREA
546
HEIGHT
583
13-Oct-2023
16:58
linh
pham



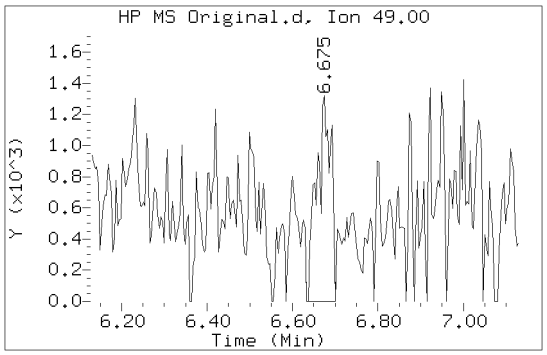
AFTER

MASS
57
AREA
546
HEIGHT
583
13-Oct-2023
16:58
linh
pham



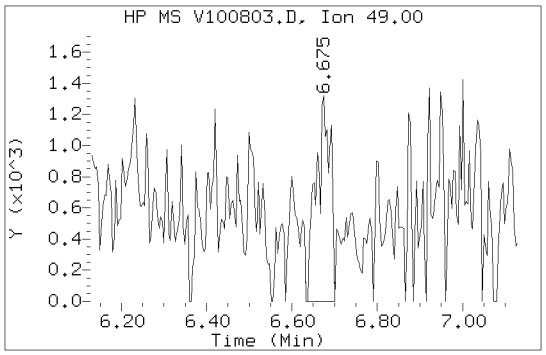
BEFORE

MASS
49
AREA
3065
HEIGHT
1320
13-Oct-2023
16:58
linh
pham



AFTER

MASS
49
AREA
3065
HEIGHT
1320
13-Oct-2023
16:58
linh
pham



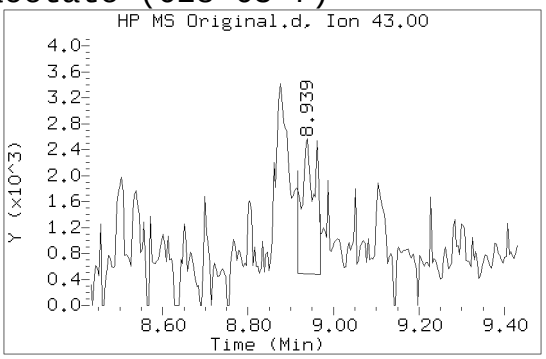
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100803.D
Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

n-Amyl acetate (628-63-7)

Reason Code:

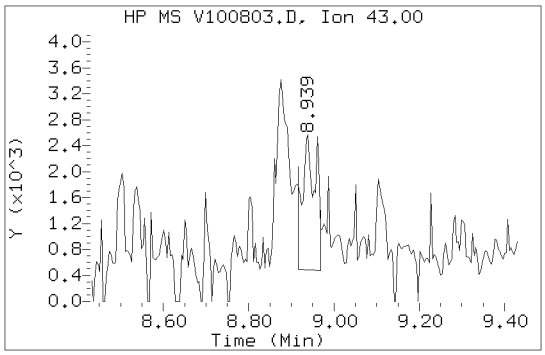
BEFORE

MASS
43
AREA
4736
HEIGHT
2078
13-Oct-2023
16:58
linh
pham



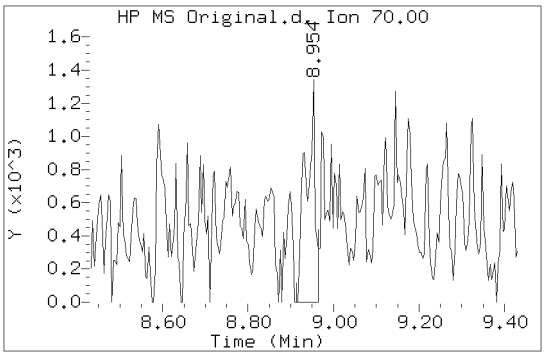
AFTER

MASS
43
AREA
4736
HEIGHT
2078
13-Oct-2023
16:58
linh
pham



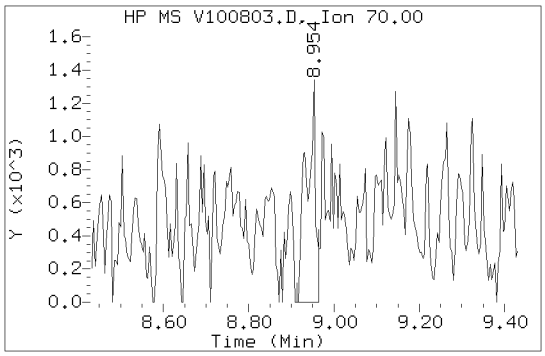
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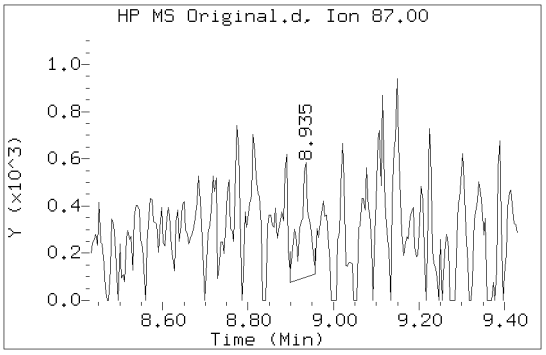
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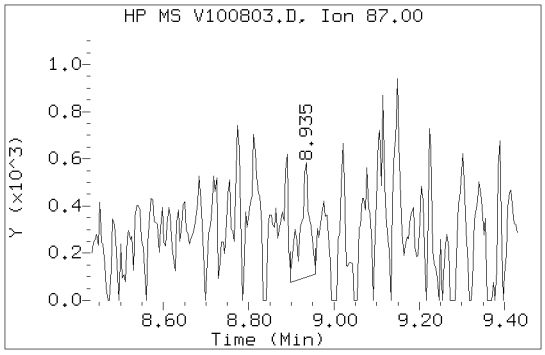
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AFTER

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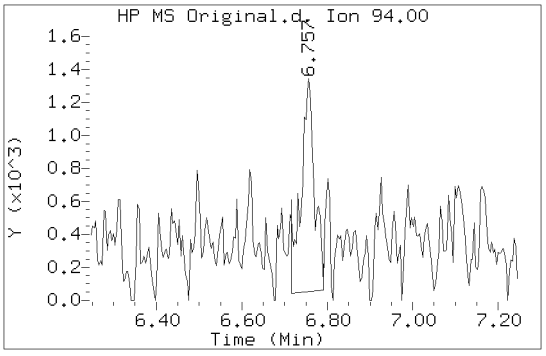


Dimethyl Disulfide (624-92-0)

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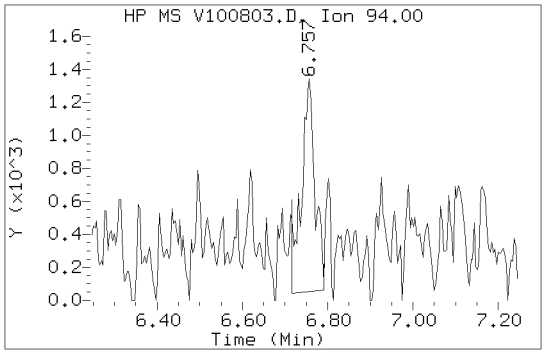
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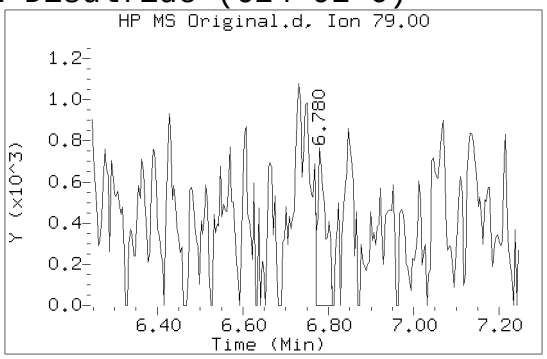
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InstruID : VOA9.i
LabSampID : VSTD000.5

Dimethyl Disulfide (624-92-0)

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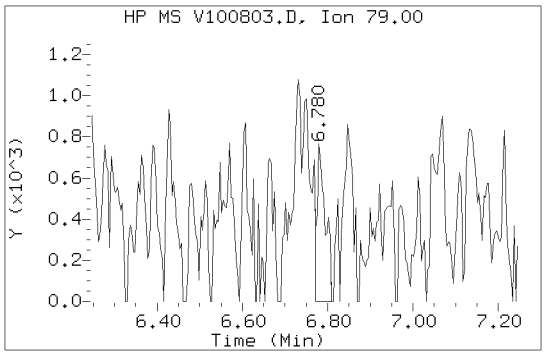
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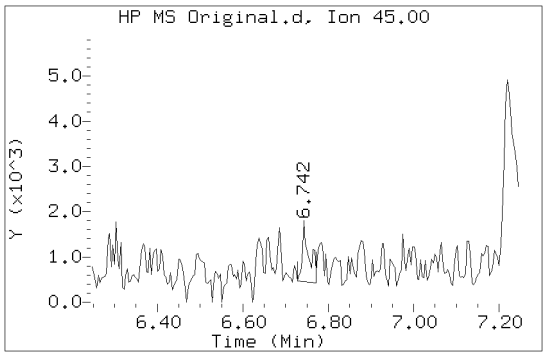
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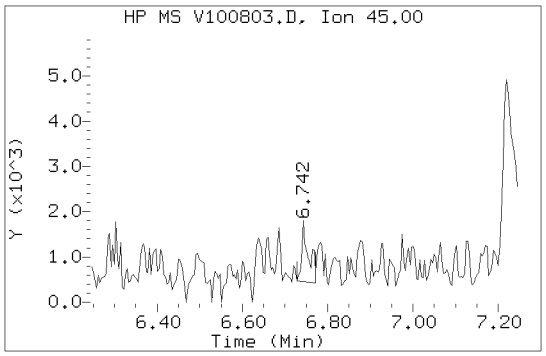
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AFTER

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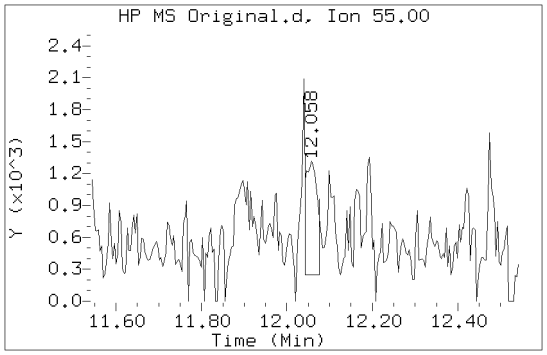


2-Ethylhexyl Acrylate (103-11-7)

Reason Code:

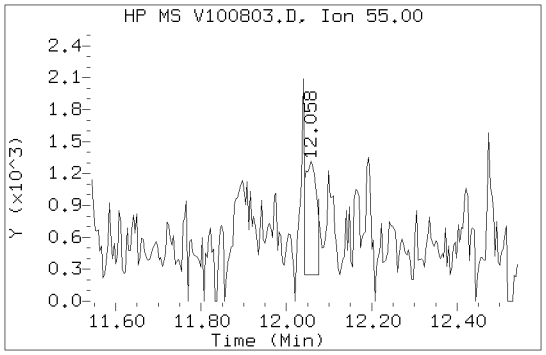
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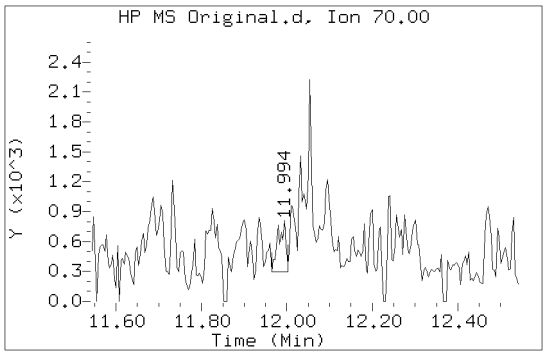
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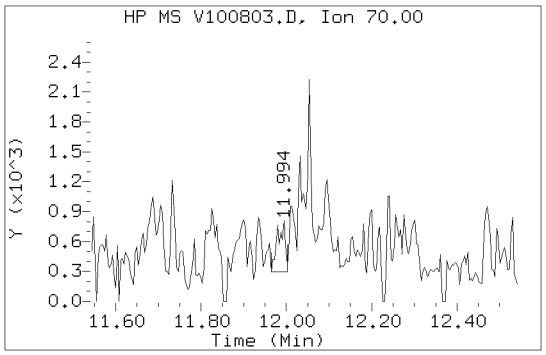
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AFTER

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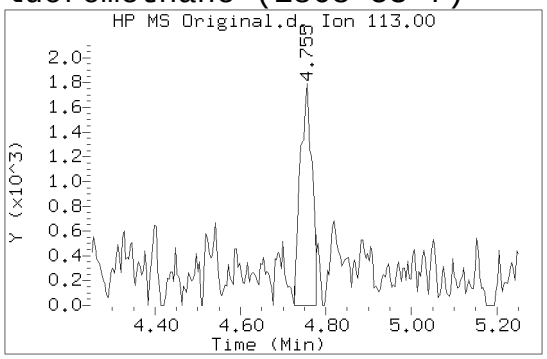
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Inj Date : 08-OCT-2023 14:12
InstruID : VOA9.i
LabSampID : VSTD000.5

Dibromofluoromethane (1868-53-7)

Reason Code:

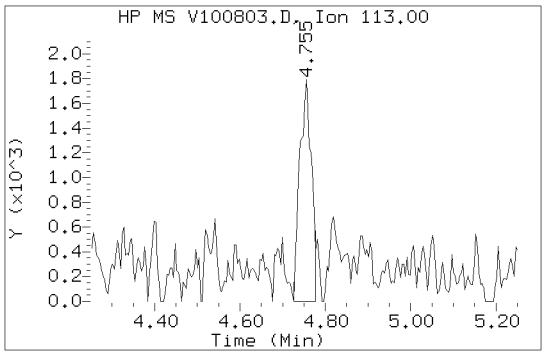
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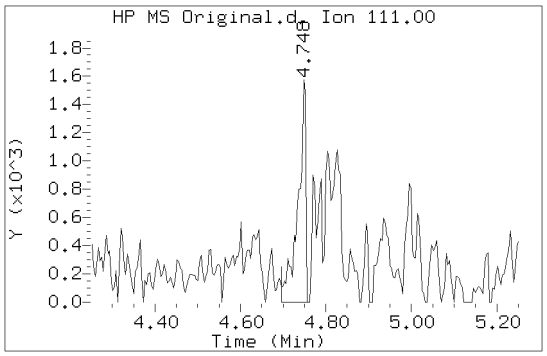
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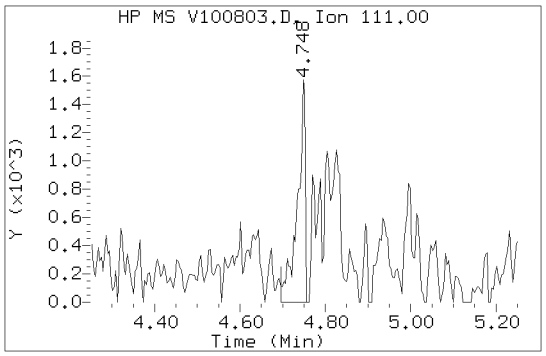
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AFTER

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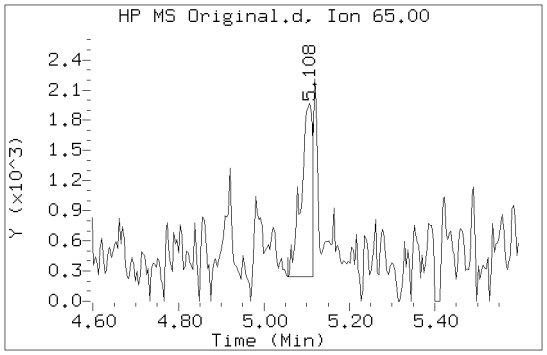


1,2-Dichloroethane-d4 (17060-07-0)

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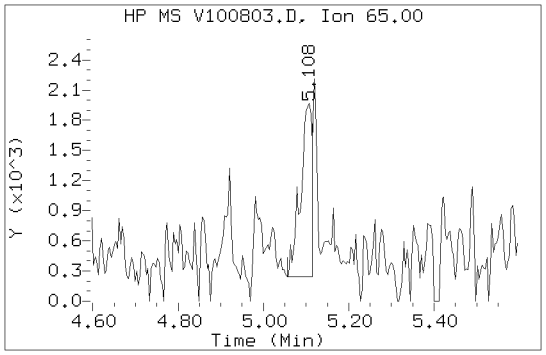
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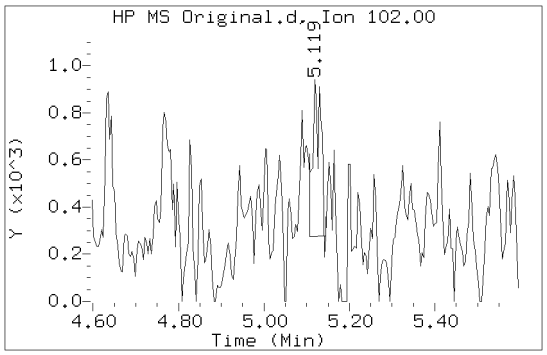
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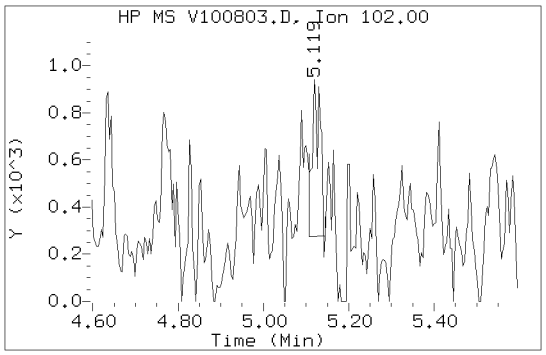
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AFTER

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859
HEIGHT
664
13-Oct-2023
16:58
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D Page 1
Report Date: 13-Oct-2023 17:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
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Inj Date : 08-OCT-2023 14:56
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : V9;WATER;0;1;
Comment   :
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Cal Date : 08-OCT-2023 14:12 Cal File: V100803.D
Als bottle: 5 Calibration Sample, Level: 3
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	4.819	4.819	(1.000)	402593	50.0000	
2	Dichlorodifluoromethane	85	1.168	1.168	(0.242)	4130	1.00000	1.92(aM)
5	Vinyl Chloride	62	1.381	1.381	(0.287)	5802	1.00000	0.89(aM)
6	Bromomethane	94	1.629	1.629	(0.338)	7766	1.00000	1.80(aM)
7	Chloroethane	64	1.704	1.704	(0.354)	7828	1.00000	1.22(aM)
8	Trichlorofluoromethane	101	1.902	1.902	(0.395)	17060	1.00000	1.16(aM)
11	1,1-Dichloroethene	96	2.337	2.337	(0.485)	9292	1.00000	1.15(a)
15	Iodomethane	142	2.480	2.480	(0.515)	15650	2.00000	3.38(aM)
17	Methylene Chloride	84	2.798	2.798	(0.581)	13734	1.00000	1.15(aM)
18	Methyl tert-butyl ether	73	3.091	3.091	(0.641)	36933	1.00000	1.11(a)
19	Carbon Disulfide	76	2.525	2.525	(0.524)	53927	2.00000	2.33(a)
20	trans-1,2-Dichloroethene	96	3.068	3.068	(0.637)	11558	1.00000	1.15(a)
22	1,1-Dichloroethane	63	3.518	3.518	(0.730)	12157	1.00000	1.18(a)
24	2-Butanone	43	4.275	4.275	(0.887)	4204	2.00000	2.25(aM)
26	2,2-Dichloropropane	77	4.178	4.178	(0.867)	5223	1.00000	1.70(a)
27	cis-1,2-Dichloroethene	96	4.200	4.200	(0.872)	5652	1.00000	1.10(a)
28	Chloroform	83	4.575	4.575	(0.949)	10494	1.00000	1.12(a)
29	Bromochloromethane	128	4.478	4.478	(0.929)	2199	1.00000	0.89(aM)
$ 30	Dibromofluoromethane	113	4.748	4.748	(0.985)	5286	1.00000	0.80(a)
31	1,1,1-Trichloroethane	97	4.740	4.740	(0.984)	6653	1.00000	0.95(aM)

32 1,1-Dichloropropene	75	4.927	4.927 (0.887)	7270	1.00000	1.19(a)
33 1,2-Dichloroethane	62	5.179	5.179 (0.933)	7649	1.00000	1.09(aM)

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	34	Carbon Tetrachloride	117	4.905	4.905	(0.883)	5032	1.00000	0.89(a)
$	35	1,2-Dichloroethane-d4	65	5.104	5.104	(1.059)	5363	1.00000	0.64(aM)
*	36	1,4-Difluorobenzene	114	5.553	5.553	(1.000)	708236	50.0000	
	37	Benzene	78	5.141	5.141	(0.926)	21235	1.00000	1.12(a)
	38	Trichloroethene	130	5.790	5.790	(1.043)	5033	1.00000	1.02(a)
	39	Bromodichloromethane	83	6.281	6.281	(1.131)	6814	1.00000	1.04(a)
	42	1,2-Dichloropropane	63	6.007	6.007	(1.082)	4804	1.00000	1.00(a)
	44	Dibromomethane	93	6.120	6.120	(1.102)	3937	1.00000	1.03(aM)
	45	4-Methyl-2-Pentanone	43	6.858	6.858	(0.838)	9009	2.00000	2.06(aM)
	46	cis-1,3-Dichloropropene	75	6.682	6.682	(1.203)	7008	1.00000	0.89(aM)
*	47	Chlorobenzene-d5	117	8.185	8.185	(1.000)	734252	50.0000	
$	48	Toluene-d8	98	6.922	6.922	(0.846)	20491	1.00000	1.17(a)
	50	Toluene	91	6.982	6.982	(0.853)	19434	1.00000	0.96(a)
	51	trans-1,3-Dichloropropene	75	7.199	7.199	(1.296)	6570	1.00000	0.66(aM)
	52	2-Hexanone	43	7.600	7.600	(0.929)	5272	2.00000	1.74(a)
	53	1,1,2-Trichloroethane	83	7.360	7.360	(0.899)	4018	1.00000	0.99(aM)
	54	1,3-Dichloropropane	76	7.499	7.499	(0.916)	9863	1.00000	1.16(aM)
	55	Dibromochloromethane	129	7.705	7.705	(0.941)	4690	1.00000	0.95(a)
	56	Tetrachloroethene	164	7.462	7.462	(0.912)	4070	1.00000	1.06(aM)
	57	1,2-Dibromoethane	107	7.788	7.788	(0.951)	5349	1.00000	1.00(a)
	58	1-Chlorohexane	55	8.193	8.193	(1.475)	5368	1.00000	0.68(aM)
	59	Chlorobenzene	112	8.211	8.211	(1.003)	16073	1.00000	1.12(a)
	60	1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	4987	1.00000	1.06(aM)
	61	Ethylbenzene	106	8.309	8.309	(1.015)	6872	1.00000	1.01(aM)
	62	m,p-Xylenes	106	8.410	8.410	(1.027)	17666	2.00000	1.94(aM)
	63	o-Xylene	106	8.751	8.751	(1.069)	9120	1.00000	0.99(a)
	64	Styrene	104	8.766	8.766	(1.071)	13776	1.00000	0.88(a)
	66	Bromoform	173	8.920	8.920	(1.090)	5629	1.00000	1.74(aM)
	67	Isopropylbenzene	105	9.062	9.062	(1.107)	20128	1.00000	0.91(aM)
	68	1,1,2,2-Tetrachloroethane	83	9.325	9.325	(0.917)	7461	1.00000	1.55(a)
$	69	4-Bromofluorobenzene	95	9.193	9.193	(1.123)	7376	1.00000	1.40(a)
*	70	1,4-Dichlorobenzene-d4	152	10.172	10.172	(1.000)	392407	50.0000	
	71	1,2,3-Trichloropropane	75	9.366	9.366	(0.921)	6620	1.00000	1.00(a)
	73	n-Propylbenzene	91	9.415	9.415	(0.926)	18901	1.00000	0.87(a)
	74	Bromobenzene	156	9.325	9.325	(0.917)	5706	1.00000	1.04(a)
	75	1,3,5-Trimethylbenzene	105	9.565	9.565	(0.940)	15145	1.00000	0.91(a)
	76	2-Chlorotoluene	91	9.486	9.486	(0.933)	15175	1.00000	1.11(a)
	77	4-Chlorotoluene	91	9.576	9.576	(0.941)	14820	1.00000	0.91(a)
	78	tert-Butylbenzene	119	9.838	9.838	(0.967)	13110	1.00000	0.91(a)
	79	1,2,4-Trimethylbenzene	105	9.879	9.879	(0.971)	16350	1.00000	0.93(aM)
	81	sec-Butylbenzene	105	10.022	10.022	(0.985)	18492	1.00000	0.96(a)
	82	p-Isopropyltoluene	119	10.149	10.149	(0.998)	15139	1.00000	0.89(a)
	83	1,3-Dichlorobenzene	146	10.116	10.116	(0.994)	10257	1.00000	1.00(aM)
	84	1,4-Dichlorobenzene	146	10.194	10.194	(1.002)	13128	1.00000	1.14(a)
	88	1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	10778	1.00000	1.02(a)
	89	1,2-Dibromo-3-Chloropropane	155	11.169	11.169	(1.098)	899	1.00000	0.62(aM)
	90	1,2,4-Trichlorobenzene	180	11.863	11.863	(1.166)	6056	1.00000	0.97(a)
	93	1,2,3-Trichlorobenzene	180	12.271	12.271	(1.206)	6337	1.00000	1.02(a)
M	94	1,2-Dichloroethylene (total)	96				17210	2.00000	(a)
	141	Cyclohexane	56	4.781	4.781	(0.992)	5358	1.00000	1.04(aMH)
	138	Freon TF	101	2.345	2.345	(0.487)	8629	1.00000	0.74(a)
	140	1,3-Butadiene	54	1.407	1.407	(0.292)	6492	1.00000	1.15(aM)

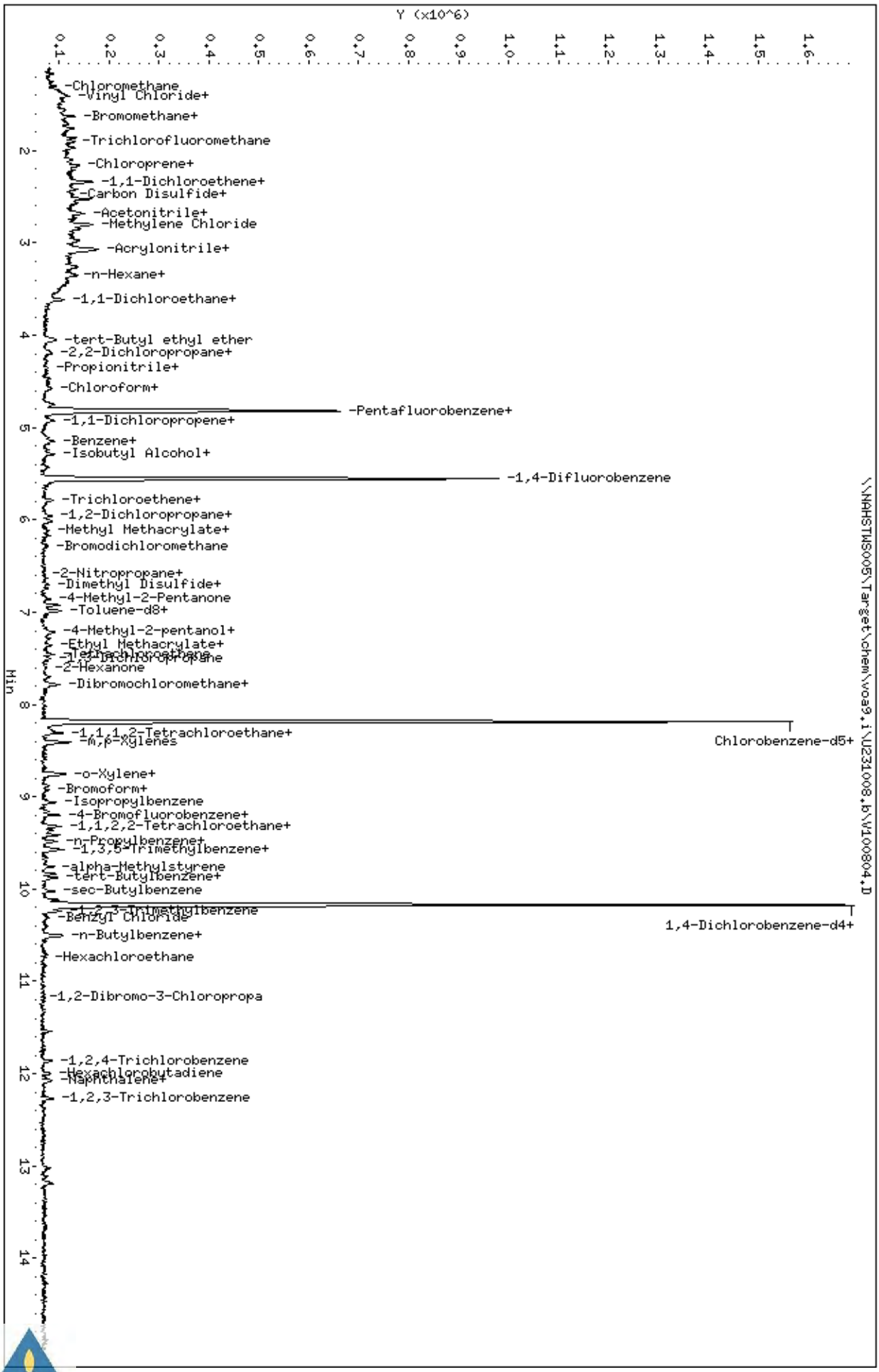
146 Methyl Acetate	43	2.719	2.719 (0.564)	8798	1.00000	1.13(aM)
148 Tert-Butyl alcohol	59	2.971	2.971 (0.617)	25221	20.0000	21.11(aM)

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D Page 3
Report Date: 13-Oct-2023 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
149	Isopropyl Alcohol	45	2.570	2.570	(0.533)	15971	20.0000	24.65
72	trans-1,4-Dichloro-2-butene	53	9.392	9.392	(1.147)	1892	1.00000	1.16(M)
12	Isobutyl Alcohol	43	5.287	5.287	(1.097)	11373	20.0000	18.45(a)
13	Acetonitrile	39	2.678	2.678	(0.556)	11466	10.0000	10.29
40	Methyl Methacrylate	41	6.161	6.161	(1.278)	3734	1.00000	0.91(a)
4	Propionitrile	54	4.358	4.358	(0.904)	6279	10.0000	9.68(a)
136	n-Hexane	57	3.346	3.346	(0.694)	8071	1.00000	0.61(aM)
131	Methyl Acrylate	55	4.380	4.380	(0.909)	5573	1.00000	1.05(aM)
200	Dimethyl Disulfide	94	6.746	6.746	(0.824)	4557	1.00000	1.80(a)
49	Ethyl Methacrylate	69	7.293	7.293	(1.313)	6765	1.00000	1.09(a)
166	1,2,3-Trimethylbenzene	105	10.239	10.239	(1.007)	16175	1.00000	0.92(a)
167	Ethanol	45	2.082	2.082	(0.432)	2764	20.0000	22.97
164	Dicyclopentadiene	66	10.202	10.202	(1.003)	19087	1.00000	0.92(a)
145	alpha-Methylstyrene	118	9.760	9.760	(0.959)	8458	1.00000	1.01(a)
156	Diisopropyl ether	45	3.627	3.627	(0.753)	14609	1.00000	1.06(a)
151	4-Methyl-2-pentanol	45	7.218	7.218	(1.300)	11448	20.0000	21.59
150	Allyl alcohol	57	3.346	3.346	(0.694)	7363	20.0000	18.11(M)
86	Benzyl Chloride	91	10.314	10.314	(1.260)	8076	1.00000	2.42(aM)
162	Butyl acrylate	55	8.740	8.740	(1.068)	6634	1.00000	1.82(aM)
139	Diethyl ether	59	2.153	2.153	(0.447)	6807	1.00000	0.96(a)
203	2-Ethylhexyl Acrylate	55	12.046	12.046	(1.184)	3231	1.00000	0.81(aM)
130	Ethyl Acetate	43	4.343	4.343	(0.901)	3401	1.00000	0.82(aM)
189	n-Butyl acetate	43	7.731	7.731	(0.945)	5593	1.00000	0.82(a)
182	Epichlorohydrin	57	6.633	6.633	(1.194)	622	4.00000	6.91(MH)
132	n-Butanol	56	5.842	5.842	(1.212)	926	20.0000	14.20(a)
133	Ethyl Acrylate	55	5.955	5.955	(1.236)	6993	1.00000	2.23(a)
163	Butyl methacrylate	41	9.655	9.655	(0.949)	4624	1.00000	0.91(a)
174	tert-Amyl methyl ether	73	5.287	5.287	(1.097)	13997	1.00000	0.92(a)
175	tert-Butyl ethyl ether	59	4.050	4.050	(0.841)	12983	1.00000	1.02(a)
187	n-Amyl acetate	43	8.935	8.935	(1.092)	8326	1.00000	0.94(aM)
188	Isopropyl acetate	43	5.287	5.287	(0.952)	11203	1.00000	0.96(aH)
179	Hexachloroethane	166	10.715	10.715	(1.053)	1324	1.00000	1.11(aM)

QC Flag Legend

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\voa9.i\U231008.b\V100804.D
Date : 08-OCT-2023 14:56
Client ID: VSTD001
Sample Info: VSTD001;VSTD0011;1;3;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

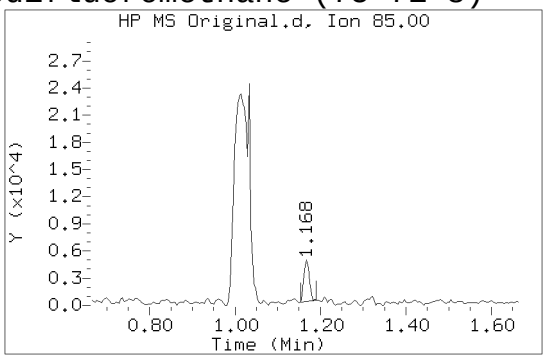
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InstruID : VOA9.i
LabSampID : VSTD001

Dichlorodifluoromethane (75-71-8)

Reason Code:

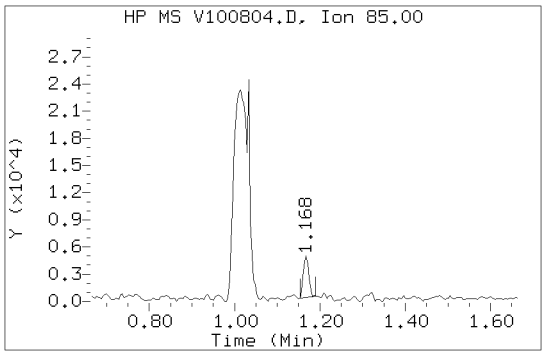
BEFORE

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13-Oct-2023
16:58
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pham



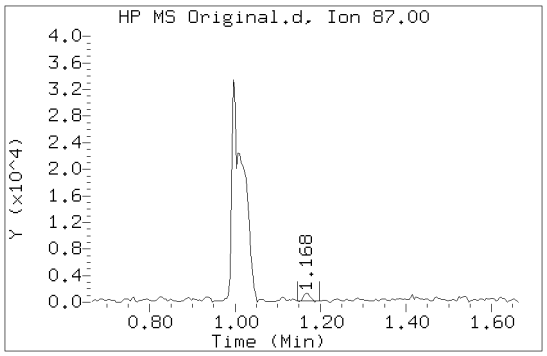
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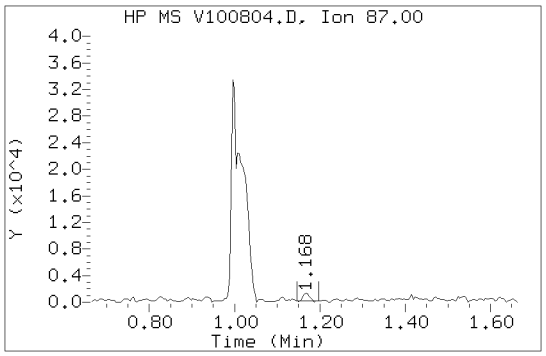
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AFTER

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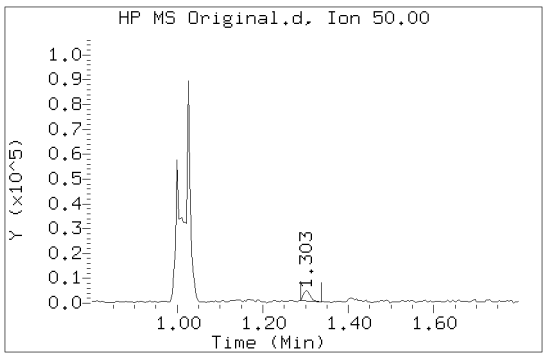


Chloromethane (74-87-3)

Reason Code:

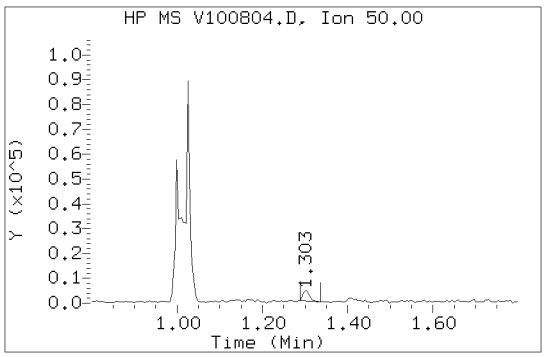
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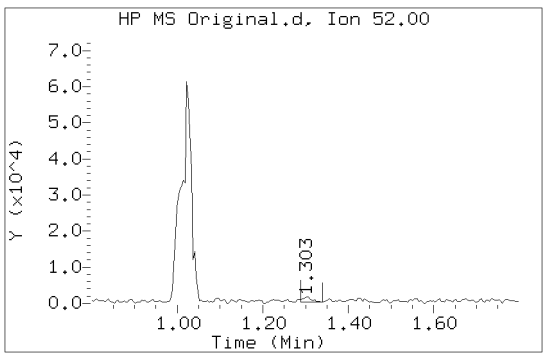
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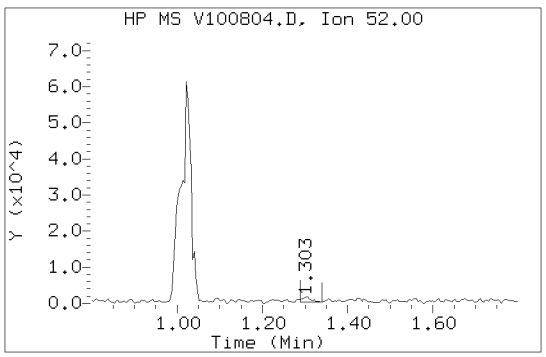
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AFTER

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HEIGHT
1428
13-Oct-2023
16:58
linh
pham



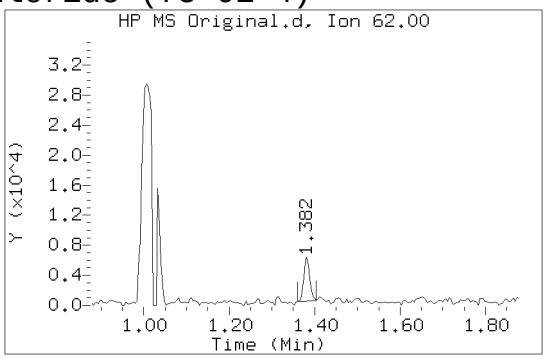
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InstruID : VOA9.i
LabSampID : VSTD001

Vinyl Chloride (75-01-4)

Reason Code:

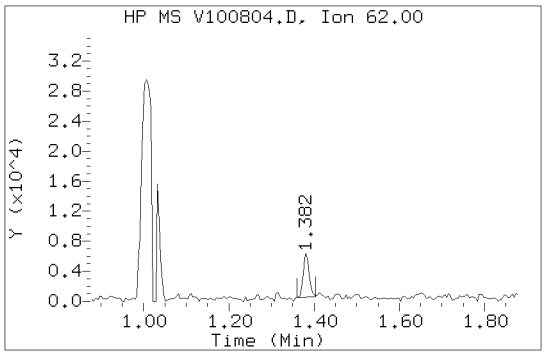
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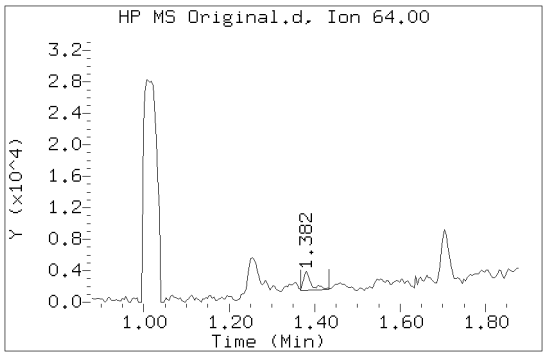
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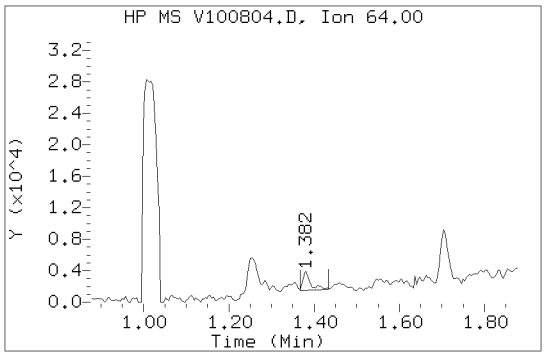
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AFTER

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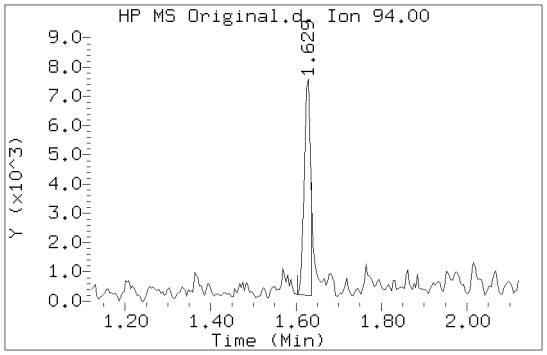


Bromomethane (74-83-9)

Reason Code:

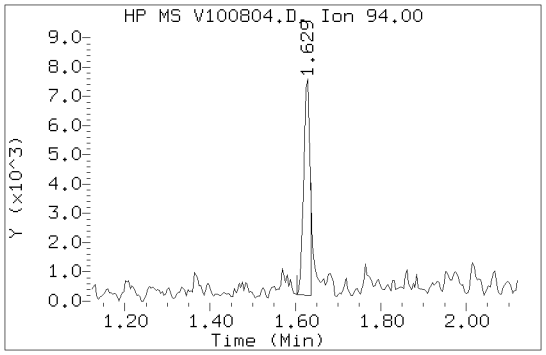
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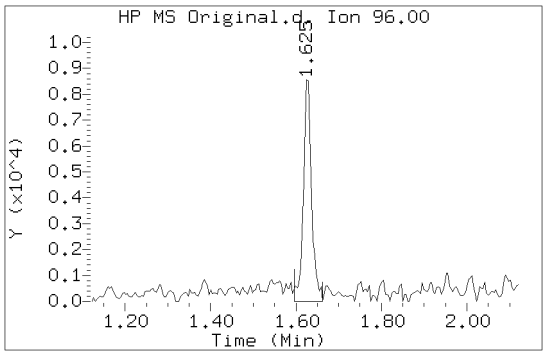
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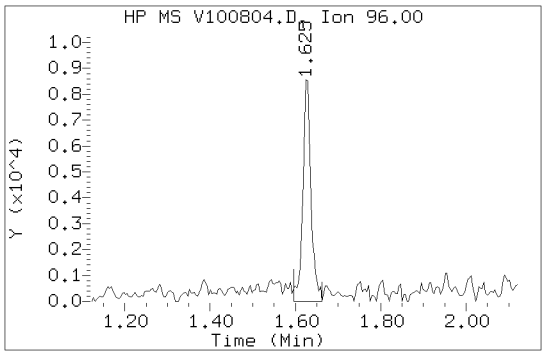
BEFORE

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AFTER

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HEIGHT
8562
13-Oct-2023
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linh
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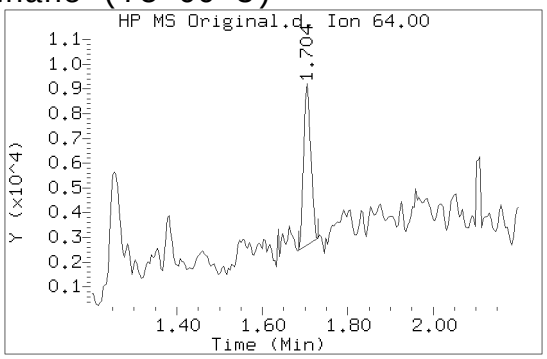
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Chloroethane (75-00-3)

Reason Code:

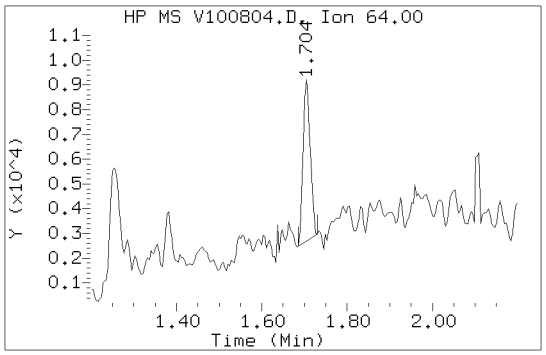
BEFORE

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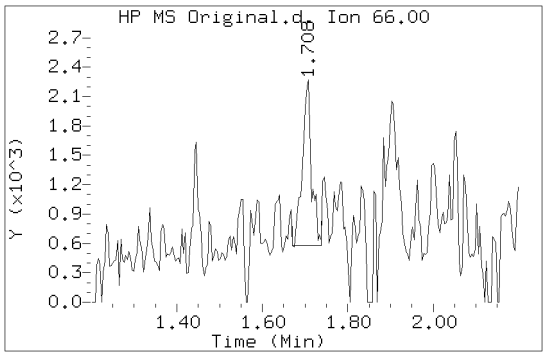
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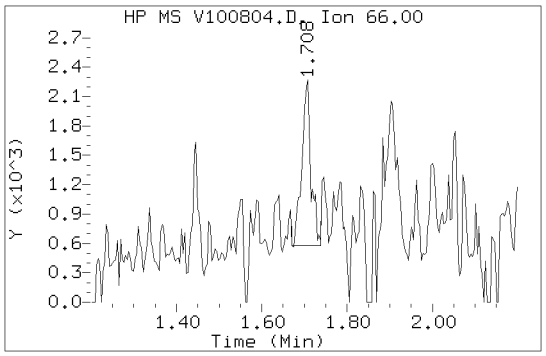
BEFORE

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13-Oct-2023
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AFTER

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13-Oct-2023
16:58
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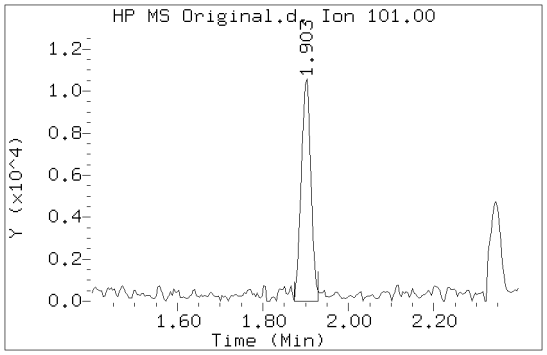


Trichlorofluoromethane (75-69-4)

Reason Code:

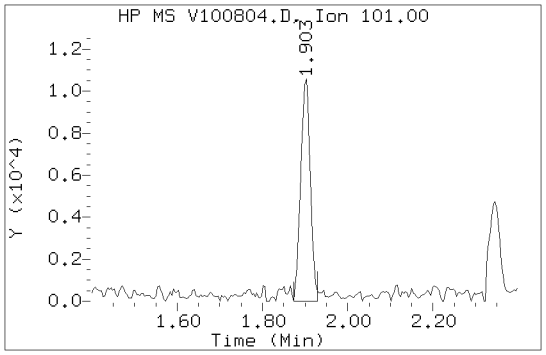
BEFORE

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10581
13-Oct-2023
16:58
linh
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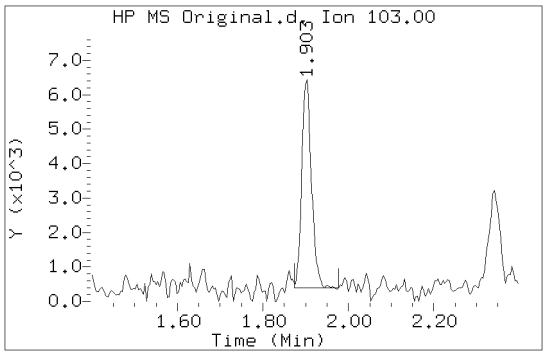
AFTER

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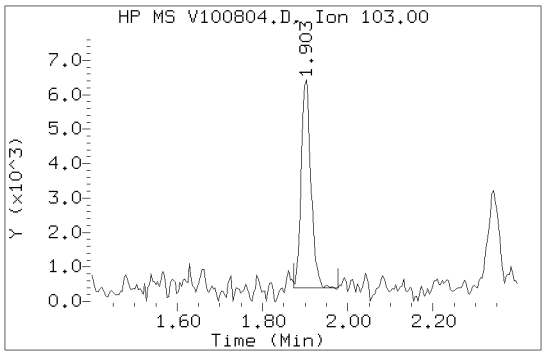
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AFTER

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13-Oct-2023
16:58
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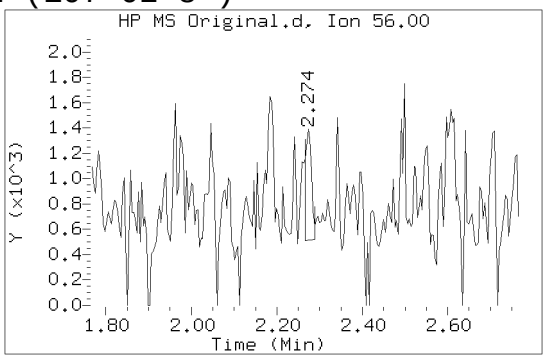
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Acrolein (107-02-8)

Reason Code:

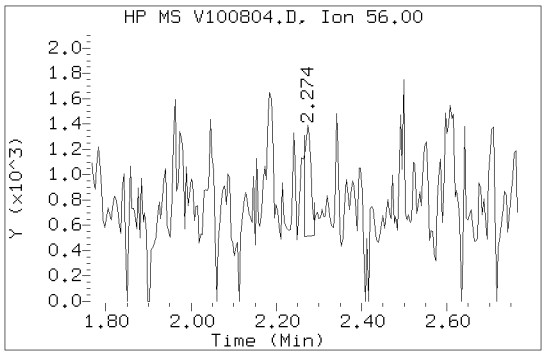
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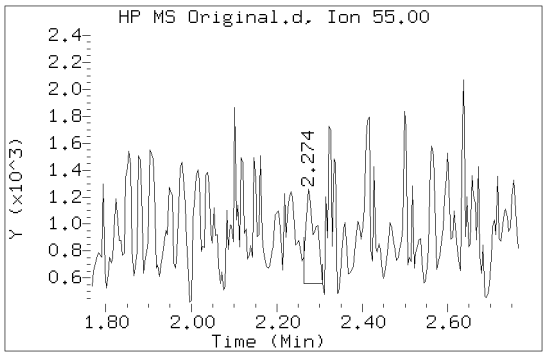
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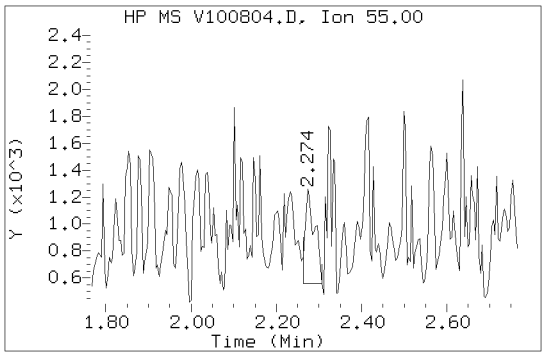
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AFTER

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701
13-Oct-2023
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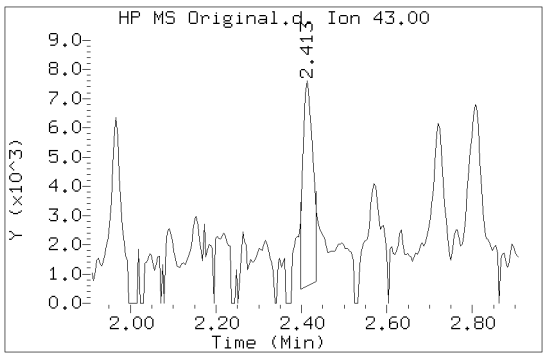


Acetone (67-64-1)

Reason Code:

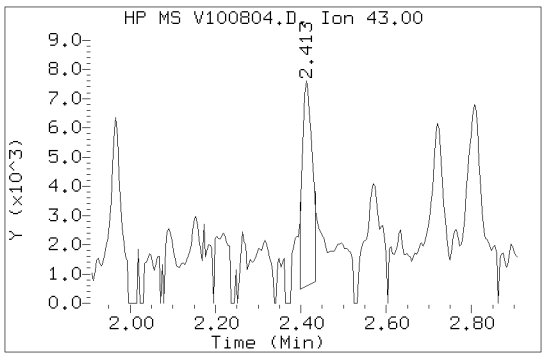
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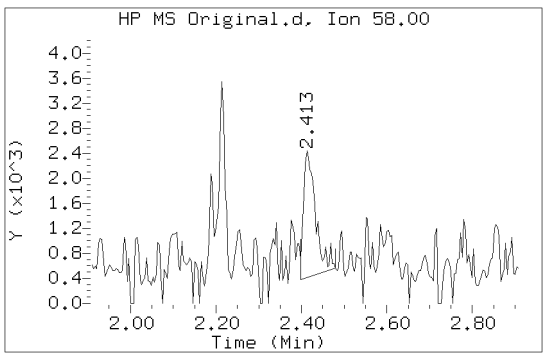
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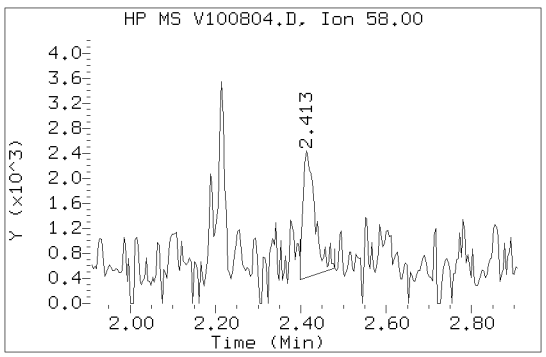
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AFTER

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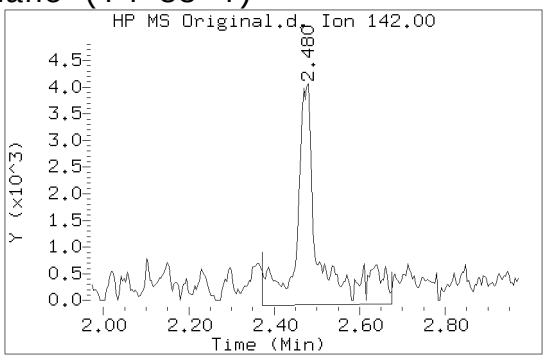
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Iodomethane (74-88-4)

Reason Code:

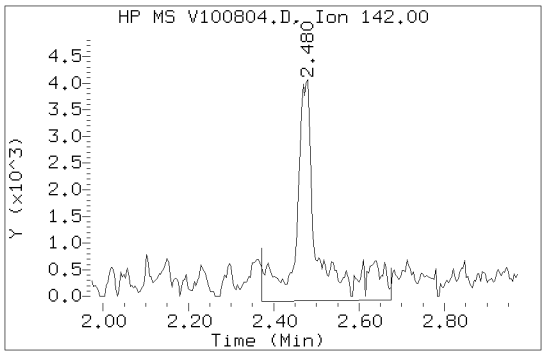
BEFORE

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HEIGHT
4149
13-Oct-2023
16:58
linh
pham



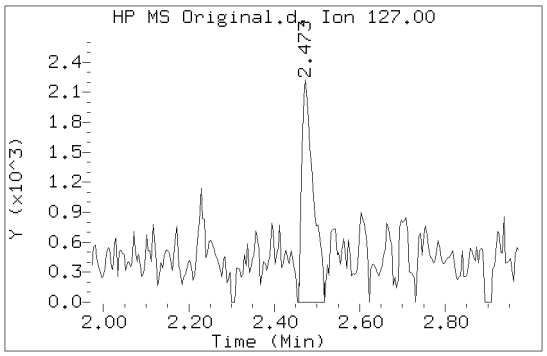
AFTER

MASS
142
AREA
15650
HEIGHT
4149
13-Oct-2023
16:58
linh
pham



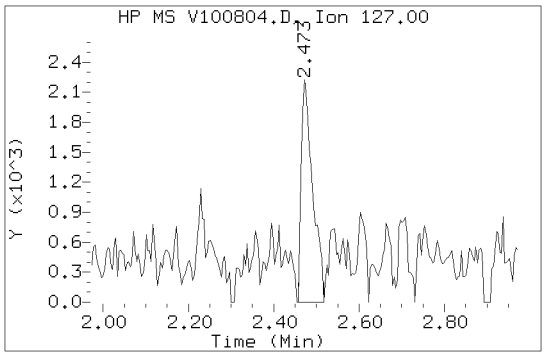
BEFORE

MASS
127
AREA
4228
HEIGHT
2224
13-Oct-2023
16:58
linh
pham



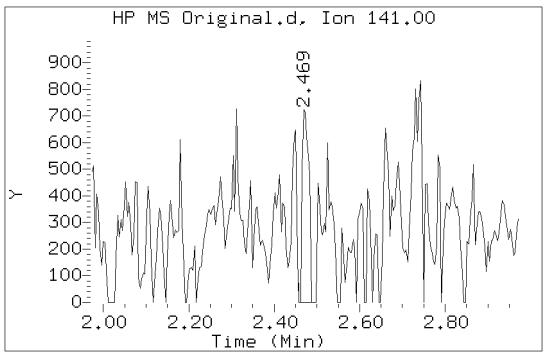
AFTER

MASS
127
AREA
4228
HEIGHT
2224
13-Oct-2023
16:58
linh
pham



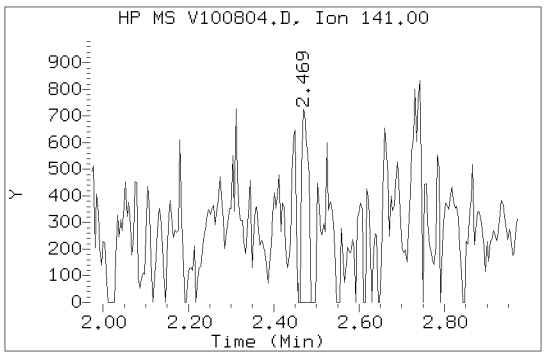
BEFORE

MASS
141
AREA
807
HEIGHT
724
13-Oct-2023
16:58
linh
pham



AFTER

MASS
141
AREA
807
HEIGHT
724
13-Oct-2023
16:58
linh
pham

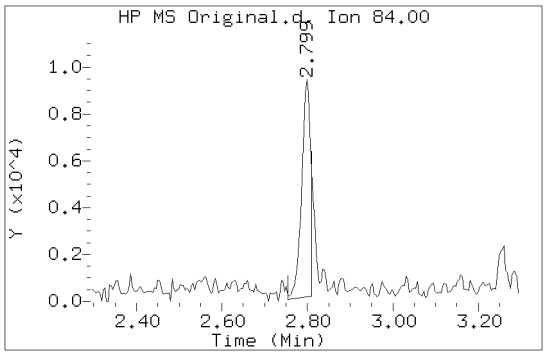


Methylene Chloride (75-09-2)

Reason Code:

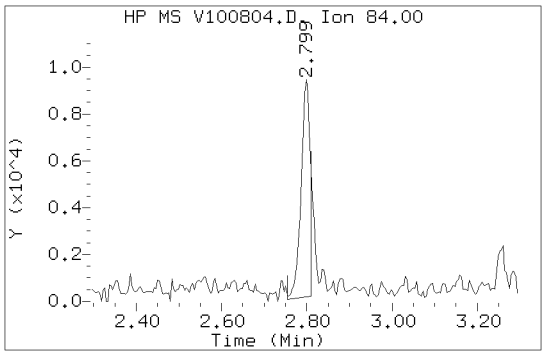
BEFORE

MASS
84
AREA
13734
HEIGHT
9272
13-Oct-2023
16:58
linh
pham



AFTER

MASS
84
AREA
13734
HEIGHT
9272
13-Oct-2023
16:58
linh
pham



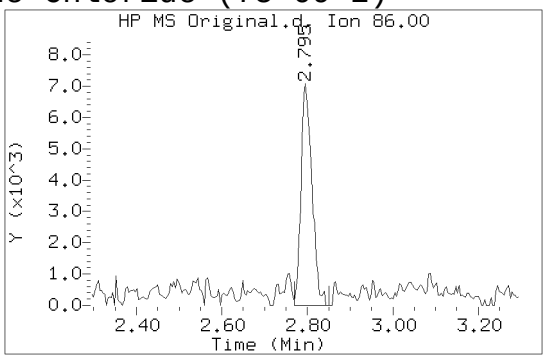
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Methylene Chloride (75-09-2)

Reason Code:

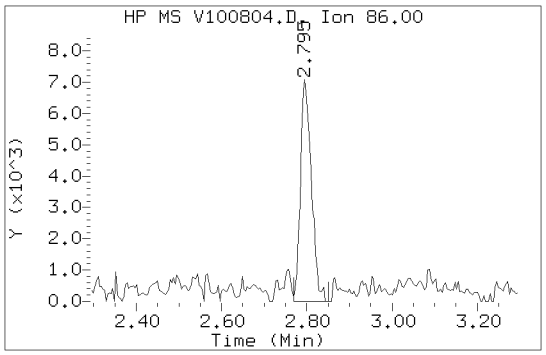
BEFORE

MASS
86
AREA
12846
HEIGHT
7080
13-Oct-2023
16:58
linh
pham



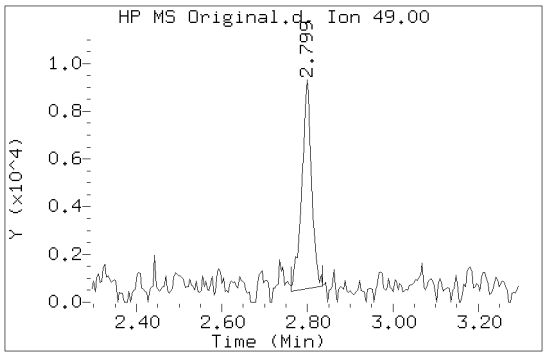
AFTER

MASS
86
AREA
12846
HEIGHT
7080
13-Oct-2023
16:58
linh
pham



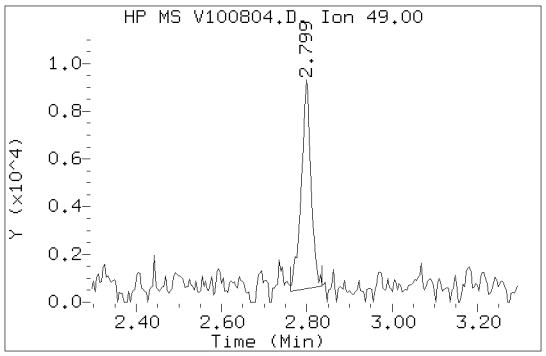
BEFORE

MASS
49
AREA
14210
HEIGHT
8748
13-Oct-2023
16:58
linh
pham



AFTER

MASS
49
AREA
14210
HEIGHT
8748
13-Oct-2023
16:58
linh
pham

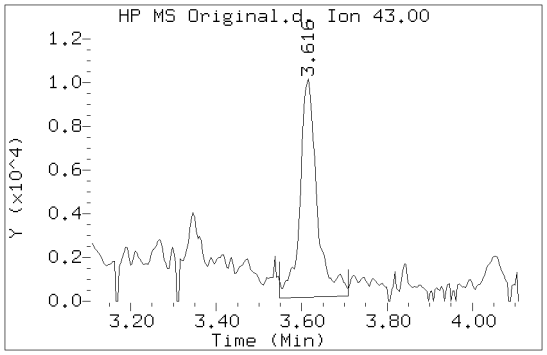


Vinyl Acetate (108-05-4)

Reason Code:

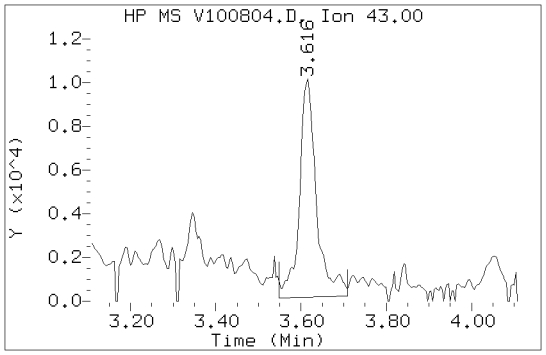
BEFORE

MASS
43
AREA
28389
HEIGHT
9980
13-Oct-2023
16:58
linh
pham



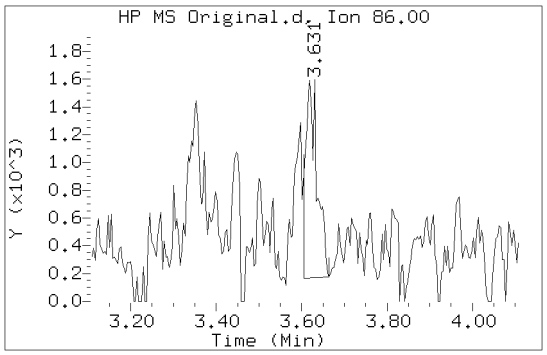
AFTER

MASS
43
AREA
28389
HEIGHT
9980
13-Oct-2023
16:58
linh
pham



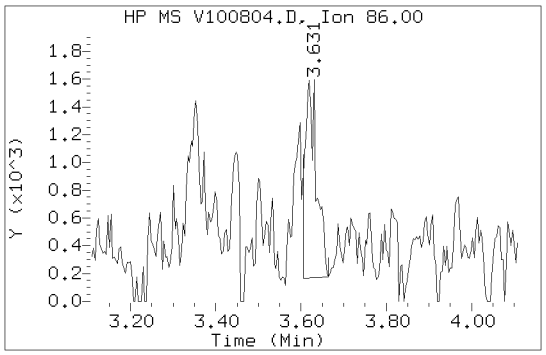
BEFORE

MASS
86
AREA
2746
HEIGHT
1427
13-Oct-2023
16:58
linh
pham



AFTER

MASS
86
AREA
2746
HEIGHT
1427
13-Oct-2023
16:58
linh
pham



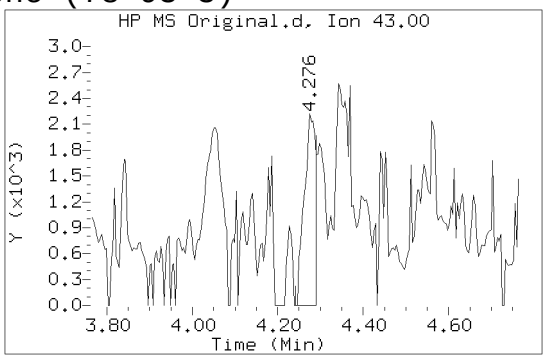
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

2-Butanone (78-93-3)

Reason Code:

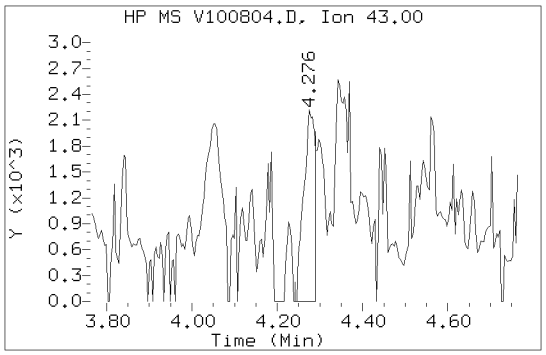
BEFORE

MASS
43
AREA
4204
HEIGHT
2223
13-Oct-2023
16:58
linh
pham



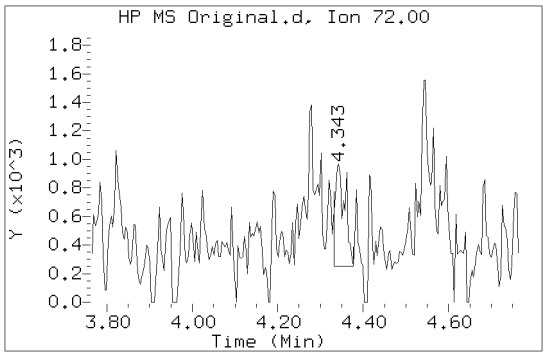
AFTER

MASS
43
AREA
4204
HEIGHT
2223
13-Oct-2023
16:58
linh
pham



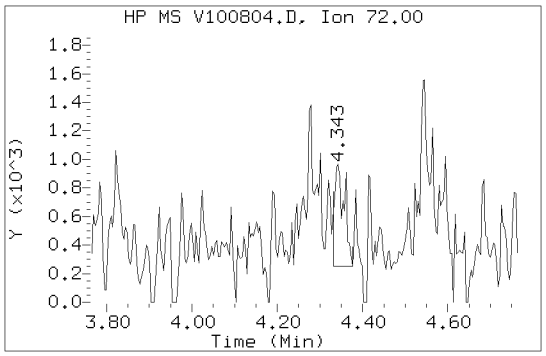
BEFORE

MASS
72
AREA
1158
HEIGHT
716
13-Oct-2023
16:58
linh
pham



AFTER

MASS
72
AREA
1158
HEIGHT
716
13-Oct-2023
16:58
linh
pham

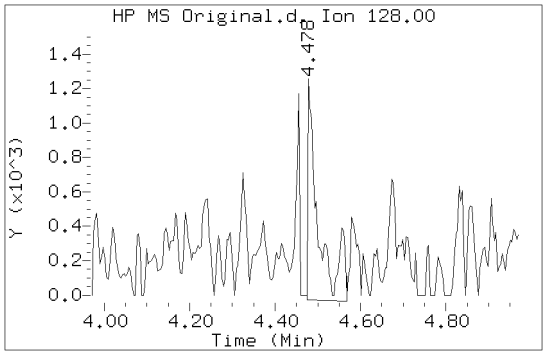


Bromochloromethane (74-97-5)

Reason Code:

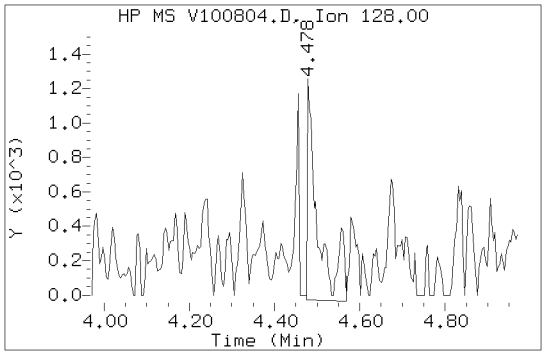
BEFORE

MASS
128
AREA
2199
HEIGHT
1283
13-Oct-2023
16:58
linh
pham



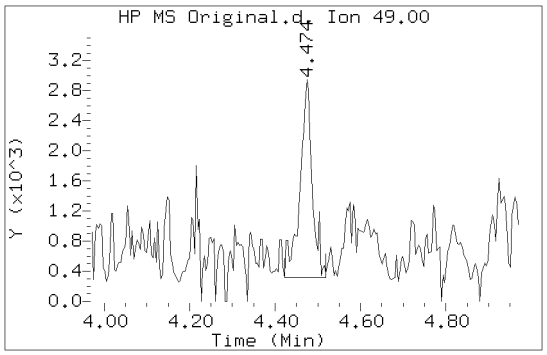
AFTER

MASS
128
AREA
2199
HEIGHT
1283
13-Oct-2023
16:58
linh
pham



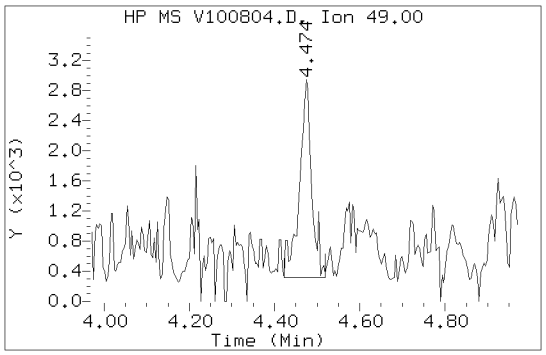
BEFORE

MASS
49
AREA
5371
HEIGHT
2630
13-Oct-2023
16:58
linh
pham



AFTER

MASS
49
AREA
5371
HEIGHT
2630
13-Oct-2023
16:58
linh
pham



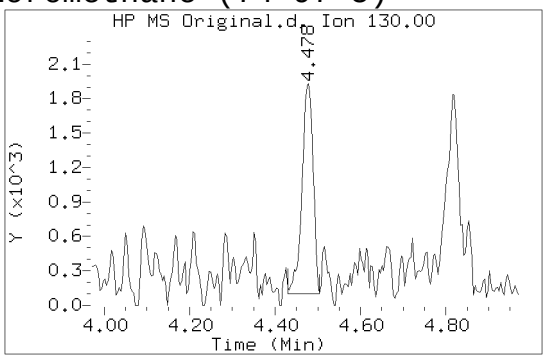
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Bromochloromethane (74-97-5)

Reason Code:

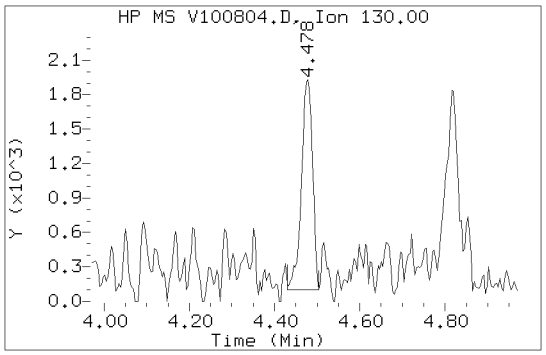
BEFORE

MASS
130
AREA
3395
HEIGHT
1828
13-Oct-2023
16:58
linh
pham



AFTER

MASS
130
AREA
3395
HEIGHT
1828
13-Oct-2023
16:58
linh
pham

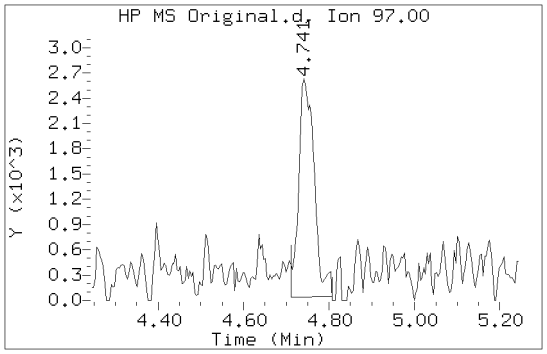


1,1,1-Trichloroethane (71-55-6)

Reason Code:

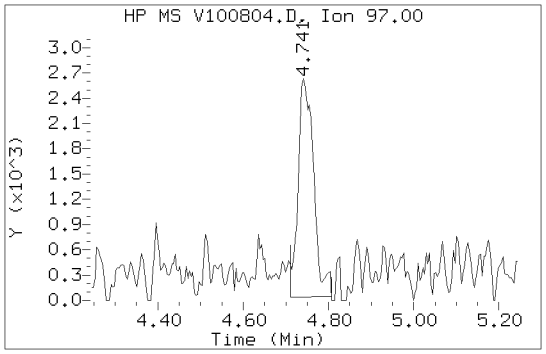
BEFORE

MASS
97
AREA
6653
HEIGHT
2592
13-Oct-2023
16:58
linh
pham



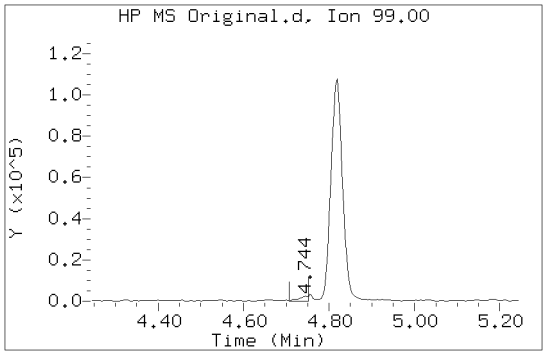
AFTER

MASS
97
AREA
6653
HEIGHT
2592
13-Oct-2023
16:58
linh
pham



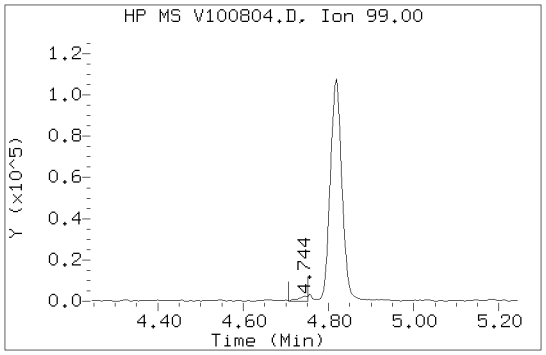
BEFORE

MASS
99
AREA
3977
HEIGHT
2465
13-Oct-2023
16:58
linh
pham



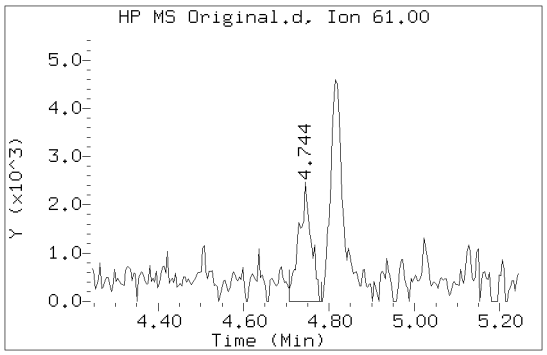
AFTER

MASS
99
AREA
3977
HEIGHT
2465
13-Oct-2023
16:58
linh
pham



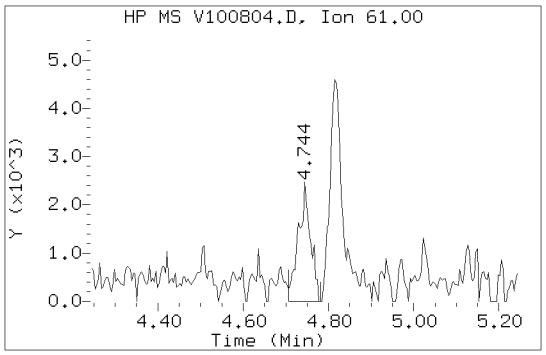
BEFORE

MASS
61
AREA
4942
HEIGHT
2476
13-Oct-2023
16:58
linh
pham



AFTER

MASS
61
AREA
4942
HEIGHT
2476
13-Oct-2023
16:58
linh
pham



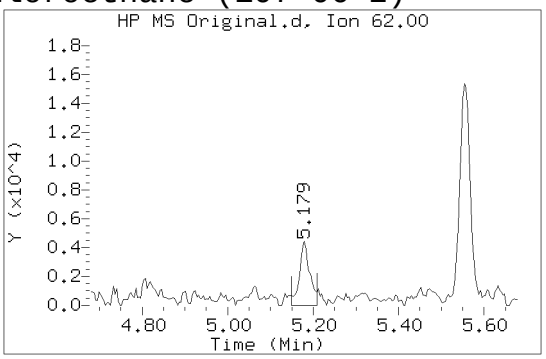
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

1,2-Dichloroethane (107-06-2)

Reason Code:

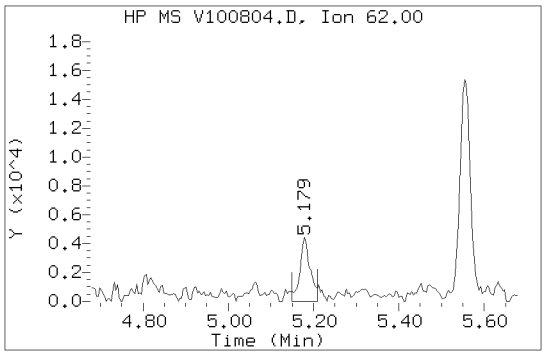
BEFORE

MASS
62
AREA
7649
HEIGHT
4450
13-Oct-2023
16:58
linh
pham



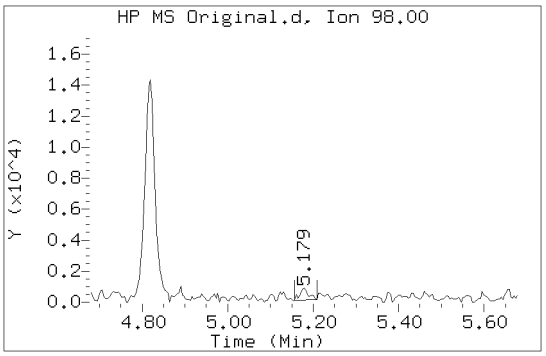
AFTER

MASS
62
AREA
7649
HEIGHT
4450
13-Oct-2023
16:58
linh
pham



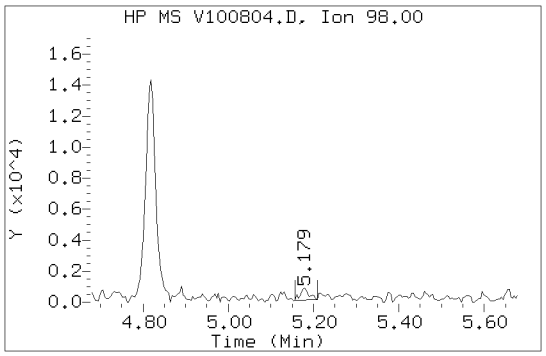
BEFORE

MASS
98
AREA
1120
HEIGHT
756
13-Oct-2023
16:58
linh
pham



AFTER

MASS
98
AREA
1120
HEIGHT
756
13-Oct-2023
16:58
linh
pham

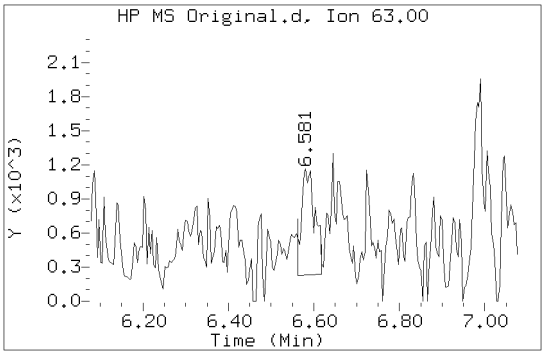


2-Chloroethylvinyl ether (110-75-8)

Reason Code:

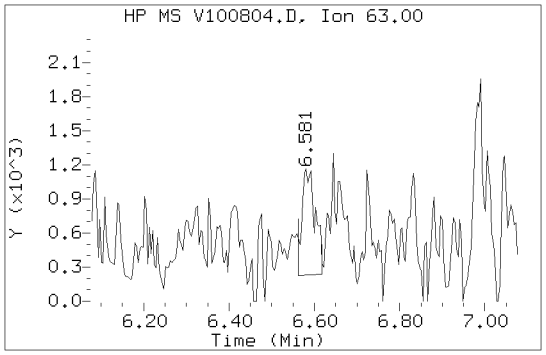
BEFORE

MASS
63
AREA
2054
HEIGHT
936
13-Oct-2023
16:58
linh
pham



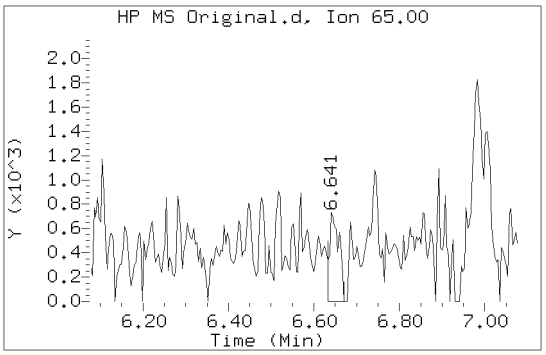
AFTER

MASS
63
AREA
2054
HEIGHT
936
13-Oct-2023
16:58
linh
pham



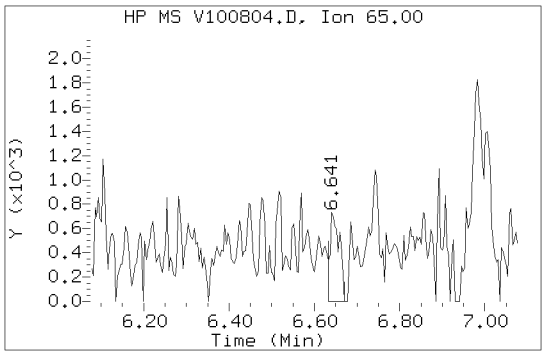
BEFORE

MASS
65
AREA
1133
HEIGHT
735
13-Oct-2023
16:58
linh
pham



AFTER

MASS
65
AREA
1133
HEIGHT
735
13-Oct-2023
16:58
linh
pham



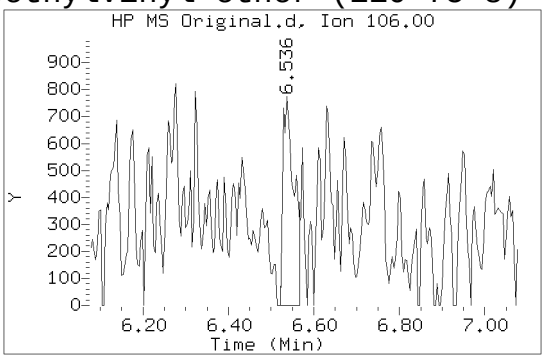
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

2-Chloroethylvinyl ether (110-75-8)

Reason Code:

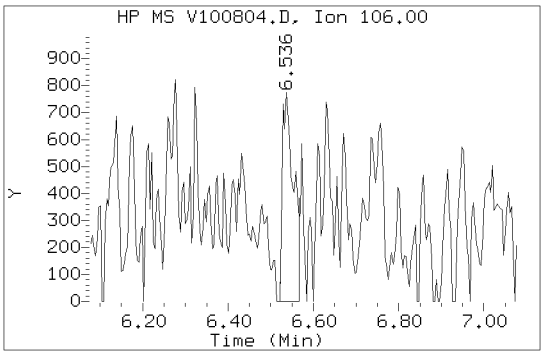
BEFORE

MASS
106
AREA
1393
HEIGHT
774
13-Oct-2023
16:58
linh
pham



AFTER

MASS
106
AREA
1393
HEIGHT
774
13-Oct-2023
16:58
linh
pham

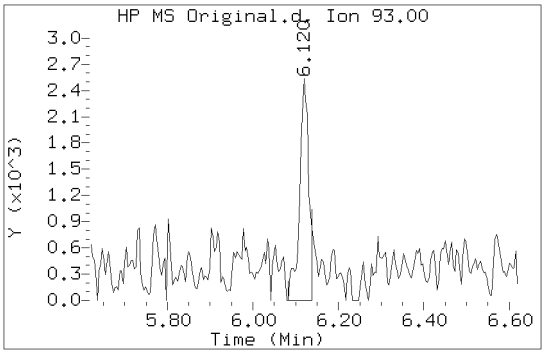


Dibromomethane (74-95-3)

Reason Code:

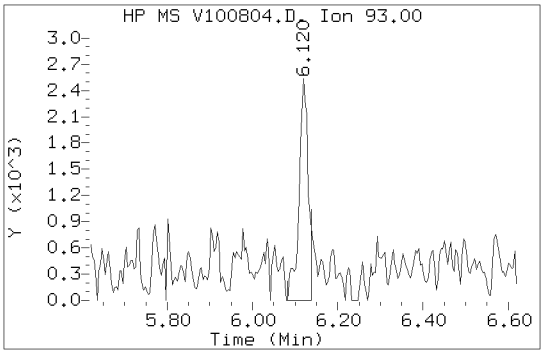
BEFORE

MASS
93
AREA
3937
HEIGHT
2535
13-Oct-2023
16:58
linh
pham



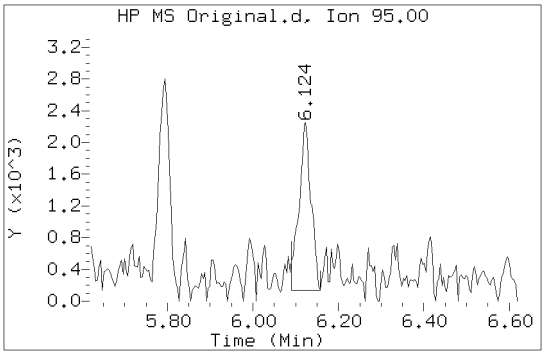
AFTER

MASS
93
AREA
3937
HEIGHT
2535
13-Oct-2023
16:58
linh
pham



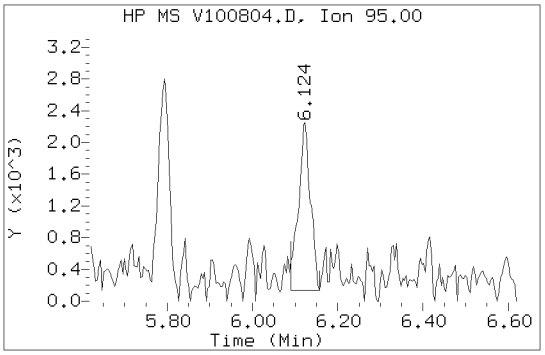
BEFORE

MASS
95
AREA
4225
HEIGHT
2110
13-Oct-2023
16:58
linh
pham



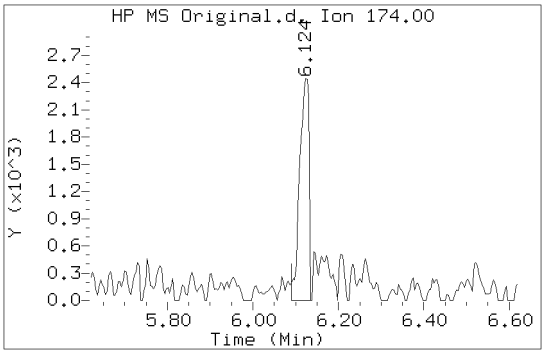
AFTER

MASS
95
AREA
4225
HEIGHT
2110
13-Oct-2023
16:58
linh
pham



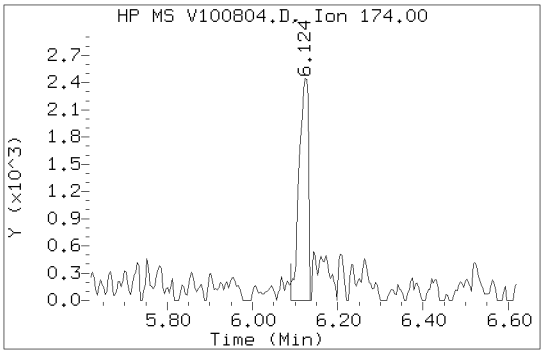
BEFORE

MASS
174
AREA
3793
HEIGHT
2443
13-Oct-2023
16:58
linh
pham



AFTER

MASS
174
AREA
3793
HEIGHT
2443
13-Oct-2023
16:58
linh
pham



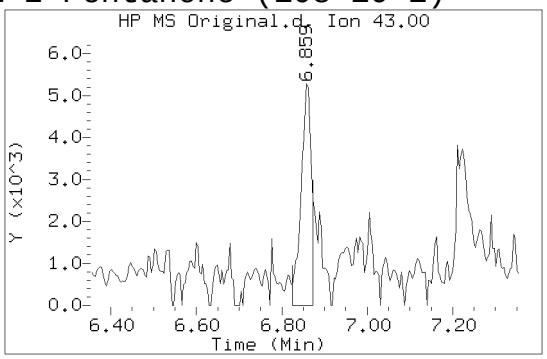
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

4-Methyl-2-Pentanone (108-10-1)

Reason Code:

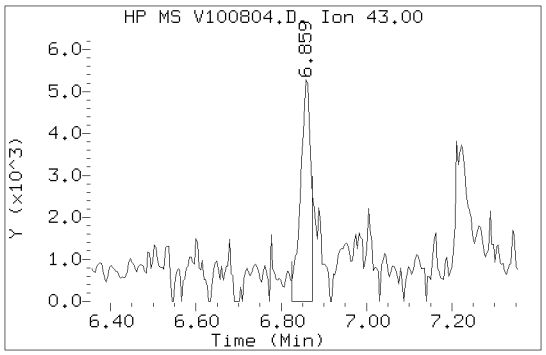
BEFORE

MASS
43
AREA
9009
HEIGHT
5282
13-Oct-2023
16:58
linh
pham



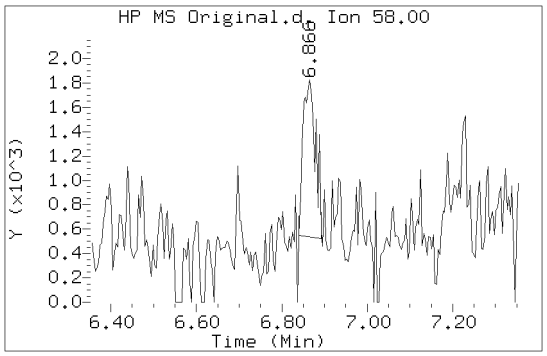
AFTER

MASS
43
AREA
9009
HEIGHT
5282
13-Oct-2023
16:58
linh
pham



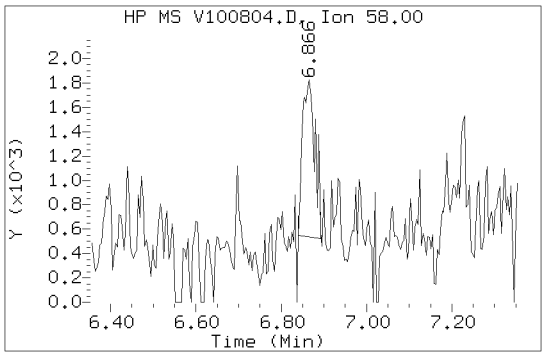
BEFORE

MASS
58
AREA
2644
HEIGHT
1290
13-Oct-2023
16:58
linh
pham



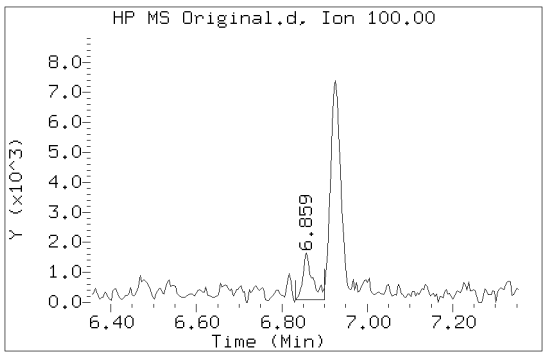
AFTER

MASS
58
AREA
2644
HEIGHT
1290
13-Oct-2023
16:58
linh
pham



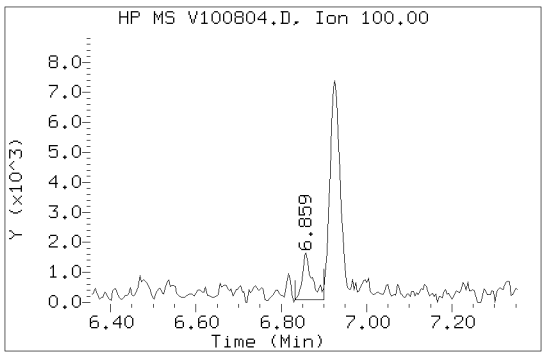
BEFORE

MASS
100
AREA
2563
HEIGHT
1565
13-Oct-2023
16:58
linh
pham



AFTER

MASS
100
AREA
2563
HEIGHT
1565
13-Oct-2023
16:58
linh
pham

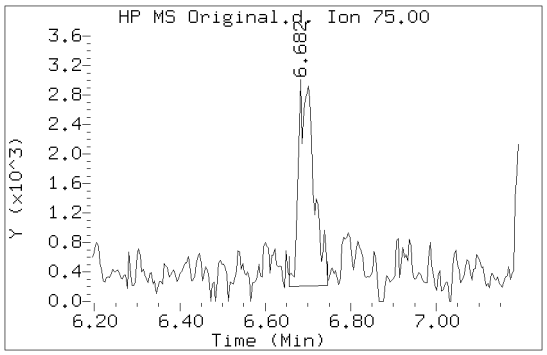


cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

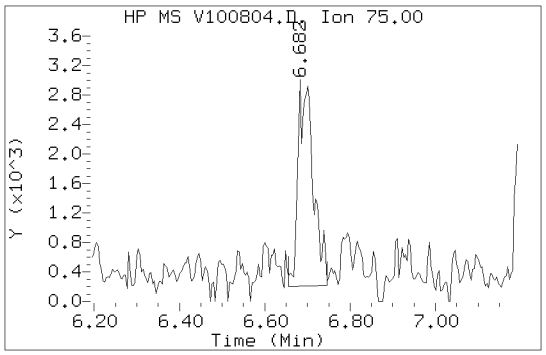
BEFORE

MASS
75
AREA
7008
HEIGHT
2802
13-Oct-2023
16:58
linh
pham



AFTER

MASS
75
AREA
7008
HEIGHT
2802
13-Oct-2023
16:58
linh
pham



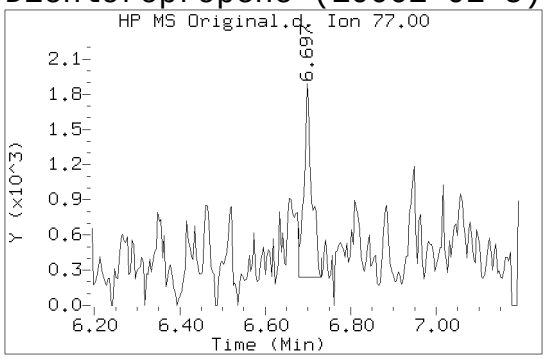
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

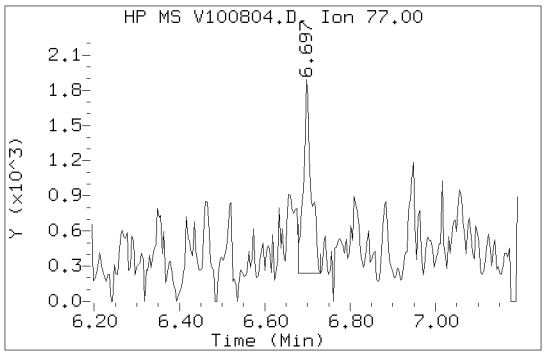
BEFORE

MASS
77
AREA
2147
HEIGHT
1652
13-Oct-2023
16:58
linh
pham



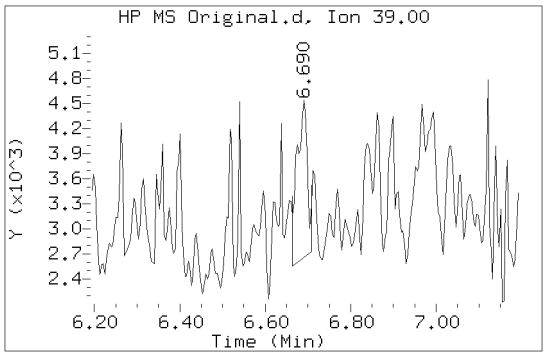
AFTER

MASS
77
AREA
2147
HEIGHT
1652
13-Oct-2023
16:58
linh
pham



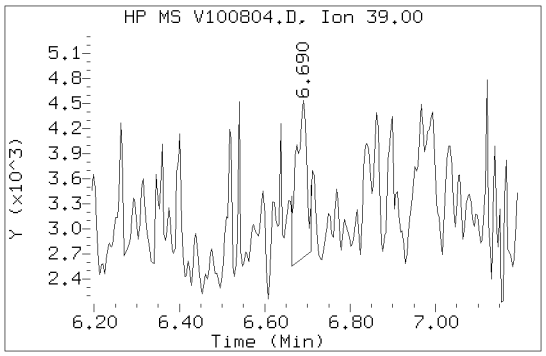
BEFORE

MASS
39
AREA
3302
HEIGHT
1886
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
3302
HEIGHT
1886
13-Oct-2023
16:58
linh
pham

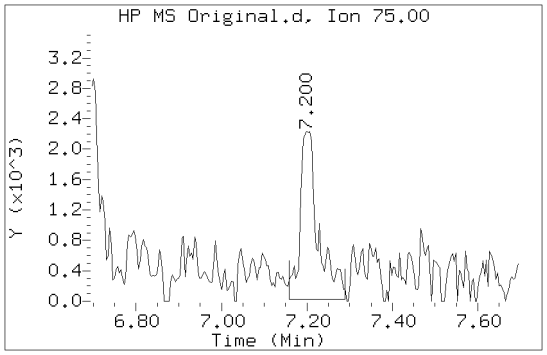


trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

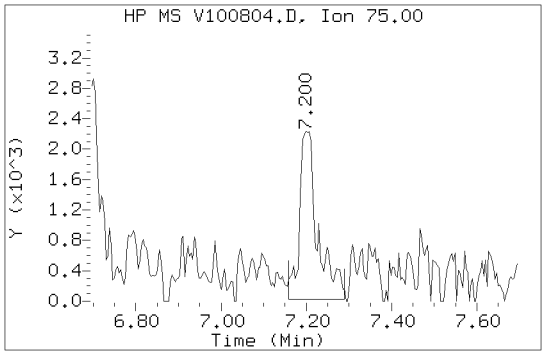
BEFORE

MASS
75
AREA
6570
HEIGHT
2203
13-Oct-2023
16:58
linh
pham



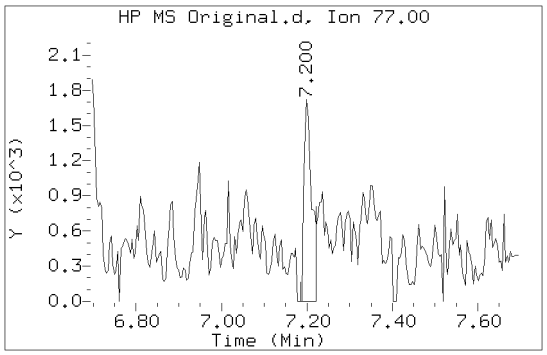
AFTER

MASS
75
AREA
6570
HEIGHT
2203
13-Oct-2023
16:58
linh
pham



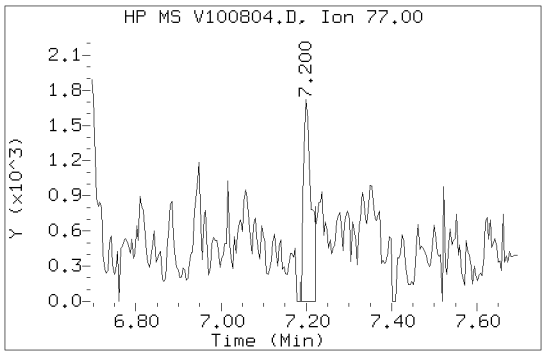
BEFORE

MASS
77
AREA
2201
HEIGHT
1723
13-Oct-2023
16:58
linh
pham



AFTER

MASS
77
AREA
2201
HEIGHT
1723
13-Oct-2023
16:58
linh
pham



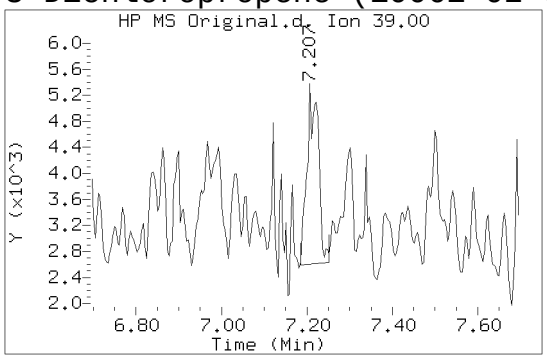
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

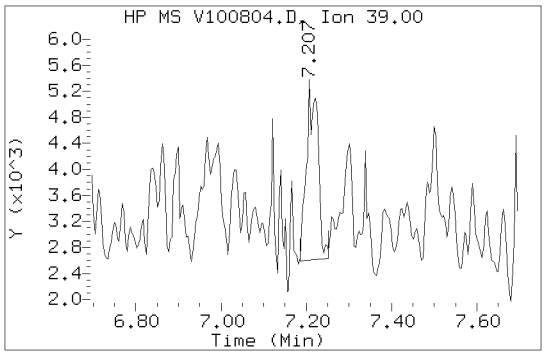
BEFORE

MASS
39
AREA
5089
HEIGHT
2772
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
5089
HEIGHT
2772
13-Oct-2023
16:58
linh
pham

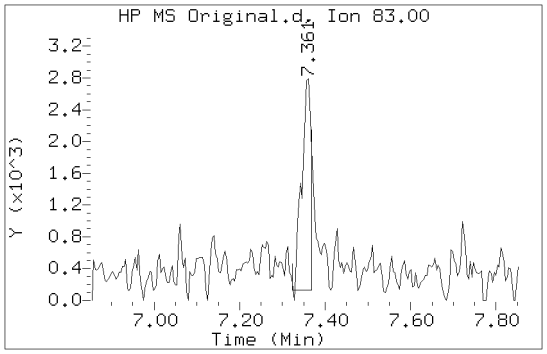


1,1,2-Trichloroethane (79-00-5)

Reason Code:

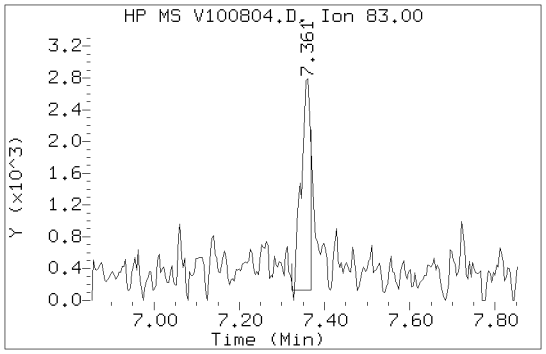
BEFORE

MASS
83
AREA
4018
HEIGHT
2664
13-Oct-2023
16:58
linh
pham



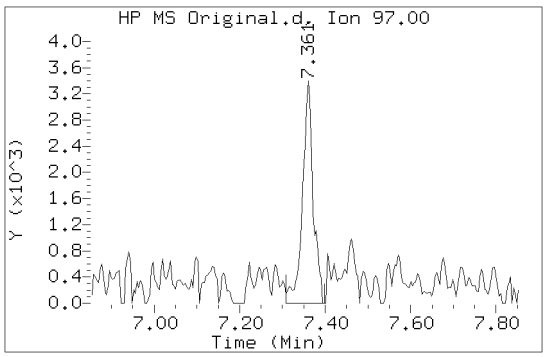
AFTER

MASS
83
AREA
4018
HEIGHT
2664
13-Oct-2023
16:58
linh
pham



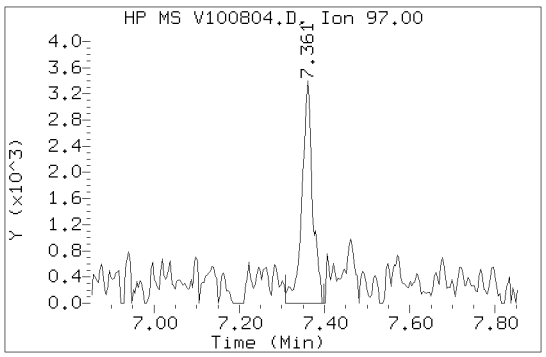
BEFORE

MASS
97
AREA
5945
HEIGHT
3397
13-Oct-2023
16:58
linh
pham



AFTER

MASS
97
AREA
5945
HEIGHT
3397
13-Oct-2023
16:58
linh
pham

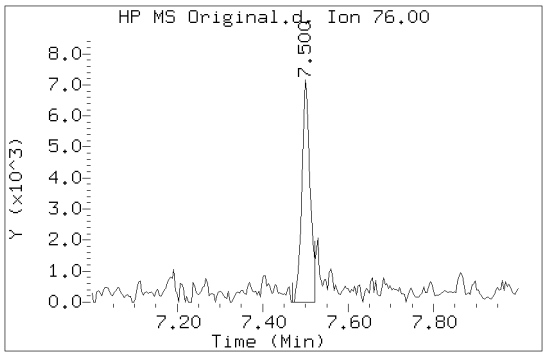


1,3-Dichloropropane (142-28-9)

Reason Code:

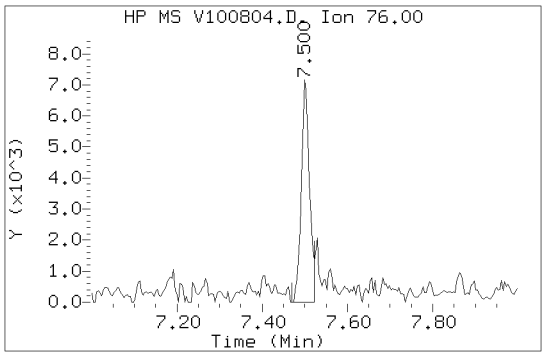
BEFORE

MASS
76
AREA
9863
HEIGHT
7160
13-Oct-2023
16:58
linh
pham



AFTER

MASS
76
AREA
9863
HEIGHT
7160
13-Oct-2023
16:58
linh
pham



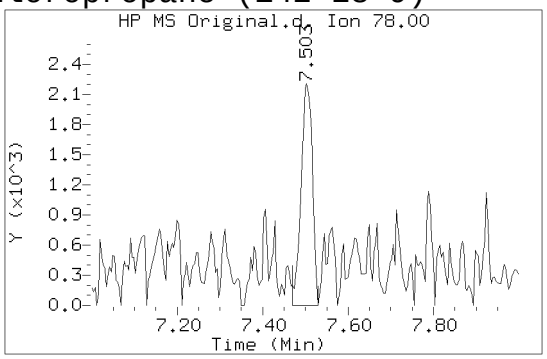
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

1,3-Dichloropropane (142-28-9)

Reason Code:

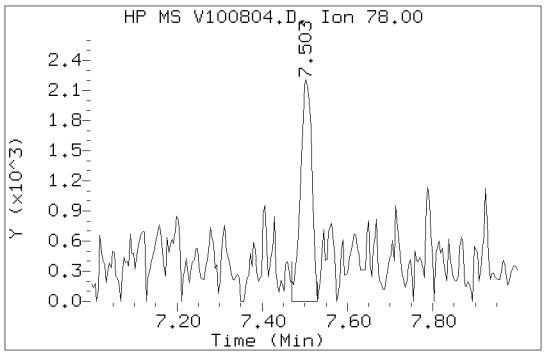
BEFORE

MASS
78
AREA
4154
HEIGHT
2207
13-Oct-2023
16:58
linh
pham



AFTER

MASS
78
AREA
4154
HEIGHT
2207
13-Oct-2023
16:58
linh
pham

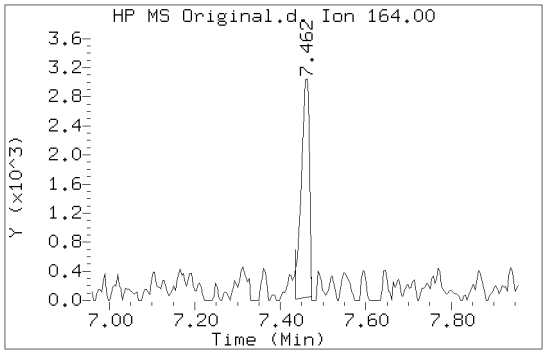


Tetrachloroethene (127-18-4)

Reason Code:

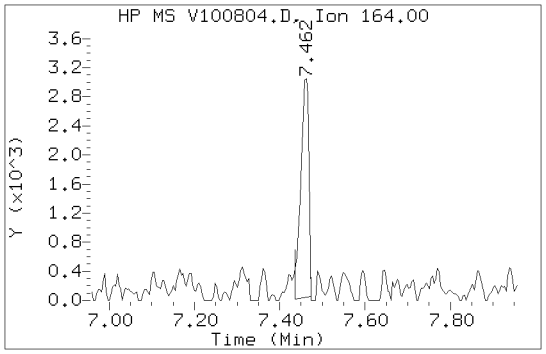
BEFORE

MASS
164
AREA
4070
HEIGHT
3003
13-Oct-2023
16:58
linh
pham



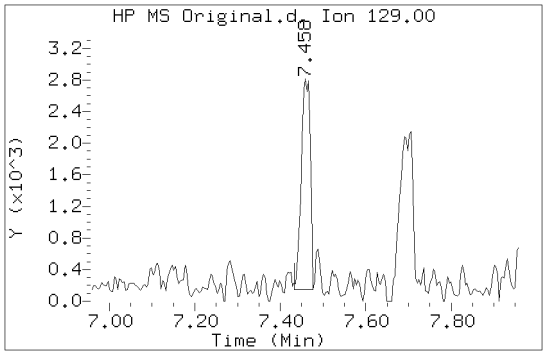
AFTER

MASS
164
AREA
4070
HEIGHT
3003
13-Oct-2023
16:58
linh
pham



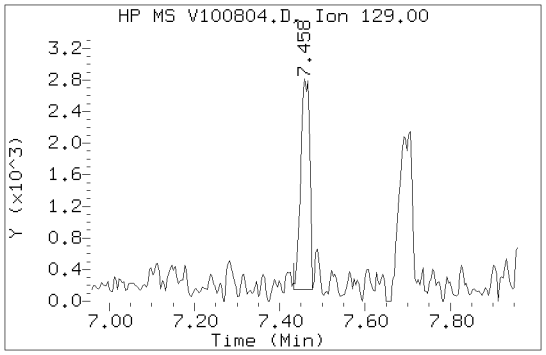
BEFORE

MASS
129
AREA
4026
HEIGHT
2665
13-Oct-2023
16:58
linh
pham



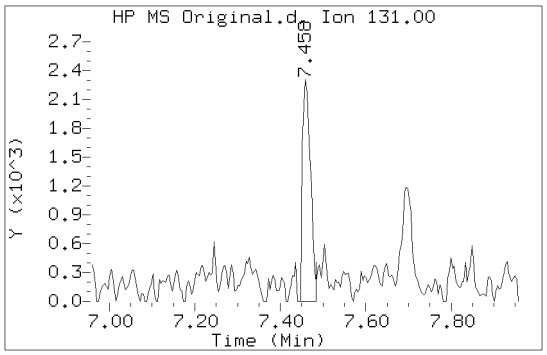
AFTER

MASS
129
AREA
4026
HEIGHT
2665
13-Oct-2023
16:58
linh
pham



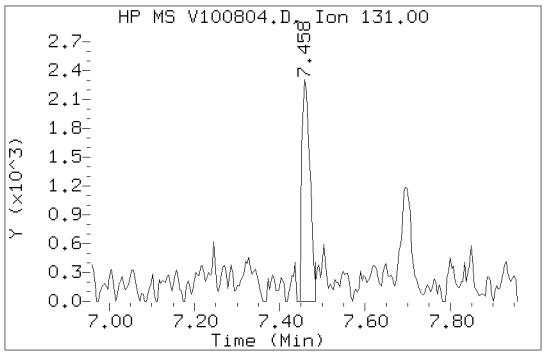
BEFORE

MASS
131
AREA
3121
HEIGHT
2308
13-Oct-2023
16:58
linh
pham



AFTER

MASS
131
AREA
3121
HEIGHT
2308
13-Oct-2023
16:58
linh
pham



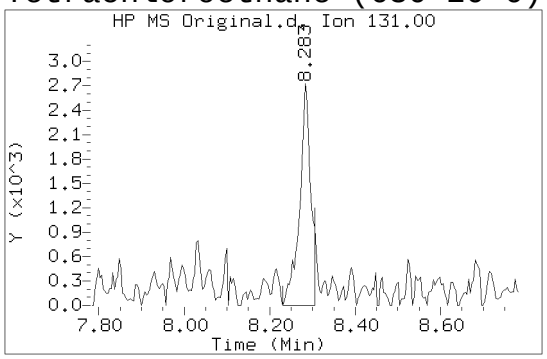
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

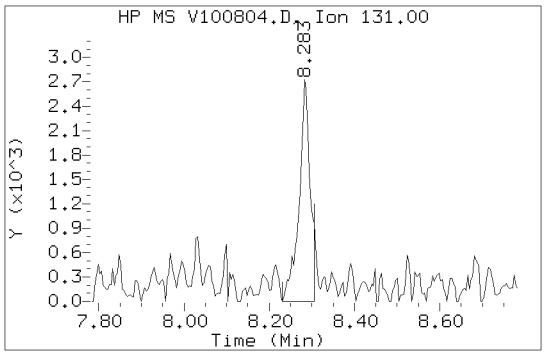
BEFORE

MASS
131
AREA
4987
HEIGHT
2726
13-Oct-2023
16:58
linh
pham



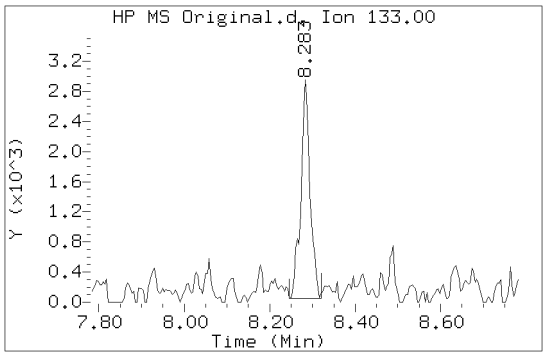
AFTER

MASS
131
AREA
4987
HEIGHT
2726
13-Oct-2023
16:58
linh
pham



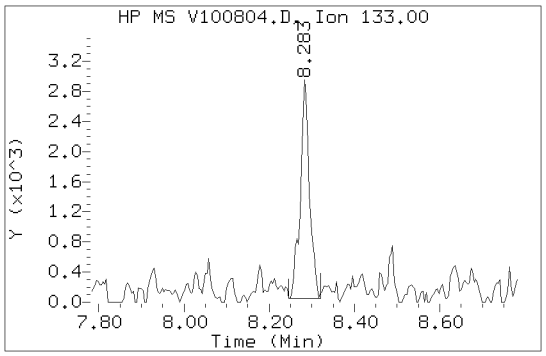
BEFORE

MASS
133
AREA
4469
HEIGHT
2897
13-Oct-2023
16:58
linh
pham



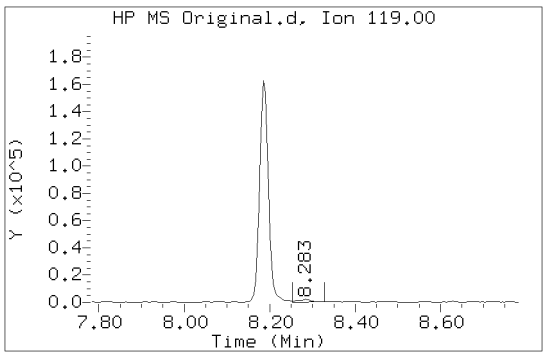
AFTER

MASS
133
AREA
4469
HEIGHT
2897
13-Oct-2023
16:58
linh
pham



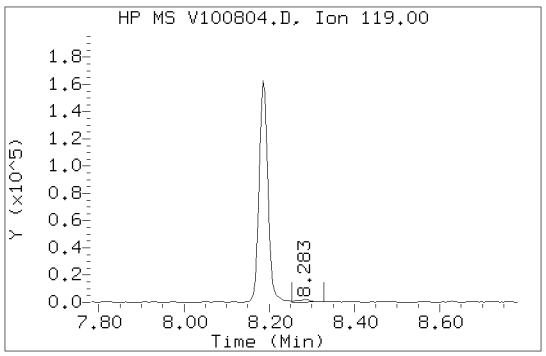
BEFORE

MASS
119
AREA
4045
HEIGHT
2020
13-Oct-2023
16:58
linh
pham



AFTER

MASS
119
AREA
4045
HEIGHT
2020
13-Oct-2023
16:58
linh
pham

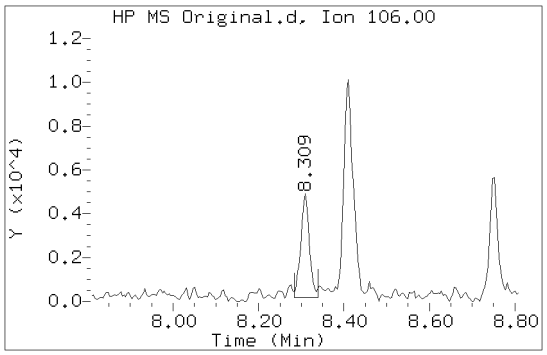


Ethylbenzene (100-41-4)

Reason Code:

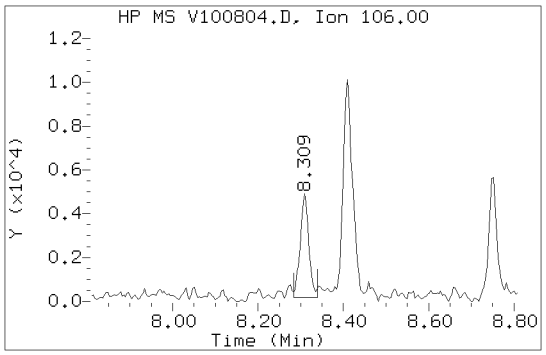
BEFORE

MASS
106
AREA
6872
HEIGHT
4739
13-Oct-2023
16:58
linh
pham



AFTER

MASS
106
AREA
6872
HEIGHT
4739
13-Oct-2023
16:58
linh
pham



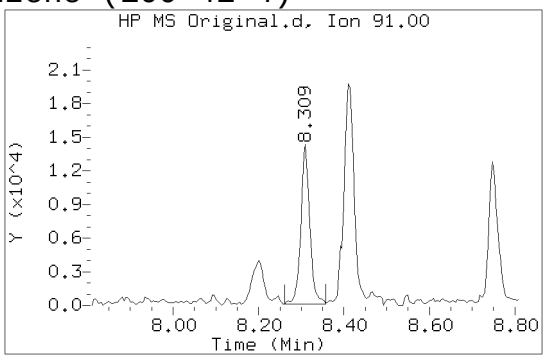
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Ethylbenzene (100-41-4)

Reason Code:

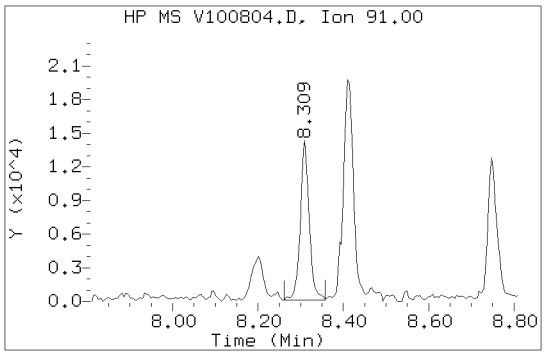
BEFORE

MASS
91
AREA
21094
HEIGHT
14205
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
21094
HEIGHT
14205
13-Oct-2023
16:58
linh
pham

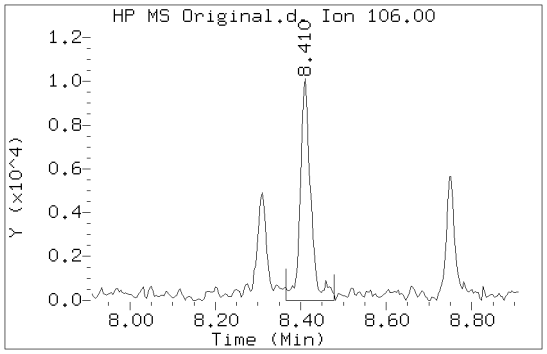


m,p-Xylenes ()

Reason Code:

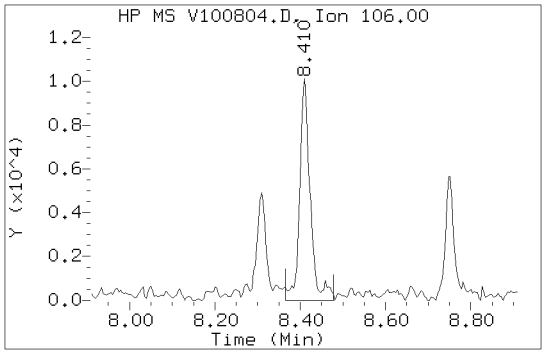
BEFORE

MASS
106
AREA
17666
HEIGHT
10126
13-Oct-2023
16:58
linh
pham



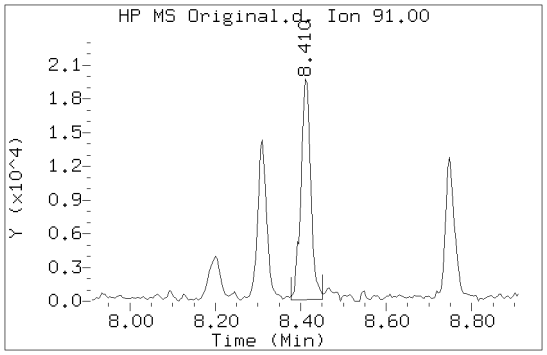
AFTER

MASS
106
AREA
17666
HEIGHT
10126
13-Oct-2023
16:58
linh
pham



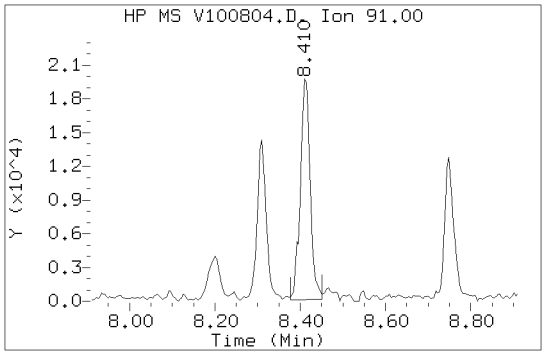
BEFORE

MASS
91
AREA
32360
HEIGHT
19629
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
32360
HEIGHT
19629
13-Oct-2023
16:58
linh
pham

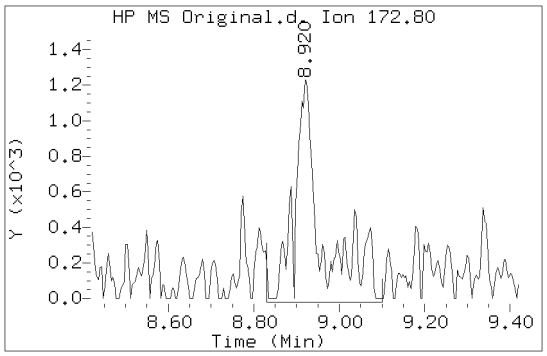


Bromoform (75-25-2)

Reason Code:

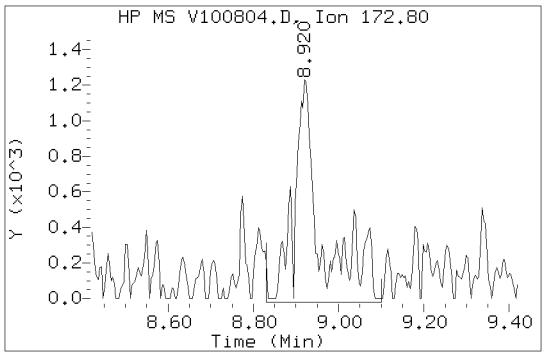
BEFORE

MASS
172.8
AREA
5629
HEIGHT
1251
13-Oct-2023
16:58
linh
pham



AFTER

MASS
172.8
AREA
5629
HEIGHT
1251
13-Oct-2023
16:58
linh
pham



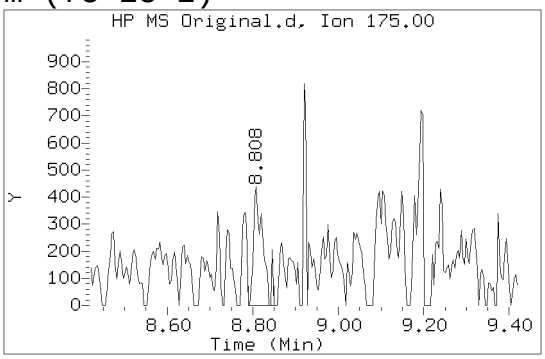
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Bromoform (75-25-2)

Reason Code:

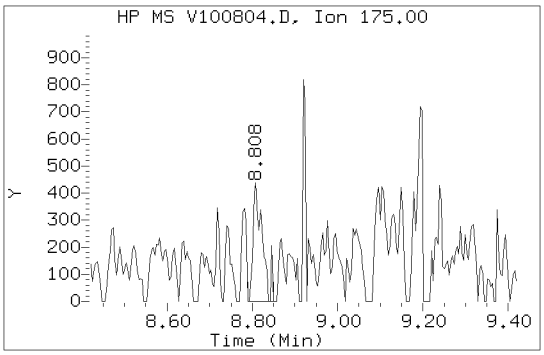
BEFORE

MASS
175
AREA
652
HEIGHT
438
13-Oct-2023
16:58
linh
pham



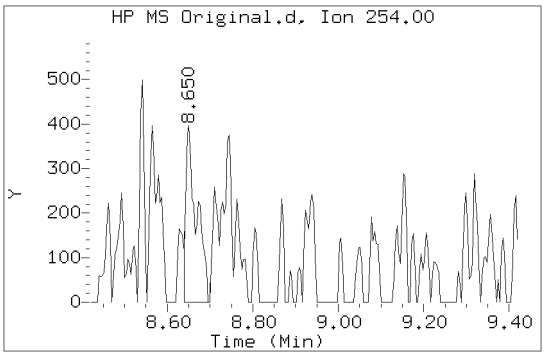
AFTER

MASS
175
AREA
652
HEIGHT
438
13-Oct-2023
16:58
linh
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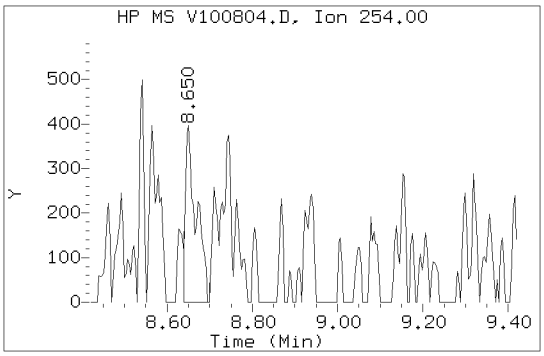
BEFORE

MASS
254
AREA
701
HEIGHT
397
13-Oct-2023
16:58
linh
pham



AFTER

MASS
254
AREA
701
HEIGHT
397
13-Oct-2023
16:58
linh
pham

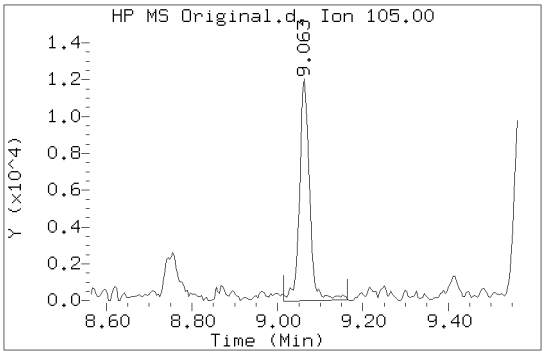


Isopropylbenzene (98-82-8)

Reason Code:

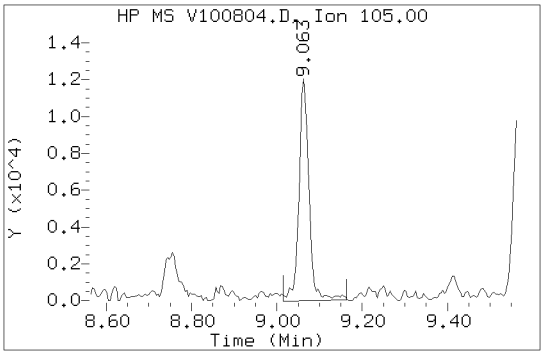
BEFORE

MASS
105
AREA
20128
HEIGHT
12038
13-Oct-2023
16:58
linh
pham



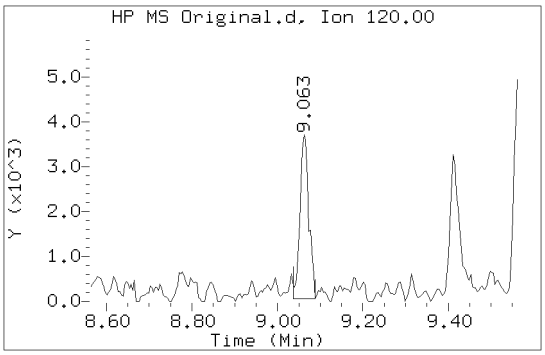
AFTER

MASS
105
AREA
20128
HEIGHT
12038
13-Oct-2023
16:58
linh
pham



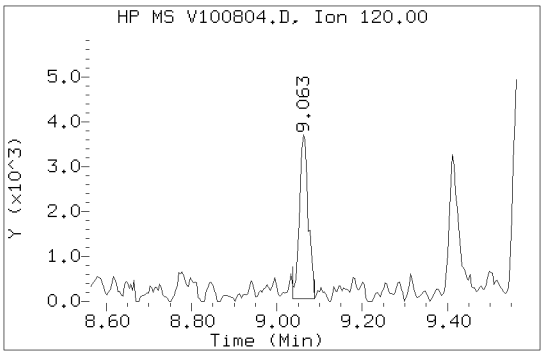
BEFORE

MASS
120
AREA
5386
HEIGHT
3642
13-Oct-2023
16:58
linh
pham



AFTER

MASS
120
AREA
5386
HEIGHT
3642
13-Oct-2023
16:58
linh
pham



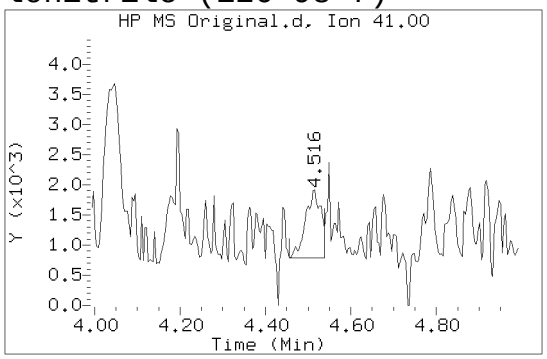
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Methacrylonitrile (126-98-7)

Reason Code:

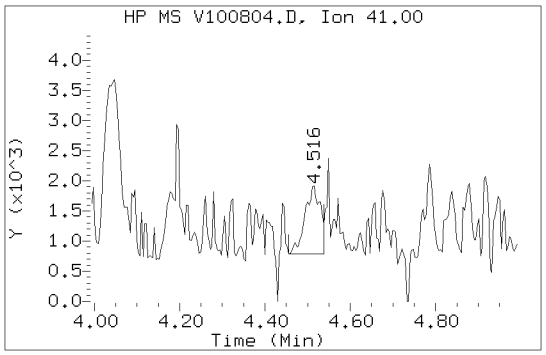
BEFORE

MASS
41
AREA
2833
HEIGHT
1130
13-Oct-2023
16:58
linh
pham



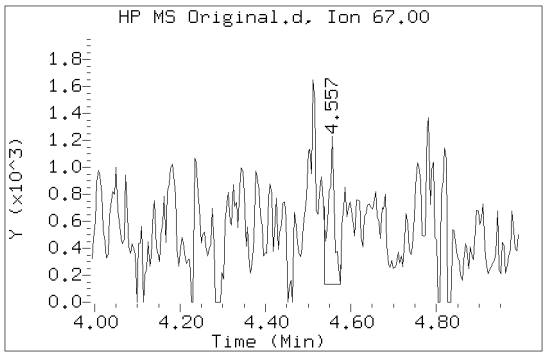
AFTER

MASS
41
AREA
2833
HEIGHT
1130
13-Oct-2023
16:58
linh
pham



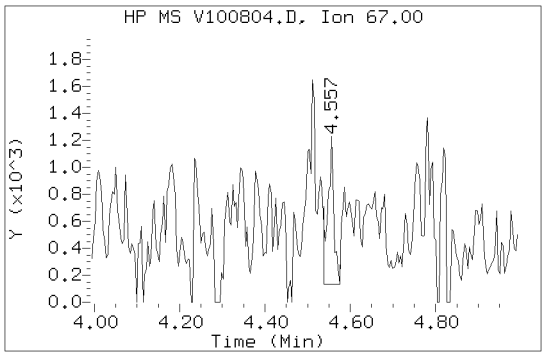
BEFORE

MASS
67
AREA
1107
HEIGHT
1094
13-Oct-2023
16:58
linh
pham



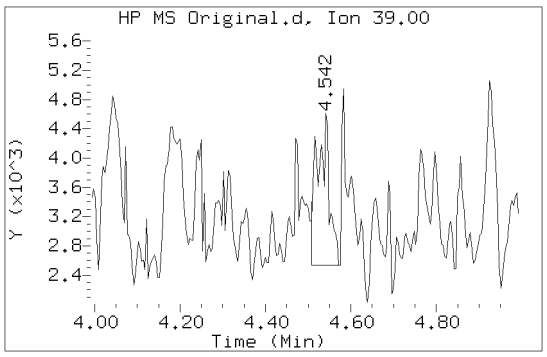
AFTER

MASS
67
AREA
1107
HEIGHT
1094
13-Oct-2023
16:58
linh
pham



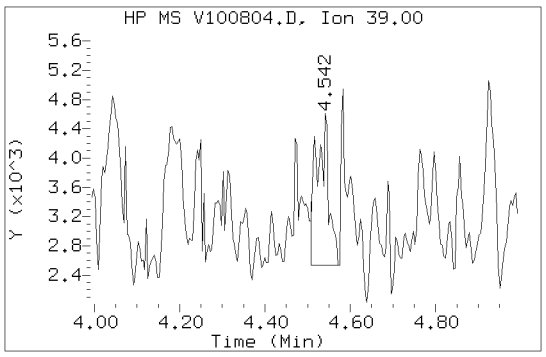
BEFORE

MASS
39
AREA
4200
HEIGHT
2071
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
4200
HEIGHT
2071
13-Oct-2023
16:58
linh
pham

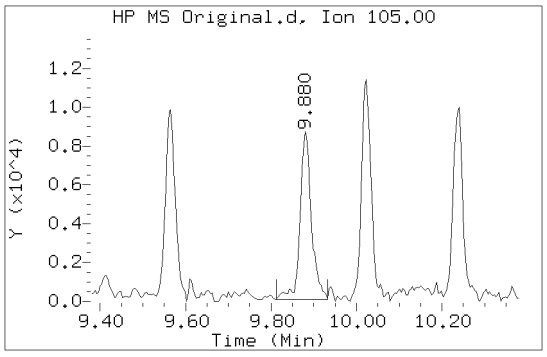


1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

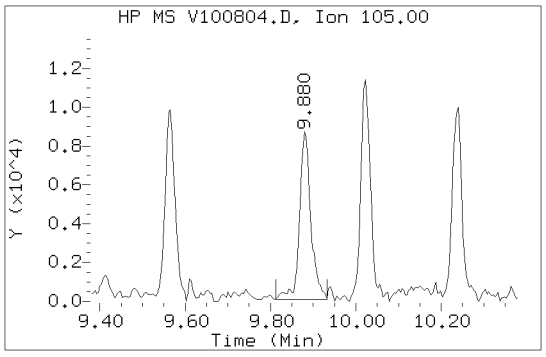
BEFORE

MASS
105
AREA
16350
HEIGHT
8626
13-Oct-2023
16:58
linh
pham



AFTER

MASS
105
AREA
16350
HEIGHT
8626
13-Oct-2023
16:58
linh
pham



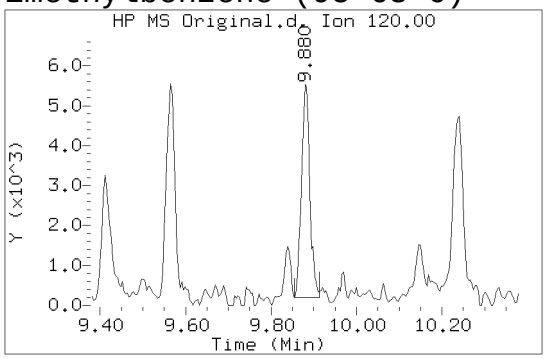
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

1,2,4-Trimethylbenzene (95-63-6)

Reason Code:

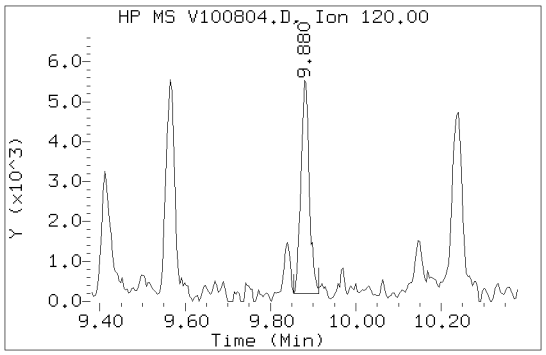
BEFORE

MASS
120
AREA
7494
HEIGHT
5347
13-Oct-2023
16:58
linh
pham



AFTER

MASS
120
AREA
7494
HEIGHT
5347
13-Oct-2023
16:58
linh
pham

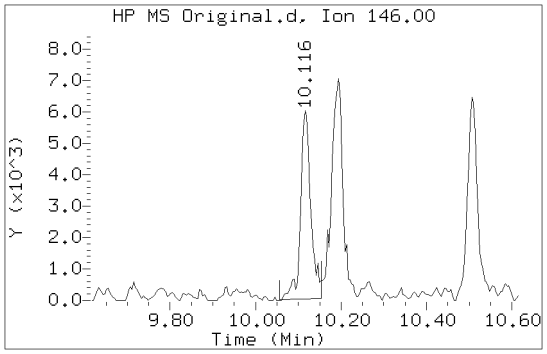


1,3-Dichlorobenzene (541-73-1)

Reason Code:

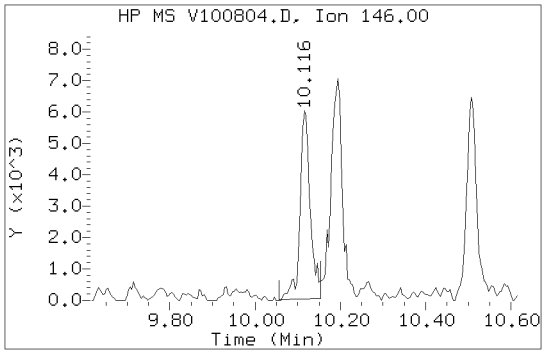
BEFORE

MASS
146
AREA
10257
HEIGHT
5995
13-Oct-2023
16:58
linh
pham



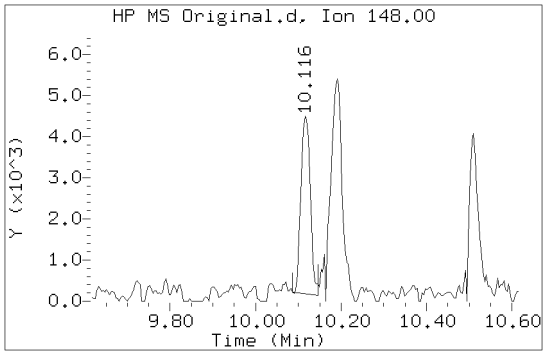
AFTER

MASS
146
AREA
10257
HEIGHT
5995
13-Oct-2023
16:58
linh
pham



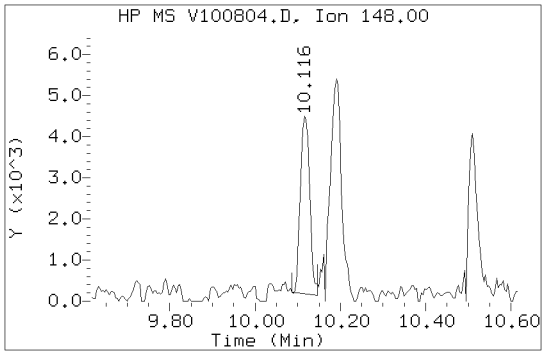
BEFORE

MASS
148
AREA
6773
HEIGHT
4324
13-Oct-2023
16:58
linh
pham



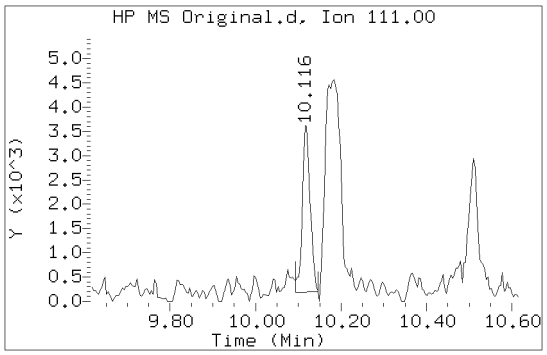
AFTER

MASS
148
AREA
6773
HEIGHT
4324
13-Oct-2023
16:58
linh
pham



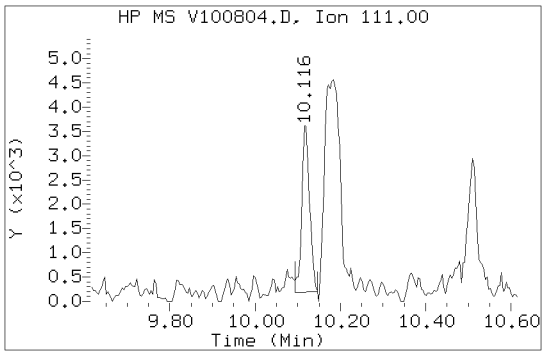
BEFORE

MASS
111
AREA
4423
HEIGHT
3418
13-Oct-2023
16:58
linh
pham



AFTER

MASS
111
AREA
4423
HEIGHT
3418
13-Oct-2023
16:58
linh
pham



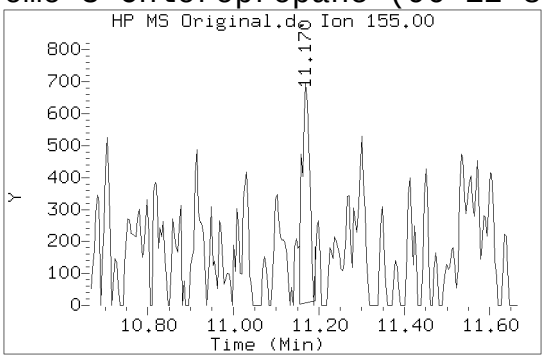
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

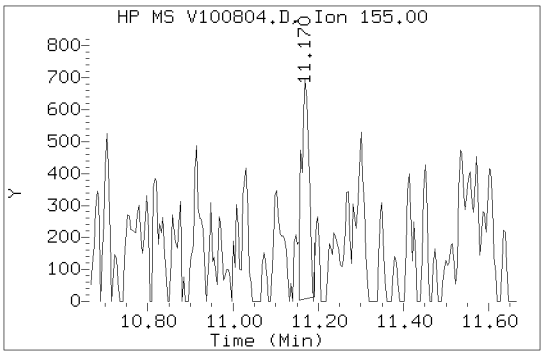
BEFORE

MASS
155
AREA
899
HEIGHT
685
13-Oct-2023
16:58
linh
pham



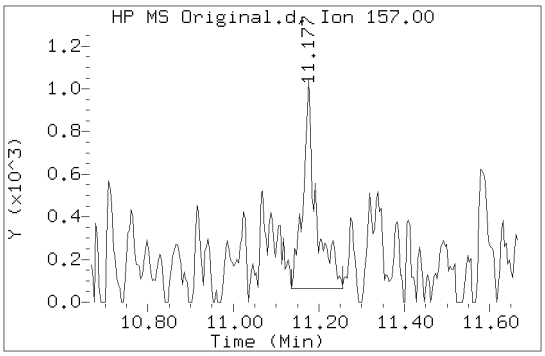
AFTER

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AREA
899
HEIGHT
685
13-Oct-2023
16:58
linh
pham



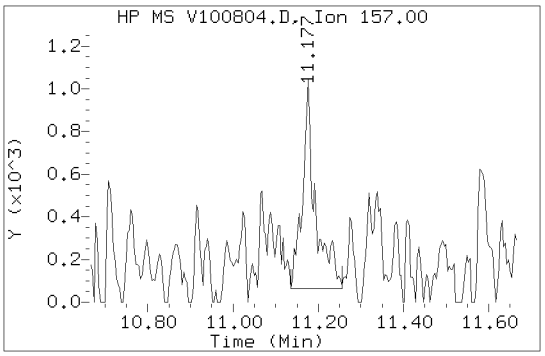
BEFORE

MASS
157
AREA
2085
HEIGHT
979
13-Oct-2023
16:58
linh
pham



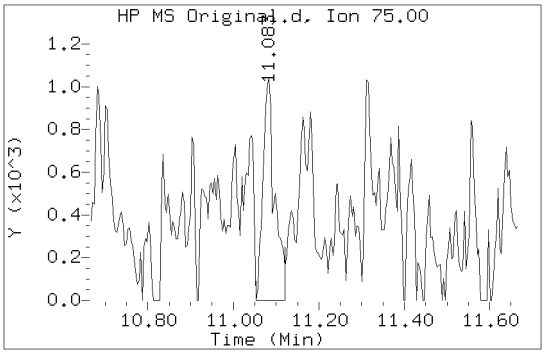
AFTER

MASS
157
AREA
2085
HEIGHT
979
13-Oct-2023
16:58
linh
pham



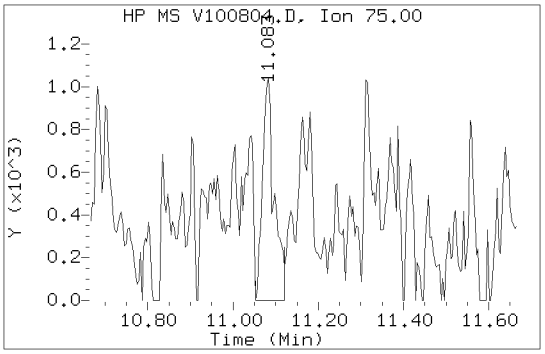
BEFORE

MASS
75
AREA
1976
HEIGHT
1037
13-Oct-2023
16:58
linh
pham



AFTER

MASS
75
AREA
1976
HEIGHT
1037
13-Oct-2023
16:58
linh
pham

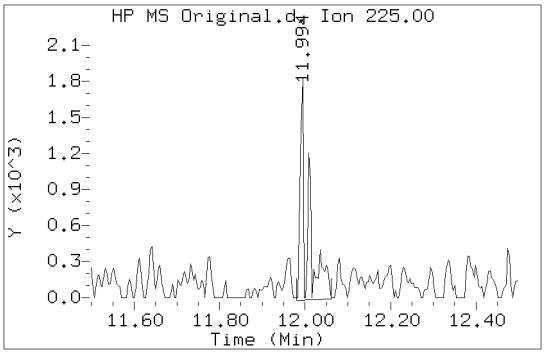


Hexachlorobutadiene (87-68-3)

Reason Code:

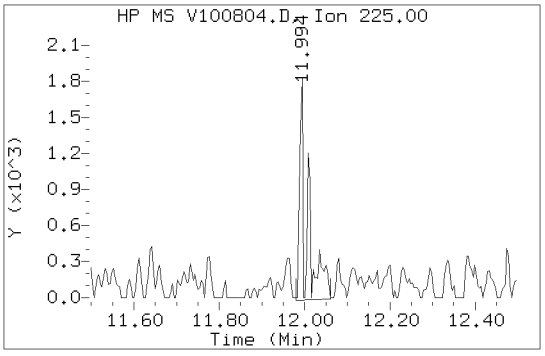
BEFORE

MASS
225
AREA
2133
HEIGHT
1845
13-Oct-2023
16:58
linh
pham



AFTER

MASS
225
AREA
2133
HEIGHT
1845
13-Oct-2023
16:58
linh
pham



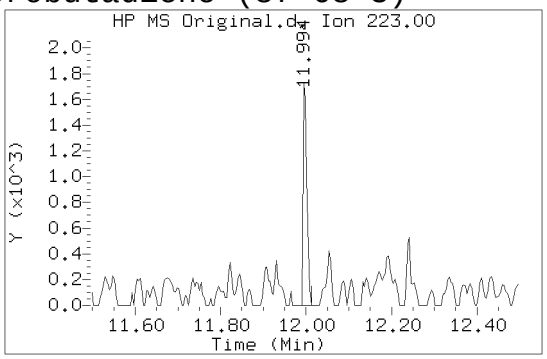
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Hexachlorobutadiene (87-68-3)

Reason Code:

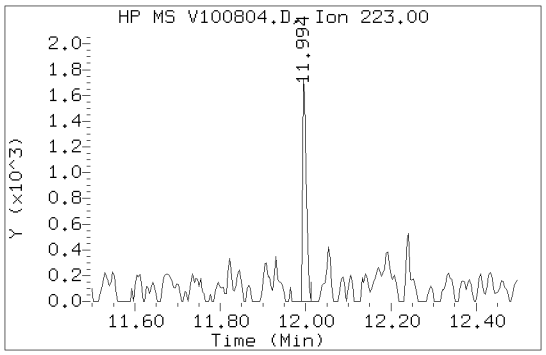
BEFORE

MASS
223
AREA
1097
HEIGHT
1722
13-Oct-2023
16:58
linh
pham



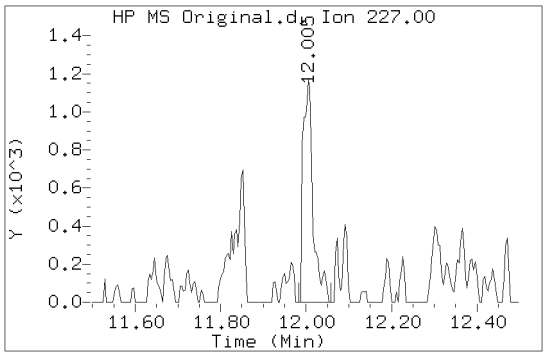
AFTER

MASS
223
AREA
1097
HEIGHT
1722
13-Oct-2023
16:58
linh
pham



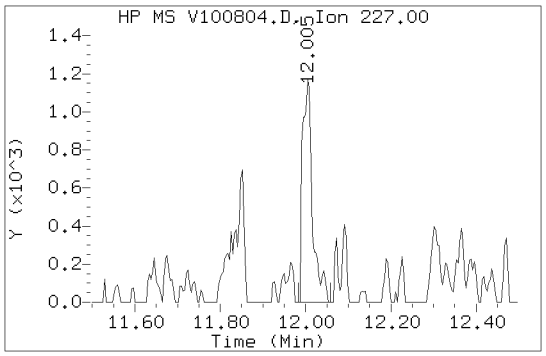
BEFORE

MASS
227
AREA
1933
HEIGHT
1168
13-Oct-2023
16:58
linh
pham



AFTER

MASS
227
AREA
1933
HEIGHT
1168
13-Oct-2023
16:58
linh
pham

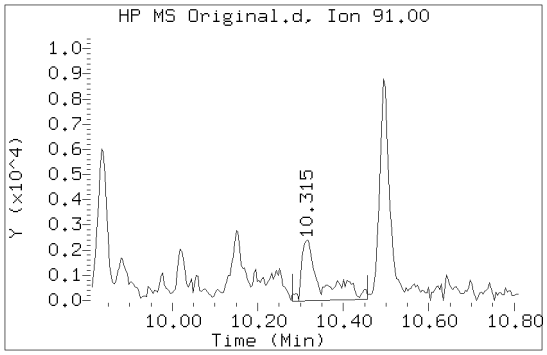


Benzyl Chloride (100-44-7)

Reason Code:

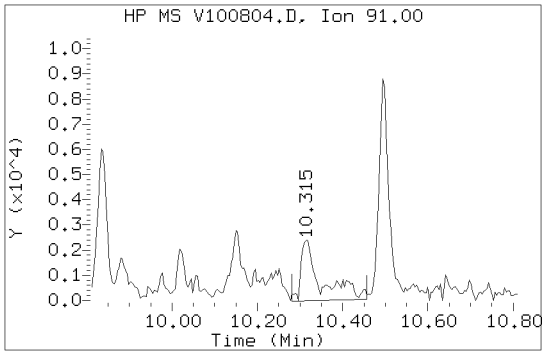
BEFORE

MASS
91
AREA
8076
HEIGHT
2404
13-Oct-2023
16:58
linh
pham



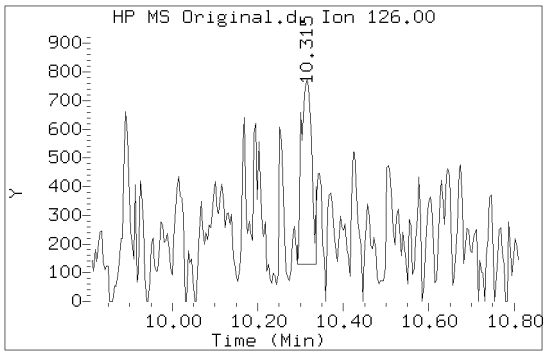
AFTER

MASS
91
AREA
8076
HEIGHT
2404
13-Oct-2023
16:58
linh
pham



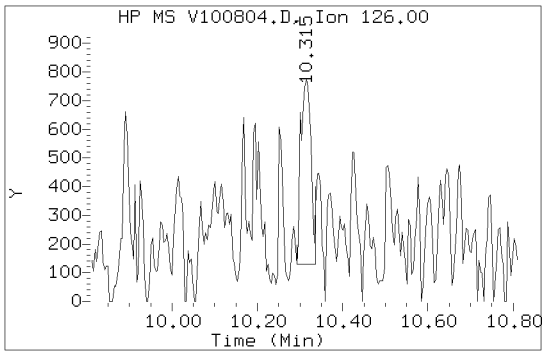
BEFORE

MASS
126
AREA
1118
HEIGHT
644
13-Oct-2023
16:58
linh
pham



AFTER

MASS
126
AREA
1118
HEIGHT
644
13-Oct-2023
16:58
linh
pham



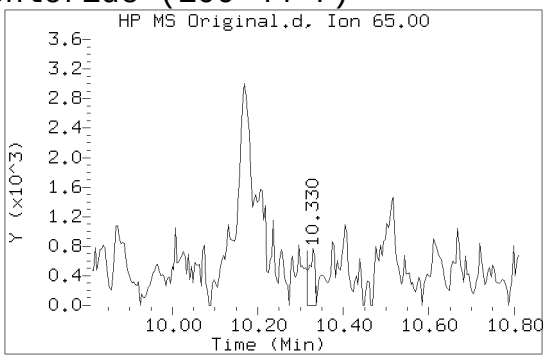
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Benzyl Chloride (100-44-7)

Reason Code:

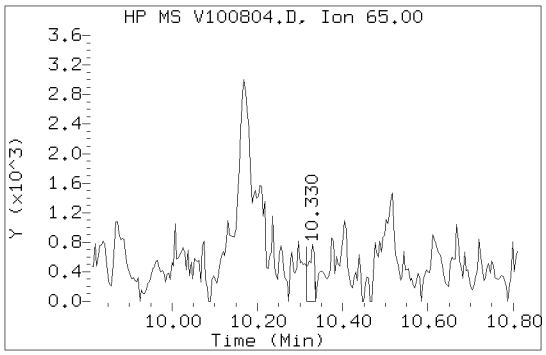
BEFORE

MASS
65
AREA
776
HEIGHT
771
13-Oct-2023
16:58
linh
pham



AFTER

MASS
65
AREA
776
HEIGHT
771
13-Oct-2023
16:58
linh
pham

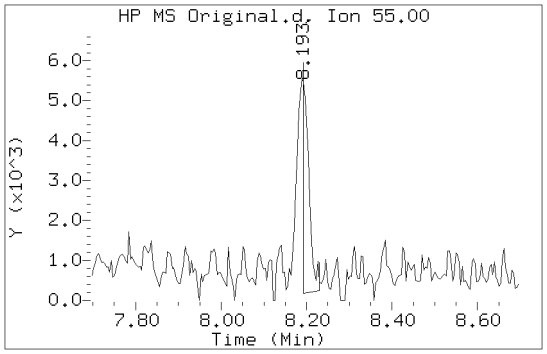


1-Chlorohexane (544-10-5)

Reason Code:

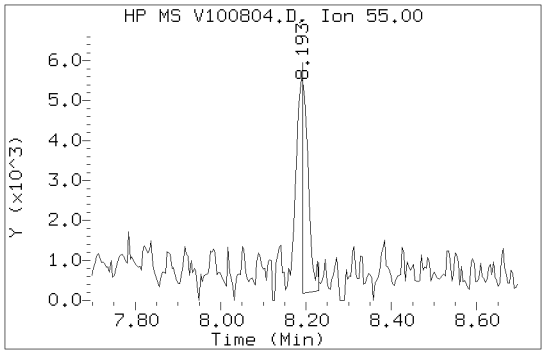
BEFORE

MASS
55
AREA
5368
HEIGHT
5308
13-Oct-2023
16:58
linh
pham



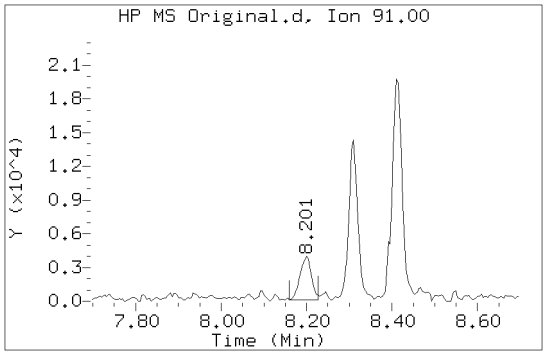
AFTER

MASS
55
AREA
5368
HEIGHT
5308
13-Oct-2023
16:58
linh
pham



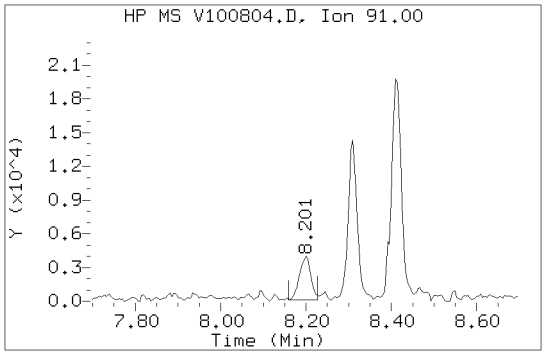
BEFORE

MASS
91
AREA
7338
HEIGHT
3902
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
7338
HEIGHT
3902
13-Oct-2023
16:58
linh
pham

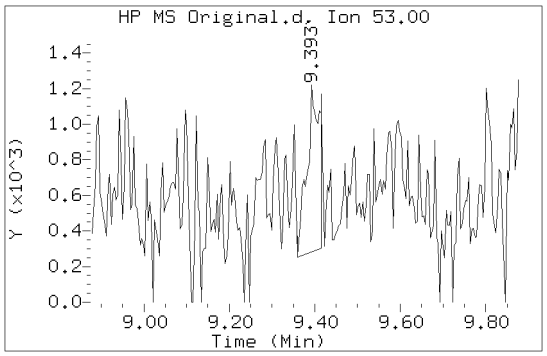


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

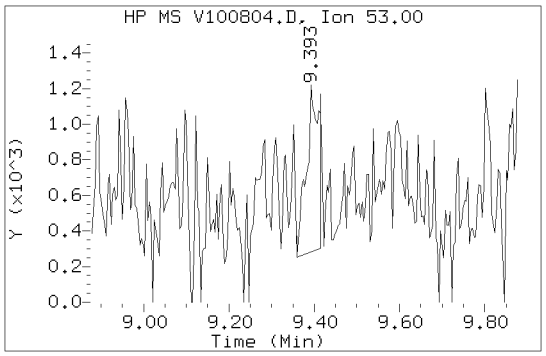
BEFORE

MASS
53
AREA
1892
HEIGHT
935
13-Oct-2023
16:58
linh
pham



AFTER

MASS
53
AREA
1892
HEIGHT
935
13-Oct-2023
16:58
linh
pham



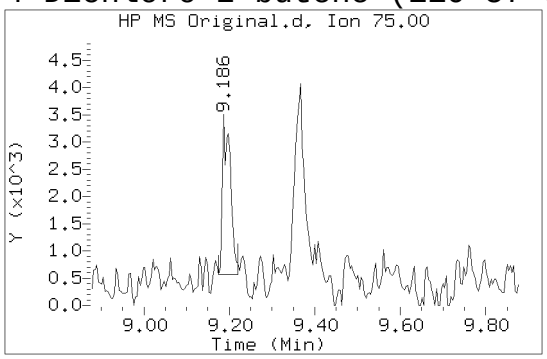
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

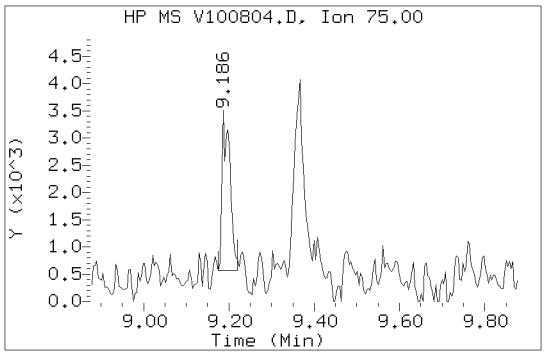
BEFORE

MASS
75
AREA
3753
HEIGHT
2945
13-Oct-2023
16:58
linh
pham



AFTER

MASS
75
AREA
3753
HEIGHT
2945
13-Oct-2023
16:58
linh
pham

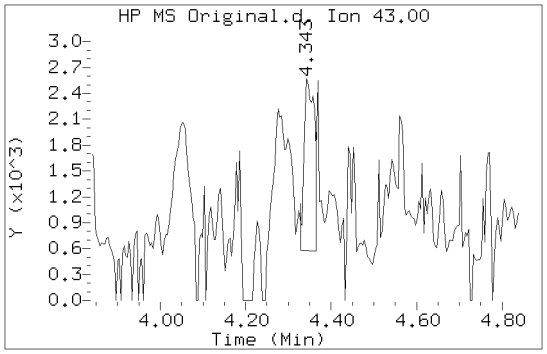


Ethyl Acetate (141-78-6)

Reason Code:

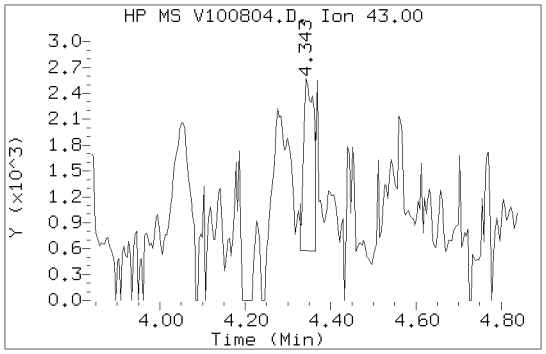
BEFORE

MASS
43
AREA
3401
HEIGHT
1996
13-Oct-2023
16:58
linh
pham



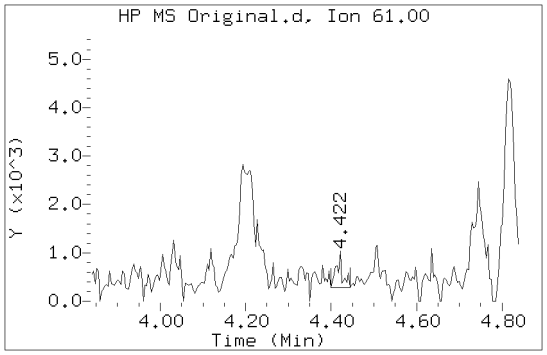
AFTER

MASS
43
AREA
3401
HEIGHT
1996
13-Oct-2023
16:58
linh
pham



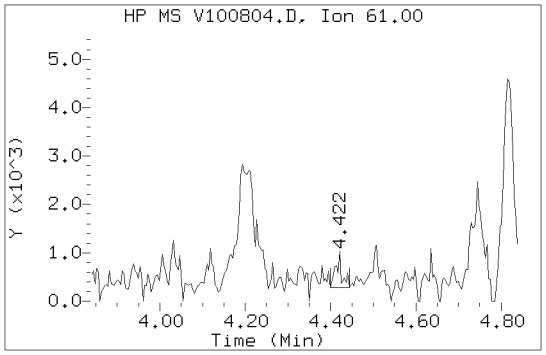
BEFORE

MASS
61
AREA
710
HEIGHT
751
13-Oct-2023
16:58
linh
pham



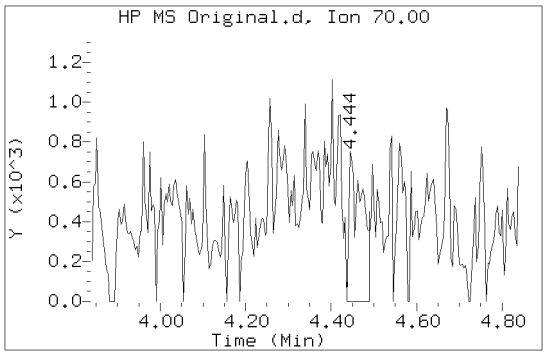
AFTER

MASS
61
AREA
710
HEIGHT
751
13-Oct-2023
16:58
linh
pham



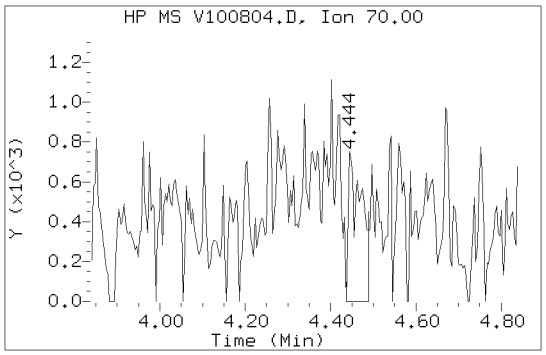
BEFORE

MASS
70
AREA
1596
HEIGHT
754
13-Oct-2023
16:58
linh
pham



AFTER

MASS
70
AREA
1596
HEIGHT
754
13-Oct-2023
16:58
linh
pham



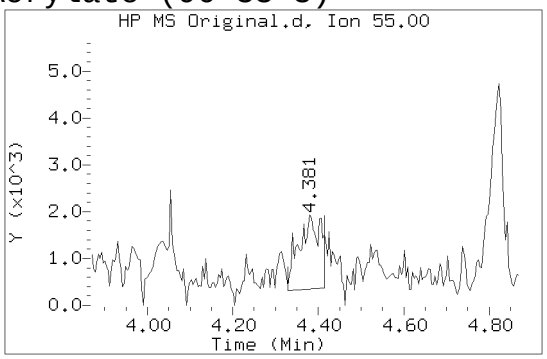
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Methyl Acrylate (96-33-3)

Reason Code:

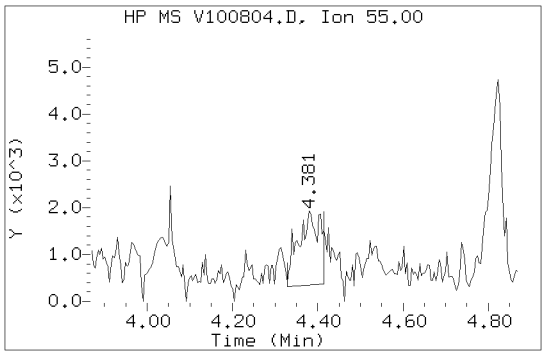
BEFORE

MASS
55
AREA
5573
HEIGHT
1578
13-Oct-2023
16:58
linh
pham



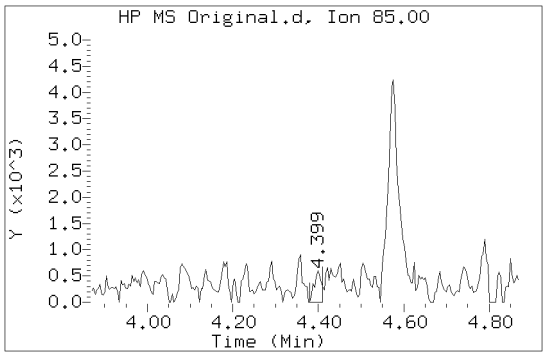
AFTER

MASS
55
AREA
5573
HEIGHT
1578
13-Oct-2023
16:58
linh
pham



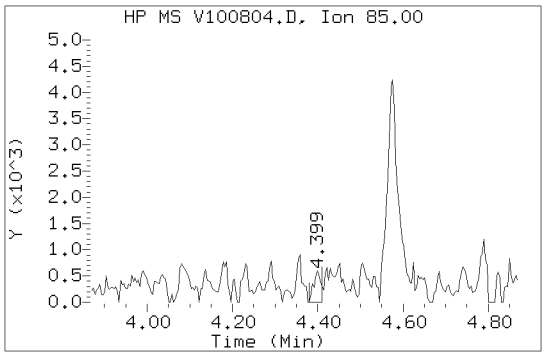
BEFORE

MASS
85
AREA
696
HEIGHT
606
13-Oct-2023
16:58
linh
pham



AFTER

MASS
85
AREA
696
HEIGHT
606
13-Oct-2023
16:58
linh
pham

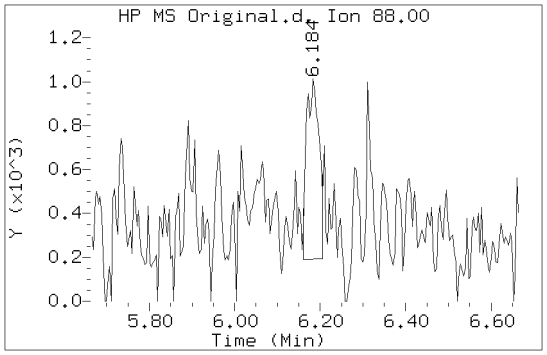


1,4-Dioxane ()

Reason Code:

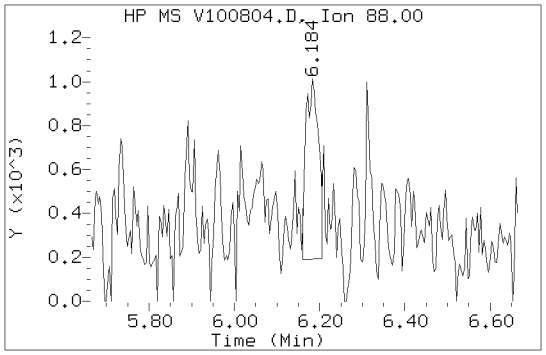
BEFORE

MASS
88
AREA
1697
HEIGHT
822
13-Oct-2023
16:58
linh
pham



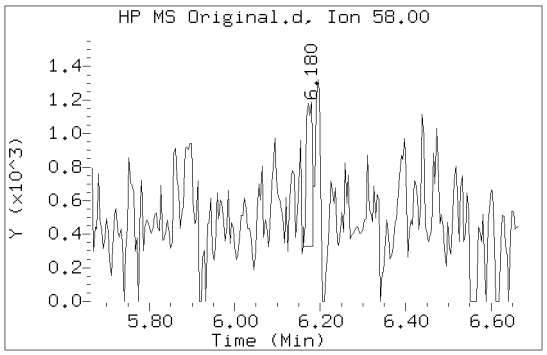
AFTER

MASS
88
AREA
1697
HEIGHT
822
13-Oct-2023
16:58
linh
pham



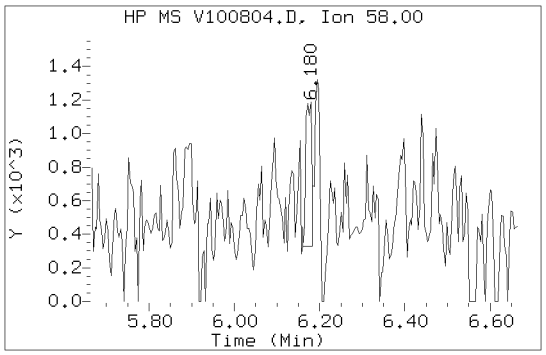
BEFORE

MASS
58
AREA
843
HEIGHT
860
13-Oct-2023
16:58
linh
pham



AFTER

MASS
58
AREA
843
HEIGHT
860
13-Oct-2023
16:58
linh
pham



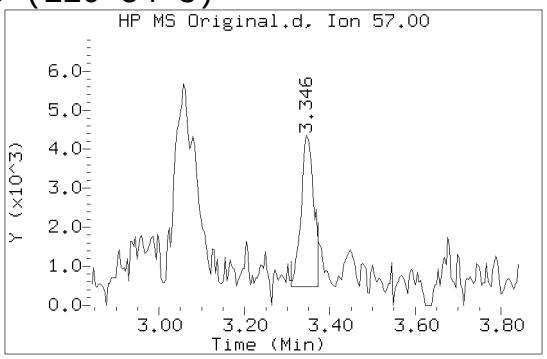
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

n-Hexane (110-54-3)

Reason Code:

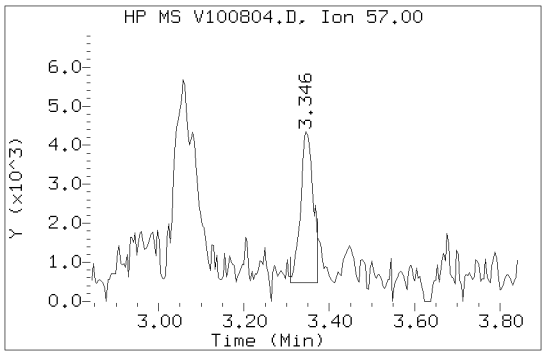
BEFORE

MASS
57
AREA
8071
HEIGHT
3888
13-Oct-2023
16:58
linh
pham



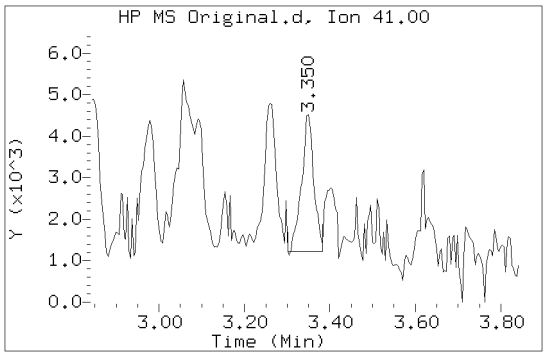
AFTER

MASS
57
AREA
8071
HEIGHT
3888
13-Oct-2023
16:58
linh
pham



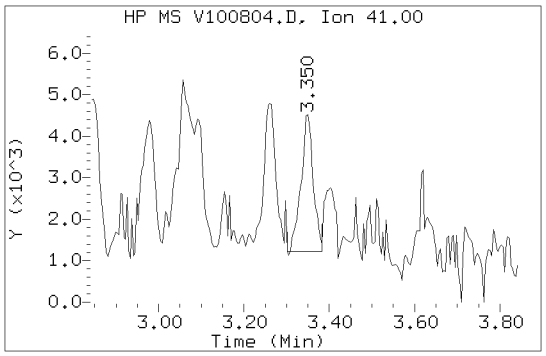
BEFORE

MASS
41
AREA
6613
HEIGHT
3291
13-Oct-2023
16:58
linh
pham



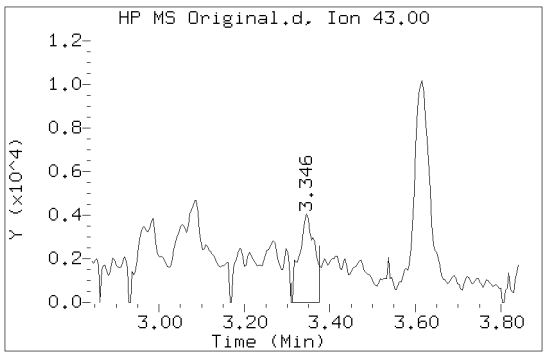
AFTER

MASS
41
AREA
6613
HEIGHT
3291
13-Oct-2023
16:58
linh
pham



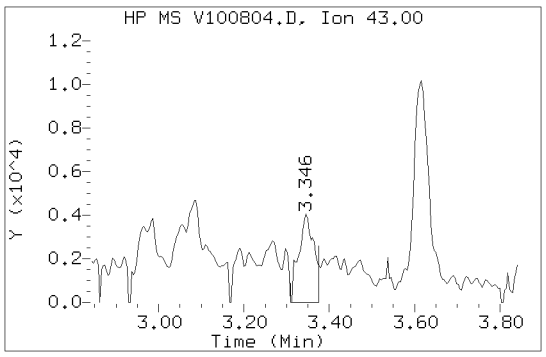
BEFORE

MASS
43
AREA
10198
HEIGHT
4053
13-Oct-2023
16:58
linh
pham



AFTER

MASS
43
AREA
10198
HEIGHT
4053
13-Oct-2023
16:58
linh
pham

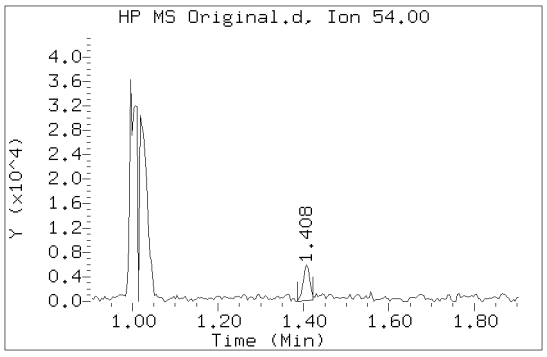


1,3-Butadiene (106-99-0)

Reason Code:

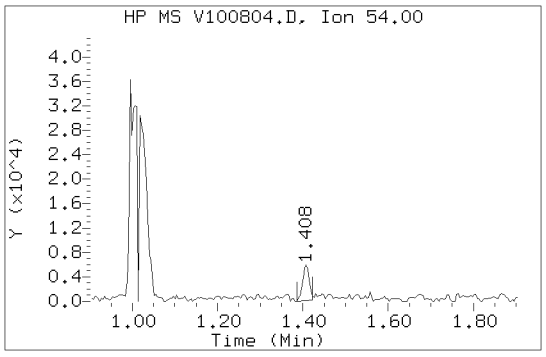
BEFORE

MASS
54
AREA
6492
HEIGHT
5838
13-Oct-2023
16:58
linh
pham



AFTER

MASS
54
AREA
6492
HEIGHT
5838
13-Oct-2023
16:58
linh
pham



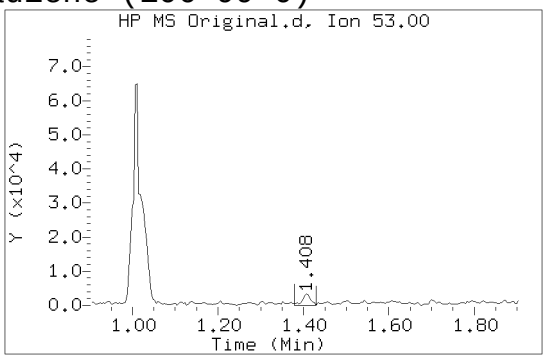
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

1,3-Butadiene (106-99-0)

Reason Code:

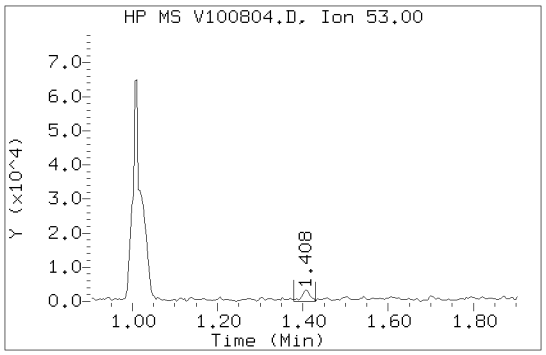
BEFORE

MASS
53
AREA
4768
HEIGHT
3463
13-Oct-2023
16:58
linh
pham



AFTER

MASS
53
AREA
4768
HEIGHT
3463
13-Oct-2023
16:58
linh
pham

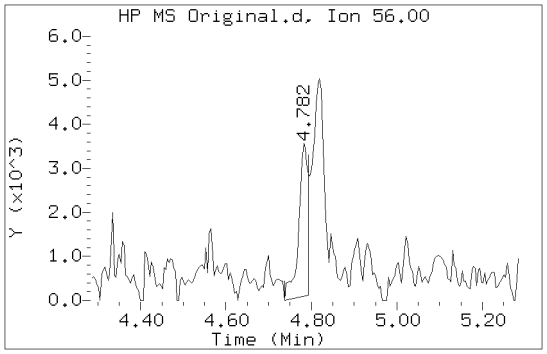


Cyclohexane (110-82-7)

Reason Code:

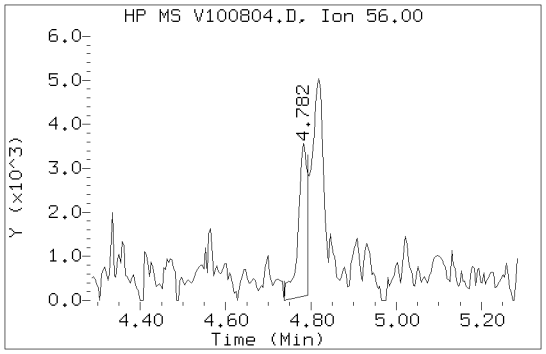
BEFORE

MASS
56
AREA
5358
HEIGHT
3471
13-Oct-2023
16:58
linh
pham



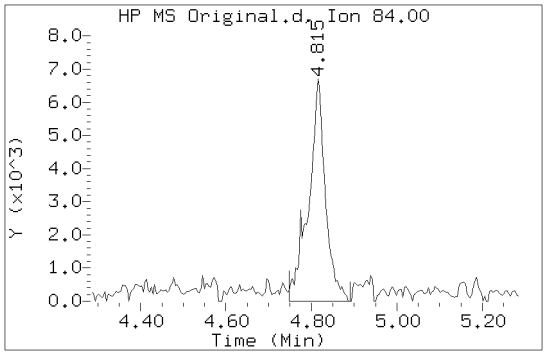
AFTER

MASS
56
AREA
5358
HEIGHT
3471
13-Oct-2023
16:58
linh
pham



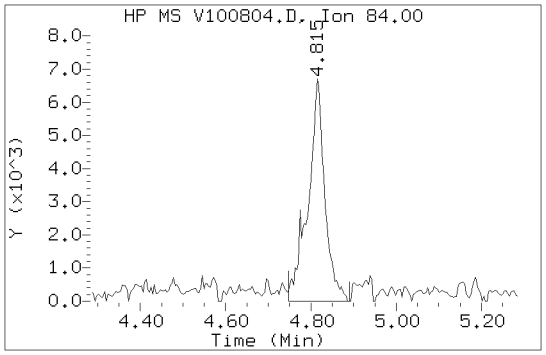
BEFORE

MASS
84
AREA
18472
HEIGHT
6705
13-Oct-2023
16:58
linh
pham



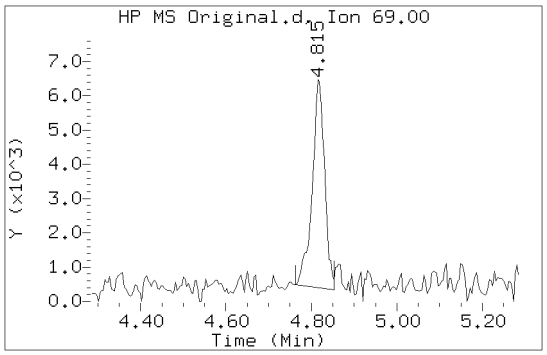
AFTER

MASS
84
AREA
18472
HEIGHT
6705
13-Oct-2023
16:58
linh
pham



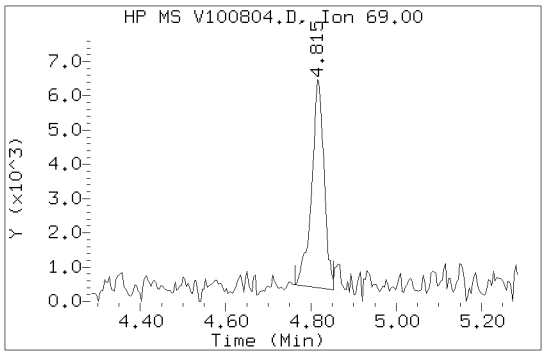
BEFORE

MASS
69
AREA
12308
HEIGHT
6072
13-Oct-2023
16:58
linh
pham



AFTER

MASS
69
AREA
12308
HEIGHT
6072
13-Oct-2023
16:58
linh
pham



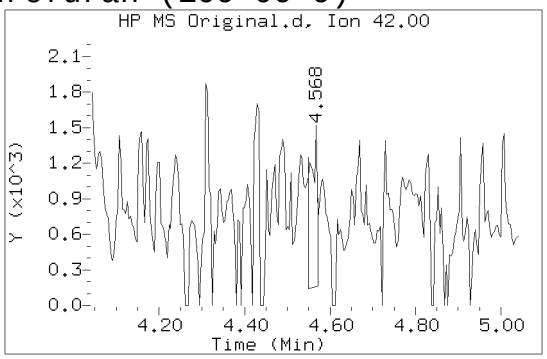
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Tetrahydrofuran (109-99-9)

Reason Code:

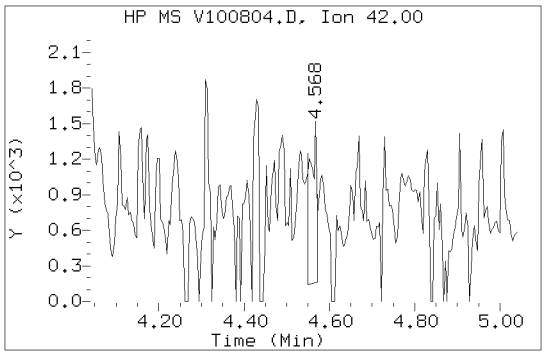
BEFORE

MASS
42
AREA
1531
HEIGHT
1360
13-Oct-2023
16:58
linh
pham



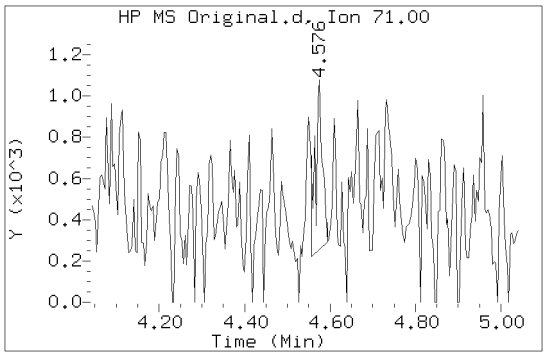
AFTER

MASS
42
AREA
1531
HEIGHT
1360
13-Oct-2023
16:58
linh
pham



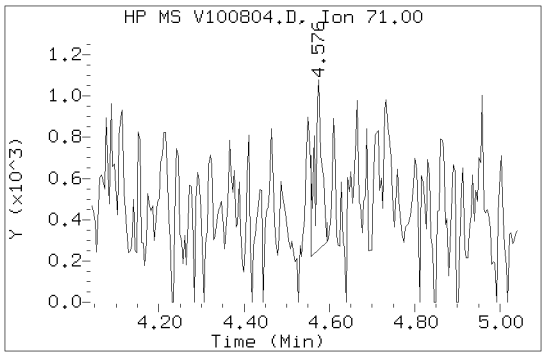
BEFORE

MASS
71
AREA
939
HEIGHT
821
13-Oct-2023
16:58
linh
pham



AFTER

MASS
71
AREA
939
HEIGHT
821
13-Oct-2023
16:58
linh
pham

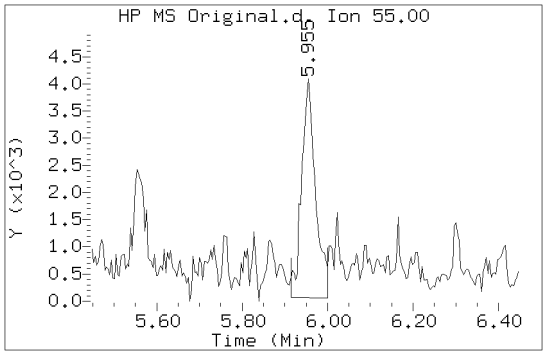


Methylcyclohexane (108-87-2)

Reason Code:

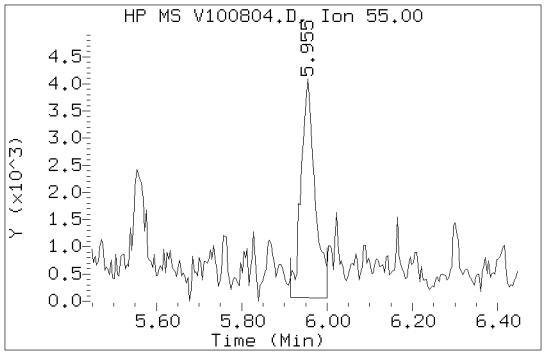
BEFORE

MASS
55
AREA
9307
HEIGHT
4028
13-Oct-2023
16:58
linh
pham



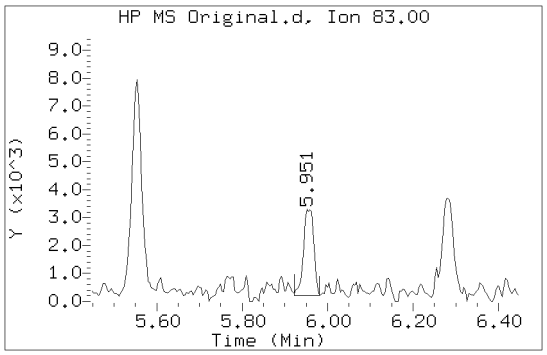
AFTER

MASS
55
AREA
9307
HEIGHT
4028
13-Oct-2023
16:58
linh
pham



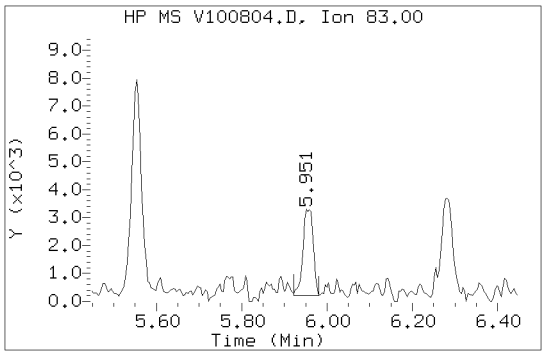
BEFORE

MASS
83
AREA
5303
HEIGHT
3084
13-Oct-2023
16:58
linh
pham



AFTER

MASS
83
AREA
5303
HEIGHT
3084
13-Oct-2023
16:58
linh
pham

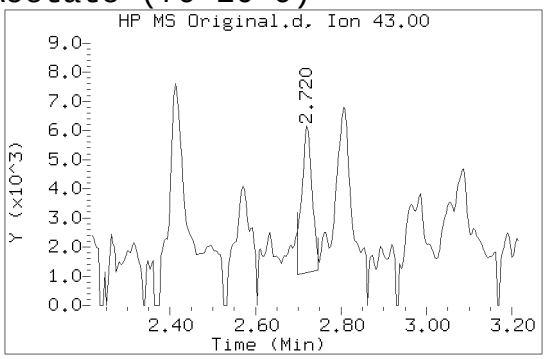


Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

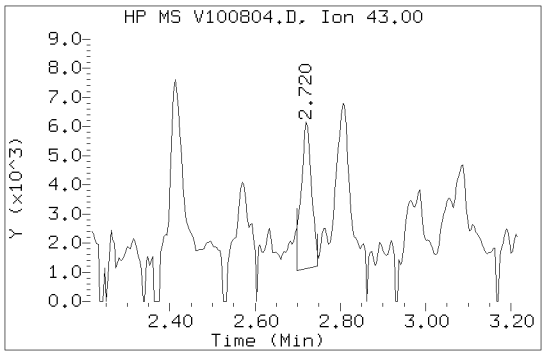
Methyl Acetate (79-20-9)

Reason Code:

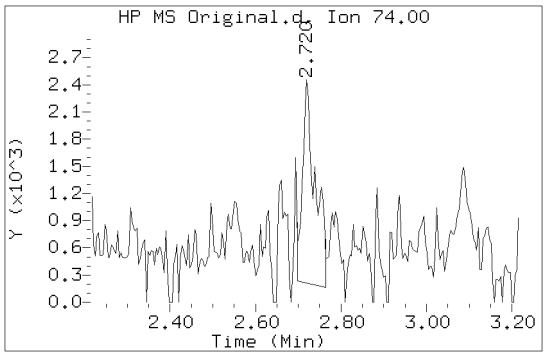
BEFORE
MASS
43
AREA
8798
HEIGHT
5045
13-Oct-2023
16:58
linh
pham



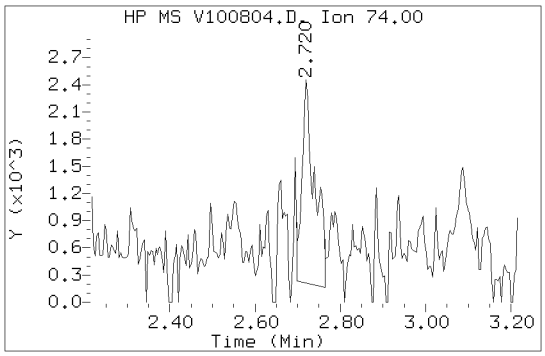
AFTER
MASS
43
AREA
8798
HEIGHT
5045
13-Oct-2023
16:58
linh
pham



BEFORE
MASS
74
AREA
4752
HEIGHT
2243
13-Oct-2023
16:58
linh
pham



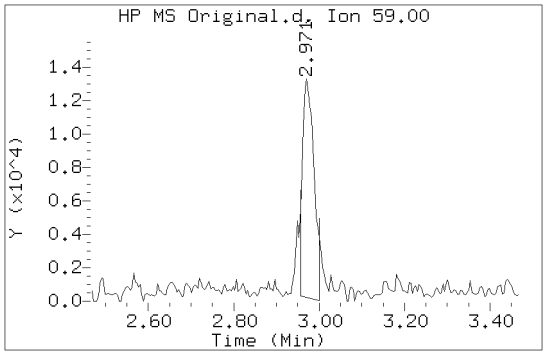
AFTER
MASS
74
AREA
4752
HEIGHT
2243
13-Oct-2023
16:58
linh
pham



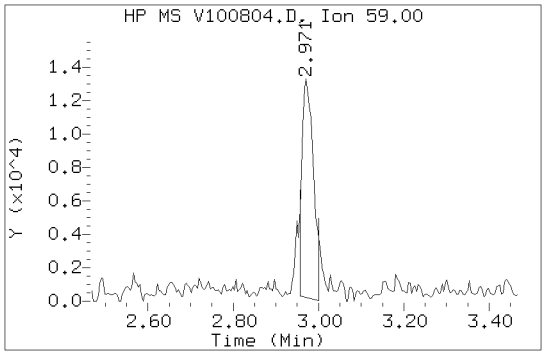
Tert-Butyl alcohol (75-65-0)

Reason Code:

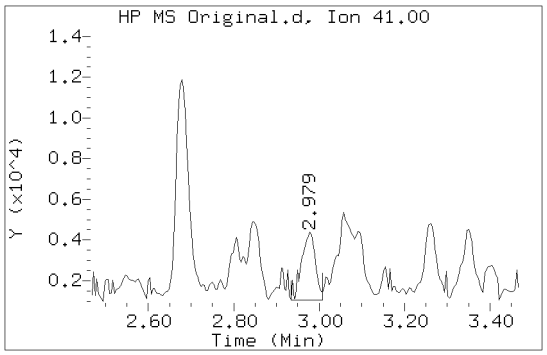
BEFORE
MASS
59
AREA
25221
HEIGHT
13087
13-Oct-2023
16:58
linh
pham



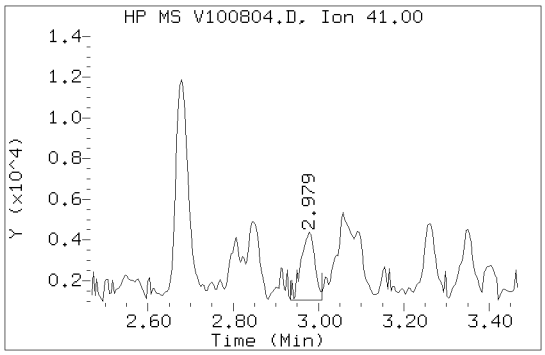
AFTER
MASS
59
AREA
25221
HEIGHT
13087
13-Oct-2023
16:58
linh
pham



BEFORE
MASS
41
AREA
7626
HEIGHT
3335
13-Oct-2023
16:58
linh
pham



AFTER
MASS
41
AREA
7626
HEIGHT
3335
13-Oct-2023
16:58
linh
pham



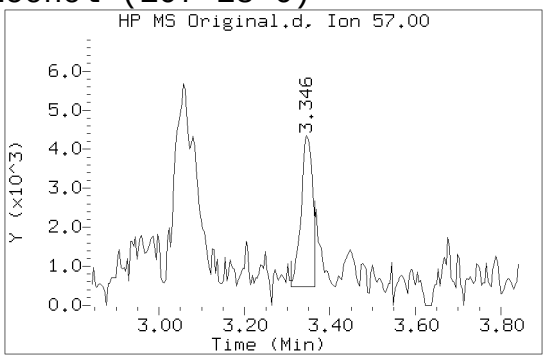
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Allyl alcohol (107-18-6)

Reason Code:

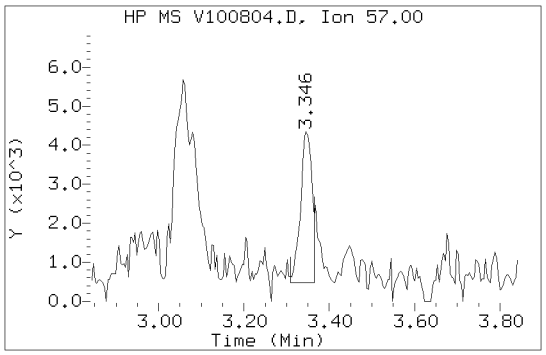
BEFORE

MASS
57
AREA
7363
HEIGHT
3888
13-Oct-2023
16:58
linh
pham



AFTER

MASS
57
AREA
7363
HEIGHT
3888
13-Oct-2023
16:58
linh
pham

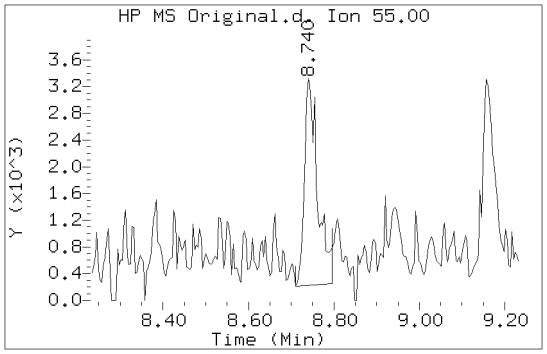


Butyl acrylate (141-32-2)

Reason Code:

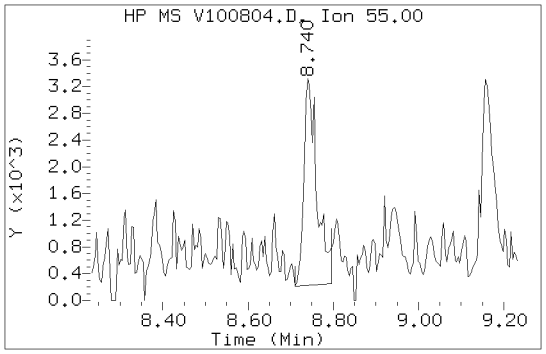
BEFORE

MASS
55
AREA
6634
HEIGHT
3093
13-Oct-2023
16:58
linh
pham



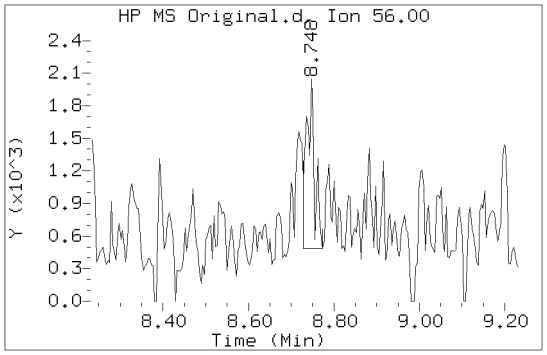
AFTER

MASS
55
AREA
6634
HEIGHT
3093
13-Oct-2023
16:58
linh
pham



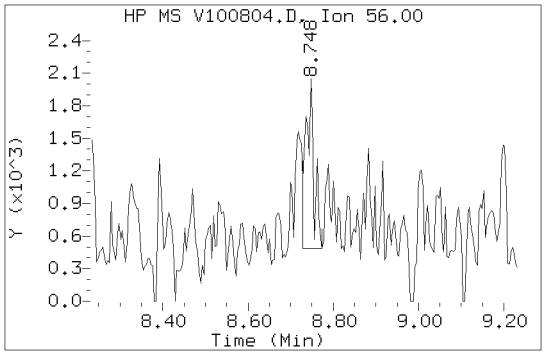
BEFORE

MASS
56
AREA
2082
HEIGHT
1559
13-Oct-2023
16:58
linh
pham



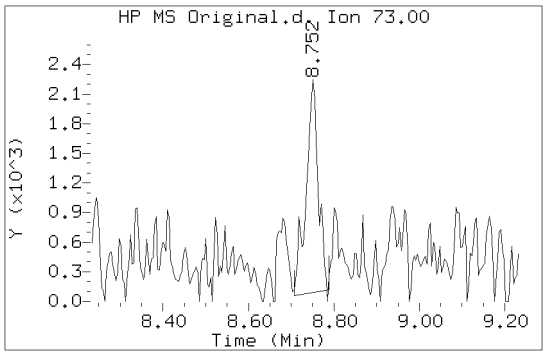
AFTER

MASS
56
AREA
2082
HEIGHT
1559
13-Oct-2023
16:58
linh
pham



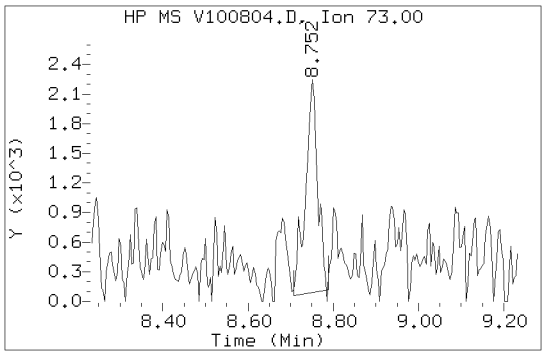
BEFORE

MASS
73
AREA
4330
HEIGHT
2155
13-Oct-2023
16:58
linh
pham



AFTER

MASS
73
AREA
4330
HEIGHT
2155
13-Oct-2023
16:58
linh
pham



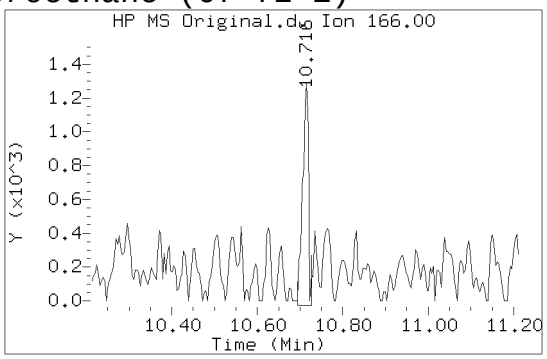
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100804.D
Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

Hexachloroethane (67-72-1)

Reason Code:

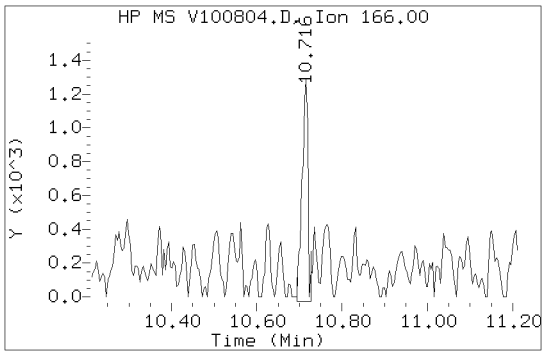
BEFORE

MASS
166
AREA
1324
HEIGHT
1311
13-Oct-2023
16:58
linh
pham



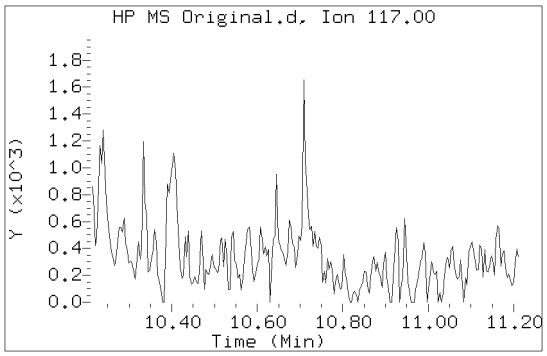
AFTER

MASS
166
AREA
1324
HEIGHT
1311
13-Oct-2023
16:58
linh
pham



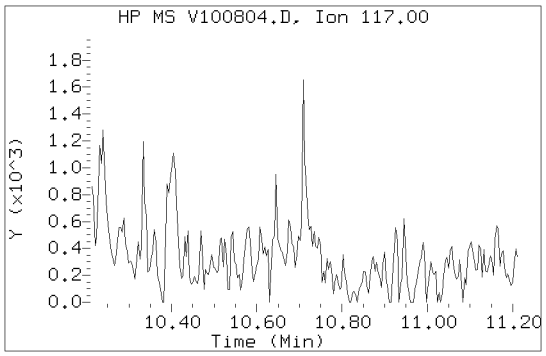
BEFORE

MASS
117
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



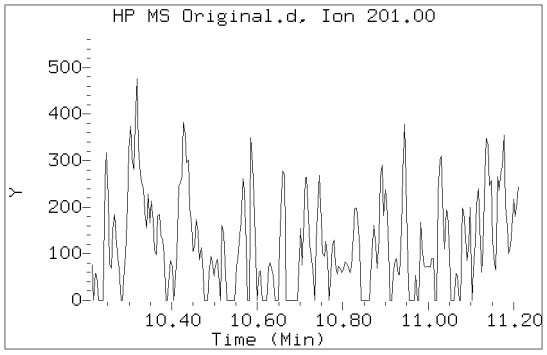
AFTER

MASS
117
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



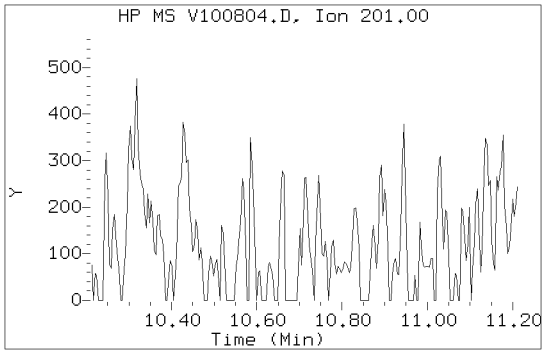
BEFORE

MASS
201
AREA
0
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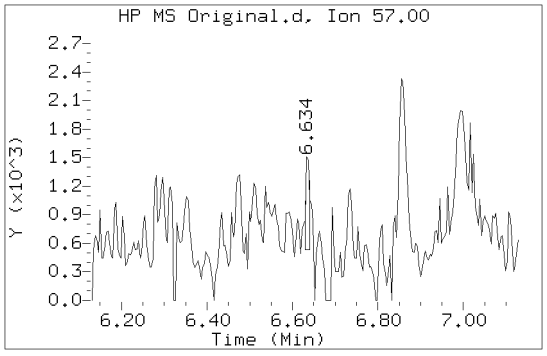


Epichlorohydrin (106-89-8)

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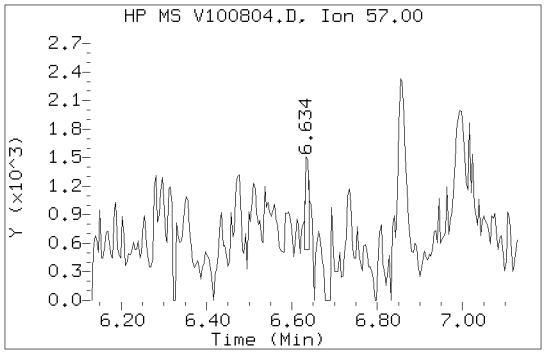
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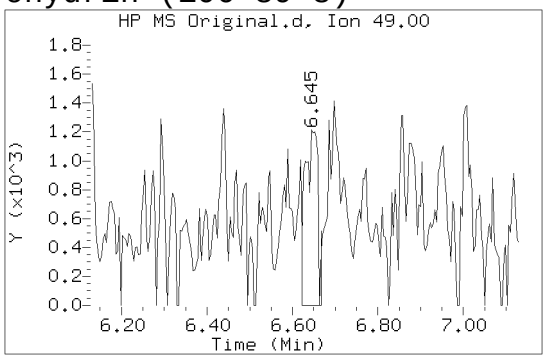
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Epichlorohydrin (106-89-8)

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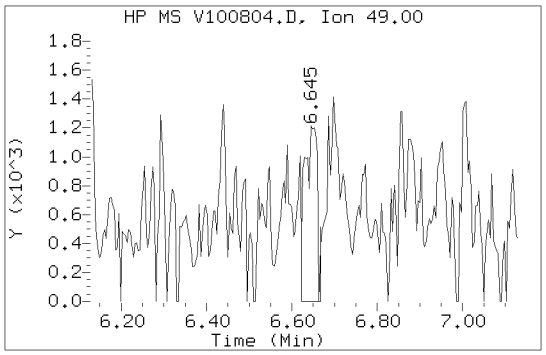
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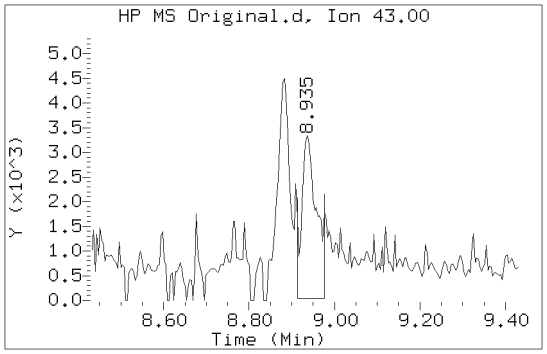


n-Amyl acetate (628-63-7)

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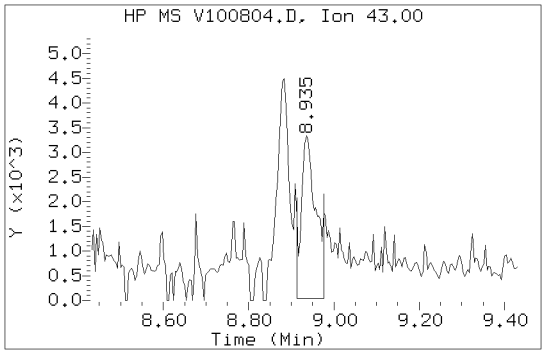
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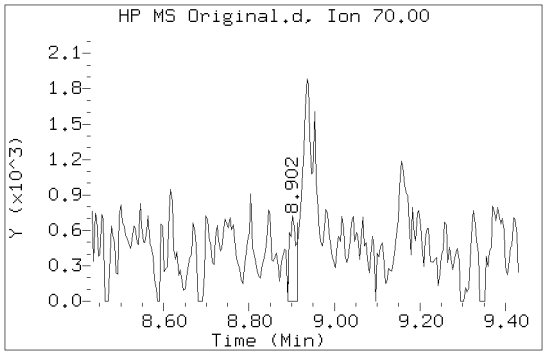
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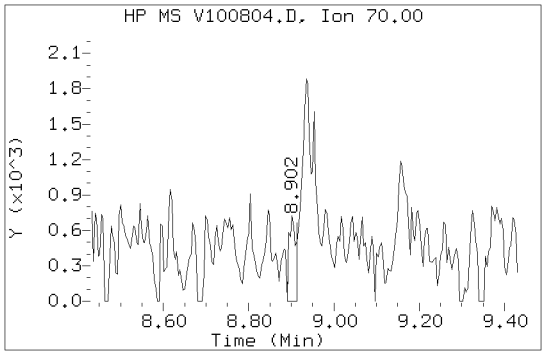
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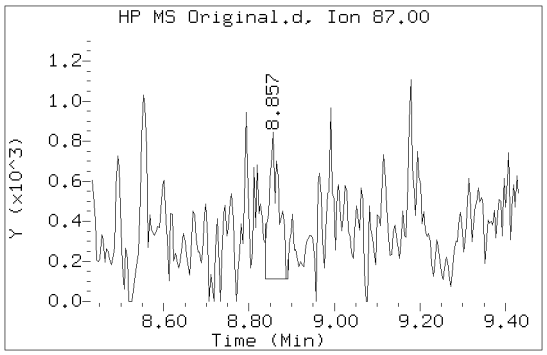
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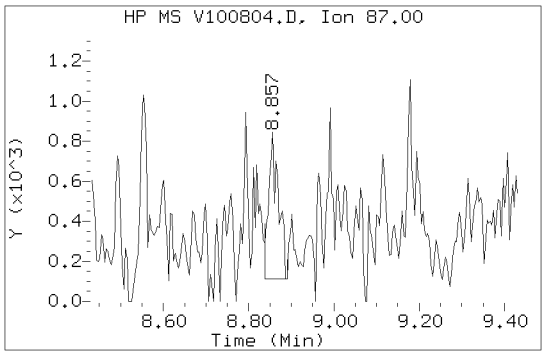
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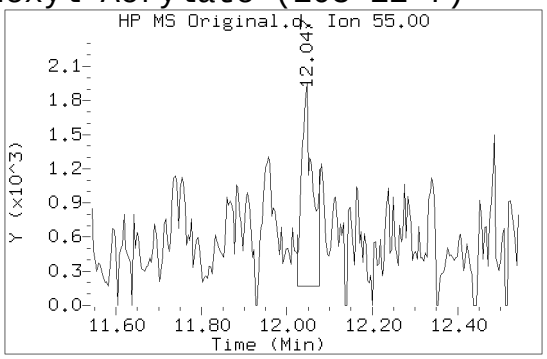
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Inj Date : 08-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : VSTD001

2-Ethylhexyl Acrylate (103-11-7)

Reason Code:

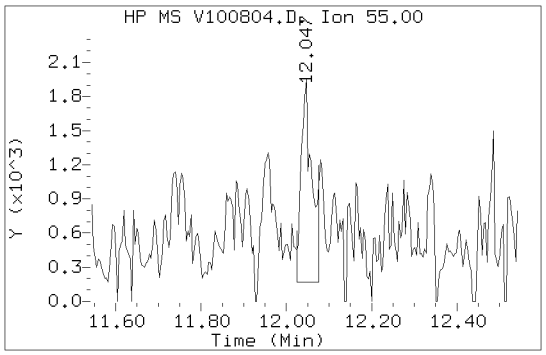
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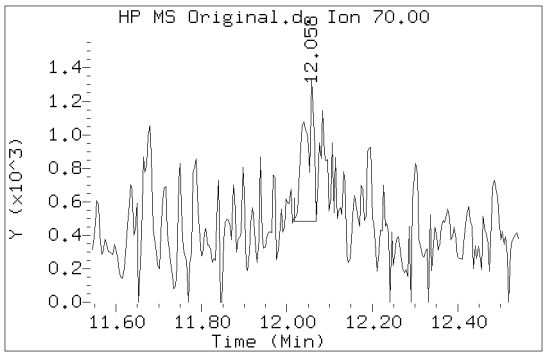
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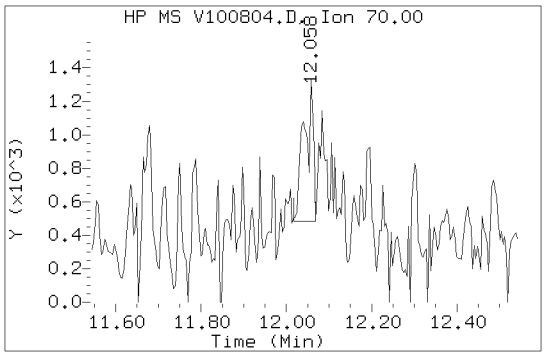
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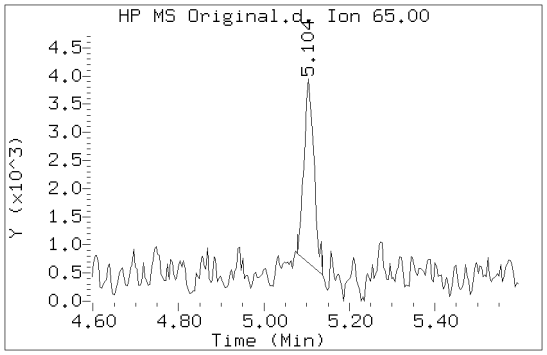


1,2-Dichloroethane-d4 (17060-07-0)

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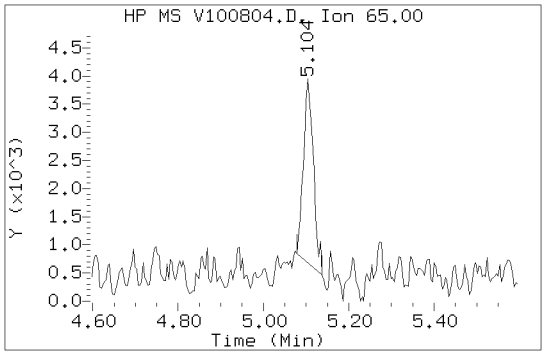
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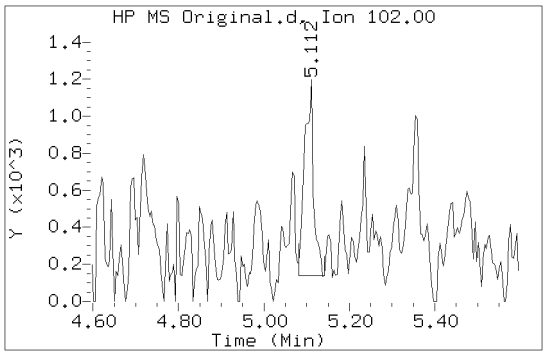
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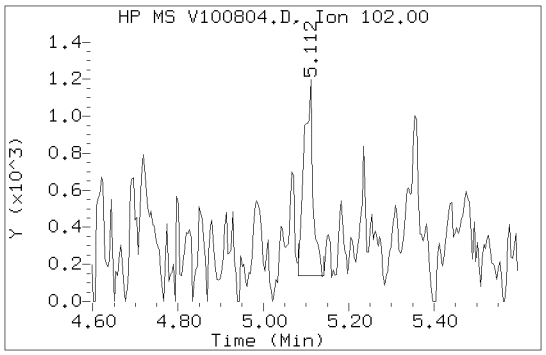
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AFTER

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Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D Page 1
Report Date: 13-Oct-2023 17:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
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Inj Date : 08-OCT-2023 15:19
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Smp Info : VSTD002;VSTD002;1;4;
Misc Info : V9;WATER;0;1;
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Cal Date : 08-OCT-2023 14:56 Cal File: V100804.D
Als bottle: 6 Calibration Sample, Level: 4
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	4.815	4.815	(1.000)	394777	50.0000	
2 Dichlorodifluoromethane	85	1.160	1.160	(0.241)	8604	2.00000	2.96(a)
3 Chloromethane	50	1.299	1.299	(0.270)	9058	2.00000	1.02(a)
5 Vinyl Chloride	62	1.374	1.374	(0.285)	11774	2.00000	1.85(a)
6 Bromomethane	94	1.621	1.621	(0.337)	13478	2.00000	2.81(aM)
7 Chloroethane	64	1.700	1.700	(0.353)	11929	2.00000	1.91(a)
8 Trichlorofluoromethane	101	1.895	1.895	(0.394)	25252	2.00000	1.75(a)
11 1,1-Dichloroethene	96	2.330	2.330	(0.484)	15725	2.00000	1.99(a)
15 Iodomethane	142	2.469	2.469	(0.513)	22744	4.00000	4.13(aM)
17 Methylene Chloride	84	2.791	2.791	(0.580)	26904	2.00000	2.30(a)
18 Methyl tert-butyl ether	73	3.080	3.080	(0.640)	69639	2.00000	2.14(a)
19 Carbon Disulfide	76	2.521	2.521	(0.524)	82319	4.00000	3.63(a)
20 trans-1,2-Dichloroethene	96	3.061	3.061	(0.636)	20531	2.00000	2.08(aM)
21 Vinyl Acetate	43	3.612	3.612	(0.750)	67233	4.00000	4.70(aM)
22 1,1-Dichloroethane	63	3.514	3.514	(0.730)	21530	2.00000	2.14(aM)
24 2-Butanone	43	4.275	4.275	(0.888)	7399	4.00000	4.04(a)
26 2,2-Dichloropropane	77	4.182	4.182	(0.868)	10443	2.00000	2.65(aM)
27 cis-1,2-Dichloroethene	96	4.204	4.204	(0.873)	9131	2.00000	1.82(a)
28 Chloroform	83	4.572	4.572	(0.949)	16809	2.00000	1.83(a)
29 Bromochloromethane	128	4.467	4.467	(0.928)	5008	2.00000	2.07(a)

$	30 Dibromofluoromethane	113	4.752	4.752 (0.987)	8870	2.00000	1.73(a)
	31 1,1,1-Trichloroethane	97	4.740	4.740 (0.984)	12740	2.00000	1.86(aM)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
32	1,1-Dichloropropene	75	4.920	4.920	(0.886)	10597	2.00000	1.80(a)
33	1,2-Dichloroethane	62	5.175	5.175	(0.932)	13328	2.00000	1.97(a)
34	Carbon Tetrachloride	117	4.913	4.913	(0.885)	10715	2.00000	1.97(aM)
$ 35	1,2-Dichloroethane-d4	65	5.100	5.100	(1.059)	12195	2.00000	2.08(a)
* 36	1,4-Difluorobenzene	114	5.554	5.554	(1.000)	683481	50.0000	
37	Benzene	78	5.138	5.138	(0.925)	33449	2.00000	1.83(a)
38	Trichloroethene	130	5.782	5.782	(1.041)	8473	2.00000	1.79(a)
39	Bromodichloromethane	83	6.281	6.281	(1.131)	11204	2.00000	1.77(aM)
42	1,2-Dichloropropane	63	6.011	6.011	(1.082)	9398	2.00000	2.03(aM)
44	Dibromomethane	93	6.116	6.116	(1.101)	6862	2.00000	1.86(aM)
45	4-Methyl-2-Pentanone	43	6.855	6.855	(0.837)	16002	4.00000	3.72(a)
46	cis-1,3-Dichloropropene	75	6.690	6.690	(1.205)	14378	2.00000	1.91(aM)
* 47	Chlorobenzene-d5	117	8.185	8.185	(1.000)	724137	50.0000	
$ 48	Toluene-d8	98	6.922	6.922	(0.846)	36986	2.00000	2.15(a)
50	Toluene	91	6.982	6.982	(0.853)	37166	2.00000	1.87(a)
51	trans-1,3-Dichloropropene	75	7.199	7.199	(1.296)	13376	2.00000	1.95(aM)
52	2-Hexanone	43	7.604	7.604	(0.929)	11605	4.00000	3.89(a)
53	1,1,2-Trichloroethane	83	7.353	7.353	(0.898)	7895	2.00000	1.97(a)
54	1,3-Dichloropropane	76	7.499	7.499	(0.916)	15303	2.00000	1.83(a)
55	Dibromochloromethane	129	7.691	7.691	(0.940)	8446	2.00000	1.74(aM)
56	Tetrachloroethene	164	7.458	7.458	(0.911)	7725	2.00000	2.05(a)
57	1,2-Dibromoethane	107	7.780	7.780	(0.951)	9826	2.00000	1.87(aM)
58	1-Chlorohexane	55	8.193	8.193	(1.475)	9455	2.00000	1.94(aM)
59	Chlorobenzene	112	8.212	8.212	(1.003)	26322	2.00000	1.87(a)
60	1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	7402	2.00000	1.61(aM)
61	Ethylbenzene	106	8.305	8.305	(1.015)	11744	2.00000	1.75(a)
62	m,p-Xylenes	106	8.410	8.410	(1.027)	32003	4.00000	3.57(aM)
63	o-Xylene	106	8.748	8.748	(1.069)	17525	2.00000	1.93(aM)
64	Styrene	104	8.763	8.763	(1.071)	26828	2.00000	1.74(aM)
66	Bromoform	173	8.916	8.916	(1.089)	9089	2.00000	2.75(TaM)
67	Isopropylbenzene	105	9.063	9.063	(1.107)	38126	2.00000	1.76(aM)
68	1,1,2,2-Tetrachloroethane	83	9.325	9.325	(0.917)	12079	2.00000	2.25(a)
$ 69	4-Bromofluorobenzene	95	9.194	9.194	(1.123)	13272	2.00000	2.30(a)
* 70	1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	389955	50.0000	
71	1,2,3-Trichloropropane	75	9.362	9.362	(0.921)	12489	2.00000	1.90(a)
73	n-Propylbenzene	91	9.411	9.411	(0.926)	37314	2.00000	1.74(a)
74	Bromobenzene	156	9.321	9.321	(0.917)	10075	2.00000	1.86(a)
75	1,3,5-Trimethylbenzene	105	9.565	9.565	(0.941)	28301	2.00000	1.71(aM)
76	2-Chlorotoluene	91	9.482	9.482	(0.933)	23066	2.00000	1.70(a)
77	4-Chlorotoluene	91	9.576	9.576	(0.942)	29999	2.00000	1.86(aM)
78	tert-Butylbenzene	119	9.835	9.835	(0.967)	24407	2.00000	1.72(aM)
79	1,2,4-Trimethylbenzene	105	9.876	9.876	(0.971)	29296	2.00000	1.69(a)
81	sec-Butylbenzene	105	10.022	10.022	(0.986)	31950	2.00000	1.67(a)
82	p-Isopropyltoluene	119	10.146	10.146	(0.998)	26687	2.00000	1.58(a)
83	1,3-Dichlorobenzene	146	10.120	10.120	(0.995)	19098	2.00000	1.88(a)
84	1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	22640	2.00000	1.97(a)
87	n-Butylbenzene	91	10.495	10.495	(1.032)	26375	2.00000	1.69(a)
88	1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	16487	2.00000	1.57(a)
89	1,2-Dibromo-3-Chloropropane	155	11.181	11.181	(1.100)	1660	2.00000	1.61(aM)
90	1,2,4-Trichlorobenzene	180	11.863	11.863	(1.167)	11220	2.00000	1.82(a)
93	1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	11421	2.00000	1.86(a)
M 94	1,2-Dichloroethylene (total)	96				29662	4.00000	(a)

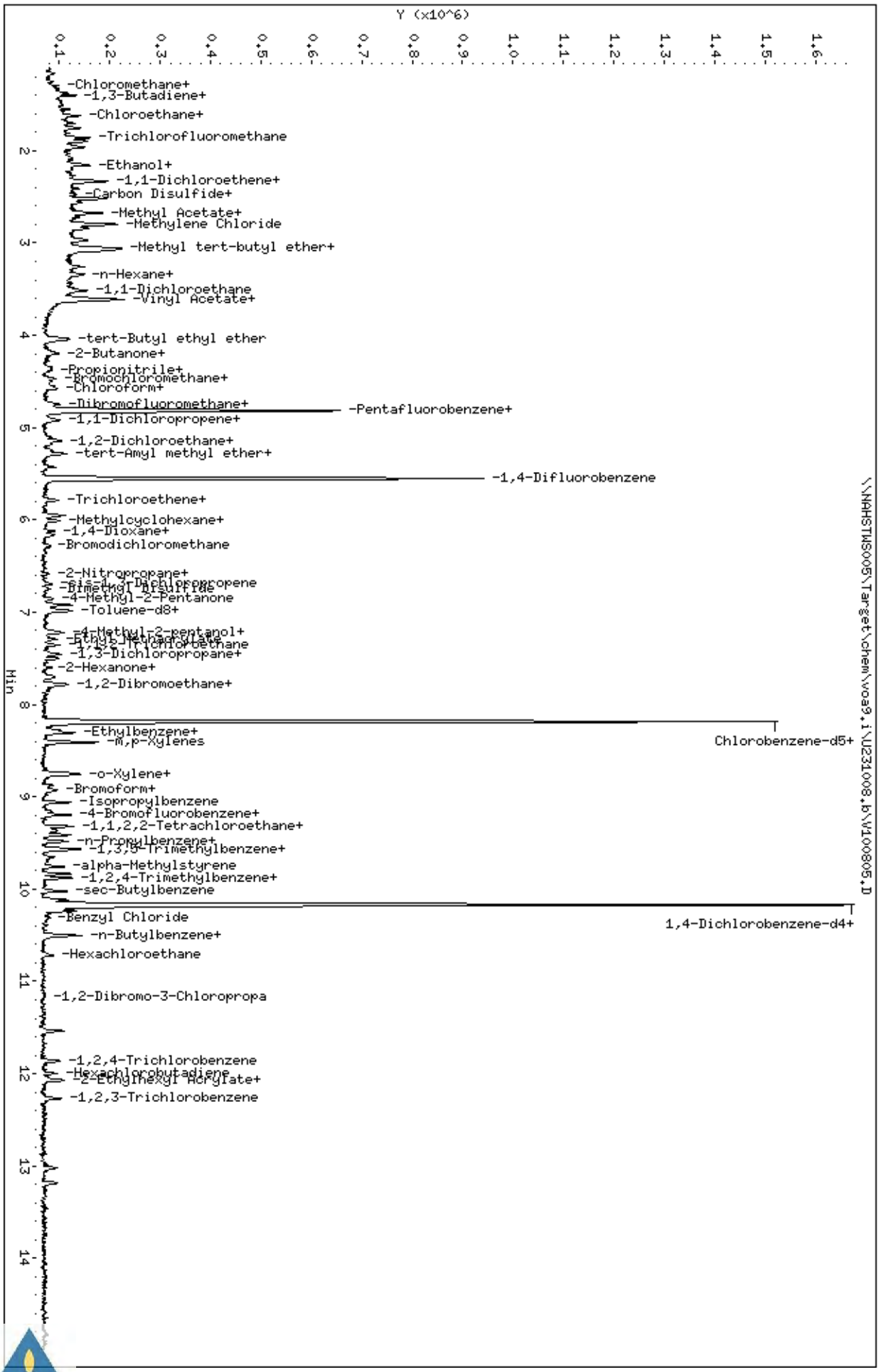
141 Cyclohexane	56	4.789	4.789 (0.995)	8940	2.00000	1.78(aH)
138 Freon TF	101	2.334	2.334 (0.485)	16888	2.00000	1.93(a)

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D Page 3
Report Date: 13-Oct-2023 17:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
140	1,3-Butadiene	54	1.404	1.404	(0.292)	10752	2.00000	1.94(aM)
147	Methylcyclohexane	55	5.955	5.955	(1.072)	18733	2.00000	1.95(a)
146	Methyl Acetate	43	2.716	2.716	(0.564)	15566	2.00000	2.04(aM)
148	Tert-Butyl alcohol	59	2.967	2.967	(0.616)	47100	40.0000	40.21(a)
149	Isopropyl Alcohol	45	2.562	2.562	(0.532)	22718	40.0000	35.76
72	trans-1,4-Dichloro-2-butene	53	9.385	9.385	(1.147)	3449	2.00000	2.15(MH)
12	Isobutyl Alcohol	43	5.284	5.284	(1.097)	22454	40.0000	37.15(M)
13	Acetonitrile	39	2.671	2.671	(0.555)	24786	20.0000	22.68(M)
25	Methacrylonitrile	41	4.493	4.493	(0.933)	5681	2.00000	2.20(H)
40	Methyl Methacrylate	41	6.157	6.157	(1.279)	6256	2.00000	1.55
43	2-Nitropropane	43	6.506	6.506	(1.351)	2312	2.00000	1.60(a)
4	Propionitrile	54	4.343	4.343	(0.902)	11748	20.0000	18.48(a)
136	n-Hexane	57	3.342	3.342	(0.694)	15044	2.00000	1.65(a)
131	Methyl Acrylate	55	4.380	4.380	(0.910)	10297	2.00000	1.99(aM)
200	Dimethyl Disulfide	94	6.750	6.750	(0.825)	9856	2.00000	2.76(aM)
49	Ethyl Methacrylate	69	7.293	7.293	(1.313)	13068	2.00000	2.01(aM)
166	1,2,3-Trimethylbenzene	105	10.236	10.236	(1.007)	33567	2.00000	1.93(a)
167	Ethanol	45	2.082	2.082	(0.433)	5739	40.0000	54.56
164	Dicyclopentadiene	66	10.198	10.198	(1.003)	41157	2.00000	2.00(aM)
145	alpha-Methylstyrene	118	9.756	9.756	(0.959)	12931	2.00000	1.56(a)
142	Tetrahydrofuran	42	4.545	4.545	(0.944)	3476	4.00000	4.20(aMH)
156	Diisopropyl ether	45	3.619	3.619	(0.752)	30538	2.00000	2.26(aM)
151	4-Methyl-2-pentanol	45	7.218	7.218	(1.300)	22353	40.0000	35.23
150	Allyl alcohol	57	3.342	3.342	(0.694)	15044	40.0000	37.73
86	Benzyl Chloride	91	10.315	10.315	(1.260)	13413	2.00000	2.92(aM)
162	Butyl acrylate	55	8.740	8.740	(1.068)	14947	2.00000	2.64(aM)
139	Diethyl ether	59	2.142	2.142	(0.445)	16031	2.00000	2.31(a)
203	2-Ethylhexyl Acrylate	55	12.043	12.043	(1.184)	7573	2.00000	1.91(a)
134	Cyclohexanone	55	9.156	9.156	(0.900)	9354	40.0000	20.32(a)
130	Ethyl Acetate	43	4.347	4.347	(0.903)	6787	2.00000	1.67(aMH)
189	n-Butyl acetate	43	7.713	7.713	(0.942)	10730	2.00000	1.60(aM)
182	Epichlorohydrin	57	6.633	6.633	(1.194)	3162	8.00000	15.04(M)
132	n-Butanol	56	5.824	5.824	(1.209)	3708	40.0000	44.45(a)
133	Ethyl Acrylate	55	5.955	5.955	(1.237)	18733	2.00000	3.30(a)
163	Butyl methacrylate	41	9.659	9.659	(0.950)	8849	2.00000	1.76(aM)
174	tert-Amyl methyl ether	73	5.284	5.284	(1.097)	25944	2.00000	1.74(a)
175	tert-Butyl ethyl ether	59	4.047	4.047	(0.840)	26119	2.00000	2.10(a)
187	n-Amyl acetate	43	8.935	8.935	(1.092)	14322	2.00000	1.65(aMH)
188	Isopropyl acetate	43	5.284	5.284	(0.951)	15959	2.00000	1.42(aH)
179	Hexachloroethane	166	10.716	10.716	(1.054)	2664	2.00000	2.26(aM)

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.



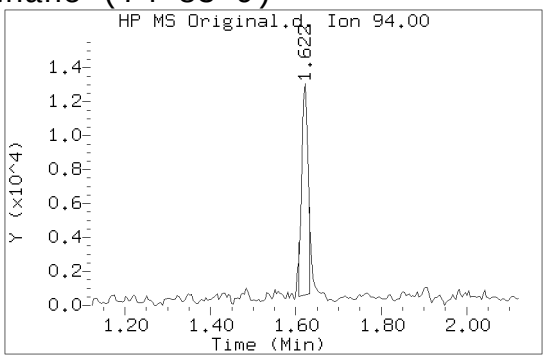
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Date : 08-OCT-2023 15:19
Client ID: VSTD002
Sample Info: VSTD002;VSTD0021:1:4;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

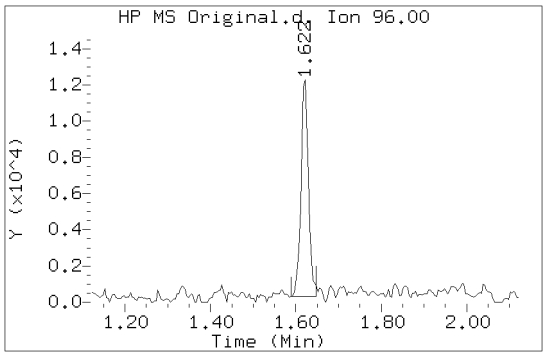
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Bromomethane (74-83-9)

BEFORE
MASS
94
AREA
13478
HEIGHT
12444
13-Oct-2023
16:58
linh
pham

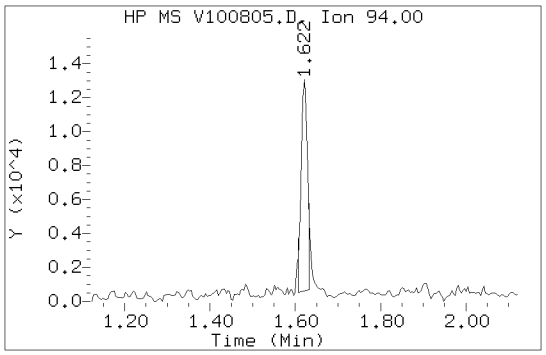


BEFORE
MASS
96
AREA
15028
HEIGHT
11977
13-Oct-2023
16:58
linh
pham

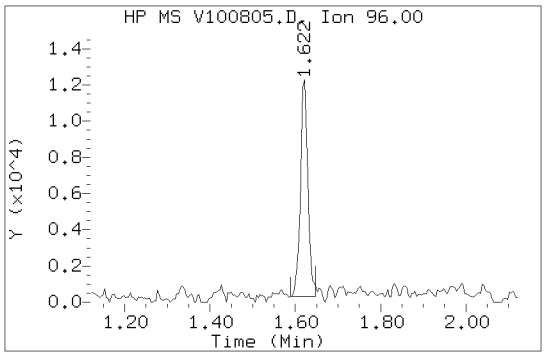


Reason Code:

AFTER
MASS
94
AREA
13478
HEIGHT
12444
13-Oct-2023
16:58
linh
pham

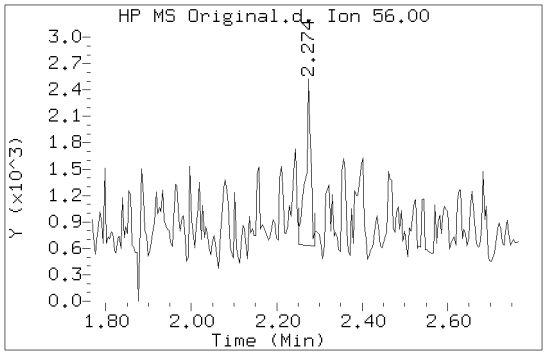


AFTER
MASS
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AREA
15028
HEIGHT
11977
13-Oct-2023
16:58
linh
pham

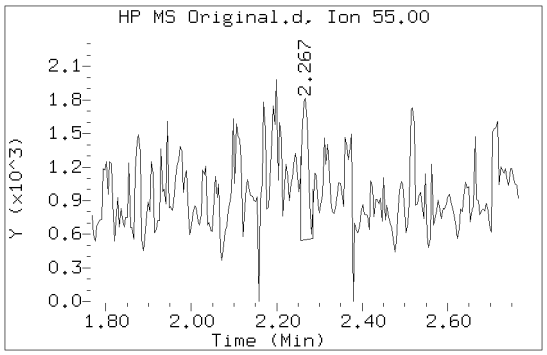


Acrolein (107-02-8)

BEFORE
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56
AREA
1686
HEIGHT
1889
13-Oct-2023
16:58
linh
pham

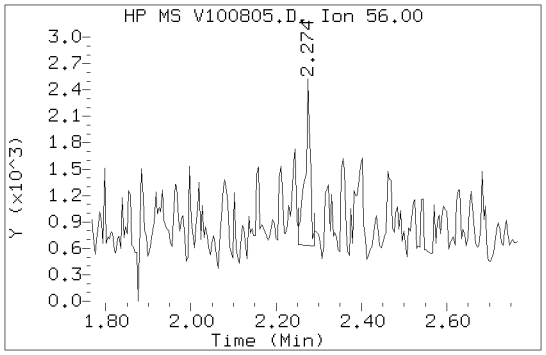


BEFORE
MASS
55
AREA
1445
HEIGHT
1263
13-Oct-2023
16:58
linh
pham

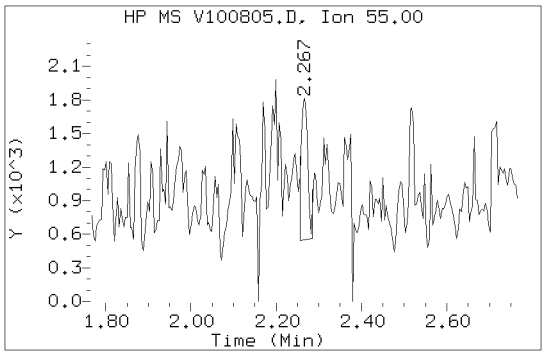


Reason Code:

AFTER
MASS
56
AREA
1686
HEIGHT
1889
13-Oct-2023
16:58
linh
pham



AFTER
MASS
55
AREA
1445
HEIGHT
1263
13-Oct-2023
16:58
linh
pham



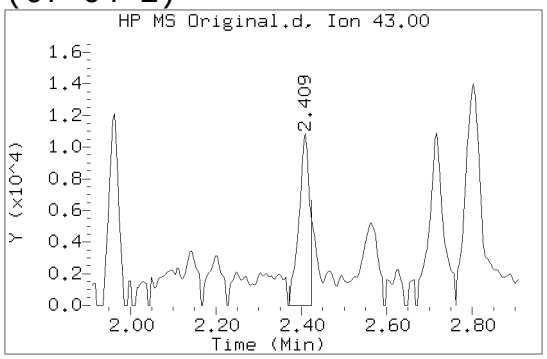
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Acetone (67-64-1)

Reason Code:

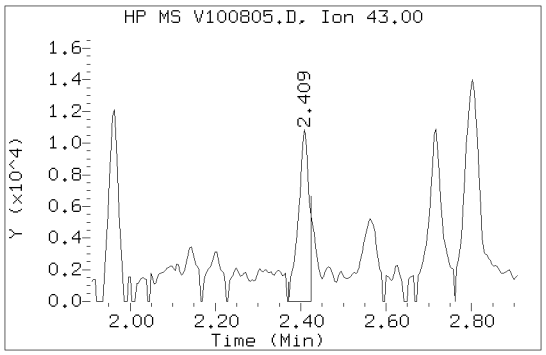
BEFORE

MASS
43
AREA
18996
HEIGHT
10858
13-Oct-2023
16:58
linh
pham



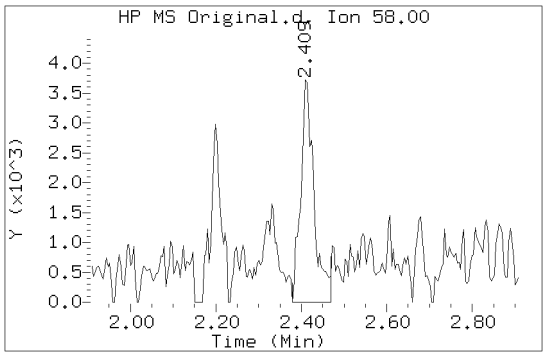
AFTER

MASS
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AREA
18996
HEIGHT
10858
13-Oct-2023
16:58
linh
pham



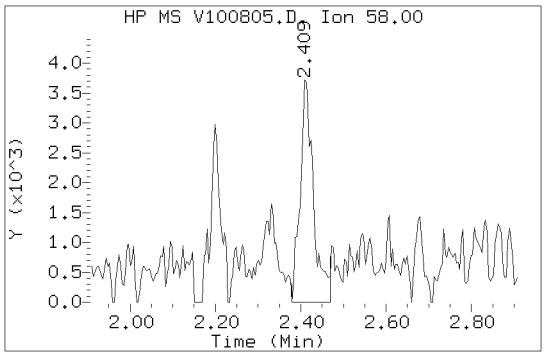
BEFORE

MASS
58
AREA
8154
HEIGHT
3720
13-Oct-2023
16:58
linh
pham



AFTER

MASS
58
AREA
8154
HEIGHT
3720
13-Oct-2023
16:58
linh
pham

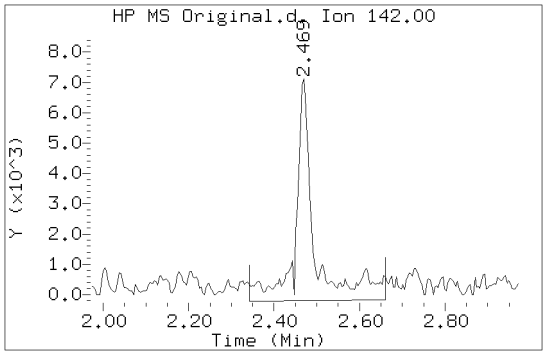


Iodomethane (74-88-4)

Reason Code:

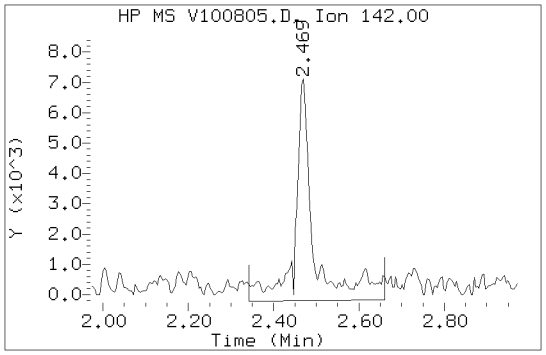
BEFORE

MASS
142
AREA
22744
HEIGHT
7315
13-Oct-2023
16:58
linh
pham



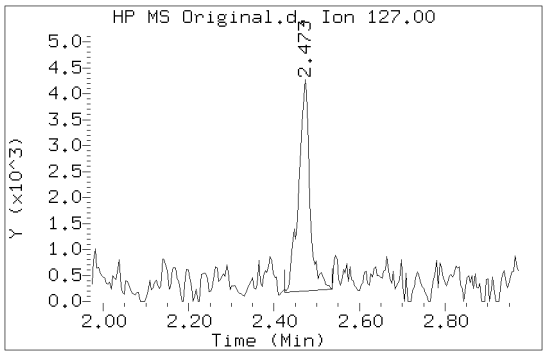
AFTER

MASS
142
AREA
22744
HEIGHT
7315
13-Oct-2023
16:58
linh
pham



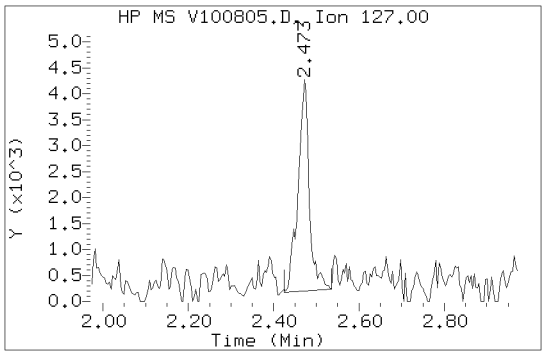
BEFORE

MASS
127
AREA
7654
HEIGHT
4074
13-Oct-2023
16:58
linh
pham



AFTER

MASS
127
AREA
7654
HEIGHT
4074
13-Oct-2023
16:58
linh
pham



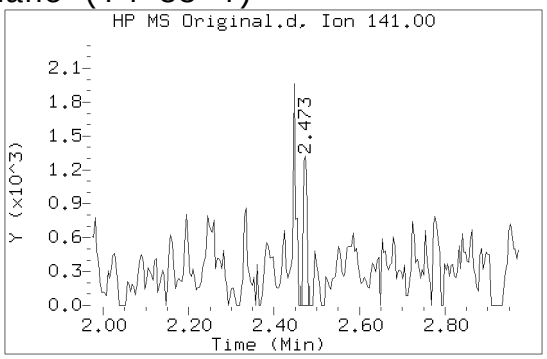
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Iodomethane (74-88-4)

Reason Code:

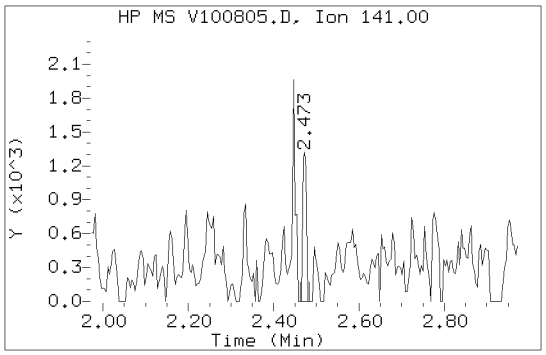
BEFORE

MASS
141
AREA
846
HEIGHT
1325
13-Oct-2023
16:58
linh
pham



AFTER

MASS
141
AREA
846
HEIGHT
1325
13-Oct-2023
16:58
linh
pham

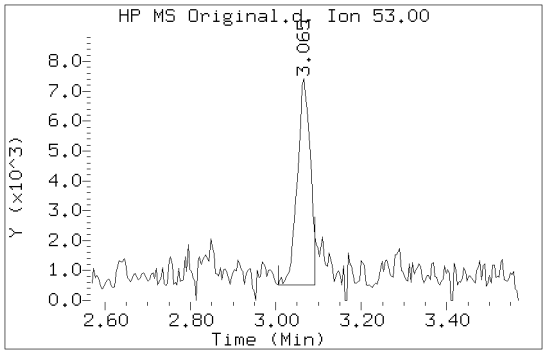


Acrylonitrile (107-13-1)

Reason Code:

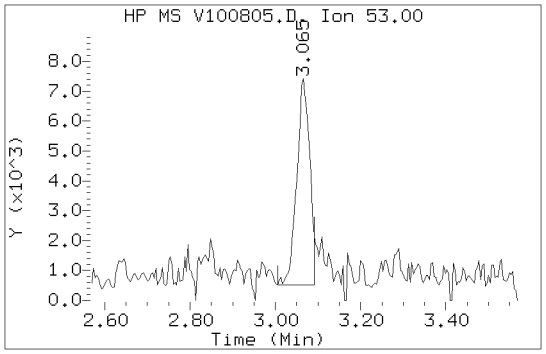
BEFORE

MASS
53
AREA
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HEIGHT
6905
13-Oct-2023
16:58
linh
pham



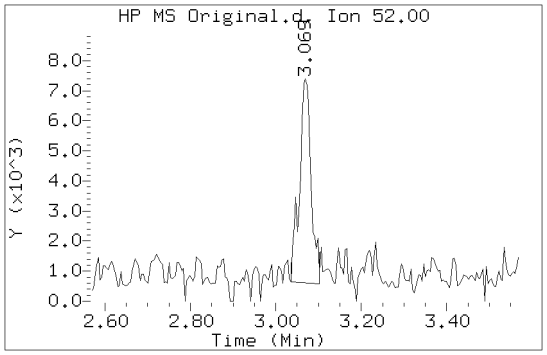
AFTER

MASS
53
AREA
14782
HEIGHT
6905
13-Oct-2023
16:58
linh
pham



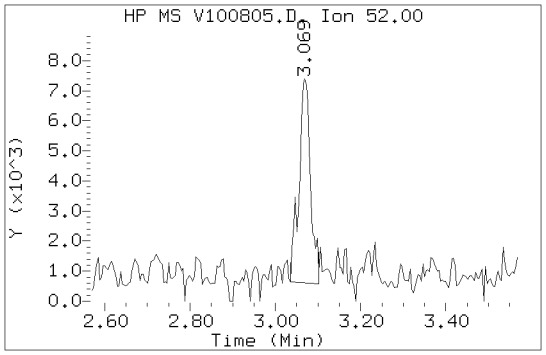
BEFORE

MASS
52
AREA
13141
HEIGHT
6786
13-Oct-2023
16:58
linh
pham



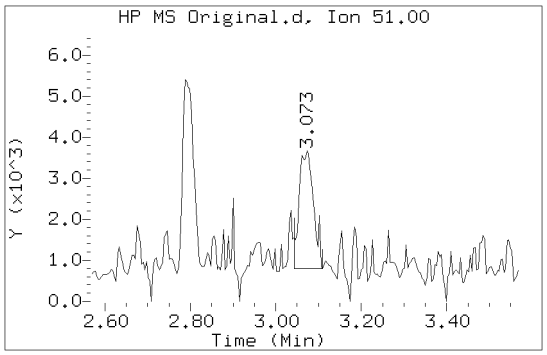
AFTER

MASS
52
AREA
13141
HEIGHT
6786
13-Oct-2023
16:58
linh
pham



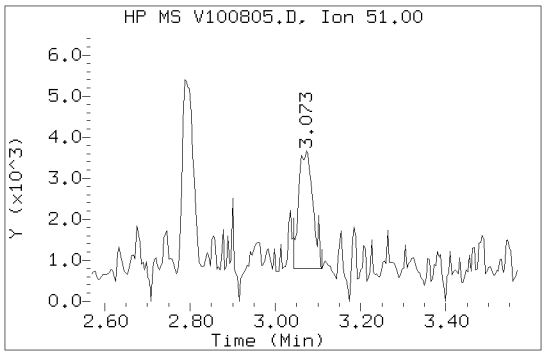
BEFORE

MASS
51
AREA
6860
HEIGHT
2868
13-Oct-2023
16:58
linh
pham



AFTER

MASS
51
AREA
6860
HEIGHT
2868
13-Oct-2023
16:58
linh
pham



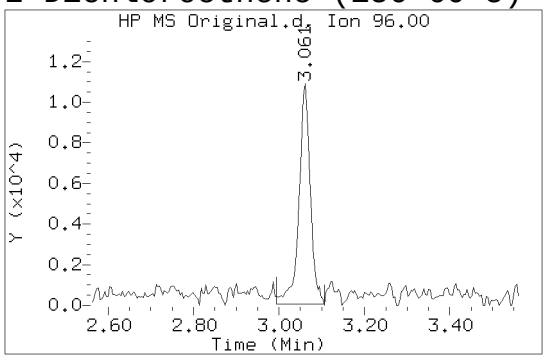
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

trans-1,2-Dichloroethene (156-60-5)

Reason Code:

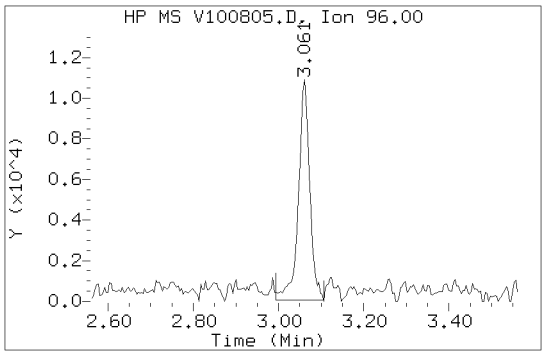
BEFORE

MASS
96
AREA
20531
HEIGHT
10859
13-Oct-2023
16:58
linh
pham



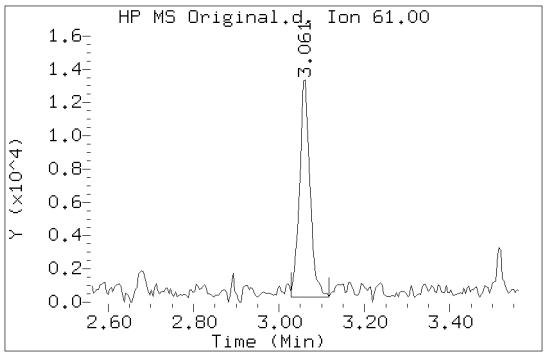
AFTER

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linh
pham



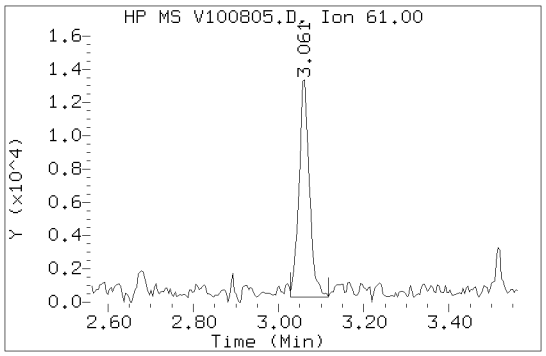
BEFORE

MASS
61
AREA
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HEIGHT
13032
13-Oct-2023
16:58
linh
pham



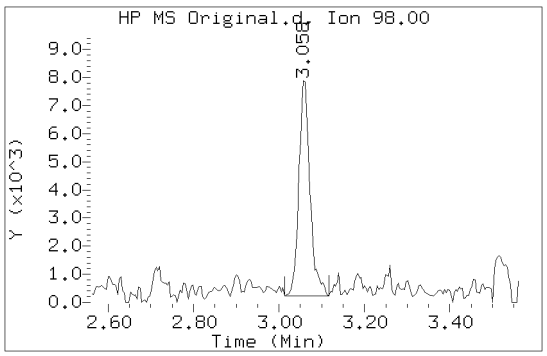
AFTER

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HEIGHT
13032
13-Oct-2023
16:58
linh
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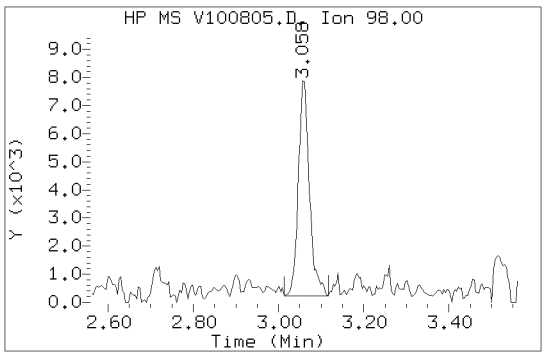
BEFORE

MASS
98
AREA
14211
HEIGHT
7661
13-Oct-2023
16:58
linh
pham



AFTER

MASS
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AREA
14211
HEIGHT
7661
13-Oct-2023
16:58
linh
pham

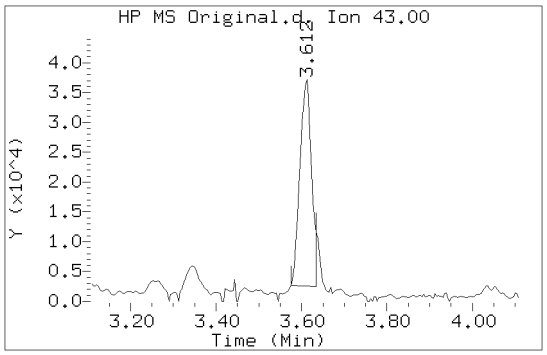


Vinyl Acetate (108-05-4)

Reason Code:

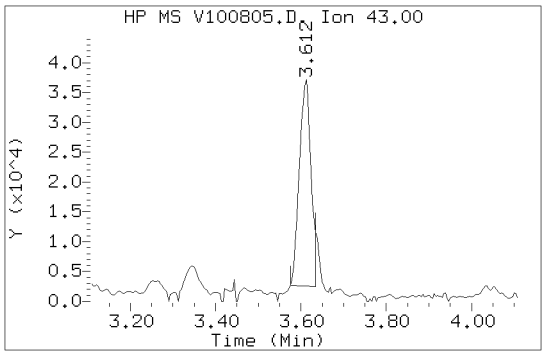
BEFORE

MASS
43
AREA
67233
HEIGHT
34596
13-Oct-2023
16:58
linh
pham



AFTER

MASS
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AREA
67233
HEIGHT
34596
13-Oct-2023
16:58
linh
pham



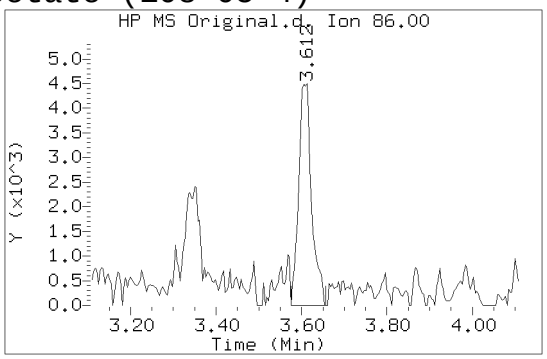
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Vinyl Acetate (108-05-4)

Reason Code:

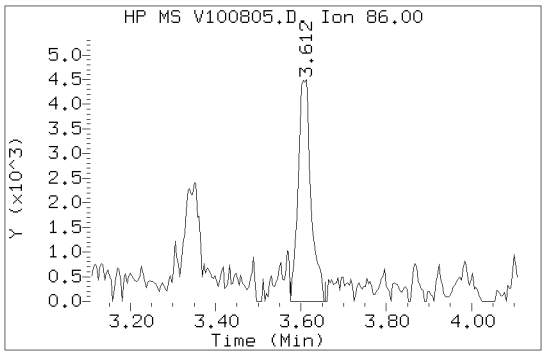
BEFORE

MASS
86
AREA
9623
HEIGHT
4498
13-Oct-2023
16:58
linh
pham



AFTER

MASS
86
AREA
9623
HEIGHT
4498
13-Oct-2023
16:58
linh
pham

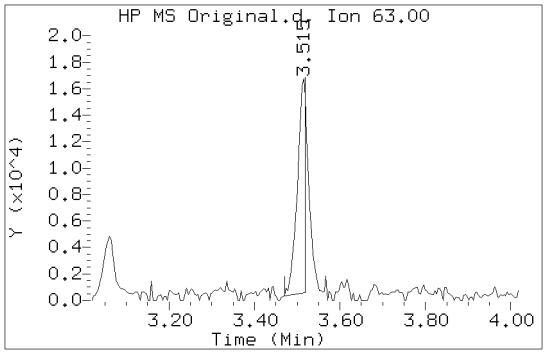


1,1-Dichloroethane (75-34-3)

Reason Code:

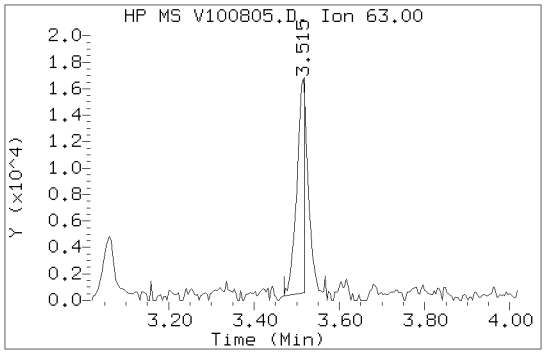
BEFORE

MASS
63
AREA
21530
HEIGHT
16212
13-Oct-2023
16:58
linh
pham



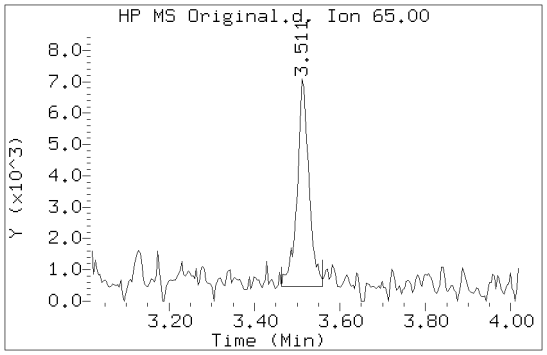
AFTER

MASS
63
AREA
21530
HEIGHT
16212
13-Oct-2023
16:58
linh
pham



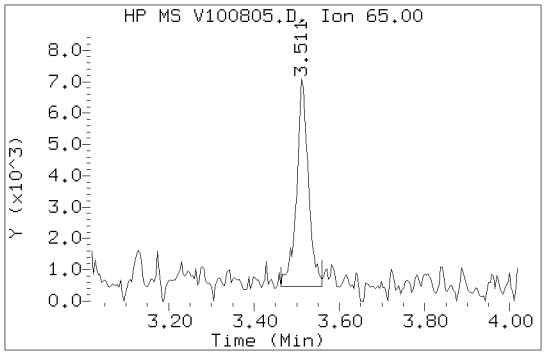
BEFORE

MASS
65
AREA
12951
HEIGHT
6622
13-Oct-2023
16:58
linh
pham



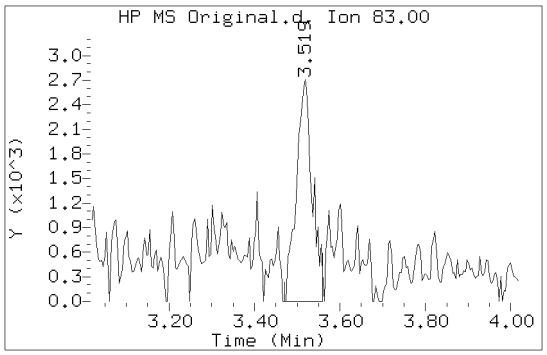
AFTER

MASS
65
AREA
12951
HEIGHT
6622
13-Oct-2023
16:58
linh
pham



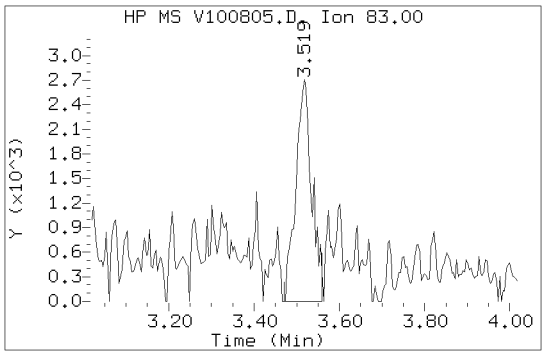
BEFORE

MASS
83
AREA
7112
HEIGHT
2706
13-Oct-2023
16:58
linh
pham



AFTER

MASS
83
AREA
7112
HEIGHT
2706
13-Oct-2023
16:58
linh
pham



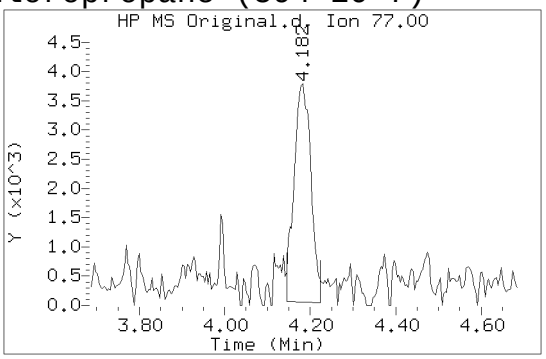
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

2,2-Dichloropropane (594-20-7)

Reason Code:

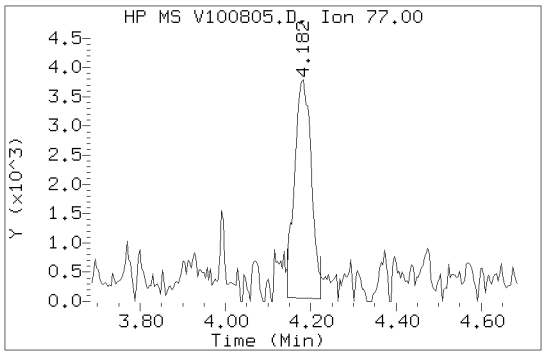
BEFORE

MASS
77
AREA
10443
HEIGHT
3736
13-Oct-2023
16:58
linh
pham



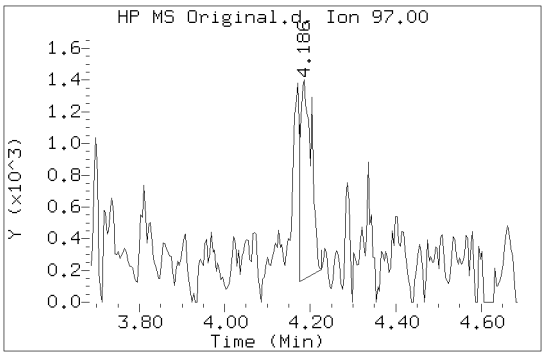
AFTER

MASS
77
AREA
10443
HEIGHT
3736
13-Oct-2023
16:58
linh
pham



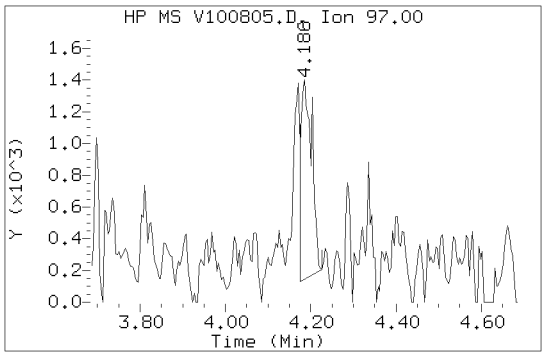
BEFORE

MASS
97
AREA
2328
HEIGHT
1254
13-Oct-2023
16:58
linh
pham



AFTER

MASS
97
AREA
2328
HEIGHT
1254
13-Oct-2023
16:58
linh
pham

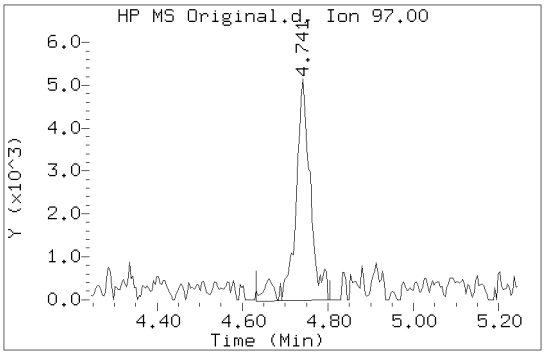


1,1,1-Trichloroethane (71-55-6)

Reason Code:

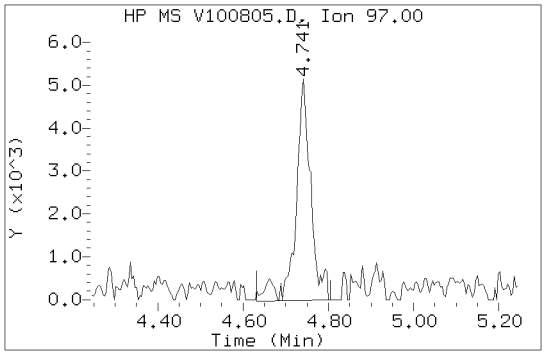
BEFORE

MASS
97
AREA
12740
HEIGHT
5163
13-Oct-2023
16:58
linh
pham



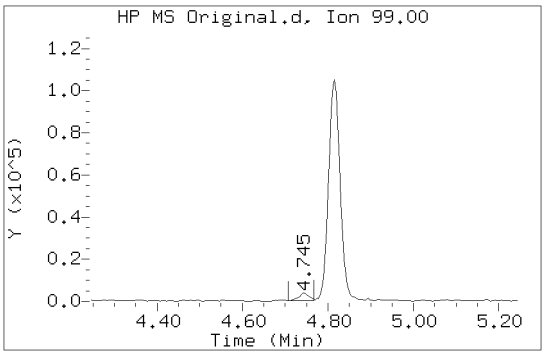
AFTER

MASS
97
AREA
12740
HEIGHT
5163
13-Oct-2023
16:58
linh
pham



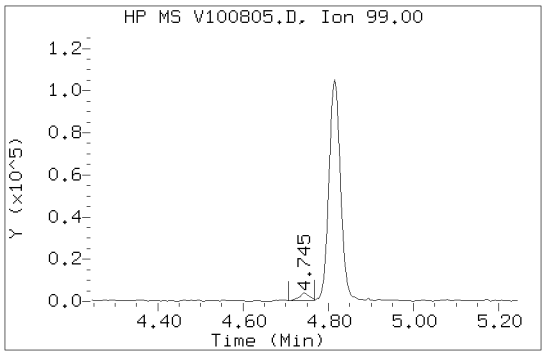
BEFORE

MASS
99
AREA
6373
HEIGHT
3683
13-Oct-2023
16:58
linh
pham



AFTER

MASS
99
AREA
6373
HEIGHT
3683
13-Oct-2023
16:58
linh
pham



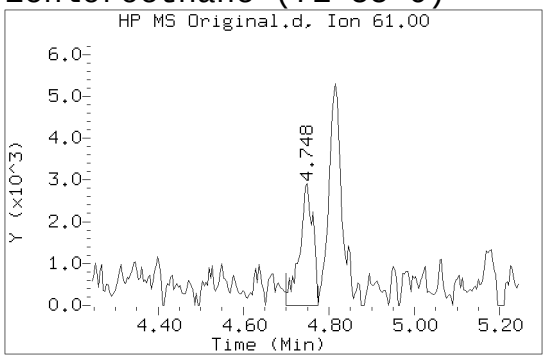
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

1,1,1-Trichloroethane (71-55-6)

Reason Code:

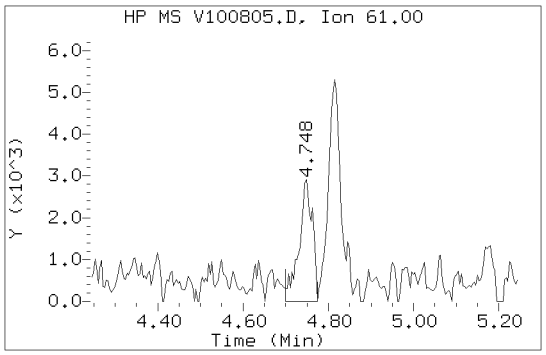
BEFORE

MASS
61
AREA
6412
HEIGHT
2916
13-Oct-2023
16:58
linh
pham



AFTER

MASS
61
AREA
6412
HEIGHT
2916
13-Oct-2023
16:58
linh
pham

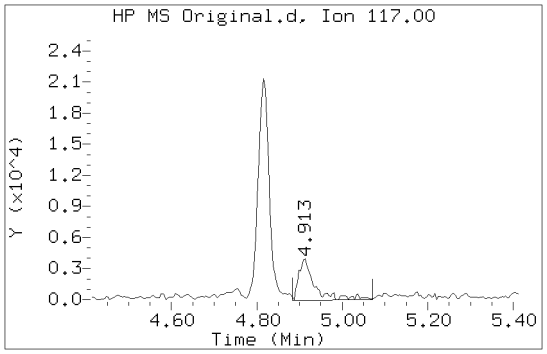


Carbon Tetrachloride (56-23-5)

Reason Code:

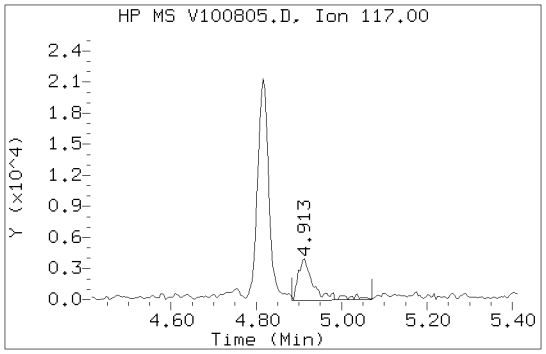
BEFORE

MASS
117
AREA
10715
HEIGHT
3983
13-Oct-2023
16:58
linh
pham



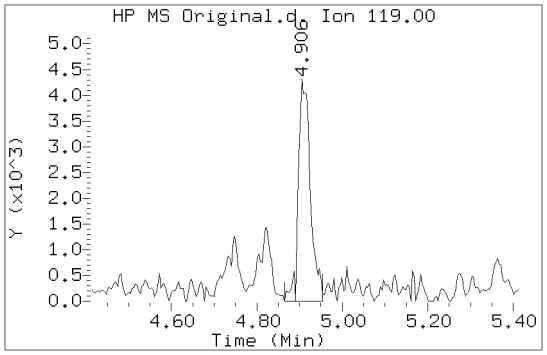
AFTER

MASS
117
AREA
10715
HEIGHT
3983
13-Oct-2023
16:58
linh
pham



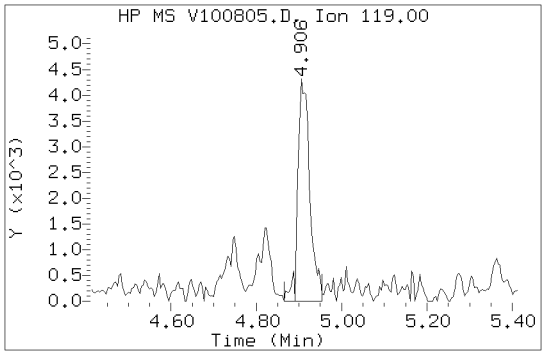
BEFORE

MASS
119
AREA
8620
HEIGHT
4317
13-Oct-2023
16:58
linh
pham



AFTER

MASS
119
AREA
8620
HEIGHT
4317
13-Oct-2023
16:58
linh
pham

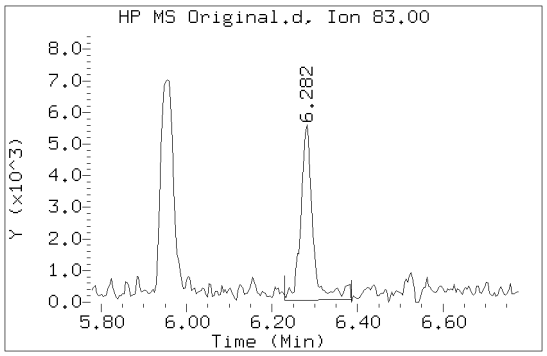


Bromodichloromethane (75-27-4)

Reason Code:

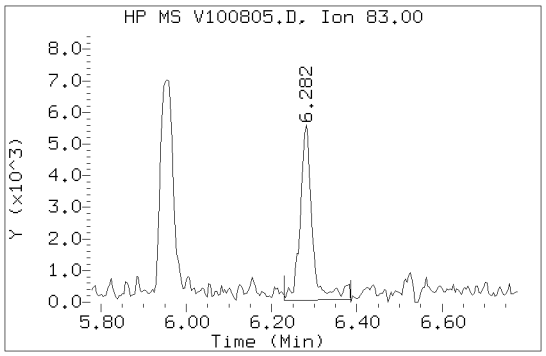
BEFORE

MASS
83
AREA
11204
HEIGHT
5537
13-Oct-2023
16:58
linh
pham



AFTER

MASS
83
AREA
11204
HEIGHT
5537
13-Oct-2023
16:58
linh
pham



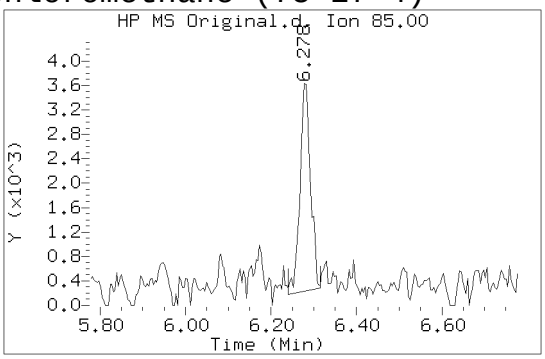
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Bromodichloromethane (75-27-4)

Reason Code:

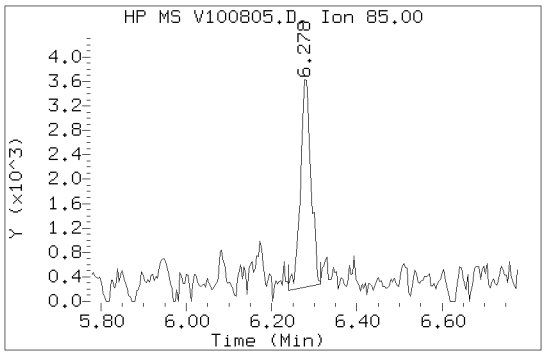
BEFORE

MASS
85
AREA
5982
HEIGHT
3397
13-Oct-2023
16:58
linh
pham



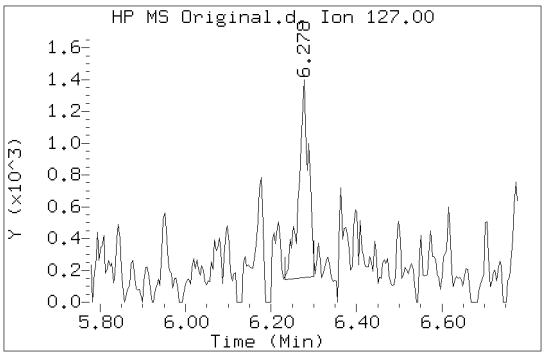
AFTER

MASS
85
AREA
5982
HEIGHT
3397
13-Oct-2023
16:58
linh
pham



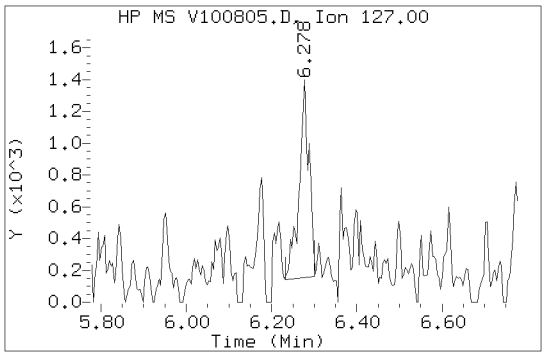
BEFORE

MASS
127
AREA
2039
HEIGHT
1243
13-Oct-2023
16:58
linh
pham



AFTER

MASS
127
AREA
2039
HEIGHT
1243
13-Oct-2023
16:58
linh
pham

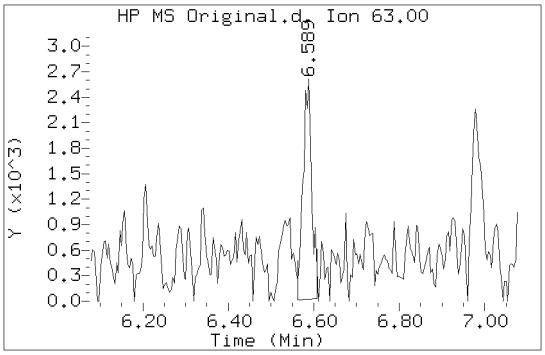


2-Chloroethylvinyl ether (110-75-8)

Reason Code:

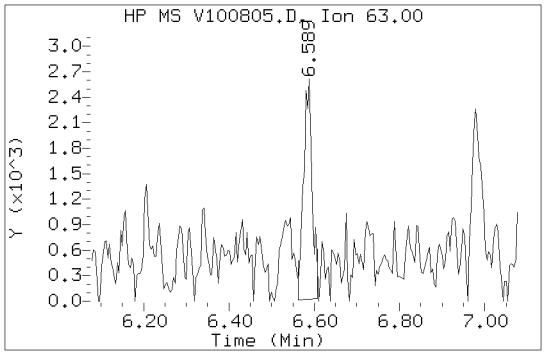
BEFORE

MASS
63
AREA
3701
HEIGHT
2593
13-Oct-2023
16:58
linh
pham



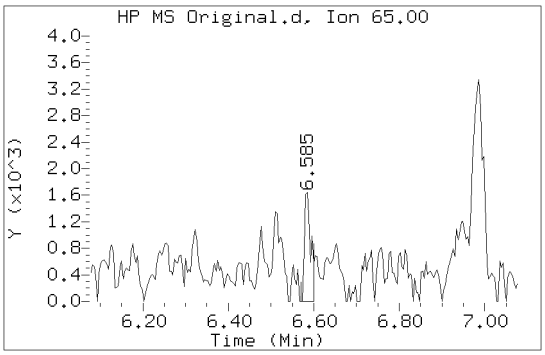
AFTER

MASS
63
AREA
3701
HEIGHT
2593
13-Oct-2023
16:58
linh
pham



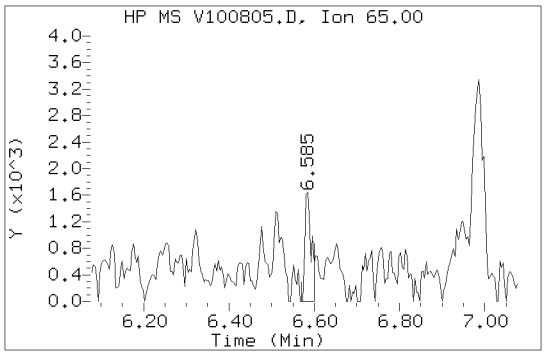
BEFORE

MASS
65
AREA
1680
HEIGHT
1640
13-Oct-2023
16:58
linh
pham



AFTER

MASS
65
AREA
1680
HEIGHT
1640
13-Oct-2023
16:58
linh
pham



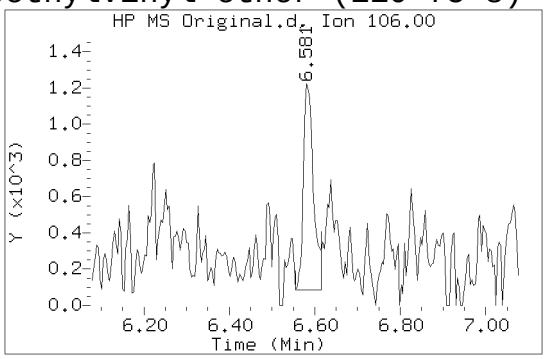
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

2-Chloroethylvinyl ether (110-75-8)

Reason Code:

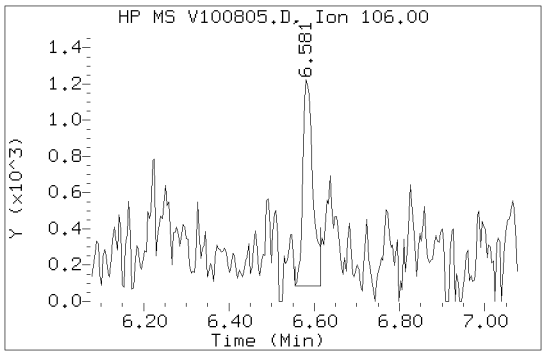
BEFORE

MASS
106
AREA
1875
HEIGHT
1138
13-Oct-2023
16:58
linh
pham



AFTER

MASS
106
AREA
1875
HEIGHT
1138
13-Oct-2023
16:58
linh
pham

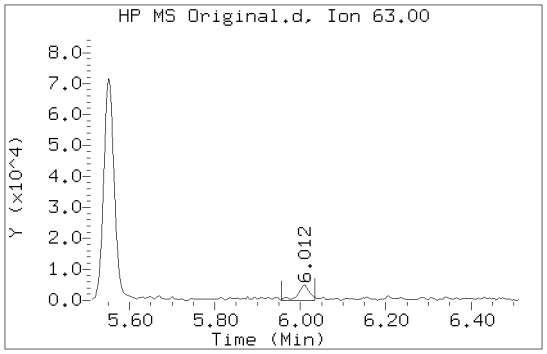


1,2-Dichloropropane (78-87-5)

Reason Code:

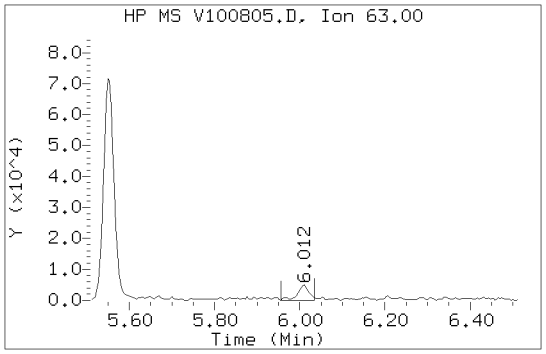
BEFORE

MASS
63
AREA
9398
HEIGHT
4926
13-Oct-2023
16:58
linh
pham



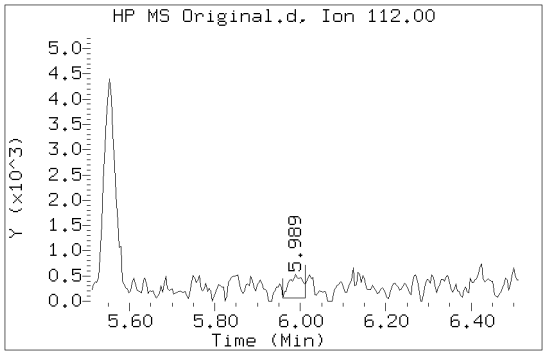
AFTER

MASS
63
AREA
9398
HEIGHT
4926
13-Oct-2023
16:58
linh
pham



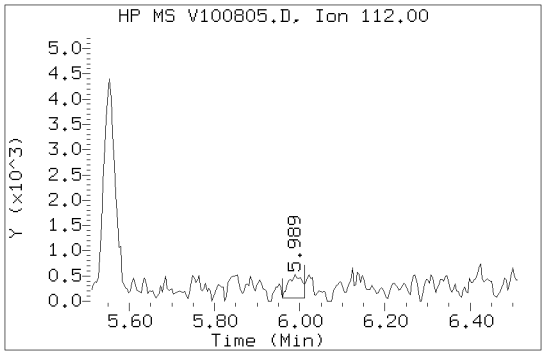
BEFORE

MASS
112
AREA
1020
HEIGHT
466
13-Oct-2023
16:58
linh
pham



AFTER

MASS
112
AREA
1020
HEIGHT
466
13-Oct-2023
16:58
linh
pham

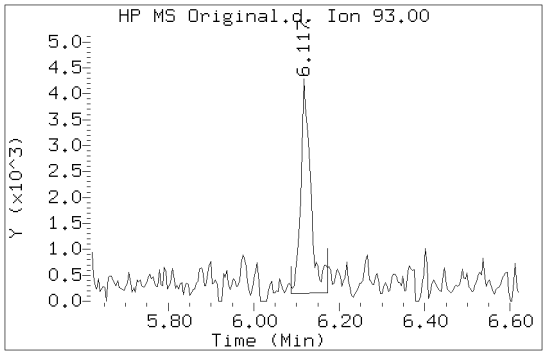


Dibromomethane (74-95-3)

Reason Code:

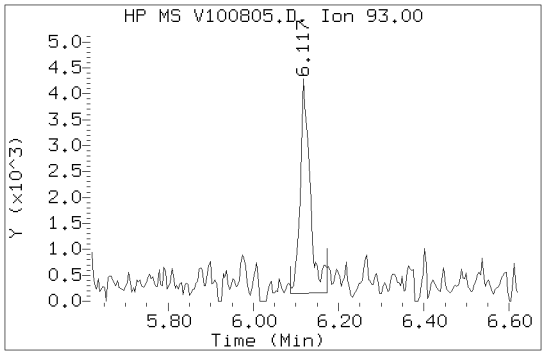
BEFORE

MASS
93
AREA
6862
HEIGHT
4132
13-Oct-2023
16:58
linh
pham



AFTER

MASS
93
AREA
6862
HEIGHT
4132
13-Oct-2023
16:58
linh
pham



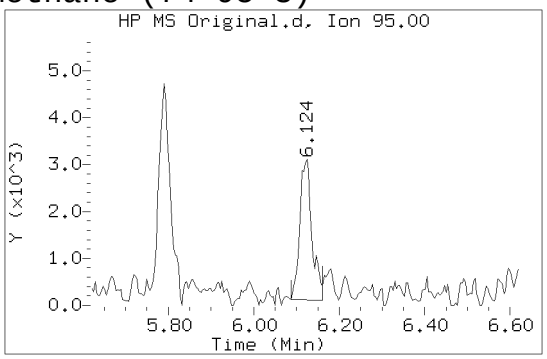
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Dibromomethane (74-95-3)

Reason Code:

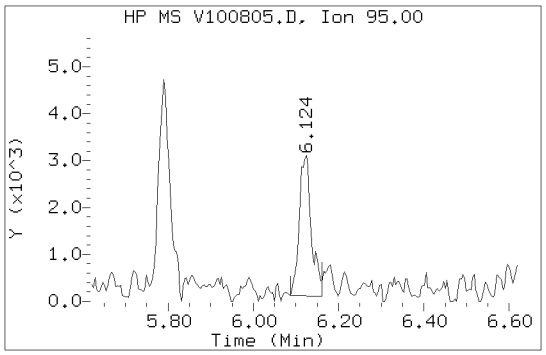
BEFORE

MASS
95
AREA
6071
HEIGHT
3003
13-Oct-2023
16:58
linh
pham



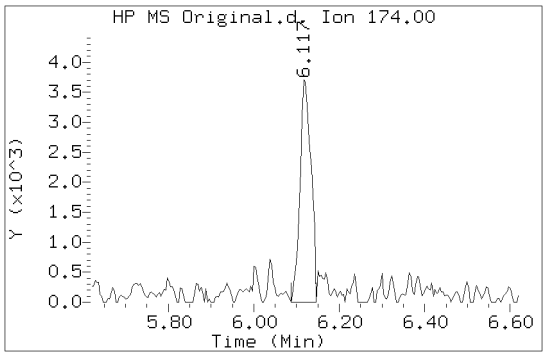
AFTER

MASS
95
AREA
6071
HEIGHT
3003
13-Oct-2023
16:58
linh
pham



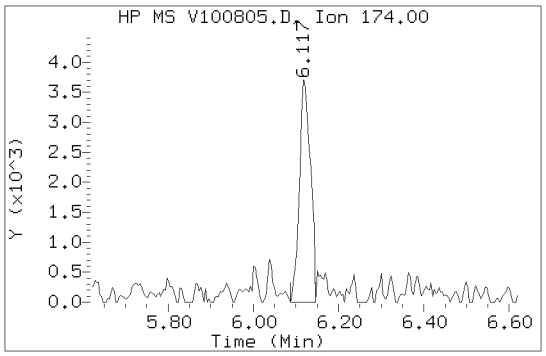
BEFORE

MASS
174
AREA
6766
HEIGHT
3706
13-Oct-2023
16:58
linh
pham



AFTER

MASS
174
AREA
6766
HEIGHT
3706
13-Oct-2023
16:58
linh
pham

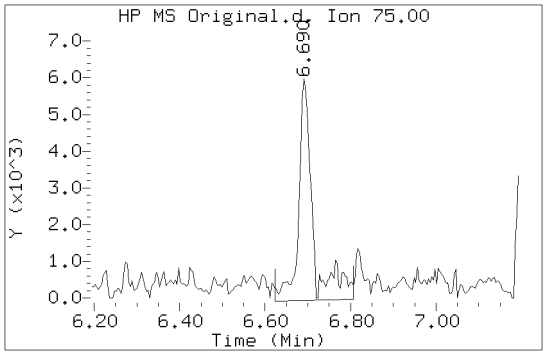


cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

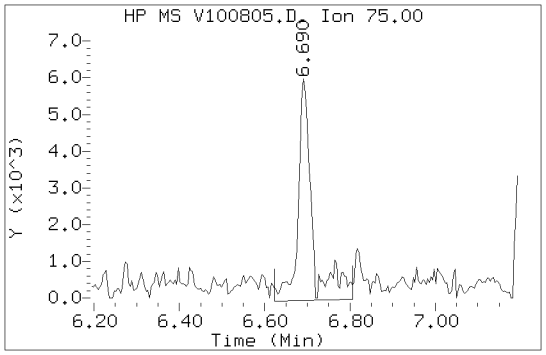
BEFORE

MASS
75
AREA
14378
HEIGHT
6036
13-Oct-2023
16:58
linh
pham



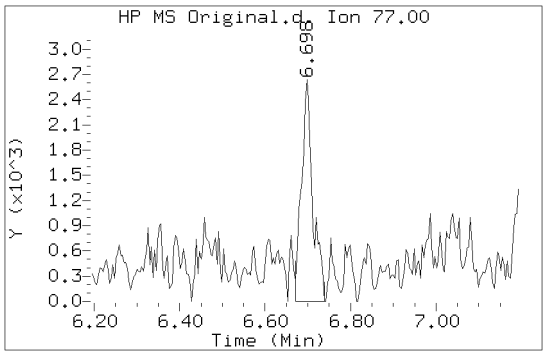
AFTER

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14378
HEIGHT
6036
13-Oct-2023
16:58
linh
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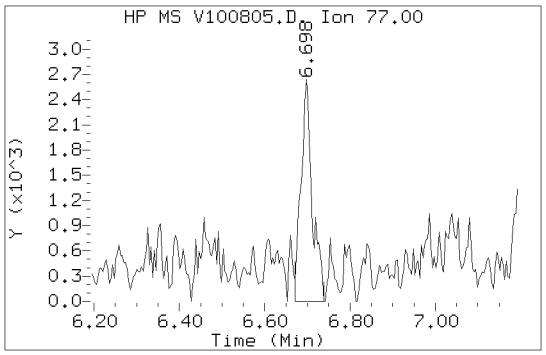
BEFORE

MASS
77
AREA
4955
HEIGHT
2637
13-Oct-2023
16:58
linh
pham



AFTER

MASS
77
AREA
4955
HEIGHT
2637
13-Oct-2023
16:58
linh
pham



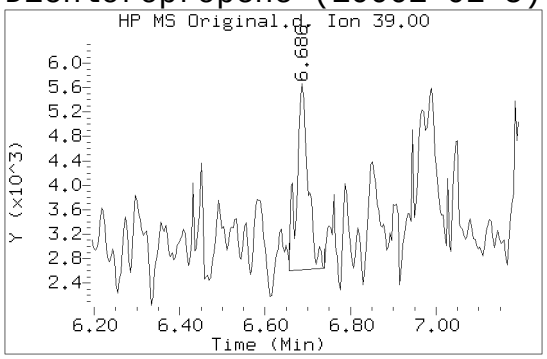
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

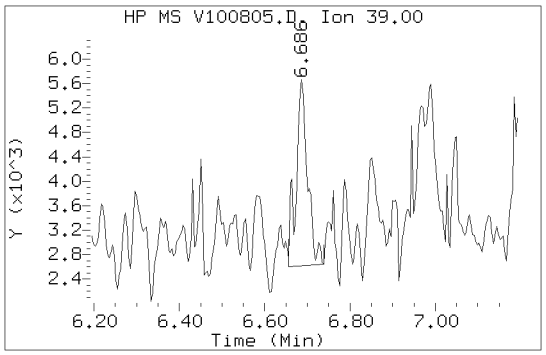
BEFORE

MASS
39
AREA
5731
HEIGHT
3045
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
5731
HEIGHT
3045
13-Oct-2023
16:58
linh
pham

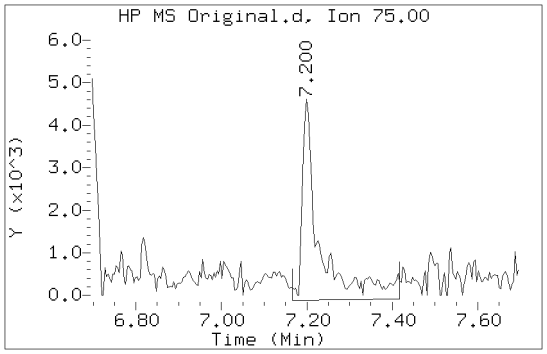


trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

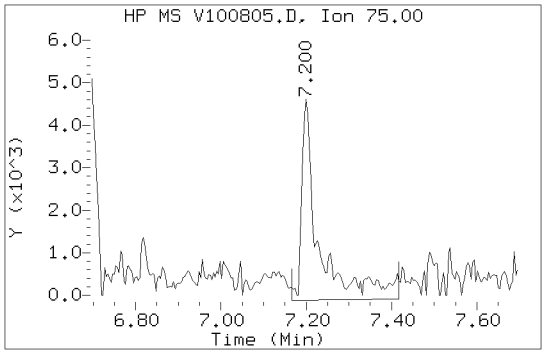
BEFORE

MASS
75
AREA
13376
HEIGHT
4727
13-Oct-2023
16:58
linh
pham



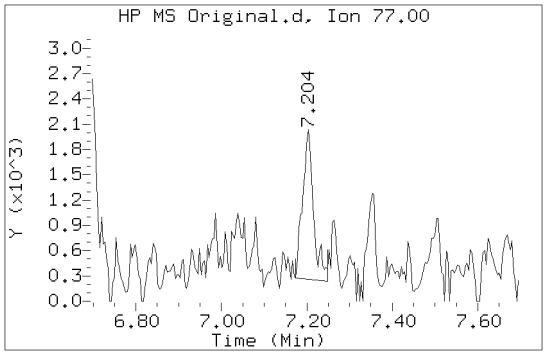
AFTER

MASS
75
AREA
13376
HEIGHT
4727
13-Oct-2023
16:58
linh
pham



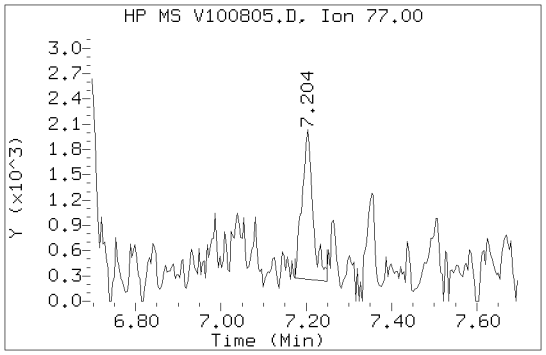
BEFORE

MASS
77
AREA
3202
HEIGHT
1776
13-Oct-2023
16:58
linh
pham



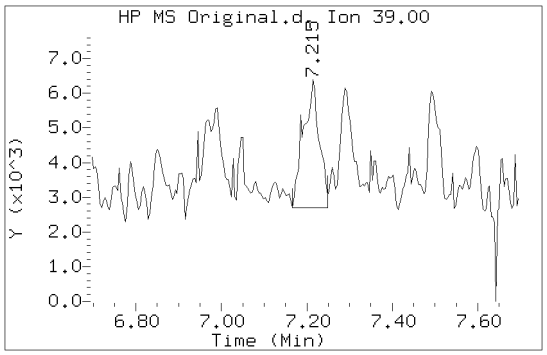
AFTER

MASS
77
AREA
3202
HEIGHT
1776
13-Oct-2023
16:58
linh
pham



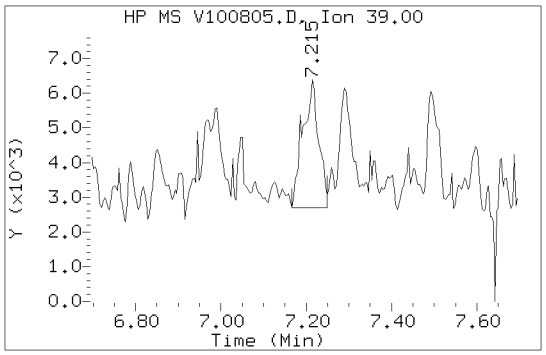
BEFORE

MASS
39
AREA
9619
HEIGHT
3690
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
9619
HEIGHT
3690
13-Oct-2023
16:58
linh
pham

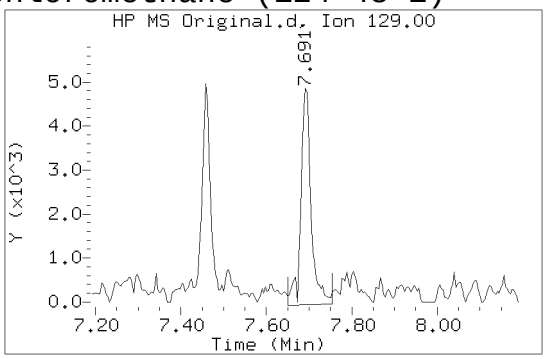


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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Dibromochloromethane (124-48-1)

BEFORE

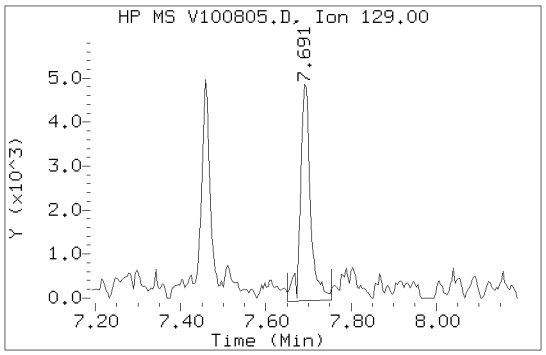
MASS
129
AREA
8446
HEIGHT
4931
13-Oct-2023
16:58
linh
pham



Reason Code:

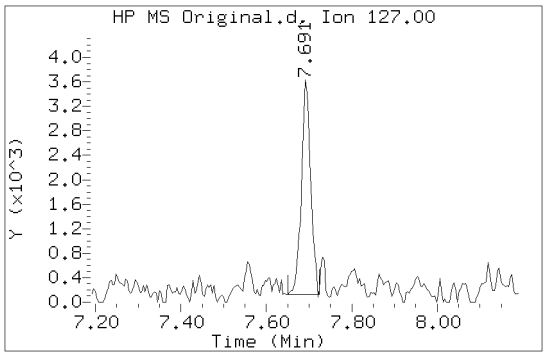
AFTER

MASS
129
AREA
8446
HEIGHT
4931
13-Oct-2023
16:58
linh
pham



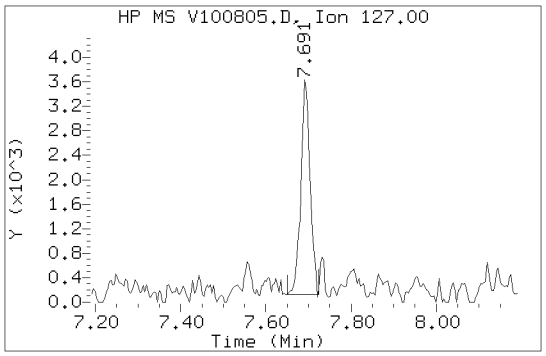
BEFORE

MASS
127
AREA
5414
HEIGHT
3505
13-Oct-2023
16:58
linh
pham



AFTER

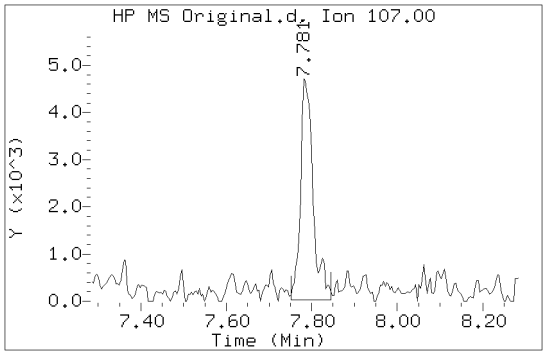
MASS
127
AREA
5414
HEIGHT
3505
13-Oct-2023
16:58
linh
pham



1,2-Dibromoethane (106-93-4)

BEFORE

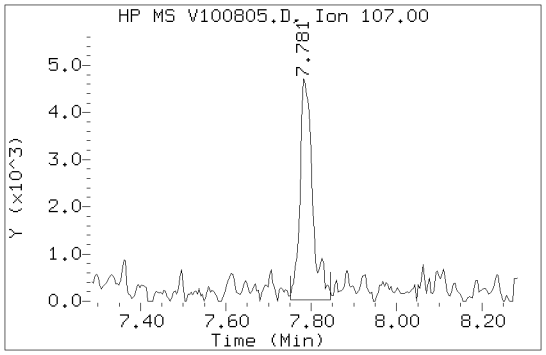
MASS
107
AREA
9826
HEIGHT
4687
13-Oct-2023
16:58
linh
pham



Reason Code:

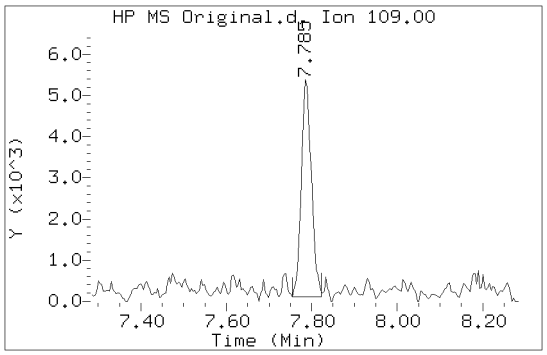
AFTER

MASS
107
AREA
9826
HEIGHT
4687
13-Oct-2023
16:58
linh
pham



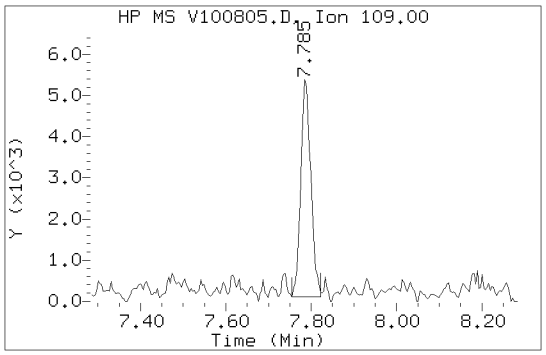
BEFORE

MASS
109
AREA
8870
HEIGHT
5280
13-Oct-2023
16:58
linh
pham



AFTER

MASS
109
AREA
8870
HEIGHT
5280
13-Oct-2023
16:58
linh
pham



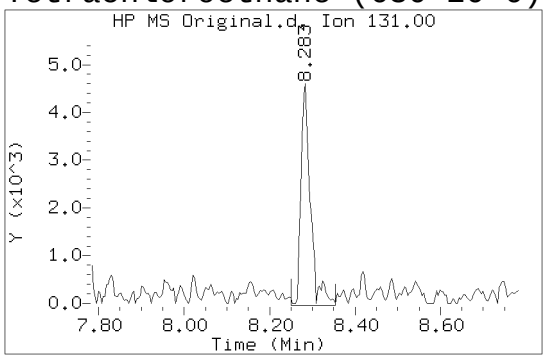
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

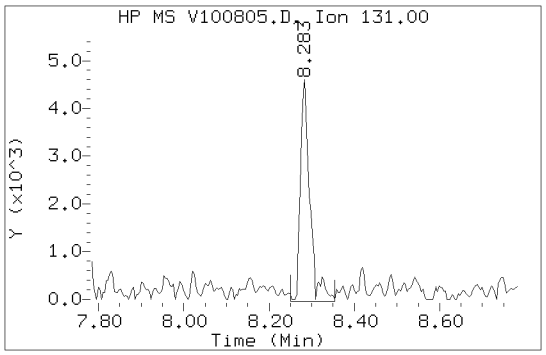
BEFORE

MASS
131
AREA
7402
HEIGHT
4644
13-Oct-2023
16:58
linh
pham



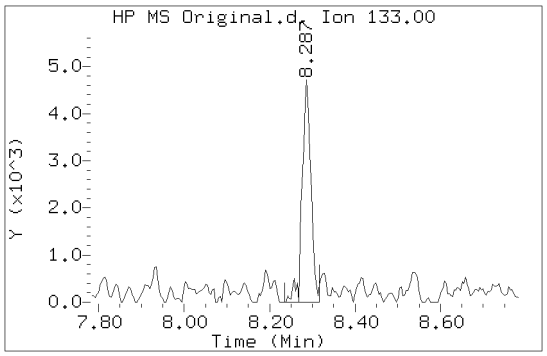
AFTER

MASS
131
AREA
7402
HEIGHT
4644
13-Oct-2023
16:58
linh
pham



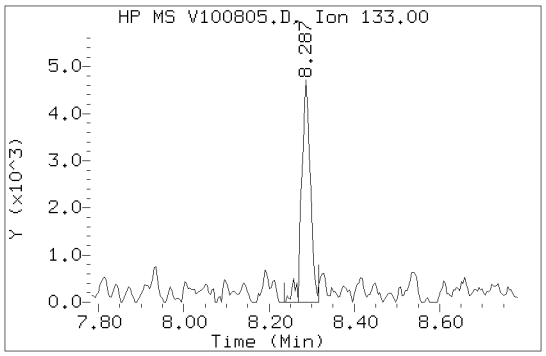
BEFORE

MASS
133
AREA
6986
HEIGHT
4714
13-Oct-2023
16:58
linh
pham



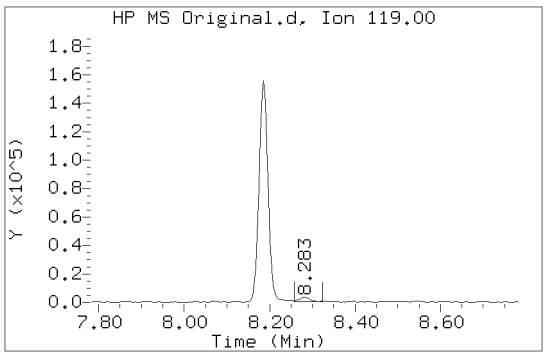
AFTER

MASS
133
AREA
6986
HEIGHT
4714
13-Oct-2023
16:58
linh
pham



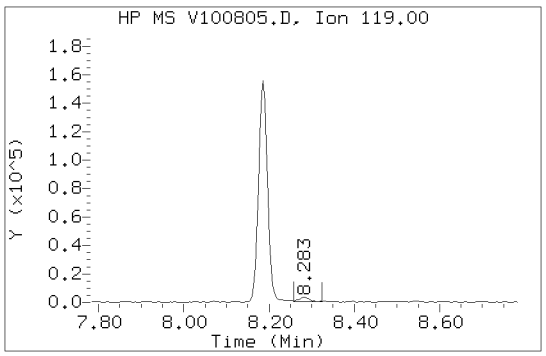
BEFORE

MASS
119
AREA
5847
HEIGHT
3442
13-Oct-2023
16:58
linh
pham



AFTER

MASS
119
AREA
5847
HEIGHT
3442
13-Oct-2023
16:58
linh
pham

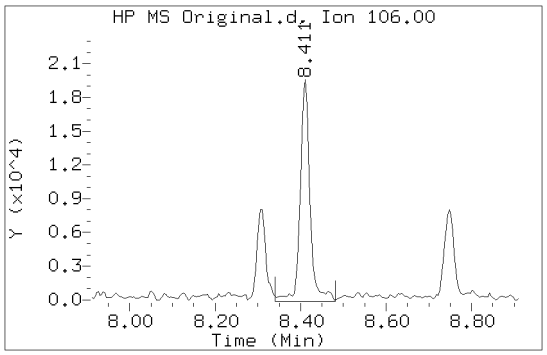


m,p-Xylenes ()

Reason Code:

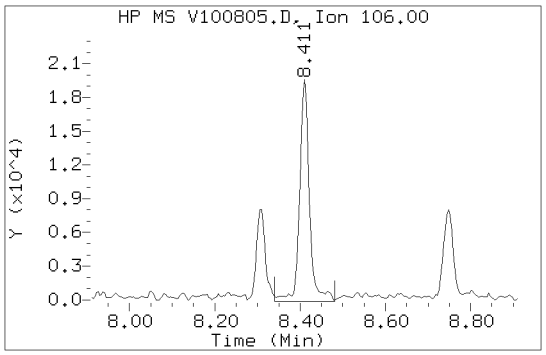
BEFORE

MASS
106
AREA
32003
HEIGHT
19702
13-Oct-2023
16:58
linh
pham



AFTER

MASS
106
AREA
32003
HEIGHT
19702
13-Oct-2023
16:58
linh
pham



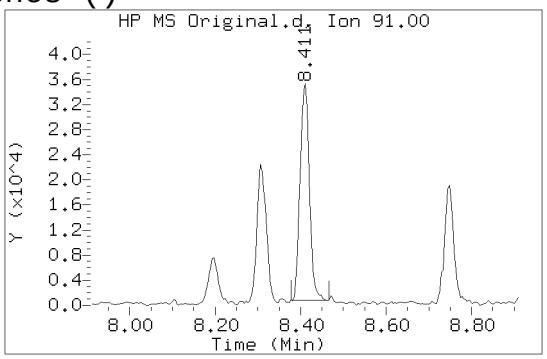
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

m,p-Xylenes ()

Reason Code:

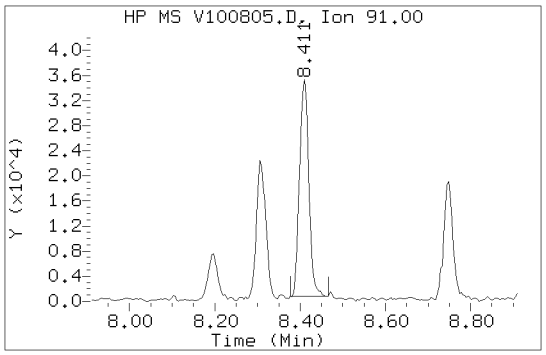
BEFORE

MASS
91
AREA
53192
HEIGHT
34493
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
53192
HEIGHT
34493
13-Oct-2023
16:58
linh
pham

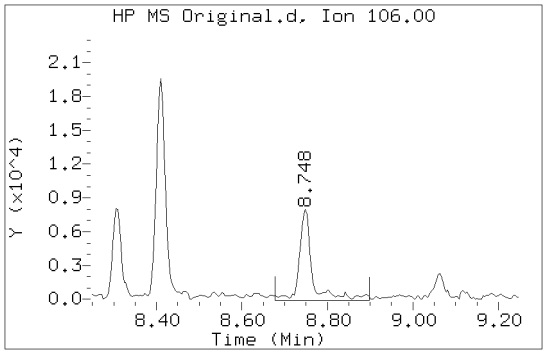


o-Xylene (95-47-6)

Reason Code:

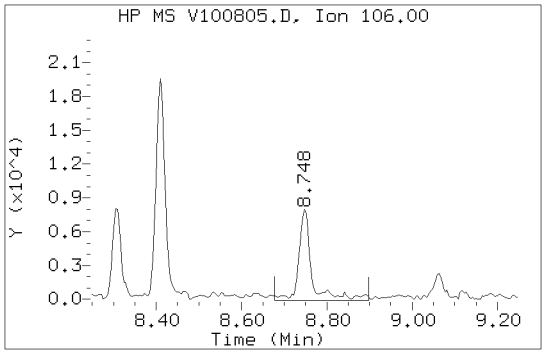
BEFORE

MASS
106
AREA
17525
HEIGHT
8105
13-Oct-2023
16:58
linh
pham



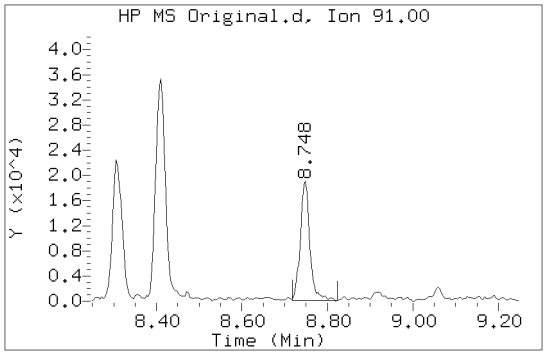
AFTER

MASS
106
AREA
17525
HEIGHT
8105
13-Oct-2023
16:58
linh
pham



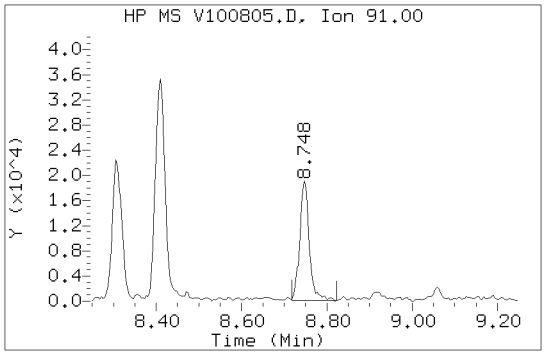
BEFORE

MASS
91
AREA
30057
HEIGHT
19029
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
30057
HEIGHT
19029
13-Oct-2023
16:58
linh
pham

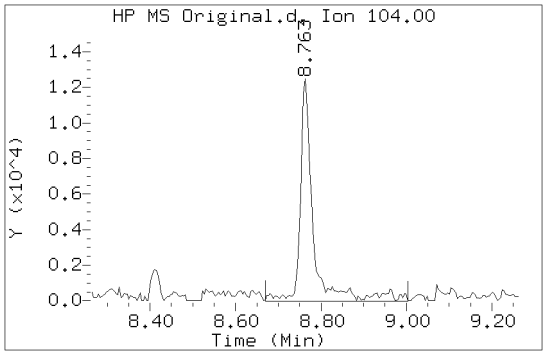


Styrene (100-42-5)

Reason Code:

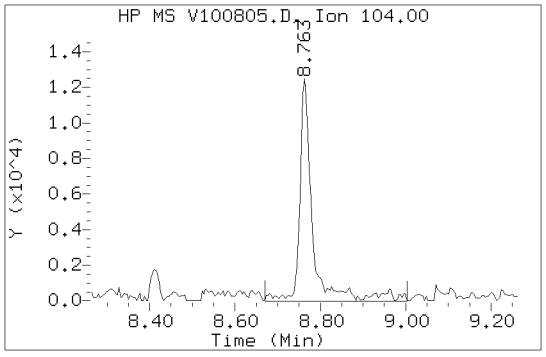
BEFORE

MASS
104
AREA
26828
HEIGHT
12493
13-Oct-2023
16:58
linh
pham



AFTER

MASS
104
AREA
26828
HEIGHT
12493
13-Oct-2023
16:58
linh
pham



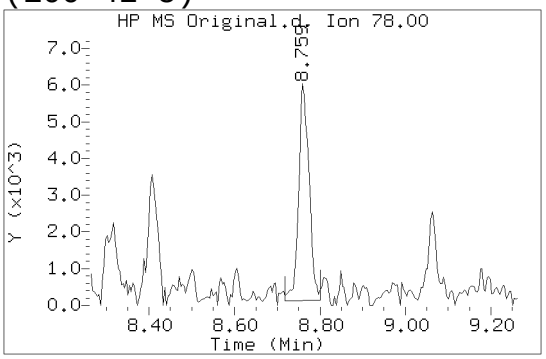
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Styrene (100-42-5)

Reason Code:

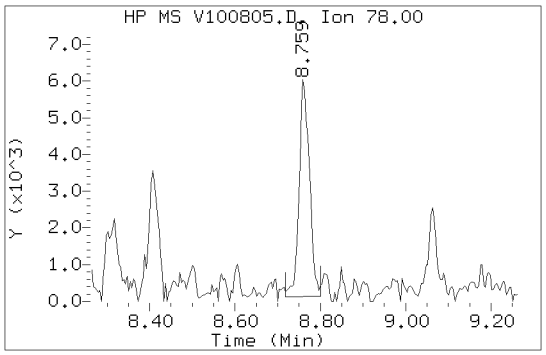
BEFORE

MASS
78
AREA
10243
HEIGHT
5909
13-Oct-2023
16:58
linh
pham



AFTER

MASS
78
AREA
10243
HEIGHT
5909
13-Oct-2023
16:58
linh
pham

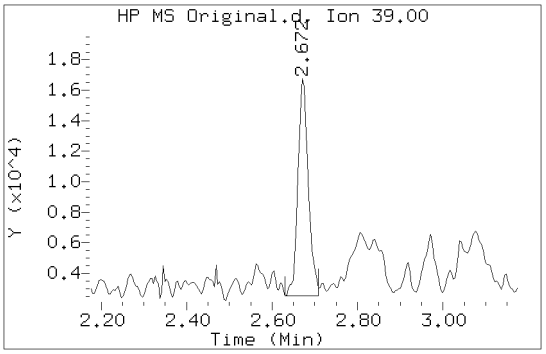


Acetonitrile (75-05-8)

Reason Code:

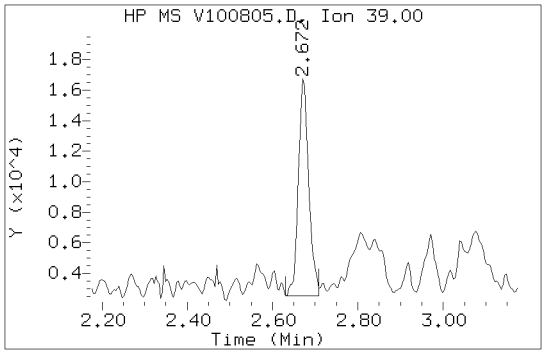
BEFORE

MASS
39
AREA
24786
HEIGHT
14242
13-Oct-2023
16:58
linh
pham



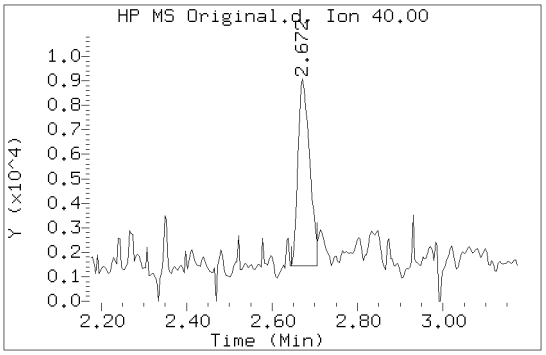
AFTER

MASS
39
AREA
24786
HEIGHT
14242
13-Oct-2023
16:58
linh
pham



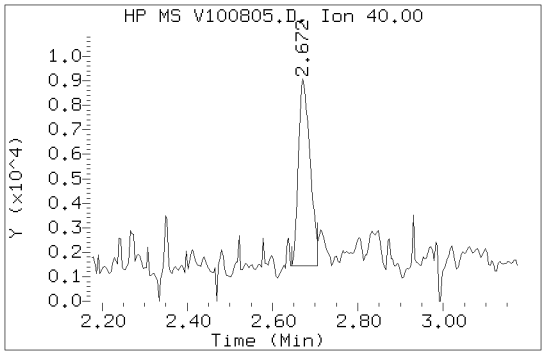
BEFORE

MASS
40
AREA
14766
HEIGHT
7634
13-Oct-2023
16:58
linh
pham



AFTER

MASS
40
AREA
14766
HEIGHT
7634
13-Oct-2023
16:58
linh
pham

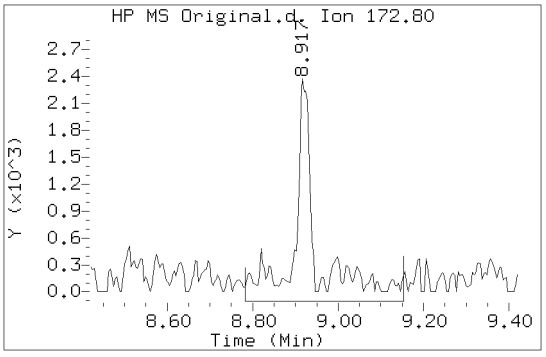


Bromoform (75-25-2)

Reason Code:

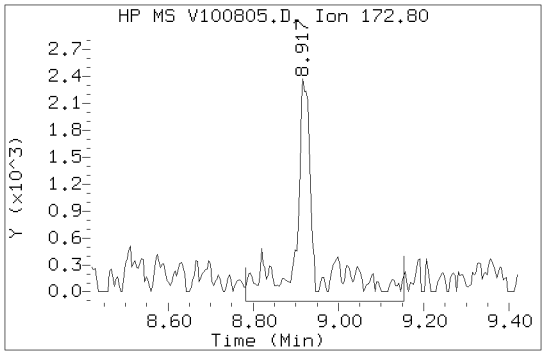
BEFORE

MASS
172.8
AREA
9089
HEIGHT
2476
13-Oct-2023
16:58
linh
pham



AFTER

MASS
172.8
AREA
9089
HEIGHT
2476
13-Oct-2023
16:58
linh
pham



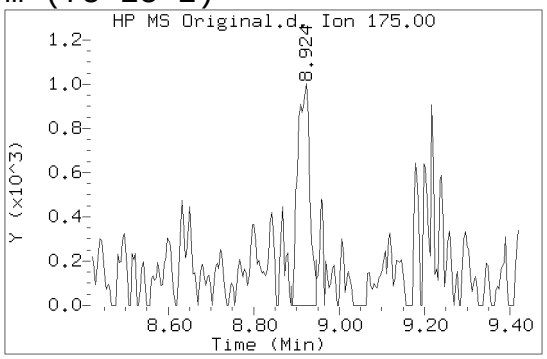
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Bromoform (75-25-2)

Reason Code:

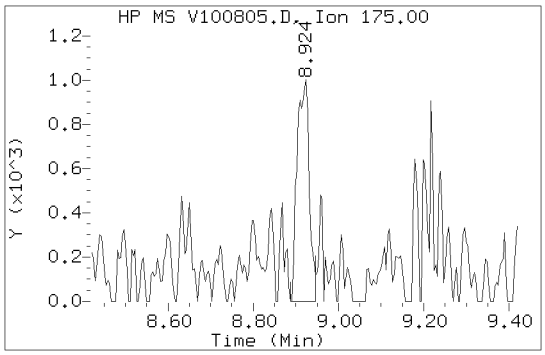
BEFORE

MASS
175
AREA
2017
HEIGHT
1002
13-Oct-2023
16:58
linh
pham



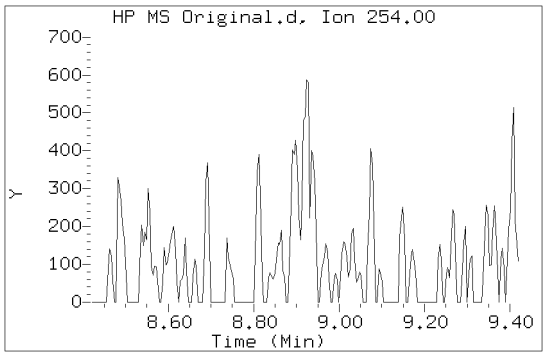
AFTER

MASS
175
AREA
2017
HEIGHT
1002
13-Oct-2023
16:58
linh
pham



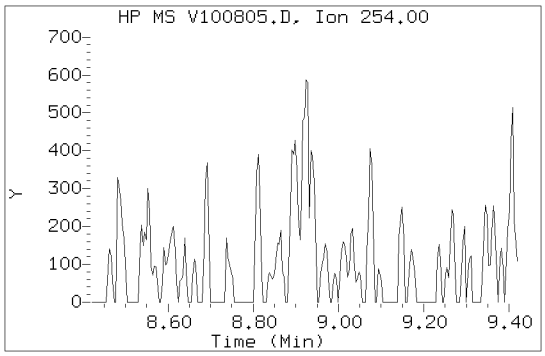
BEFORE

MASS
254
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



AFTER

MASS
254
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham

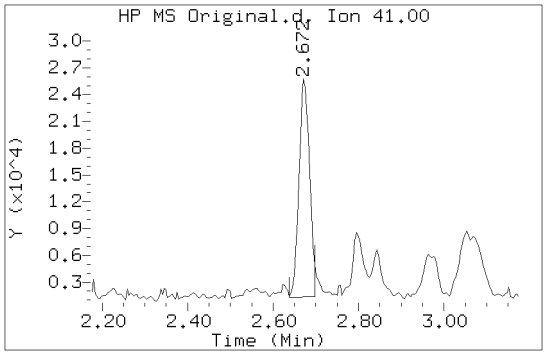


Allyl Chloride (107-05-1)

Reason Code:

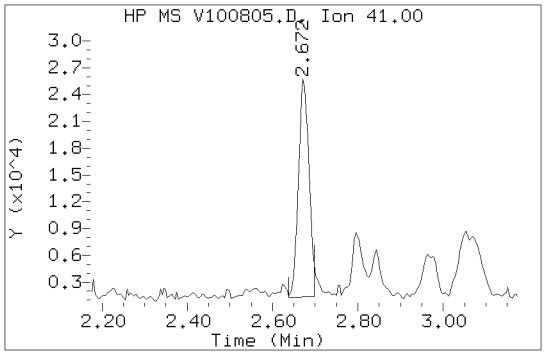
BEFORE

MASS
41
AREA
42780
HEIGHT
24382
13-Oct-2023
16:58
linh
pham



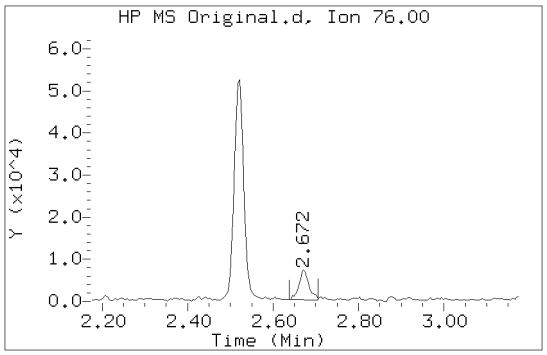
AFTER

MASS
41
AREA
42780
HEIGHT
24382
13-Oct-2023
16:58
linh
pham



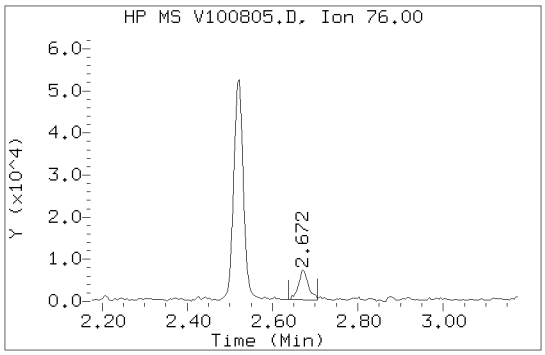
BEFORE

MASS
76
AREA
11604
HEIGHT
7026
13-Oct-2023
16:58
linh
pham



AFTER

MASS
76
AREA
11604
HEIGHT
7026
13-Oct-2023
16:58
linh
pham



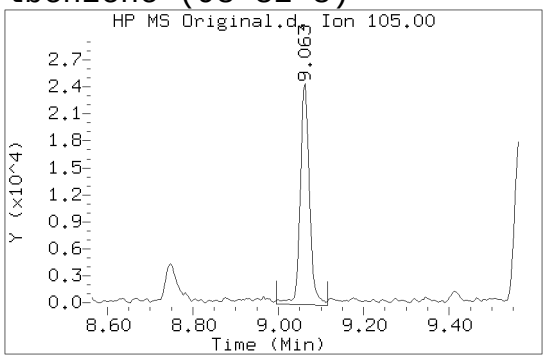
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Isopropylbenzene (98-82-8)

Reason Code:

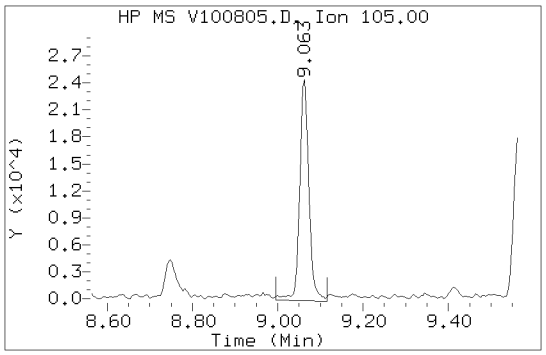
BEFORE

MASS
105
AREA
38126
HEIGHT
24556
13-Oct-2023
16:58
linh
pham



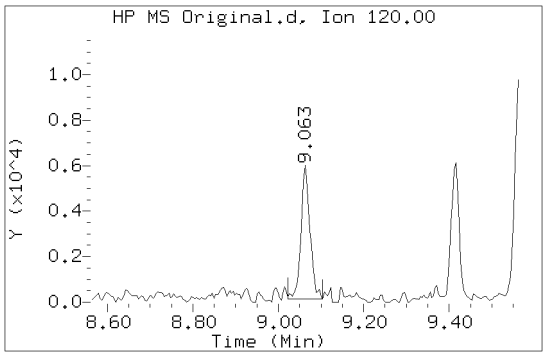
AFTER

MASS
105
AREA
38126
HEIGHT
24556
13-Oct-2023
16:58
linh
pham



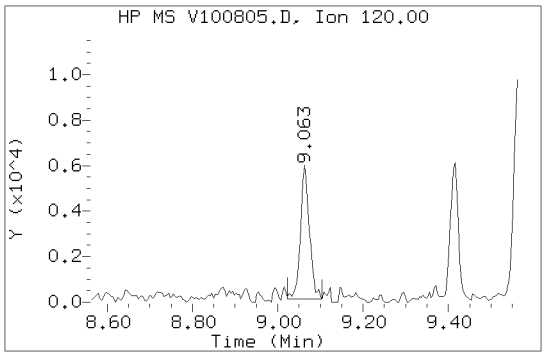
BEFORE

MASS
120
AREA
8717
HEIGHT
5864
13-Oct-2023
16:58
linh
pham



AFTER

MASS
120
AREA
8717
HEIGHT
5864
13-Oct-2023
16:58
linh
pham

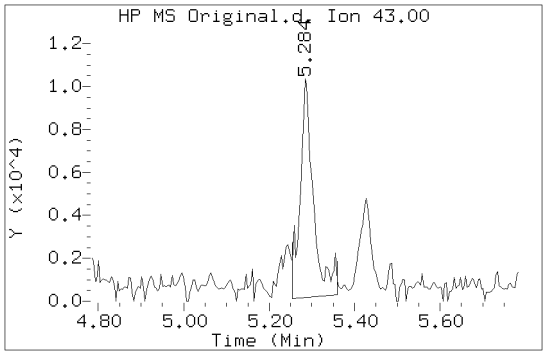


Isobutyl Alcohol (78-83-1)

Reason Code:

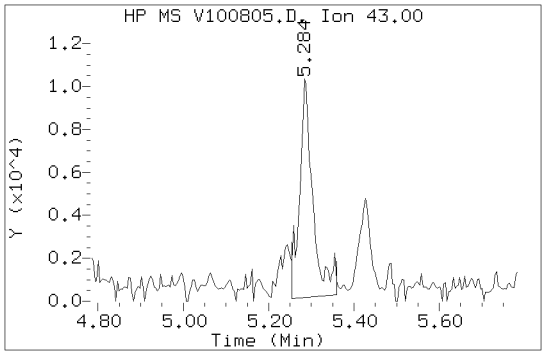
BEFORE

MASS
43
AREA
22454
HEIGHT
10192
13-Oct-2023
16:58
linh
pham



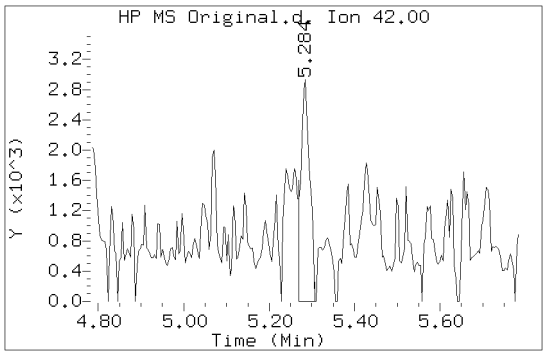
AFTER

MASS
43
AREA
22454
HEIGHT
10192
13-Oct-2023
16:58
linh
pham



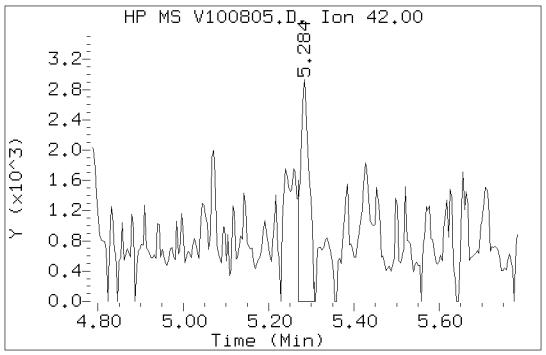
BEFORE

MASS
42
AREA
4343
HEIGHT
2930
13-Oct-2023
16:58
linh
pham



AFTER

MASS
42
AREA
4343
HEIGHT
2930
13-Oct-2023
16:58
linh
pham



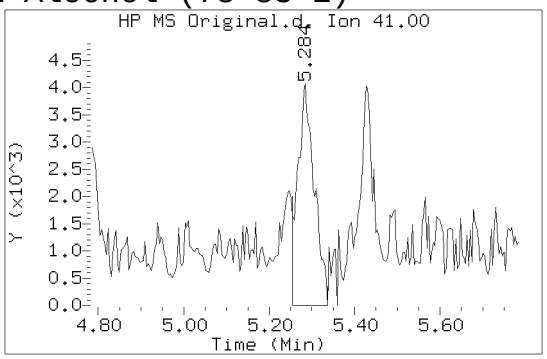
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Isobutyl Alcohol (78-83-1)

Reason Code:

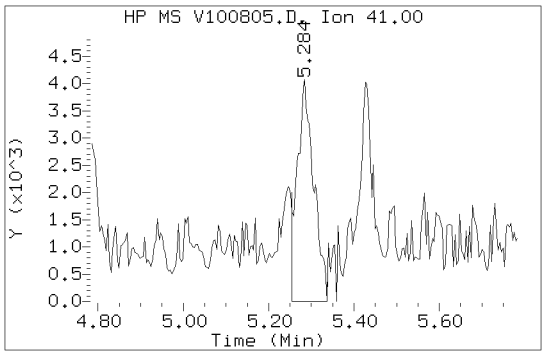
BEFORE

MASS
41
AREA
11185
HEIGHT
4072
13-Oct-2023
16:58
linh
pham



AFTER

MASS
41
AREA
11185
HEIGHT
4072
13-Oct-2023
16:58
linh
pham

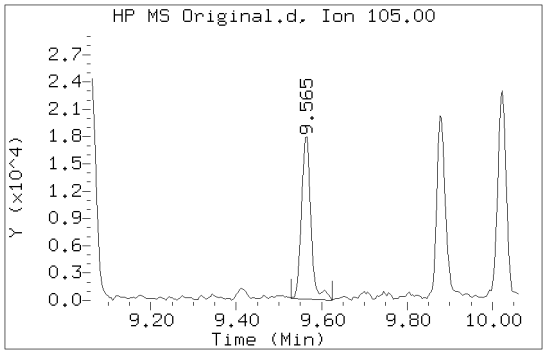


1,3,5-Trimethylbenzene (108-67-8)

Reason Code:

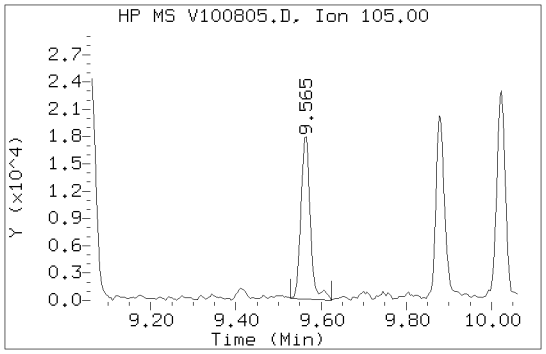
BEFORE

MASS
105
AREA
28301
HEIGHT
17820
13-Oct-2023
16:58
linh
pham



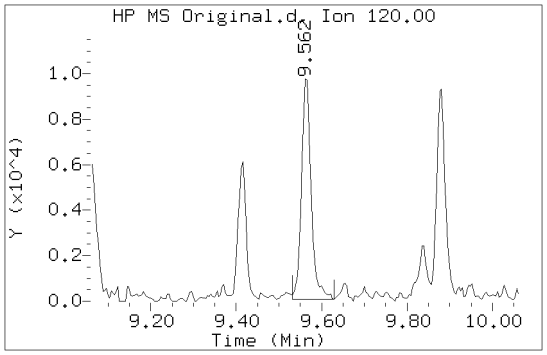
AFTER

MASS
105
AREA
28301
HEIGHT
17820
13-Oct-2023
16:58
linh
pham



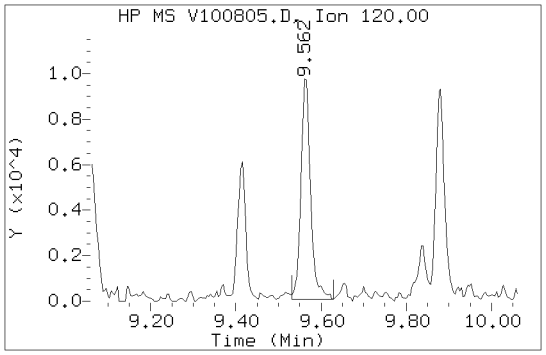
BEFORE

MASS
120
AREA
15590
HEIGHT
9672
13-Oct-2023
16:58
linh
pham



AFTER

MASS
120
AREA
15590
HEIGHT
9672
13-Oct-2023
16:58
linh
pham

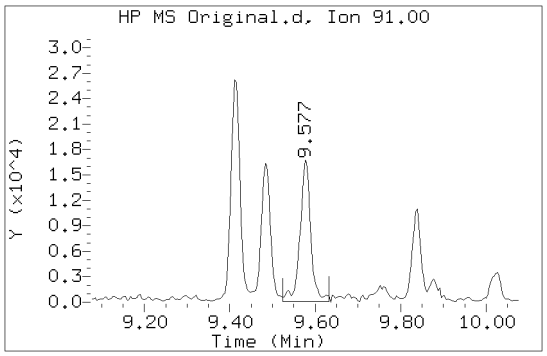


4-Chlorotoluene (106-43-4)

Reason Code:

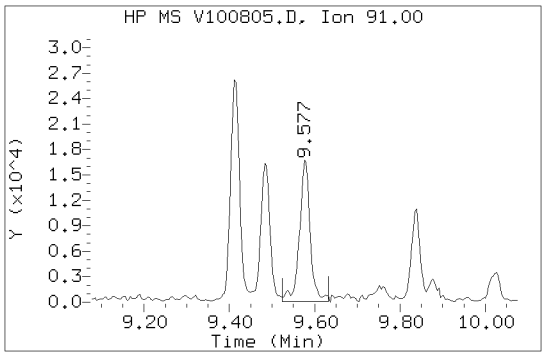
BEFORE

MASS
91
AREA
29999
HEIGHT
16698
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
29999
HEIGHT
16698
13-Oct-2023
16:58
linh
pham



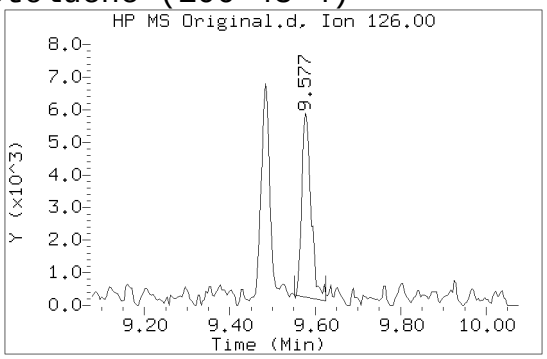
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

4-Chlorotoluene (106-43-4)

Reason Code:

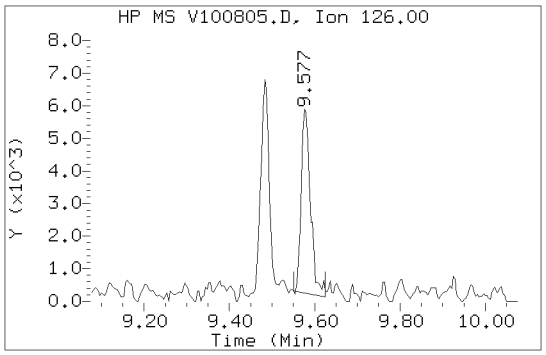
BEFORE

MASS
126
AREA
8738
HEIGHT
5653
13-Oct-2023
16:58
linh
pham



AFTER

MASS
126
AREA
8738
HEIGHT
5653
13-Oct-2023
16:58
linh
pham

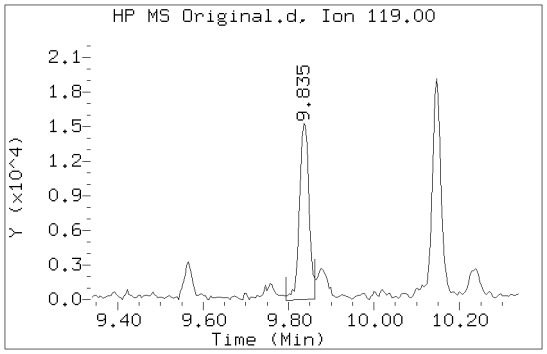


tert-Butylbenzene (98-06-6)

Reason Code:

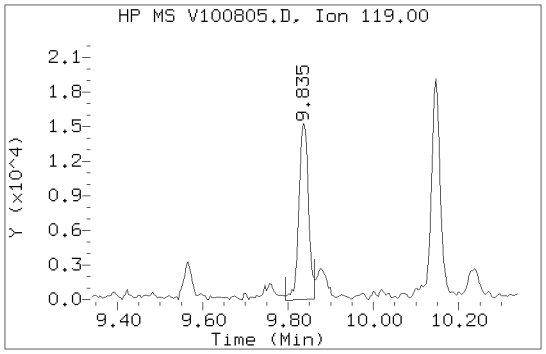
BEFORE

MASS
119
AREA
24407
HEIGHT
15225
13-Oct-2023
16:58
linh
pham



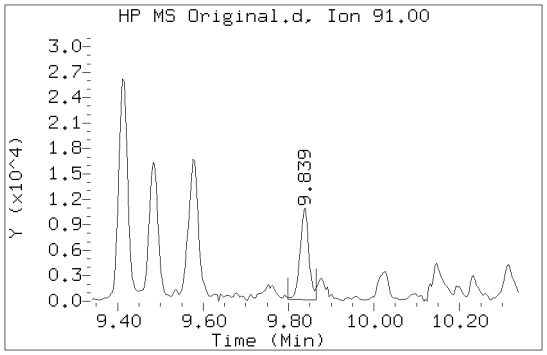
AFTER

MASS
119
AREA
24407
HEIGHT
15225
13-Oct-2023
16:58
linh
pham



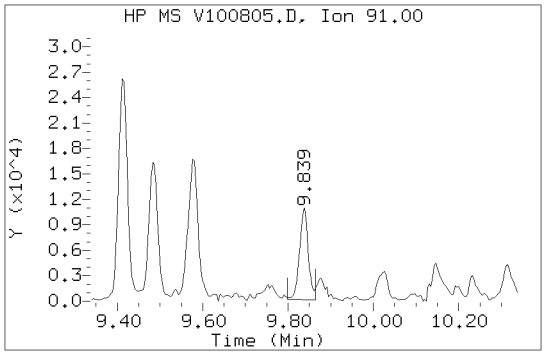
BEFORE

MASS
91
AREA
15823
HEIGHT
10806
13-Oct-2023
16:58
linh
pham



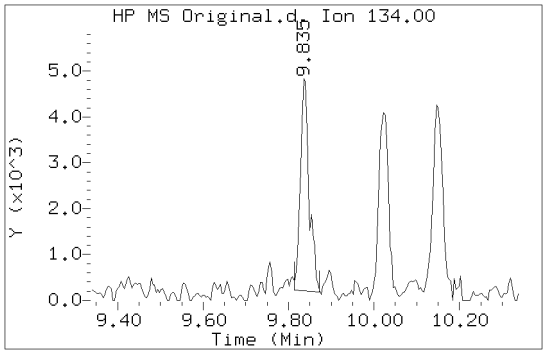
AFTER

MASS
91
AREA
15823
HEIGHT
10806
13-Oct-2023
16:58
linh
pham



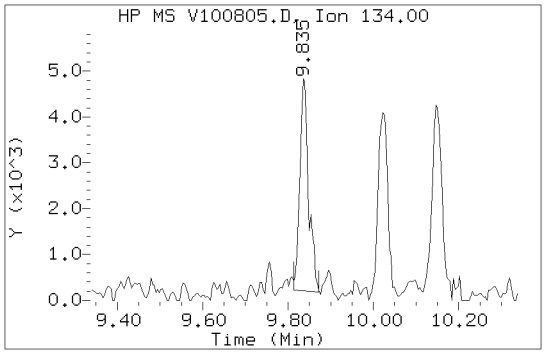
BEFORE

MASS
134
AREA
6724
HEIGHT
4629
13-Oct-2023
16:58
linh
pham



AFTER

MASS
134
AREA
6724
HEIGHT
4629
13-Oct-2023
16:58
linh
pham



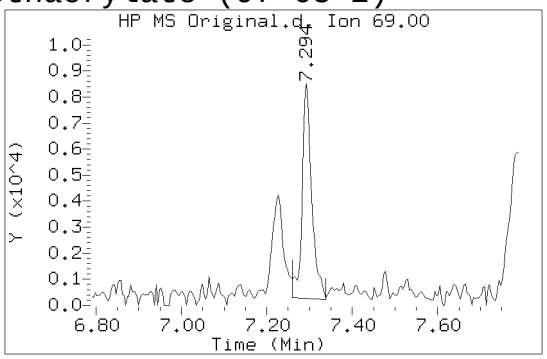
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Ethyl Methacrylate (97-63-2)

Reason Code:

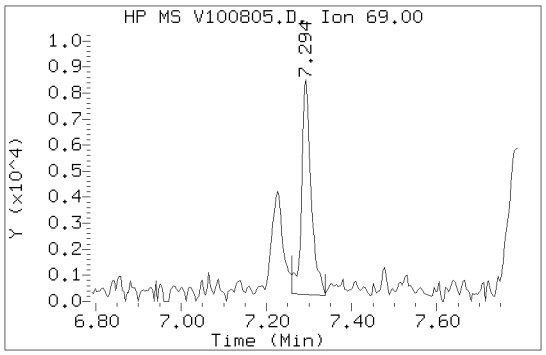
BEFORE

MASS
69
AREA
13068
HEIGHT
8247
13-Oct-2023
16:58
linh
pham



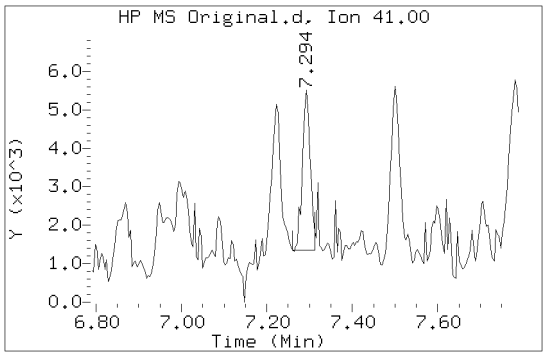
AFTER

MASS
69
AREA
13068
HEIGHT
8247
13-Oct-2023
16:58
linh
pham



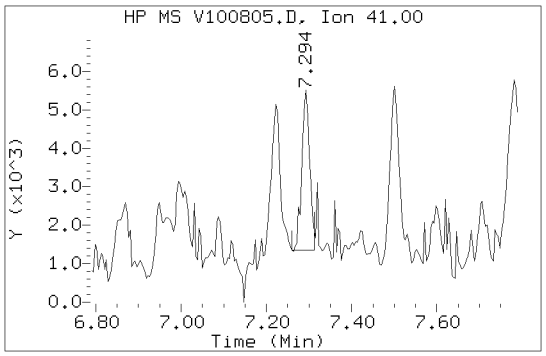
BEFORE

MASS
41
AREA
5456
HEIGHT
4161
13-Oct-2023
16:58
linh
pham



AFTER

MASS
41
AREA
5456
HEIGHT
4161
13-Oct-2023
16:58
linh
pham

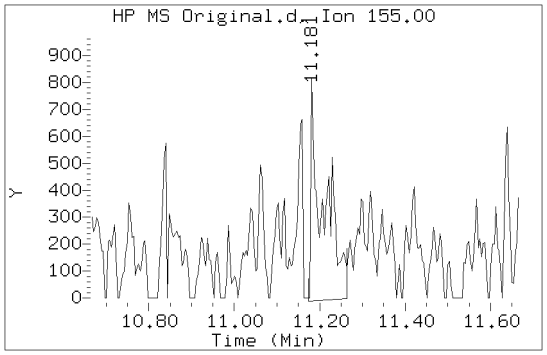


1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

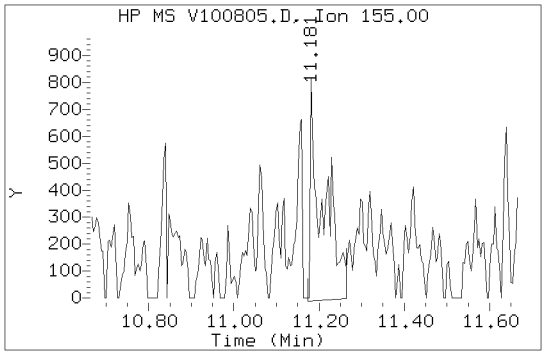
BEFORE

MASS
155
AREA
1660
HEIGHT
823
13-Oct-2023
16:58
linh
pham



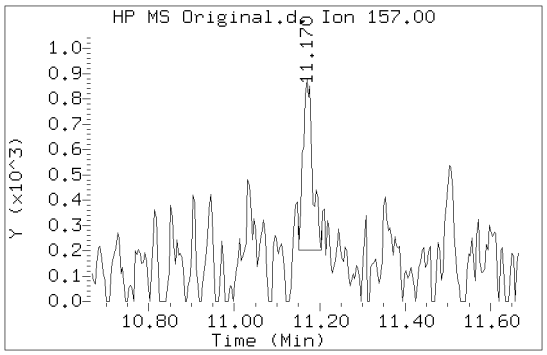
AFTER

MASS
155
AREA
1660
HEIGHT
823
13-Oct-2023
16:58
linh
pham



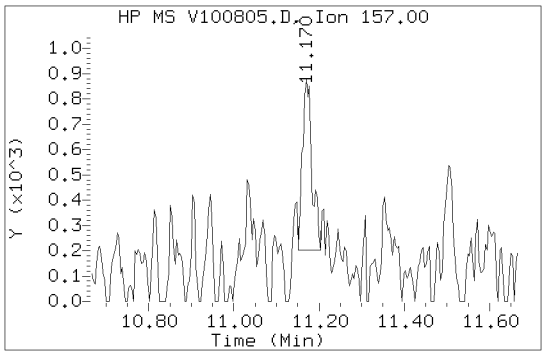
BEFORE

MASS
157
AREA
1061
HEIGHT
673
13-Oct-2023
16:58
linh
pham



AFTER

MASS
157
AREA
1061
HEIGHT
673
13-Oct-2023
16:58
linh
pham



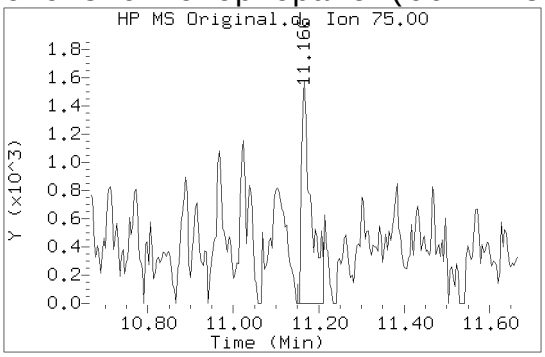
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

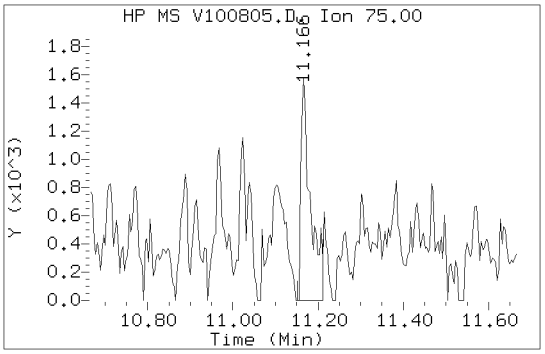
BEFORE

MASS
75
AREA
2453
HEIGHT
1571
13-Oct-2023
16:58
linh
pham



AFTER

MASS
75
AREA
2453
HEIGHT
1571
13-Oct-2023
16:58
linh
pham

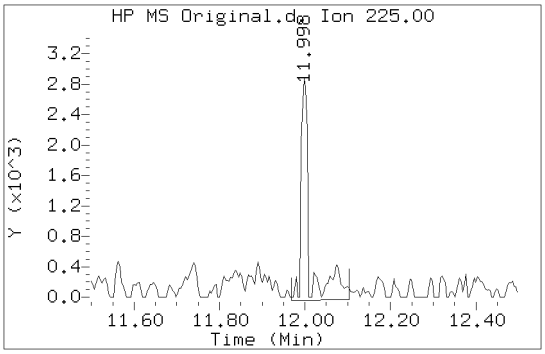


Hexachlorobutadiene (87-68-3)

Reason Code:

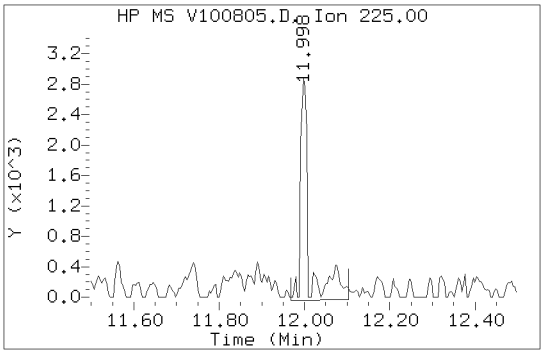
BEFORE

MASS
225
AREA
4234
HEIGHT
2911
13-Oct-2023
16:58
linh
pham



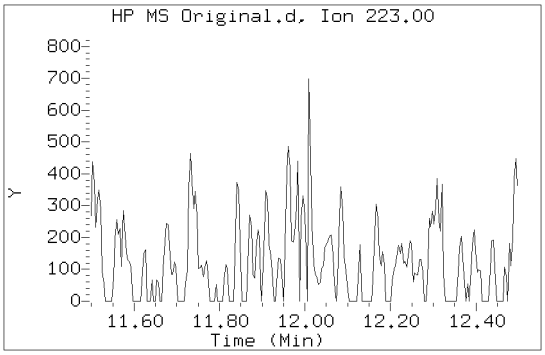
AFTER

MASS
225
AREA
4234
HEIGHT
2911
13-Oct-2023
16:58
linh
pham



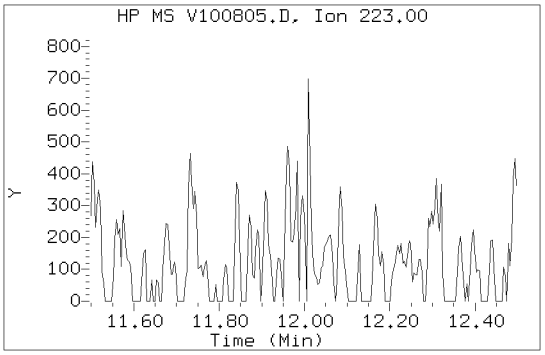
BEFORE

MASS
223
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



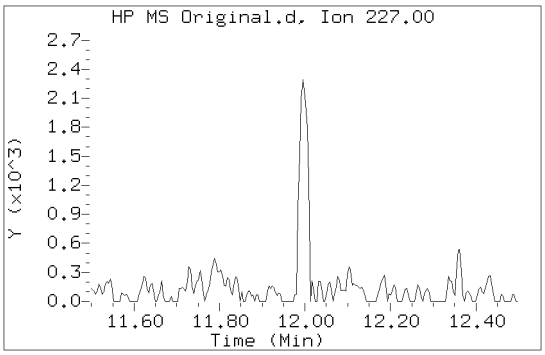
AFTER

MASS
223
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



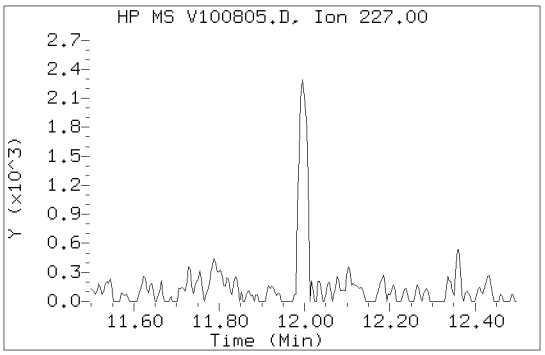
BEFORE

MASS
227
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



AFTER

MASS
227
AREA
0
HEIGHT
0
13-Oct-2023
16:58
linh
pham



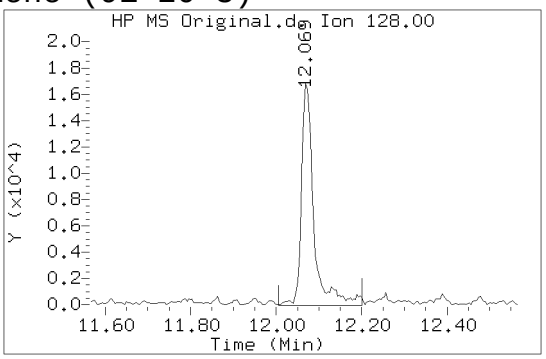
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Naphthalene (91-20-3)

Reason Code:

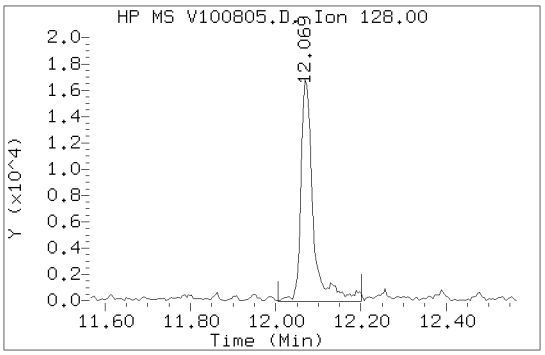
BEFORE

MASS
128
AREA
34428
HEIGHT
16839
13-Oct-2023
16:58
linh
pham



AFTER

MASS
128
AREA
34428
HEIGHT
16839
13-Oct-2023
16:58
linh
pham

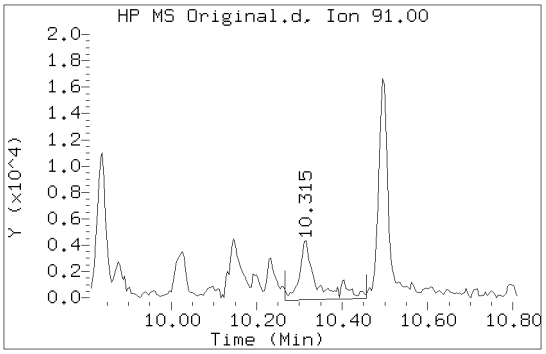


Benzyl Chloride (100-44-7)

Reason Code:

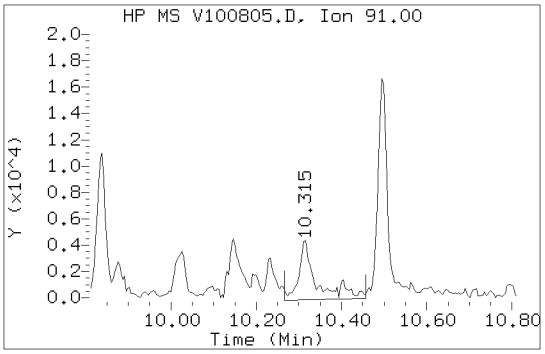
BEFORE

MASS
91
AREA
13413
HEIGHT
4479
13-Oct-2023
16:58
linh
pham



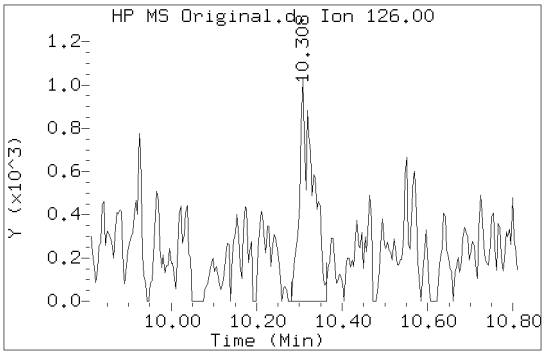
AFTER

MASS
91
AREA
13413
HEIGHT
4479
13-Oct-2023
16:58
linh
pham



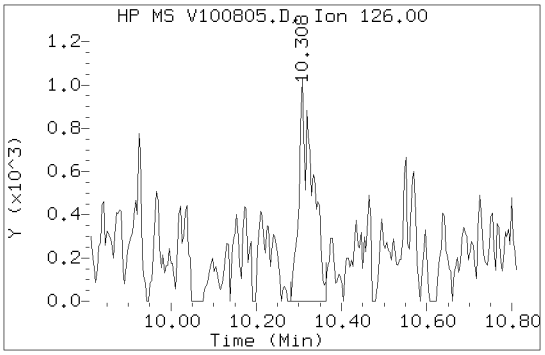
BEFORE

MASS
126
AREA
2316
HEIGHT
1028
13-Oct-2023
16:58
linh
pham



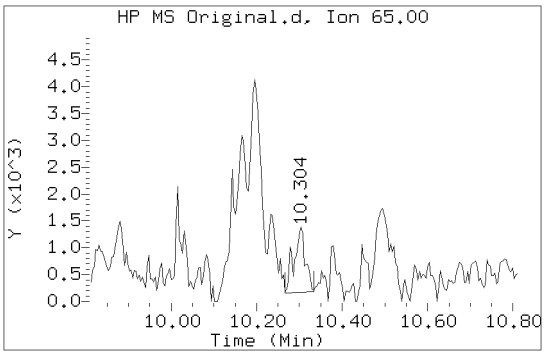
AFTER

MASS
126
AREA
2316
HEIGHT
1028
13-Oct-2023
16:58
linh
pham



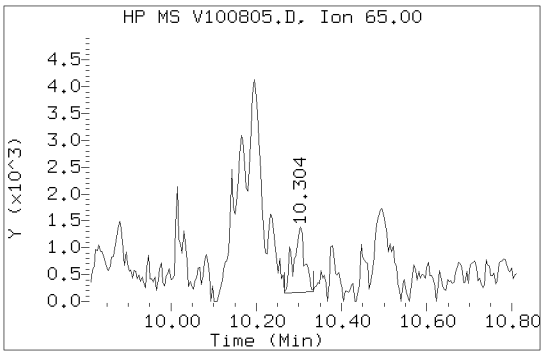
BEFORE

MASS
65
AREA
2282
HEIGHT
1220
13-Oct-2023
16:58
linh
pham



AFTER

MASS
65
AREA
2282
HEIGHT
1220
13-Oct-2023
16:58
linh
pham



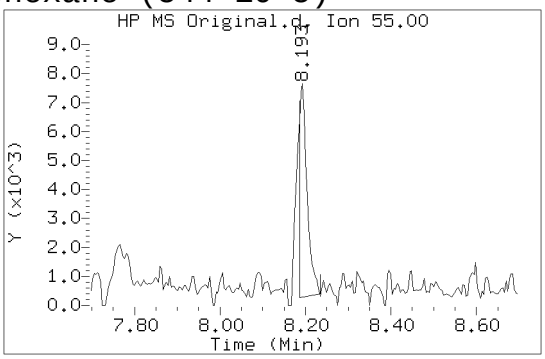
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

1-Chlorohexane (544-10-5)

Reason Code:

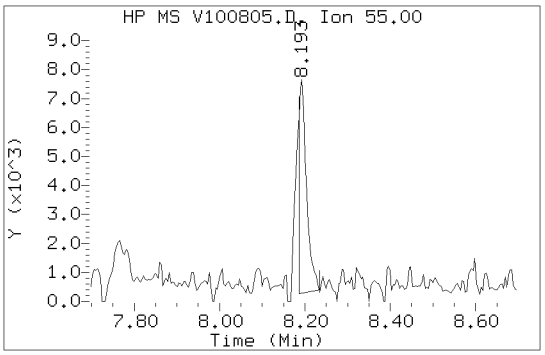
BEFORE

MASS
55
AREA
9455
HEIGHT
7365
13-Oct-2023
16:58
linh
pham



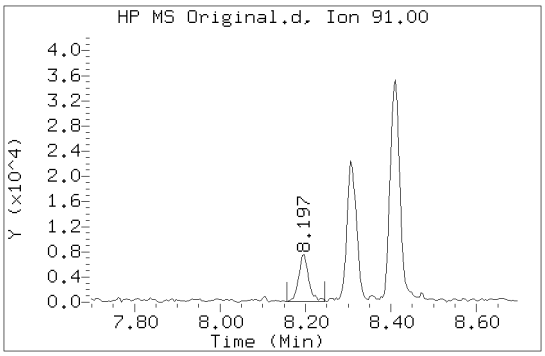
AFTER

MASS
55
AREA
9455
HEIGHT
7365
13-Oct-2023
16:58
linh
pham



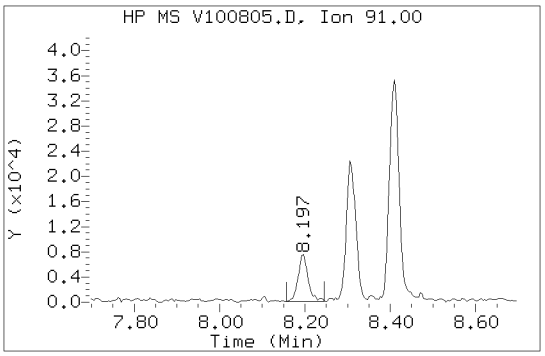
BEFORE

MASS
91
AREA
12574
HEIGHT
7491
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
12574
HEIGHT
7491
13-Oct-2023
16:58
linh
pham

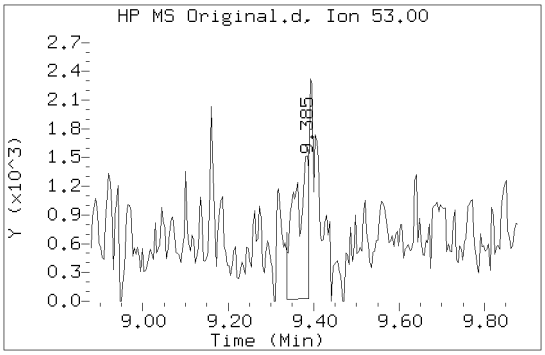


trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

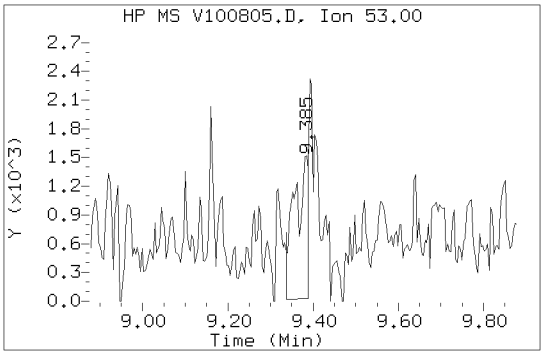
BEFORE

MASS
53
AREA
3449
HEIGHT
1486
13-Oct-2023
16:58
linh
pham



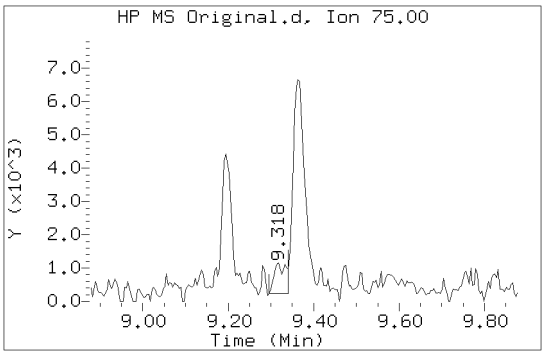
AFTER

MASS
53
AREA
3449
HEIGHT
1486
13-Oct-2023
16:58
linh
pham



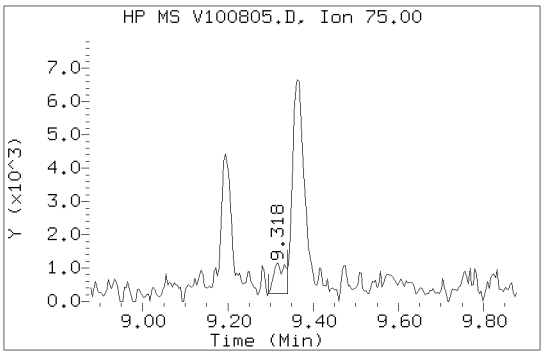
BEFORE

MASS
75
AREA
1825
HEIGHT
925
13-Oct-2023
16:58
linh
pham



AFTER

MASS
75
AREA
1825
HEIGHT
925
13-Oct-2023
16:58
linh
pham

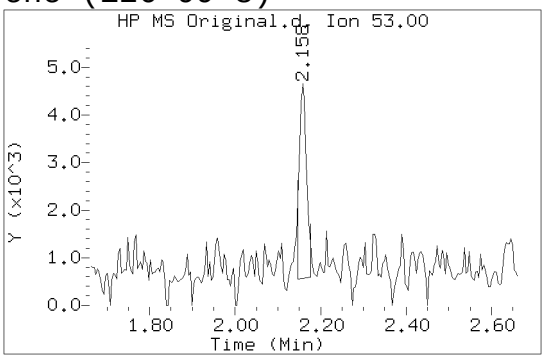


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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Chloroprene (126-99-8)

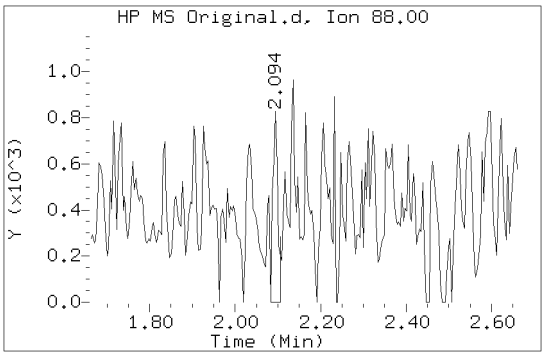
BEFORE

MASS
53
AREA
5037
HEIGHT
4090
13-Oct-2023
16:58
linh
pham



BEFORE

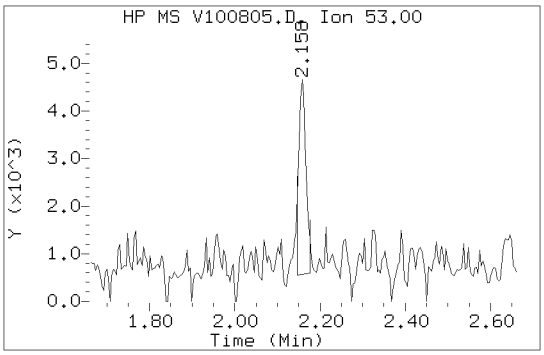
MASS
88
AREA
664
HEIGHT
827
13-Oct-2023
16:58
linh
pham



Reason Code:

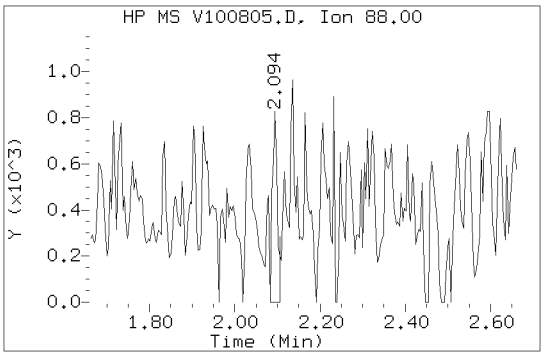
AFTER

MASS
53
AREA
5037
HEIGHT
4090
13-Oct-2023
16:58
linh
pham



AFTER

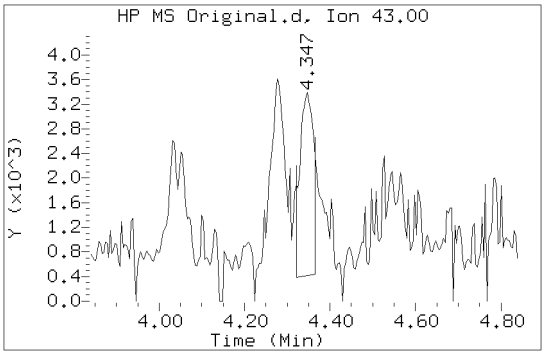
MASS
88
AREA
664
HEIGHT
827
13-Oct-2023
16:58
linh
pham



Ethyl Acetate (141-78-6)

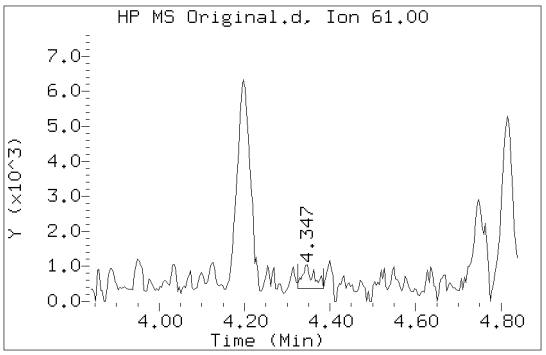
BEFORE

MASS
43
AREA
6787
HEIGHT
2978
13-Oct-2023
16:58
linh
pham



BEFORE

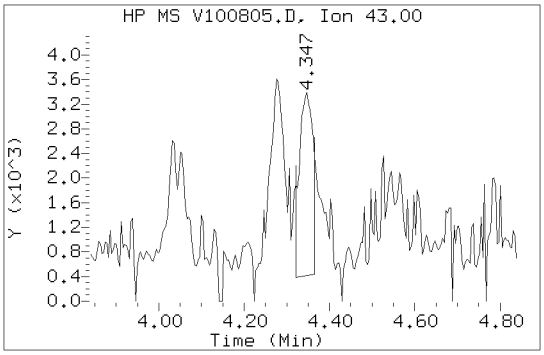
MASS
61
AREA
1264
HEIGHT
676
13-Oct-2023
16:58
linh
pham



Reason Code:

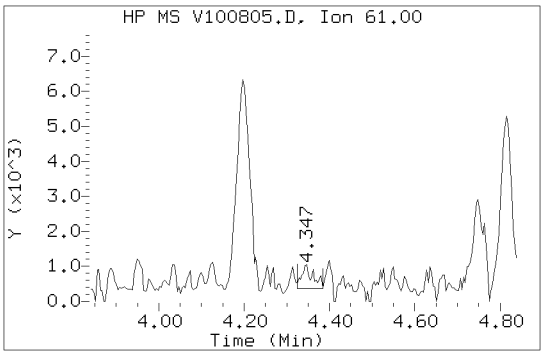
AFTER

MASS
43
AREA
6787
HEIGHT
2978
13-Oct-2023
16:58
linh
pham



AFTER

MASS
61
AREA
1264
HEIGHT
676
13-Oct-2023
16:58
linh
pham



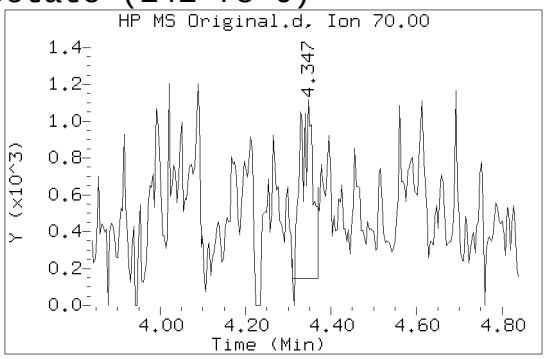
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Ethyl Acetate (141-78-6)

Reason Code:

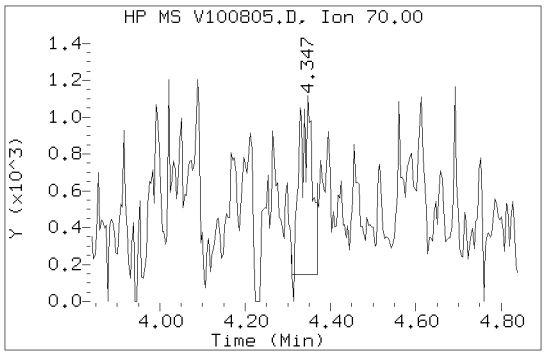
BEFORE

MASS
70
AREA
1988
HEIGHT
973
13-Oct-2023
16:58
linh
pham



AFTER

MASS
70
AREA
1988
HEIGHT
973
13-Oct-2023
16:58
linh
pham

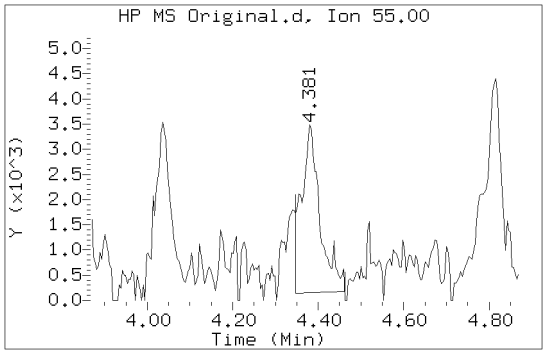


Methyl Acrylate (96-33-3)

Reason Code:

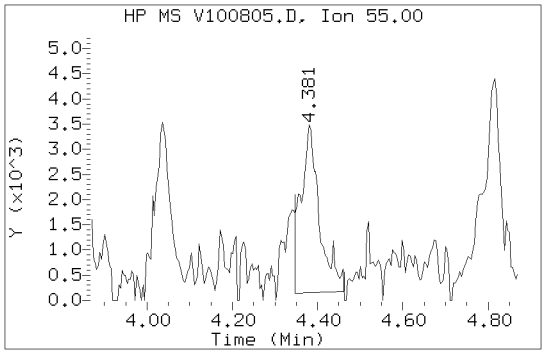
BEFORE

MASS
55
AREA
10297
HEIGHT
3342
13-Oct-2023
16:58
linh
pham



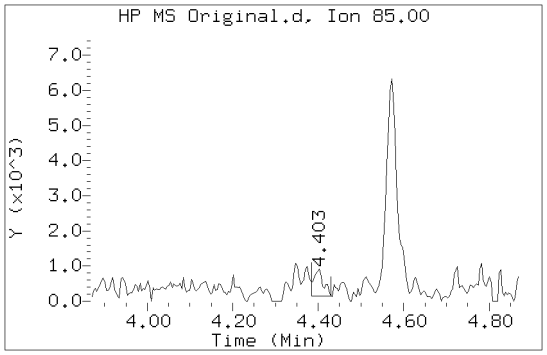
AFTER

MASS
55
AREA
10297
HEIGHT
3342
13-Oct-2023
16:58
linh
pham



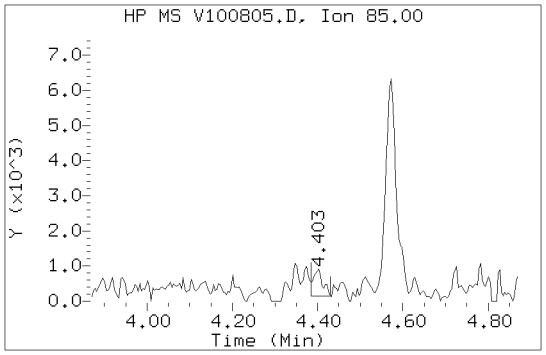
BEFORE

MASS
85
AREA
1205
HEIGHT
767
13-Oct-2023
16:58
linh
pham



AFTER

MASS
85
AREA
1205
HEIGHT
767
13-Oct-2023
16:58
linh
pham

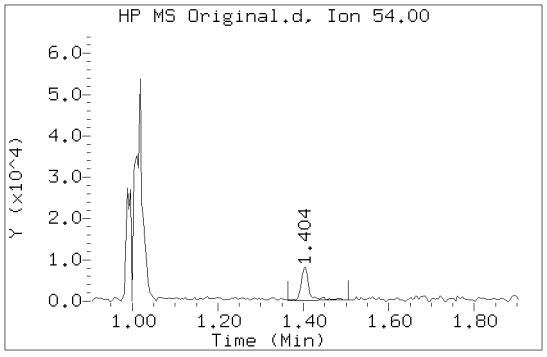


1,3-Butadiene (106-99-0)

Reason Code:

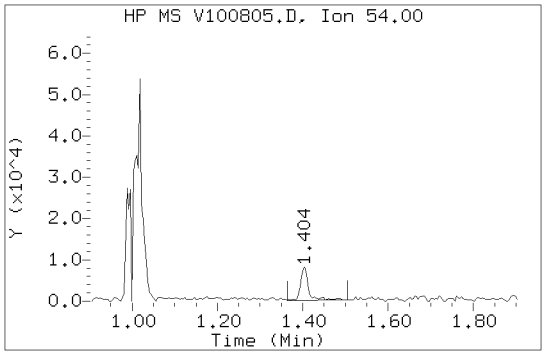
BEFORE

MASS
54
AREA
10752
HEIGHT
8000
13-Oct-2023
16:58
linh
pham



AFTER

MASS
54
AREA
10752
HEIGHT
8000
13-Oct-2023
16:58
linh
pham



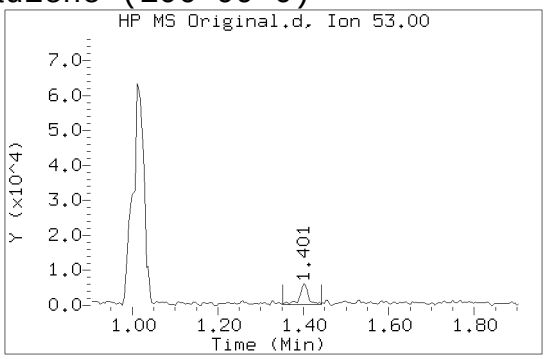
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

1,3-Butadiene (106-99-0)

Reason Code:

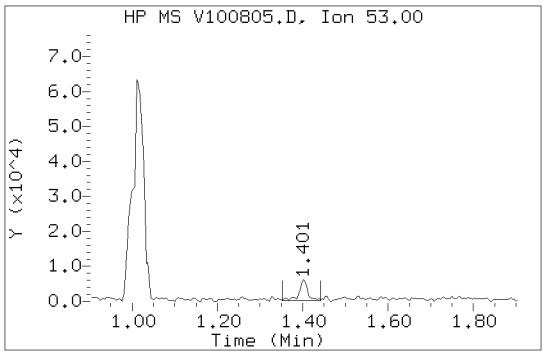
BEFORE

MASS
53
AREA
8601
HEIGHT
5949
13-Oct-2023
16:58
linh
pham



AFTER

MASS
53
AREA
8601
HEIGHT
5949
13-Oct-2023
16:58
linh
pham

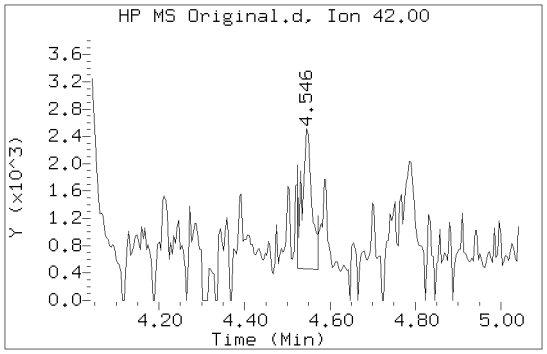


Tetrahydrofuran (109-99-9)

Reason Code:

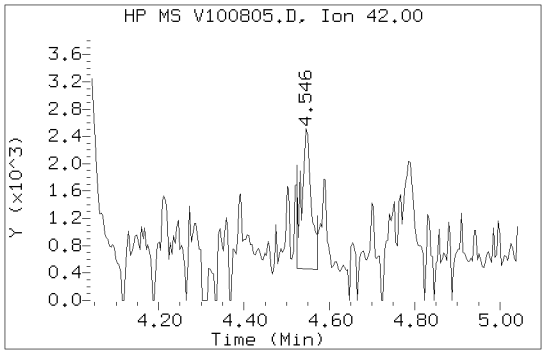
BEFORE

MASS
42
AREA
3476
HEIGHT
2049
13-Oct-2023
16:58
linh
pham



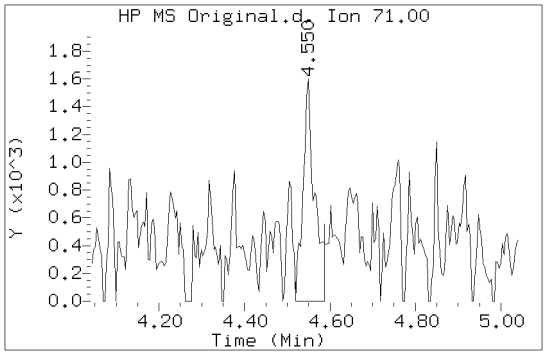
AFTER

MASS
42
AREA
3476
HEIGHT
2049
13-Oct-2023
16:58
linh
pham



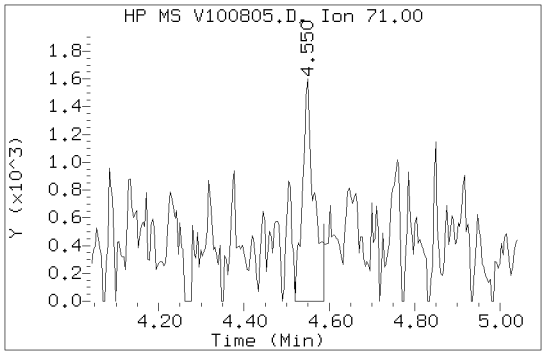
BEFORE

MASS
71
AREA
3044
HEIGHT
1600
13-Oct-2023
16:58
linh
pham



AFTER

MASS
71
AREA
3044
HEIGHT
1600
13-Oct-2023
16:58
linh
pham

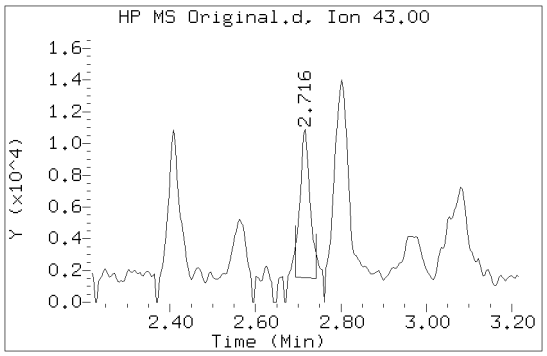


Methyl Acetate (79-20-9)

Reason Code:

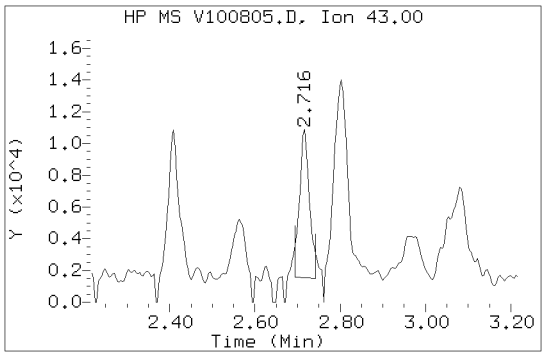
BEFORE

MASS
43
AREA
15566
HEIGHT
9356
13-Oct-2023
16:58
linh
pham



AFTER

MASS
43
AREA
15566
HEIGHT
9356
13-Oct-2023
16:58
linh
pham



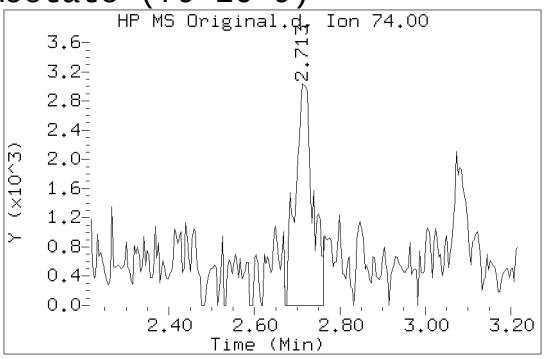
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Methyl Acetate (79-20-9)

Reason Code:

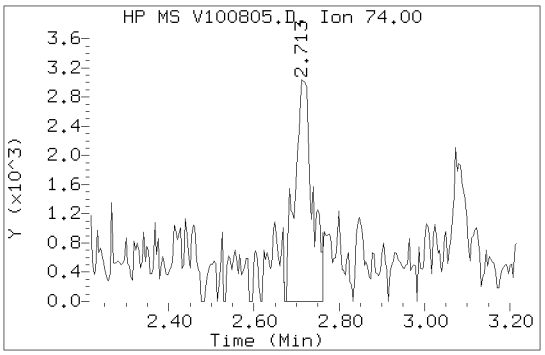
BEFORE

MASS
74
AREA
8736
HEIGHT
3038
13-Oct-2023
16:58
linh
pham



AFTER

MASS
74
AREA
8736
HEIGHT
3038
13-Oct-2023
16:58
linh
pham

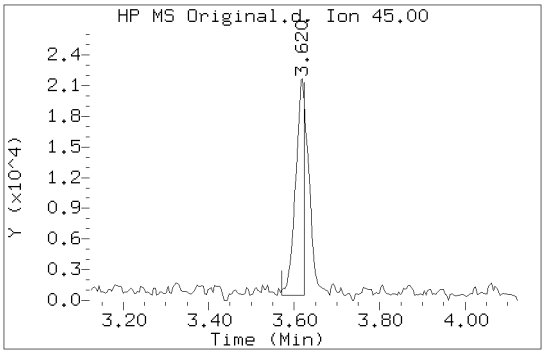


Diisopropyl ether (108-20-3)

Reason Code:

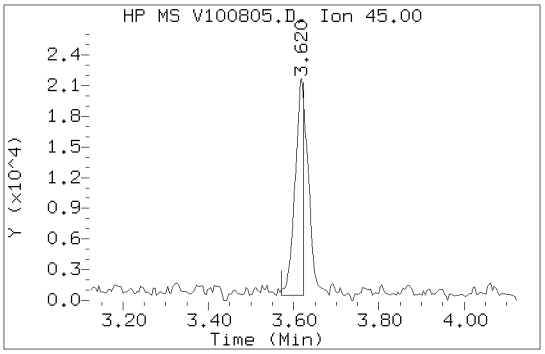
BEFORE

MASS
45
AREA
30538
HEIGHT
21174
13-Oct-2023
16:58
linh
pham



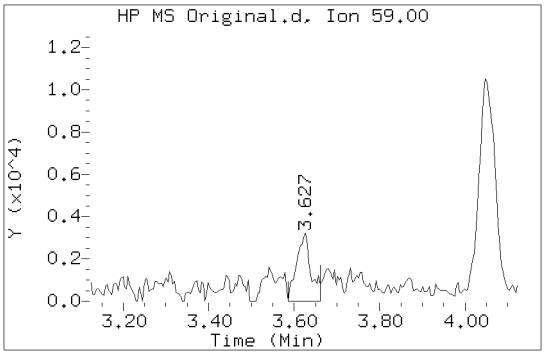
AFTER

MASS
45
AREA
30538
HEIGHT
21174
13-Oct-2023
16:58
linh
pham



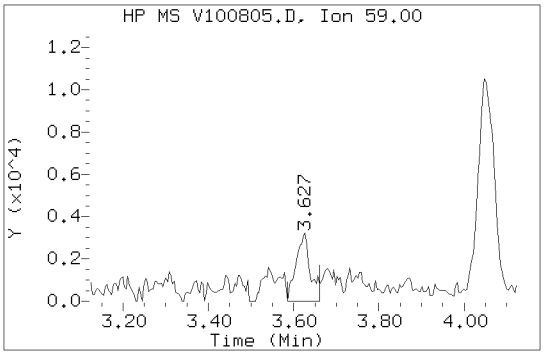
BEFORE

MASS
59
AREA
7608
HEIGHT
3233
13-Oct-2023
16:58
linh
pham



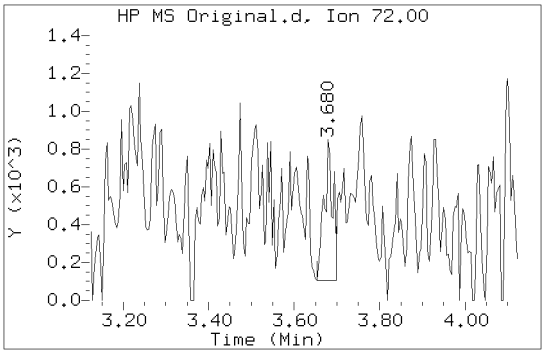
AFTER

MASS
59
AREA
7608
HEIGHT
3233
13-Oct-2023
16:58
linh
pham



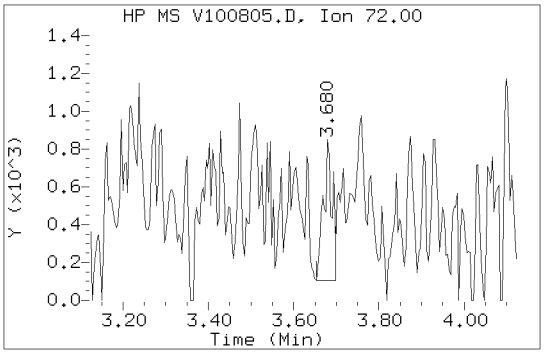
BEFORE

MASS
72
AREA
1045
HEIGHT
747
13-Oct-2023
16:58
linh
pham



AFTER

MASS
72
AREA
1045
HEIGHT
747
13-Oct-2023
16:58
linh
pham



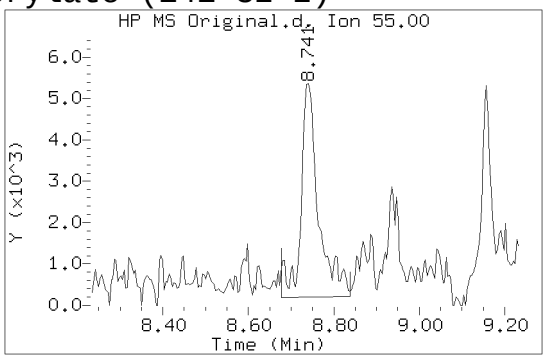
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Butyl acrylate (141-32-2)

Reason Code:

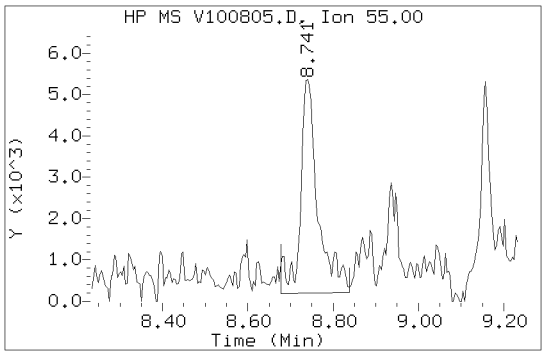
BEFORE

MASS
55
AREA
14947
HEIGHT
5160
13-Oct-2023
16:58
linh
pham



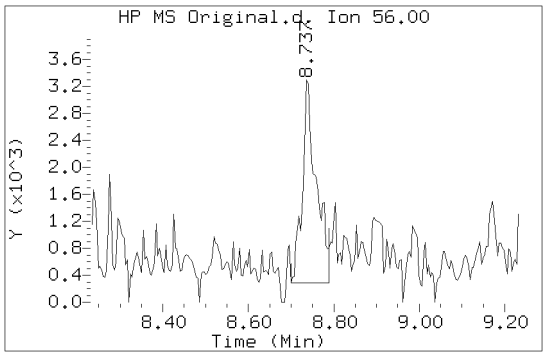
AFTER

MASS
55
AREA
14947
HEIGHT
5160
13-Oct-2023
16:58
linh
pham



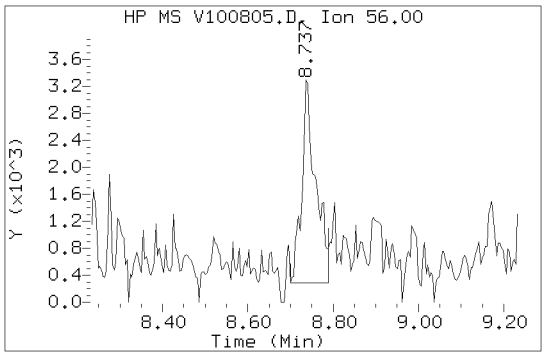
BEFORE

MASS
56
AREA
6863
HEIGHT
3009
13-Oct-2023
16:58
linh
pham



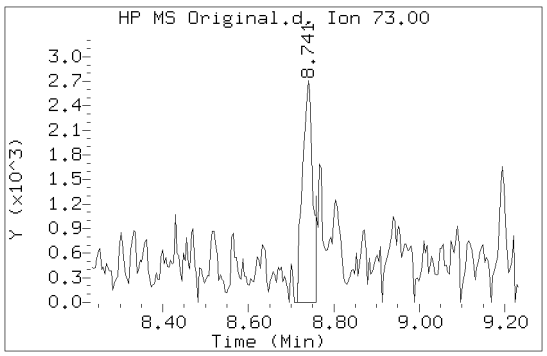
AFTER

MASS
56
AREA
6863
HEIGHT
3009
13-Oct-2023
16:58
linh
pham



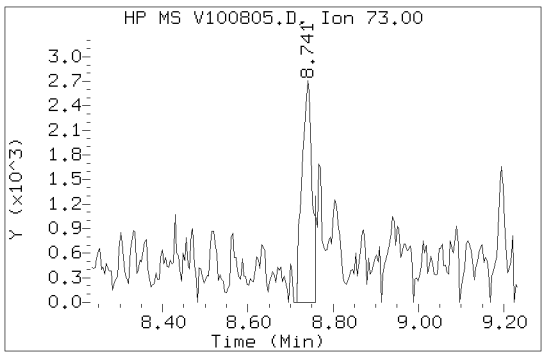
BEFORE

MASS
73
AREA
4555
HEIGHT
2707
13-Oct-2023
16:58
linh
pham



AFTER

MASS
73
AREA
4555
HEIGHT
2707
13-Oct-2023
16:58
linh
pham

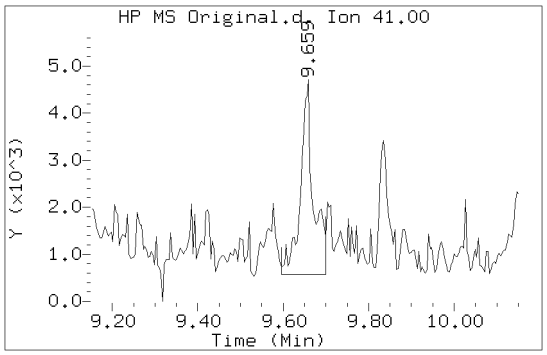


Butyl methacrylate (97-88-1)

Reason Code:

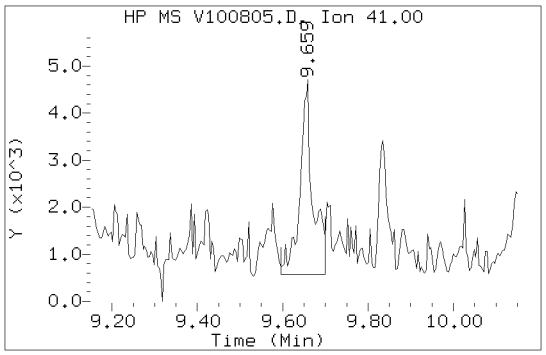
BEFORE

MASS
41
AREA
8849
HEIGHT
4135
13-Oct-2023
16:58
linh
pham



AFTER

MASS
41
AREA
8849
HEIGHT
4135
13-Oct-2023
16:58
linh
pham



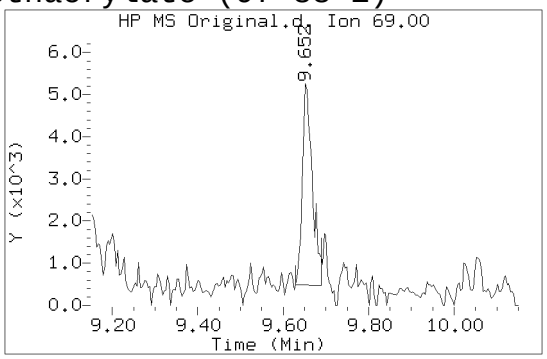
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Butyl methacrylate (97-88-1)

Reason Code:

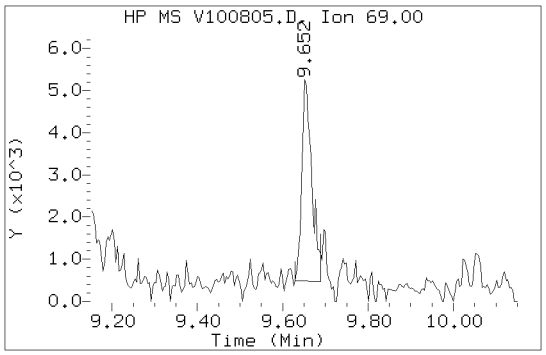
BEFORE

MASS
69
AREA
7941
HEIGHT
4784
13-Oct-2023
16:58
linh
pham



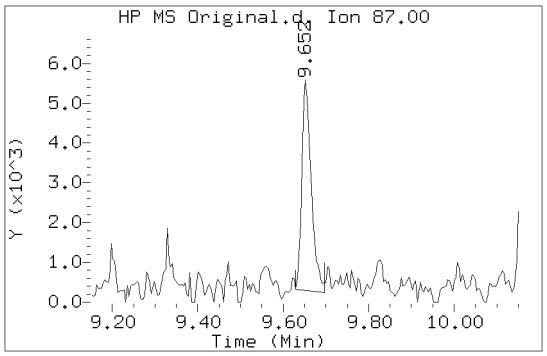
AFTER

MASS
69
AREA
7941
HEIGHT
4784
13-Oct-2023
16:58
linh
pham



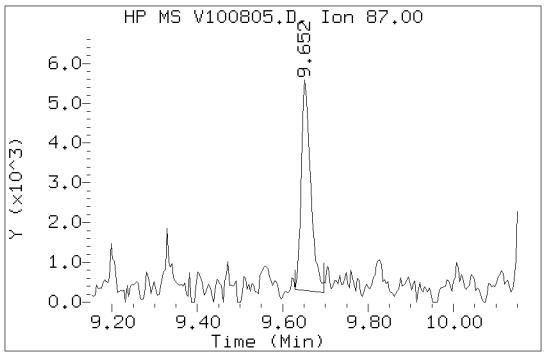
BEFORE

MASS
87
AREA
8275
HEIGHT
5288
13-Oct-2023
16:58
linh
pham



AFTER

MASS
87
AREA
8275
HEIGHT
5288
13-Oct-2023
16:58
linh
pham

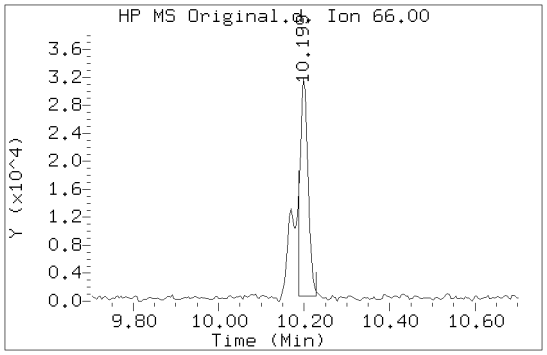


Dicyclopentadiene (77-73-6)

Reason Code:

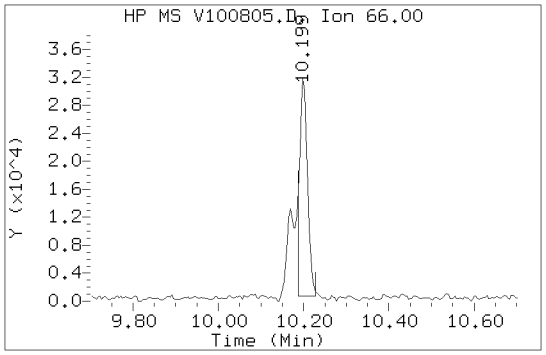
BEFORE

MASS
66
AREA
41157
HEIGHT
31089
13-Oct-2023
16:58
linh
pham



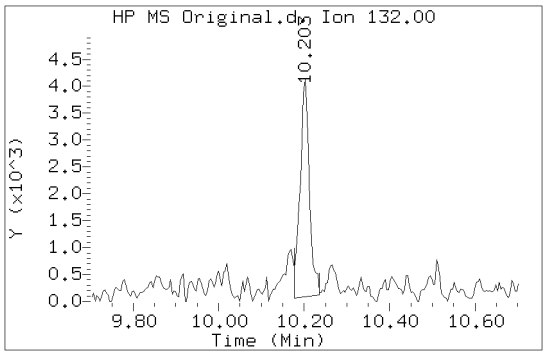
AFTER

MASS
66
AREA
41157
HEIGHT
31089
13-Oct-2023
16:58
linh
pham



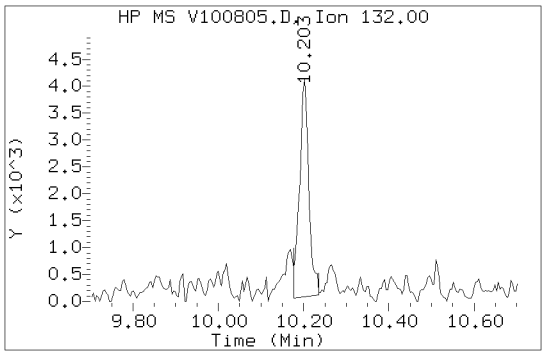
BEFORE

MASS
132
AREA
6330
HEIGHT
4039
13-Oct-2023
16:58
linh
pham



AFTER

MASS
132
AREA
6330
HEIGHT
4039
13-Oct-2023
16:58
linh
pham



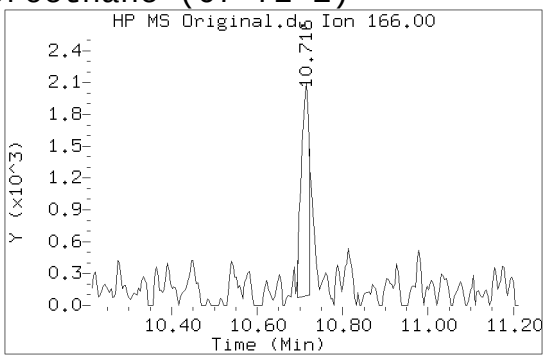
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100805.D
Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Hexachloroethane (67-72-1)

Reason Code:

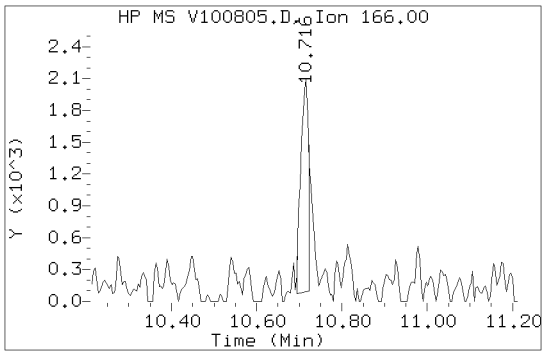
BEFORE

MASS
166
AREA
2664
HEIGHT
1997
13-Oct-2023
16:58
linh
pham



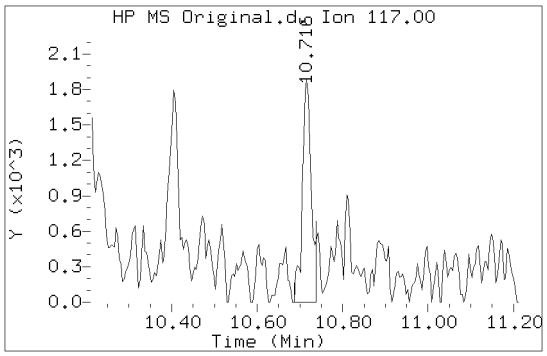
AFTER

MASS
166
AREA
2664
HEIGHT
1997
13-Oct-2023
16:58
linh
pham



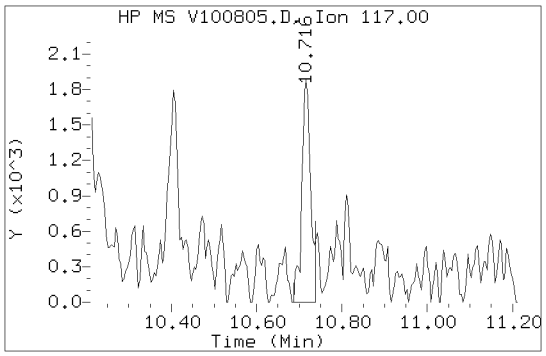
BEFORE

MASS
117
AREA
2834
HEIGHT
1881
13-Oct-2023
16:58
linh
pham



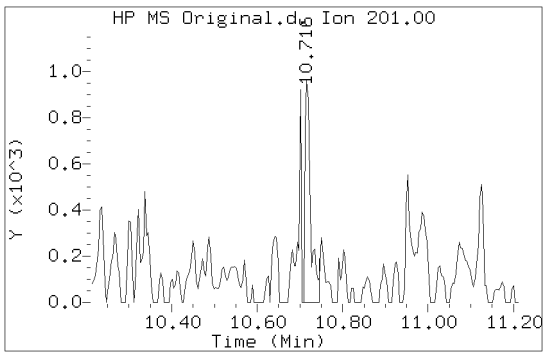
AFTER

MASS
117
AREA
2834
HEIGHT
1881
13-Oct-2023
16:58
linh
pham



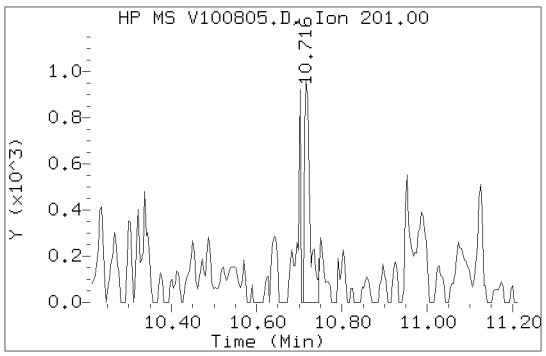
BEFORE

MASS
201
AREA
915
HEIGHT
961
13-Oct-2023
16:58
linh
pham



AFTER

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13-Oct-2023
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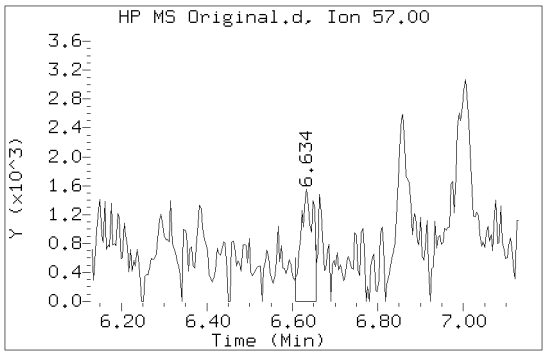


Epichlorohydrin (106-89-8)

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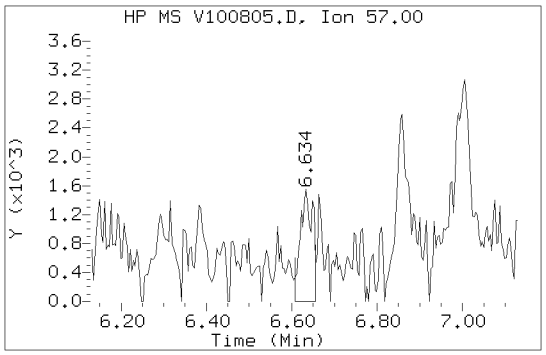
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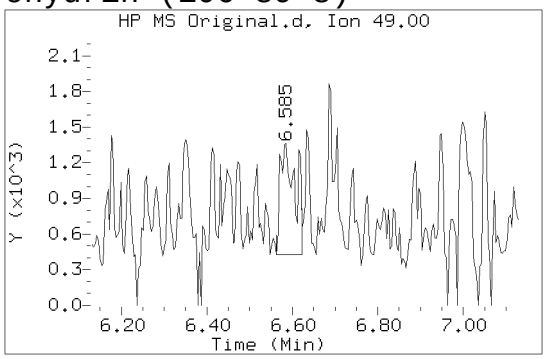
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Epichlorohydrin (106-89-8)

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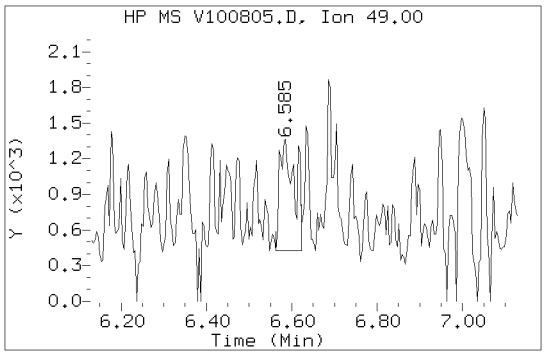
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AFTER

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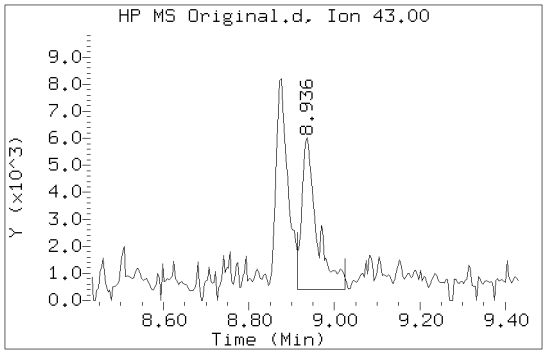


n-Amyl acetate (628-63-7)

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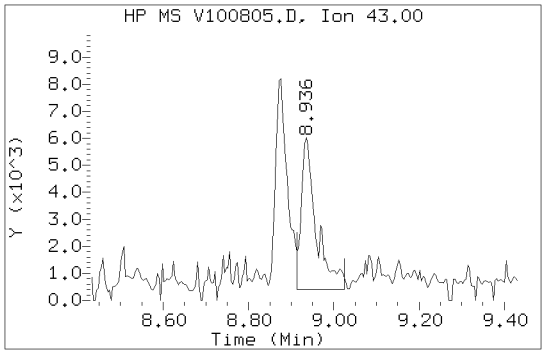
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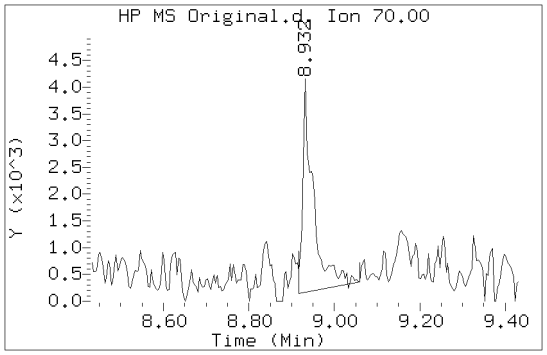
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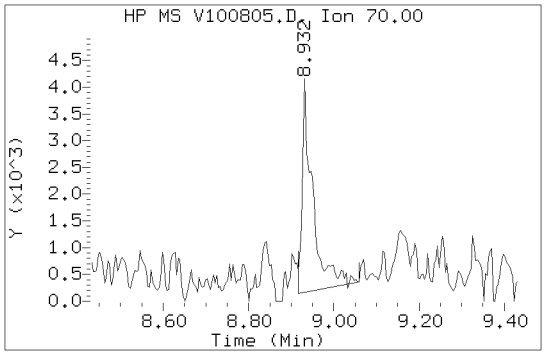
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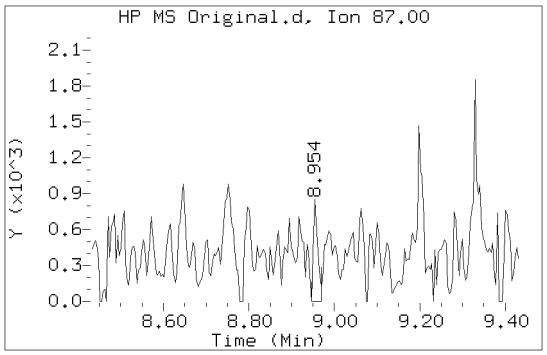
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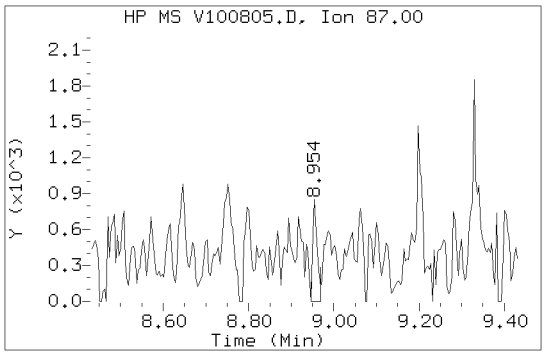
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AFTER

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13-Oct-2023
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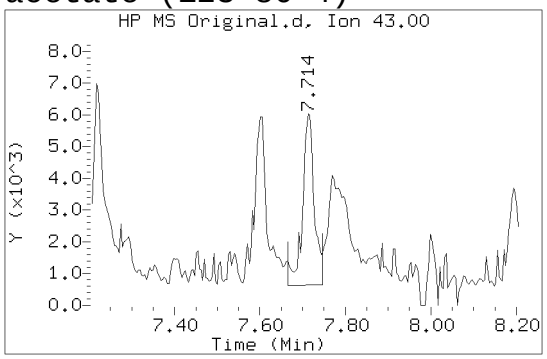
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

n-Butyl acetate (123-86-4)

Reason Code:

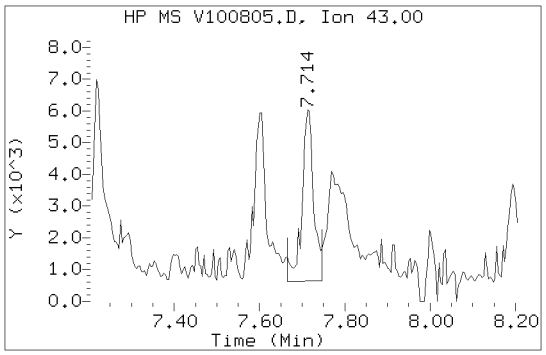
BEFORE

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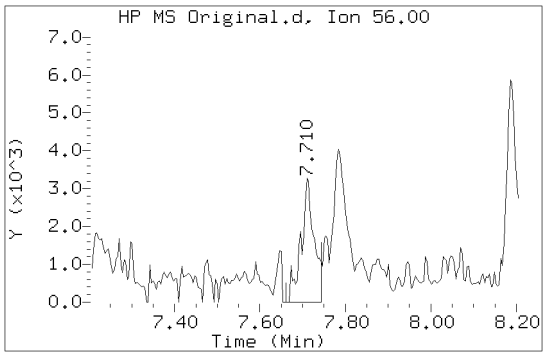
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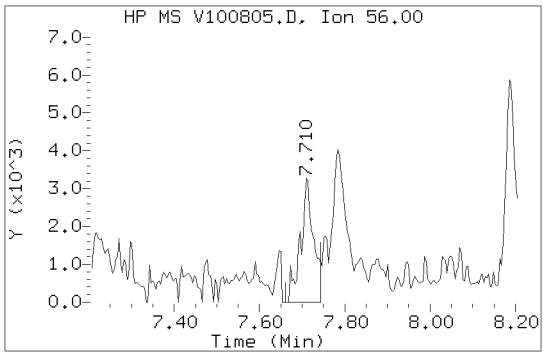
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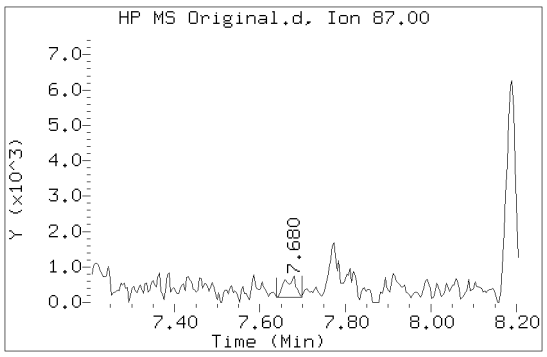
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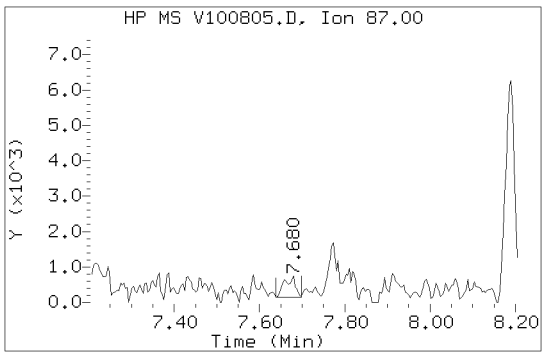
BEFORE

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587
13-Oct-2023
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AFTER

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13-Oct-2023
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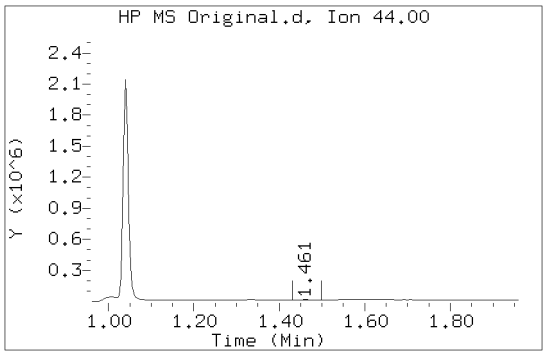


Acetaldehyde (75-07-0)

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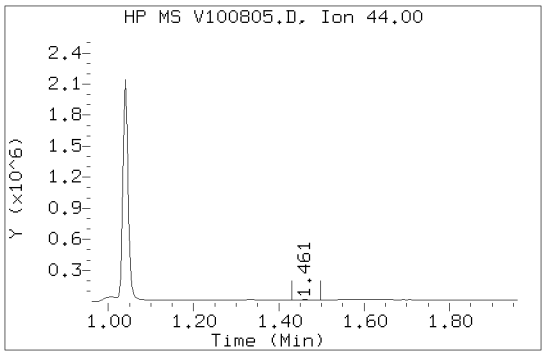
BEFORE

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4801
13-Oct-2023
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AFTER

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4801
13-Oct-2023
16:58
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pham



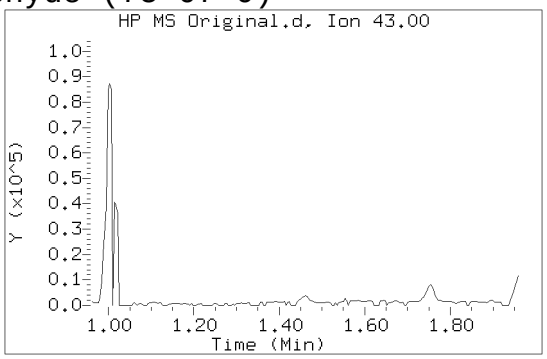
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Acetaldehyde (75-07-0)

Reason Code:

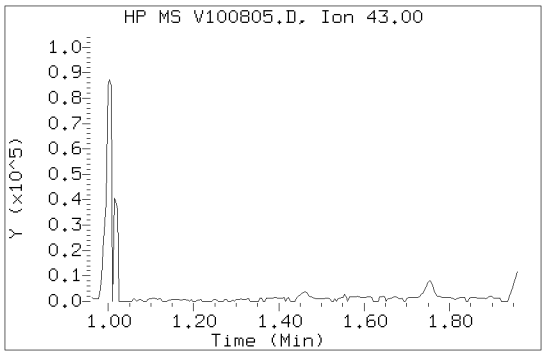
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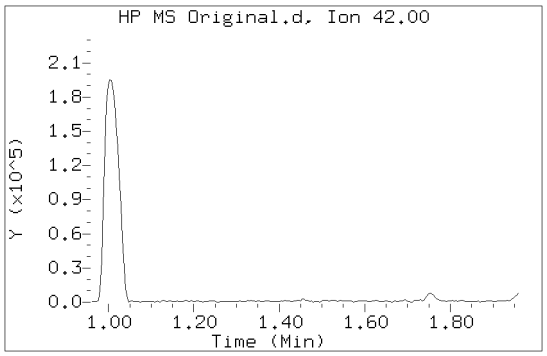
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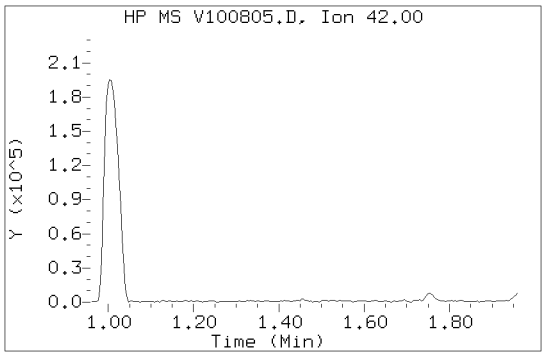
BEFORE

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13-Oct-2023
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AFTER

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13-Oct-2023
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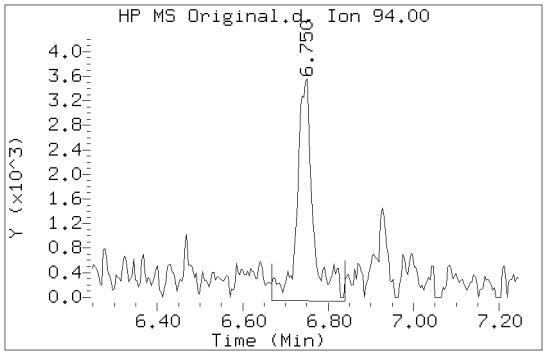


Dimethyl Disulfide (624-92-0)

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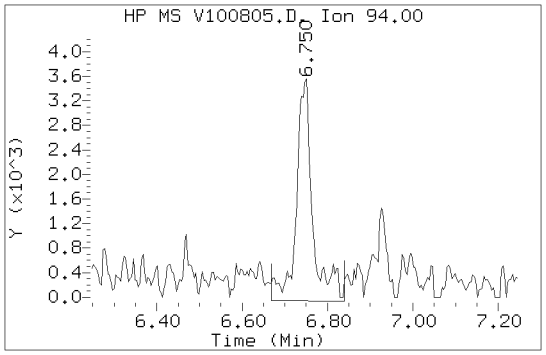
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16:58
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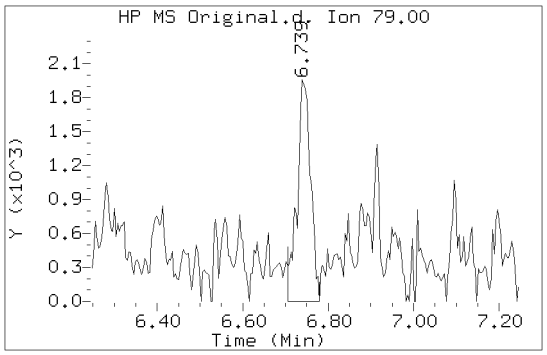
AFTER

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HEIGHT
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13-Oct-2023
16:58
linh
pham



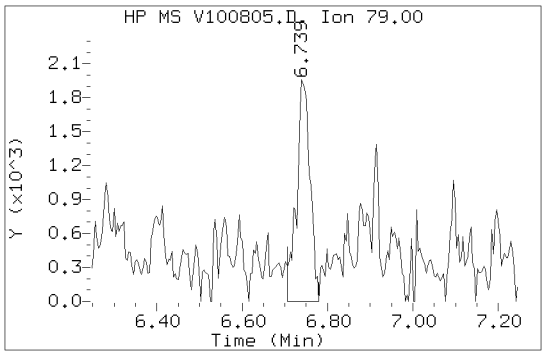
BEFORE

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13-Oct-2023
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AFTER

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HEIGHT
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linh
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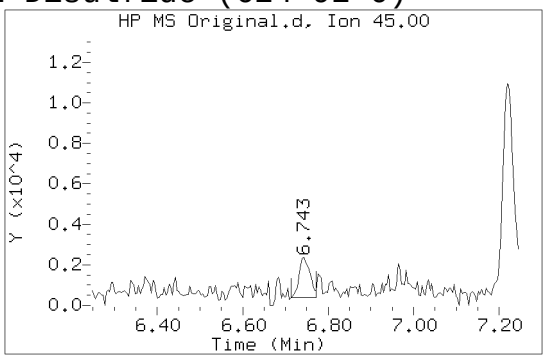
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Inj Date : 08-OCT-2023 15:19
InstruID : VOA9.i
LabSampID : VSTD002

Dimethyl Disulfide (624-92-0)

Reason Code:

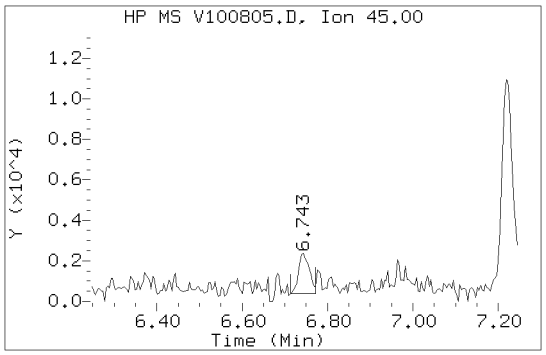
BEFORE

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1993
13-Oct-2023
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linh
pham



AFTER

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3637
HEIGHT
1993
13-Oct-2023
16:58
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D Page 1
Report Date: 13-Oct-2023 17:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 08-OCT-2023 15:41
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\U231008.b\8260C.m
Meth Date : 13-Oct-2023 17:00 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 15:19 Cal File: V100805.D
Als bottle: 7 Calibration Sample, Level: 5
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	4.819	4.819	(1.000)	389841	50.0000	
2 Dichlorodifluoromethane	85	1.168	1.168	(0.242)	20402	5.00000	5.69(M)
3 Chloromethane	50	1.303	1.303	(0.270)	22259	5.00000	4.25(aM)
5 Vinyl Chloride	62	1.378	1.378	(0.286)	31020	5.00000	4.95(aM)
6 Bromomethane	94	1.625	1.625	(0.337)	34569	5.00000	6.52(M)
7 Chloroethane	64	1.704	1.704	(0.354)	32251	5.00000	5.23
8 Trichlorofluoromethane	101	1.899	1.899	(0.394)	68312	5.00000	4.80(a)
9 Acrolein	56	2.274	2.274	(0.472)	4110	10.0000	11.79(M)
10 Acetone	43	2.412	2.412	(0.501)	46481	10.0000	10.90
11 1,1-Dichloroethene	96	2.337	2.337	(0.485)	38274	5.00000	4.91(a)
15 Iodomethane	142	2.472	2.472	(0.513)	70921	10.0000	9.08(M)
16 Acrylonitrile	53	3.068	3.068	(0.637)	37370	10.0000	10.58
17 Methylene Chloride	84	2.795	2.795	(0.580)	61602	5.00000	5.35
18 Methyl tert-butyl ether	73	3.087	3.087	(0.641)	164512	5.00000	5.13
19 Carbon Disulfide	76	2.525	2.525	(0.524)	220979	10.0000	9.86
20 trans-1,2-Dichloroethene	96	3.061	3.061	(0.635)	50720	5.00000	5.22
21 Vinyl Acetate	43	3.612	3.612	(0.750)	134073	10.0000	9.49(M)
22 1,1-Dichloroethane	63	3.514	3.514	(0.729)	50535	5.00000	5.10(M)
24 2-Butanone	43	4.275	4.275	(0.887)	20447	10.0000	11.30
26 2,2-Dichloropropane	77	4.182	4.182	(0.868)	25310	5.00000	5.36(M)

27 cis-1,2-Dichloroethene	96	4.200	4.200 (0.872)	26410	5.00000	5.34
28 Chloroform	83	4.575	4.575 (0.949)	43908	5.00000	4.84(a)

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D Page 2
Report Date: 13-Oct-2023 17:00

	Compounds	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	(0.929)	12268	5.00000	5.14(M)
$	30 Dibromofluoromethane	113	4.751	4.751	(0.986)	20955	5.00000	4.80(a)
	31 1,1,1-Trichloroethane	97	4.744	4.744	(0.984)	30656	5.00000	4.53(a)
	32 1,1-Dichloropropene	75	4.928	4.928	(0.887)	27348	5.00000	4.60(a)
	33 1,2-Dichloroethane	62	5.175	5.175	(0.932)	33863	5.00000	4.93(aM)
	34 Carbon Tetrachloride	117	4.916	4.916	(0.885)	23557	5.00000	4.29(a)
$	35 1,2-Dichloroethane-d4	65	5.104	5.104	(1.059)	26138	5.00000	5.02
*	36 1,4-Difluorobenzene	114	5.554	5.554	(1.000)	693125	50.0000	
	37 Benzene	78	5.141	5.141	(0.926)	88622	5.00000	4.79(aM)
	38 Trichloroethene	130	5.790	5.790	(1.043)	23077	5.00000	4.82(aM)
	39 Bromodichloromethane	83	6.281	6.281	(1.131)	28950	5.00000	4.51(aM)
	41 2-Chloroethylvinyl ether	63	6.581	6.581	(1.185)	10604	10.0000	10.67(a)
	42 1,2-Dichloropropane	63	6.015	6.015	(1.083)	22467	5.00000	4.78(a)
	44 Dibromomethane	93	6.120	6.120	(1.102)	17846	5.00000	4.79(a)
	45 4-Methyl-2-Pentanone	43	6.854	6.854	(0.837)	48743	10.0000	11.18
	46 cis-1,3-Dichloropropene	75	6.693	6.693	(1.205)	35027	5.00000	4.59(aM)
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	734867	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	86134	5.00000	4.93(a)
	50 Toluene	91	6.982	6.982	(0.853)	98951	5.00000	4.93(a)
	51 trans-1,3-Dichloropropene	75	7.199	7.199	(1.296)	33814	5.00000	5.56(M)
	52 2-Hexanone	43	7.593	7.593	(0.928)	31095	10.0000	10.28
	53 1,1,2-Trichloroethane	83	7.357	7.357	(0.899)	21135	5.00000	5.20
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	42660	5.00000	5.04
	55 Dibromochloromethane	129	7.694	7.694	(0.940)	21431	5.00000	4.35(aM)
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	18813	5.00000	4.93(a)
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	26823	5.00000	5.03(M)
	58 1-Chlorohexane	55	8.193	8.193	(1.475)	22806	5.00000	5.72(M)
	59 Chlorobenzene	112	8.208	8.208	(1.003)	67195	5.00000	4.71(a)
	60 1,1,1,2-Tetrachloroethane	131	8.286	8.286	(1.012)	22743	5.00000	4.87(aM)
	61 Ethylbenzene	106	8.309	8.309	(1.015)	34370	5.00000	5.05
	62 m,p-Xylenes	106	8.410	8.410	(1.027)	83691	10.0000	9.19(a)
	63 o-Xylene	106	8.748	8.748	(1.069)	43711	5.00000	4.76(aM)
	64 Styrene	104	8.762	8.762	(1.071)	74495	5.00000	4.77(aM)
	66 Bromoform	173	8.920	8.920	(1.090)	18874	5.00000	5.46(M)
	67 Isopropylbenzene	105	9.062	9.062	(1.107)	99628	5.00000	4.54(a)
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	38922	5.00000	6.20
$	69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	29176	5.00000	4.63(a)
*	70 1,4-Dichlorobenzene-d4	152	10.172	10.172	(1.000)	395499	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.920)	33604	5.00000	5.05
	73 n-Propylbenzene	91	9.411	9.411	(0.925)	112610	5.00000	5.19
	74 Bromobenzene	156	9.317	9.317	(0.916)	28902	5.00000	5.26
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	83394	5.00000	4.97(a)
	76 2-Chlorotoluene	91	9.482	9.482	(0.932)	70846	5.00000	5.15
	77 4-Chlorotoluene	91	9.576	9.576	(0.941)	82838	5.00000	5.07
	78 tert-Butylbenzene	119	9.835	9.835	(0.967)	71730	5.00000	4.99(a)
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.971)	83714	5.00000	4.77(a)
	81 sec-Butylbenzene	105	10.022	10.022	(0.985)	94565	5.00000	4.88(a)
	82 p-Isopropyltoluene	119	10.146	10.146	(0.997)	84637	5.00000	4.96(a)
	83 1,3-Dichlorobenzene	146	10.116	10.116	(0.994)	53481	5.00000	5.20
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	57189	5.00000	4.93(a)
	87 n-Butylbenzene	91	10.494	10.494	(1.032)	71300	5.00000	4.50(a)
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	52117	5.00000	4.91(a)

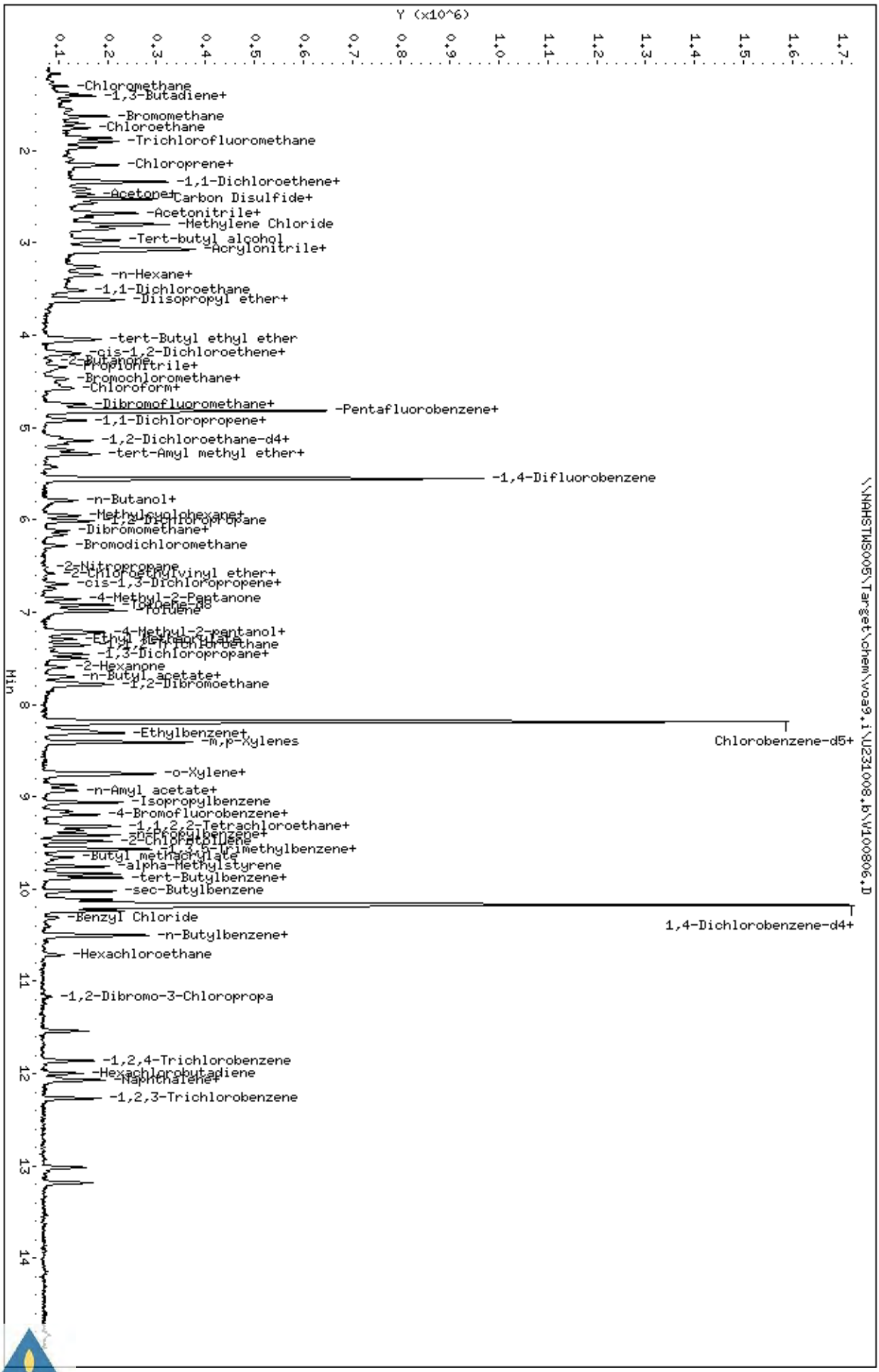
89	1,2-Dibromo-3-Chloropropane	155	11.177	11.177 (1.099)	4226	5.00000	4.81(aM)
90	1,2,4-Trichlorobenzene	180	11.859	11.859 (1.166)	32392	5.00000	5.18(M)

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D Page 3
Report Date: 13-Oct-2023 17:00

	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)	12950	5.00000	5.62
	92 Naphthalene	128	12.069	12.069	(1.186)	94614	5.00000	5.13
	93 1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	35658	5.00000	5.73
M	94 1,2-Dichloroethylene (total)	96				77130	10.0000	(a)
	135 1,4-Dioxane	88	6.168	6.168	(1.280)	8318	100.000	100.98(M)
	141 Cyclohexane	56	4.789	4.789	(0.994)	24107	5.00000	4.86(aM)
	138 Freon TF	101	2.341	2.341	(0.486)	38021	5.00000	4.96(a)
	140 1,3-Butadiene	54	1.404	1.404	(0.291)	25012	5.00000	4.58(a)
	147 Methylcyclohexane	55	5.951	5.951	(1.072)	39091	5.00000	4.02(a)
	146 Methyl Acetate	43	2.720	2.720	(0.564)	40112	5.00000	5.32(M)
	148 Tert-Butyl alcohol	59	2.971	2.971	(0.617)	125828	100.000	108.78
	149 Isopropyl Alcohol	45	2.566	2.566	(0.533)	63774	100.000	101.67
	72 trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	6727	5.00000	4.14(H)
	12 Isobutyl Alcohol	43	5.287	5.287	(1.097)	49031	100.000	82.16(M)
	13 Acetonitrile	39	2.675	2.675	(0.555)	52977	50.0000	49.10
	14 Allyl Chloride	41	2.675	2.675	(0.555)	100920	5.00000	5.18
	25 Methacrylonitrile	41	4.504	4.504	(0.935)	12444	5.00000	4.89(M)
	40 Methyl Methacrylate	41	6.157	6.157	(1.278)	18390	5.00000	4.63
	43 2-Nitropropane	43	6.506	6.506	(1.350)	5218	5.00000	4.96(a)
	4 Propionitrile	54	4.339	4.339	(0.900)	31897	50.0000	50.82(a)
	136 n-Hexane	57	3.346	3.346	(0.694)	38107	5.00000	5.08
	194 Acetaldehyde	44	1.460	1.460	(0.303)	23519	20.0000	26.84
	131 Methyl Acrylate	55	4.377	4.377	(0.908)	20869	5.00000	4.09(a)
	200 Dimethyl Disulfide	94	6.746	6.746	(0.824)	20656	5.00000	4.64(aM)
	23 Chloroprene	53	2.161	2.161	(0.449)	12439	5.00000	4.72(a)
	49 Ethyl Methacrylate	69	7.293	7.293	(1.313)	31950	5.00000	4.59(a)
	166 1,2,3-Trimethylbenzene	105	10.236	10.236	(1.006)	77426	5.00000	4.39(a)
	167 Ethanol	45	2.082	2.082	(0.432)	10996	100.000	110.86
	164 Dicyclopentadiene	66	10.198	10.198	(1.003)	98958	5.00000	4.74(aM)
	145 alpha-Methylstyrene	118	9.756	9.756	(0.959)	38240	5.00000	4.57(a)
	142 Tetrahydrofuran	42	4.549	4.549	(0.944)	9370	10.0000	11.47(H)
	156 Diisopropyl ether	45	3.627	3.627	(0.753)	58051	5.00000	4.36(a)
	151 4-Methyl-2-pentanol	45	7.218	7.218	(1.300)	72265	100.000	93.69
	150 Allyl alcohol	57	3.346	3.346	(0.694)	38107	100.000	96.80
	86 Benzyl Chloride	91	10.311	10.311	(1.260)	34985	5.00000	4.85(aM)
	162 Butyl acrylate	55	8.736	8.736	(1.067)	34091	5.00000	4.45(aM)
	139 Diethyl ether	59	2.150	2.150	(0.446)	36283	5.00000	5.31
	203 2-Ethylhexyl Acrylate	55	12.043	12.043	(1.184)	19222	5.00000	4.80(aM)
	134 Cyclohexanone	55	9.156	9.156	(0.900)	22887	100.000	83.43(a)
	130 Ethyl Acetate	43	4.347	4.347	(0.902)	19070	5.00000	4.76(aMH)
	189 n-Butyl acetate	43	7.709	7.709	(0.942)	32344	5.00000	4.78(a)
	182 Epichlorohydrin	57	6.633	6.633	(1.194)	5579	20.0000	22.46(M)
	132 n-Butanol	56	5.831	5.831	(1.210)	7641	100.000	87.63(a)
	133 Ethyl Acrylate	55	5.951	5.951	(1.235)	39091	5.00000	5.17
	163 Butyl methacrylate	41	9.651	9.651	(0.949)	22320	5.00000	4.39(aM)
	174 tert-Amyl methyl ether	73	5.287	5.287	(1.097)	59236	5.00000	4.02(a)
	175 tert-Butyl ethyl ether	59	4.054	4.054	(0.841)	55389	5.00000	4.52(a)
	187 n-Amyl acetate	43	8.935	8.935	(1.092)	41121	5.00000	4.67(a)
	188 Isopropyl acetate	43	5.287	5.287	(0.952)	49178	5.00000	4.32(TaM)
	179 Hexachloroethane	166	10.712	10.712	(1.053)	6588	5.00000	5.52

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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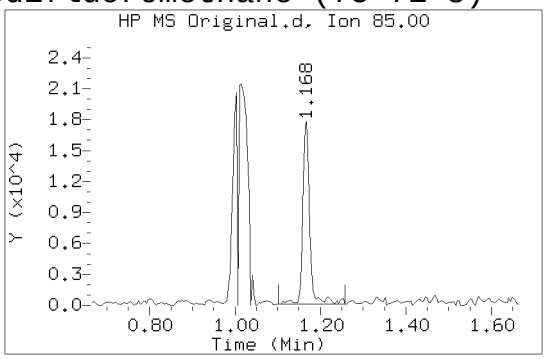
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Operator: PC
Column diameter: 0.18

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Dichlorodifluoromethane (75-71-8)

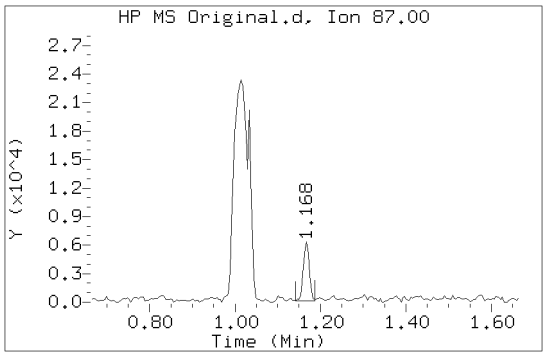
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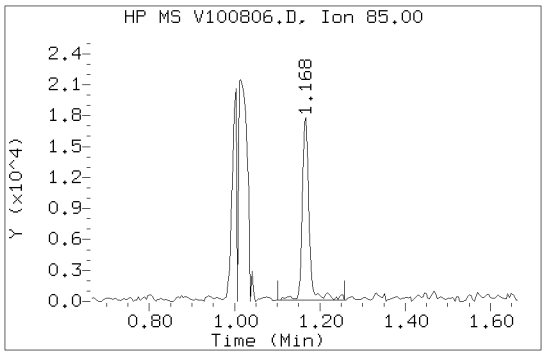
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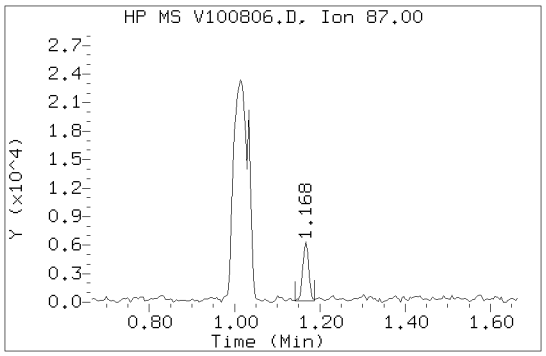
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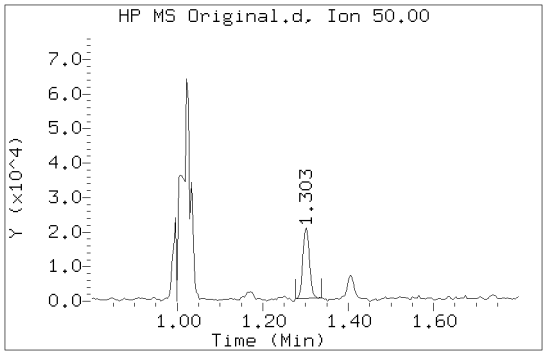
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Chloromethane (74-87-3)

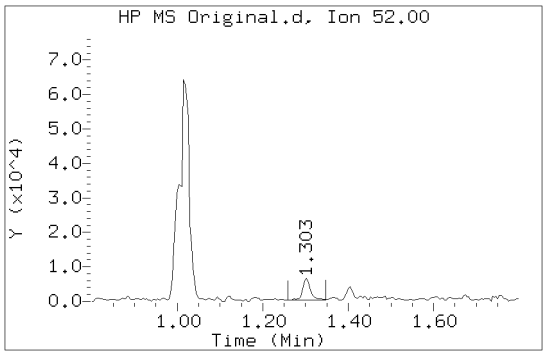
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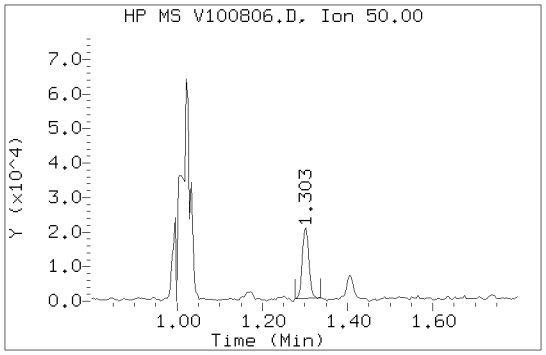
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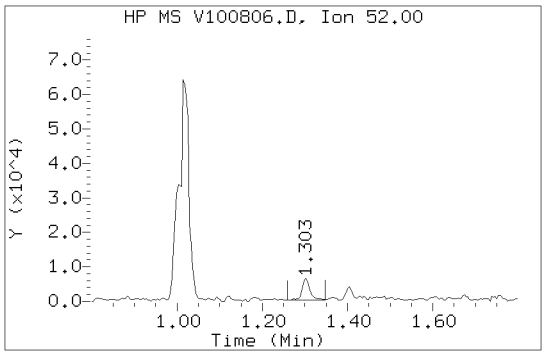
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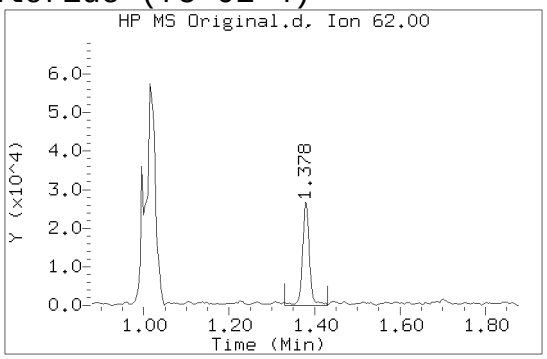
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LabSampID : VSTD005

Vinyl Chloride (75-01-4)

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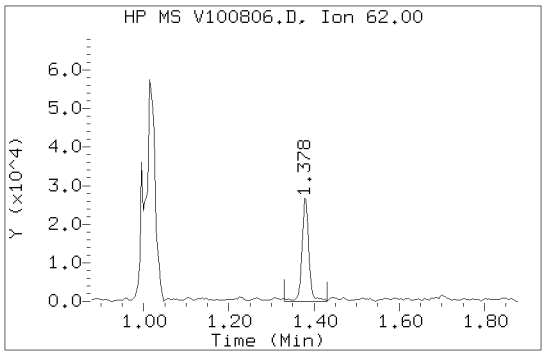
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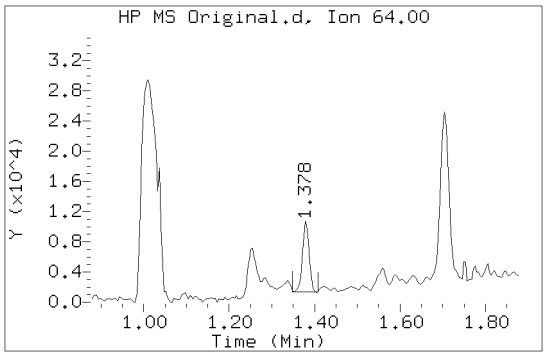
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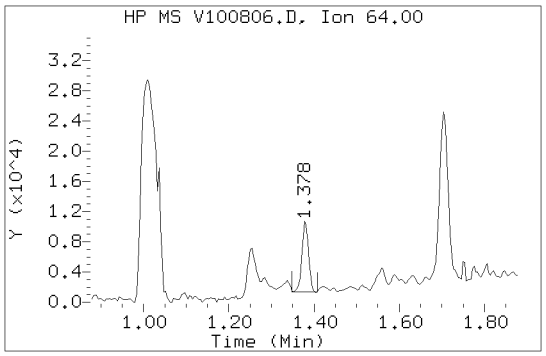
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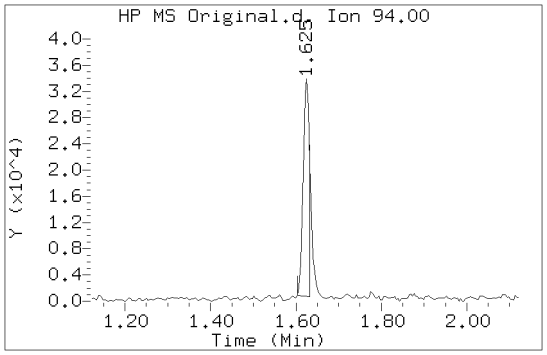


Bromomethane (74-83-9)

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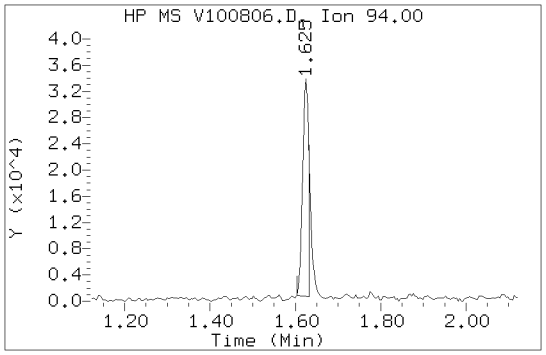
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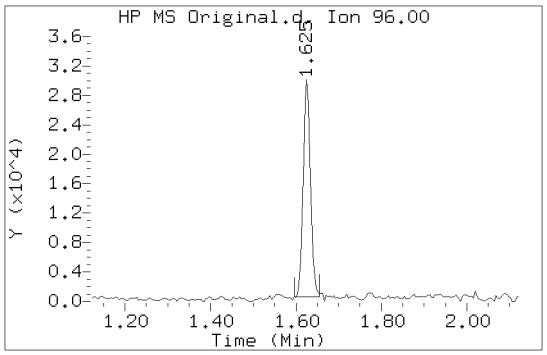
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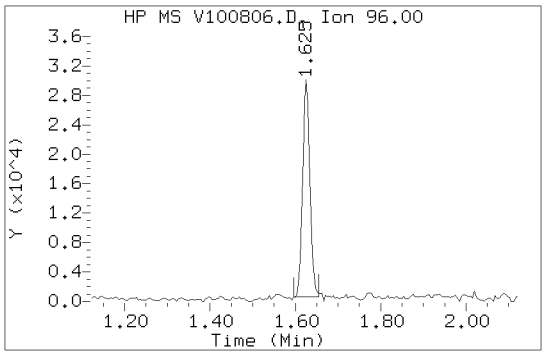
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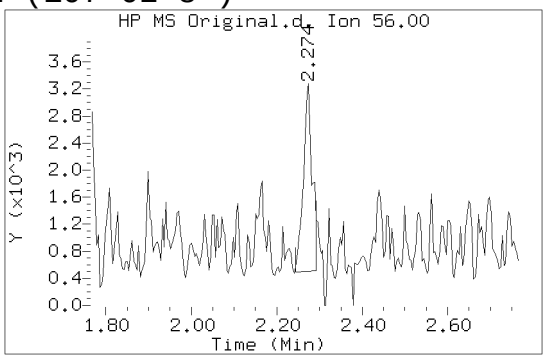
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Acrolein (107-02-8)

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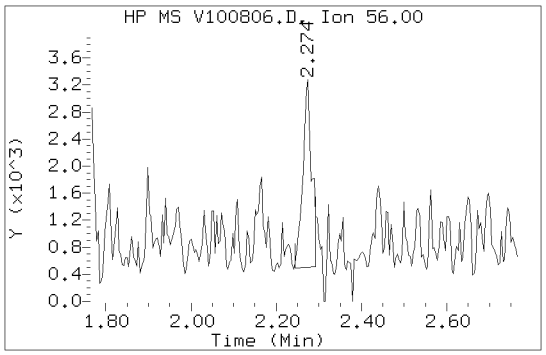
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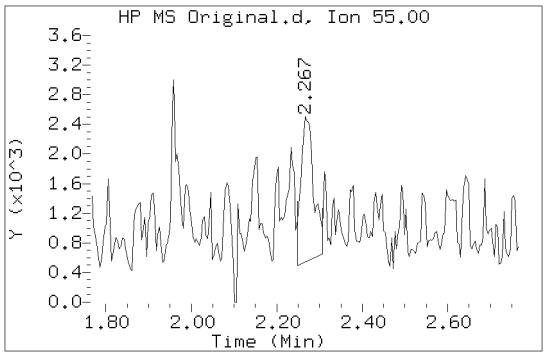
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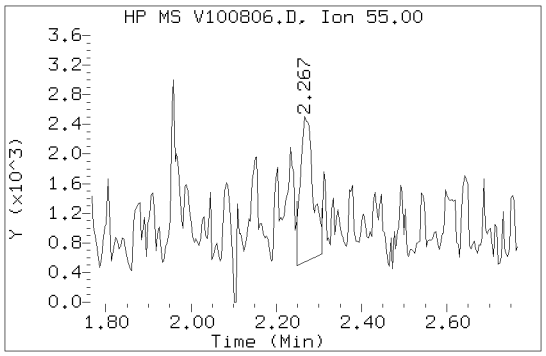
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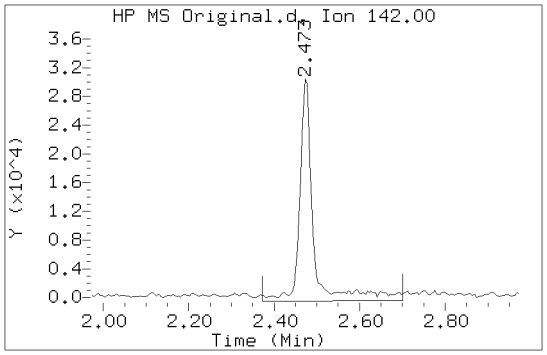


Iodomethane (74-88-4)

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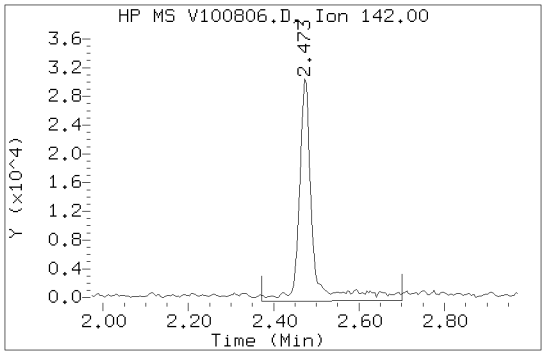
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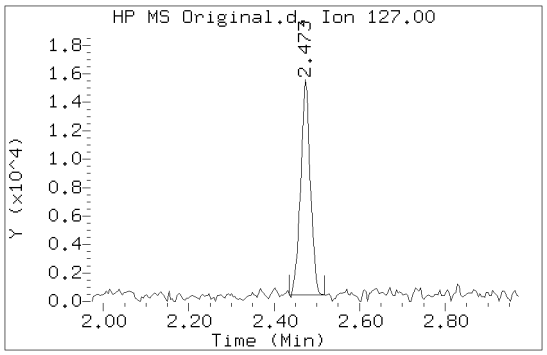
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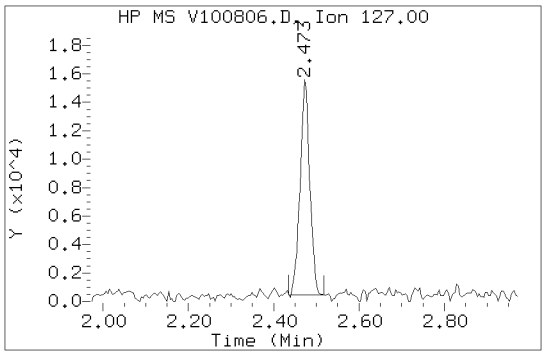
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13-Oct-2023
16:58
linh
pham



AFTER

MASS
127
AREA
24188
HEIGHT
15135
13-Oct-2023
16:58
linh
pham



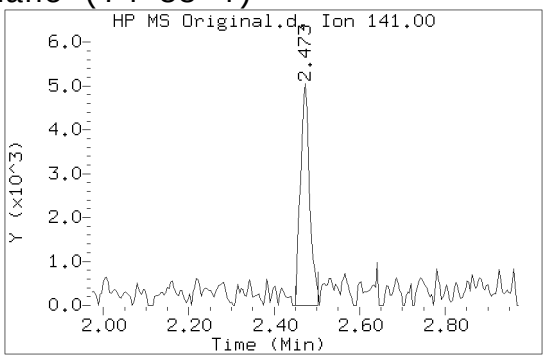
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Iodomethane (74-88-4)

Reason Code:

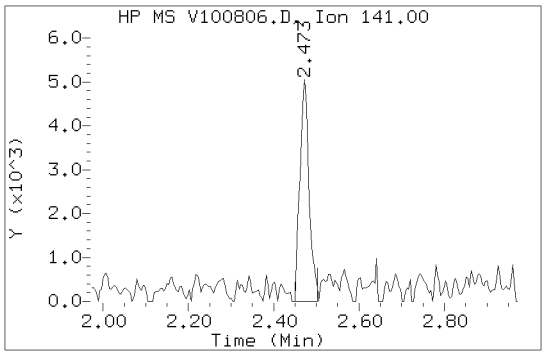
BEFORE

MASS
141
AREA
7716
HEIGHT
5053
13-Oct-2023
16:58
linh
pham



AFTER

MASS
141
AREA
7716
HEIGHT
5053
13-Oct-2023
16:58
linh
pham

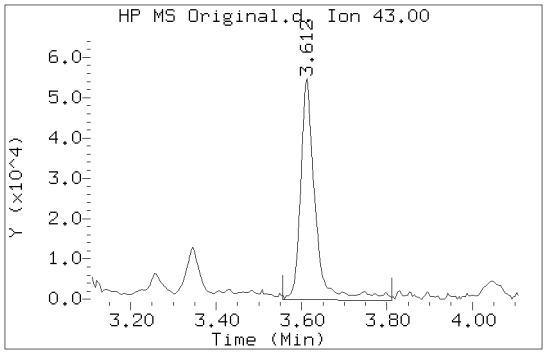


Vinyl Acetate (108-05-4)

Reason Code:

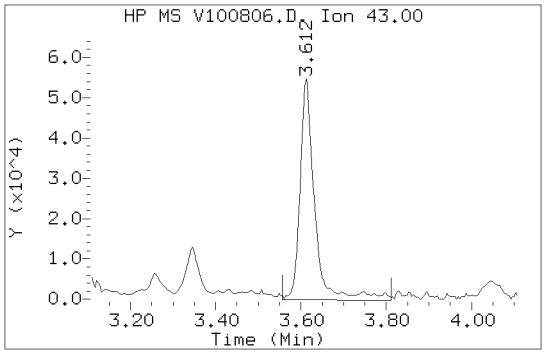
BEFORE

MASS
43
AREA
134073
HEIGHT
54887
13-Oct-2023
16:58
linh
pham



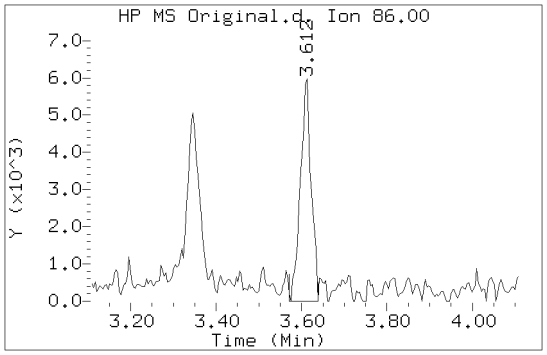
AFTER

MASS
43
AREA
134073
HEIGHT
54887
13-Oct-2023
16:58
linh
pham



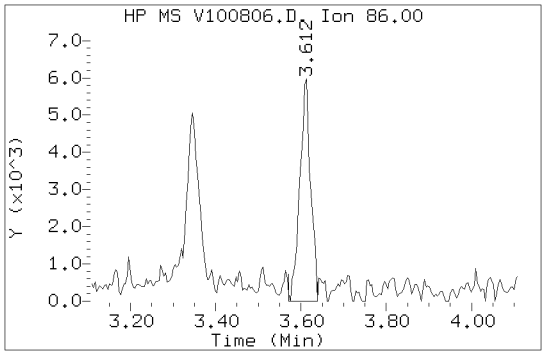
BEFORE

MASS
86
AREA
10675
HEIGHT
5972
13-Oct-2023
16:58
linh
pham



AFTER

MASS
86
AREA
10675
HEIGHT
5972
13-Oct-2023
16:58
linh
pham

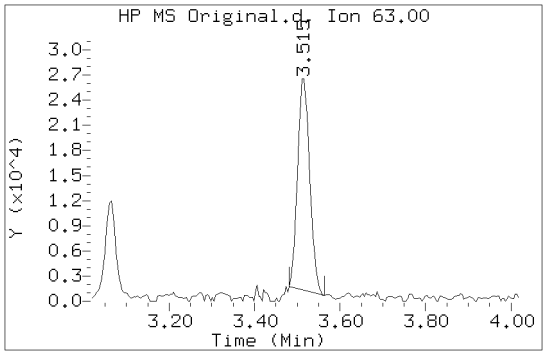


1,1-Dichloroethane (75-34-3)

Reason Code:

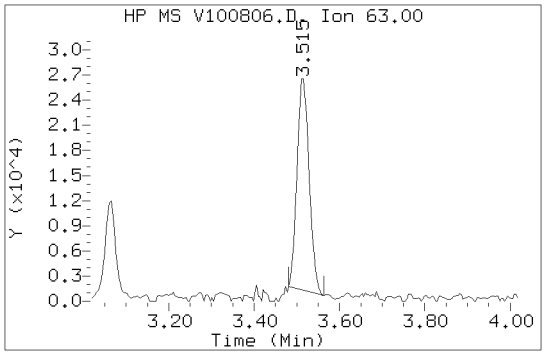
BEFORE

MASS
63
AREA
50535
HEIGHT
25210
13-Oct-2023
16:58
linh
pham



AFTER

MASS
63
AREA
50535
HEIGHT
25210
13-Oct-2023
16:58
linh
pham



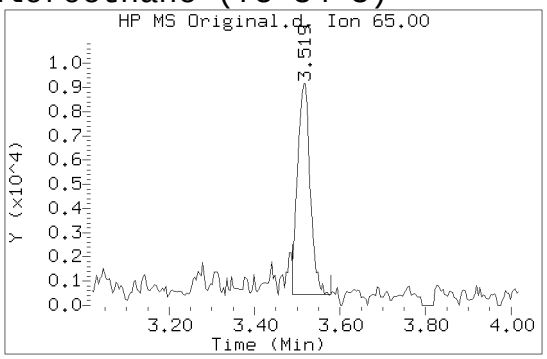
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

1,1-Dichloroethane (75-34-3)

Reason Code:

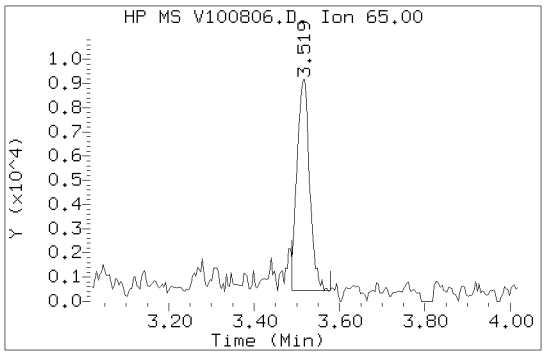
BEFORE

MASS
65
AREA
18160
HEIGHT
8699
13-Oct-2023
16:58
linh
pham



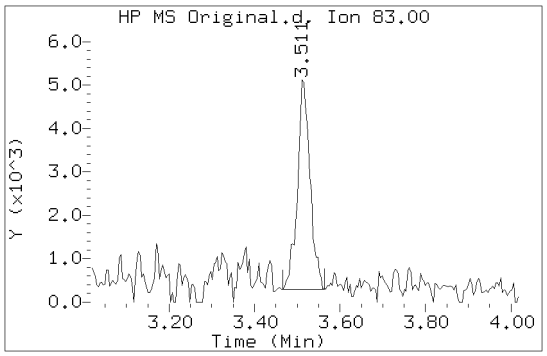
AFTER

MASS
65
AREA
18160
HEIGHT
8699
13-Oct-2023
16:58
linh
pham



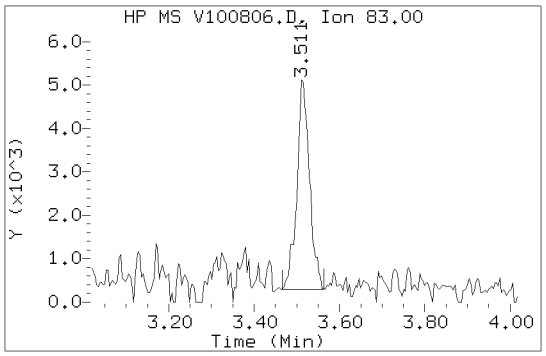
BEFORE

MASS
83
AREA
10078
HEIGHT
4828
13-Oct-2023
16:58
linh
pham



AFTER

MASS
83
AREA
10078
HEIGHT
4828
13-Oct-2023
16:58
linh
pham

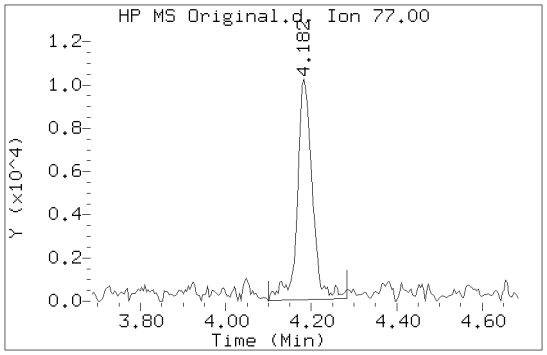


2,2-Dichloropropane (594-20-7)

Reason Code:

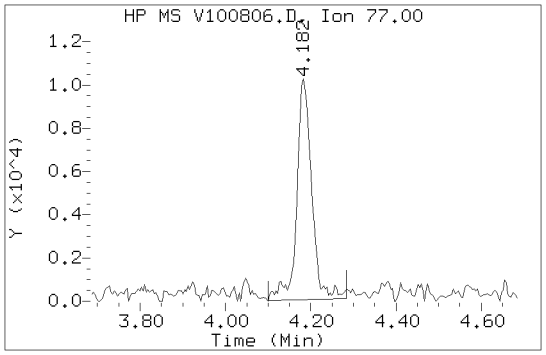
BEFORE

MASS
77
AREA
25310
HEIGHT
10202
13-Oct-2023
16:58
linh
pham



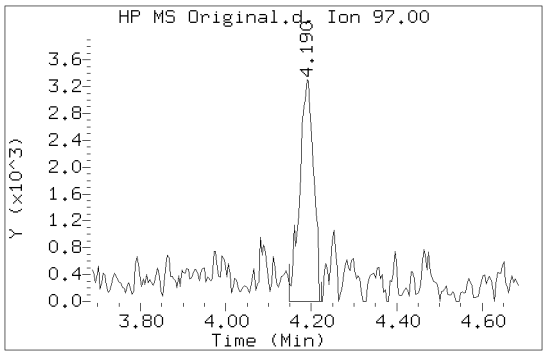
AFTER

MASS
77
AREA
25310
HEIGHT
10202
13-Oct-2023
16:58
linh
pham



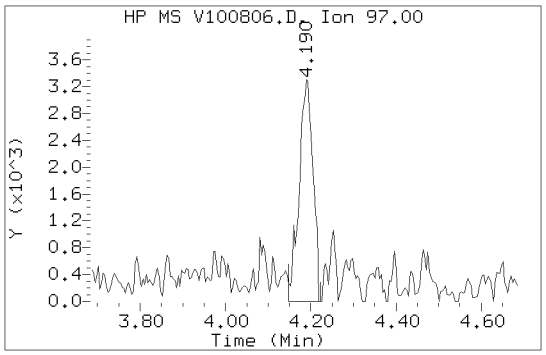
BEFORE

MASS
97
AREA
7573
HEIGHT
3304
13-Oct-2023
16:58
linh
pham



AFTER

MASS
97
AREA
7573
HEIGHT
3304
13-Oct-2023
16:58
linh
pham



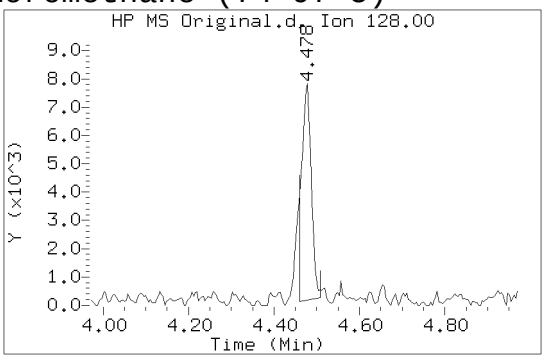
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Bromochloromethane (74-97-5)

Reason Code:

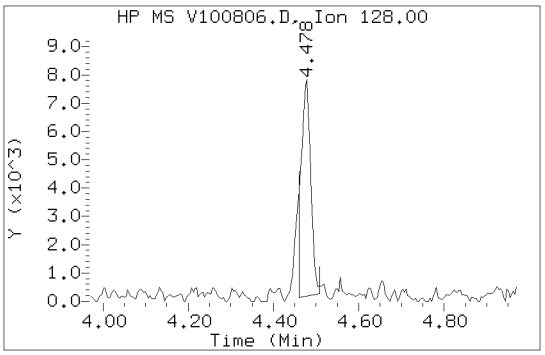
BEFORE

MASS
128
AREA
12268
HEIGHT
7641
13-Oct-2023
16:58
linh
pham



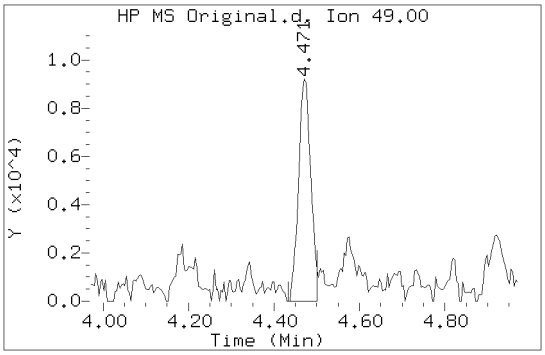
AFTER

MASS
128
AREA
12268
HEIGHT
7641
13-Oct-2023
16:58
linh
pham



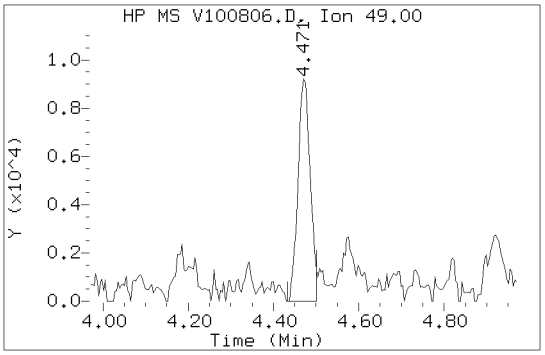
BEFORE

MASS
49
AREA
18700
HEIGHT
9215
13-Oct-2023
16:58
linh
pham



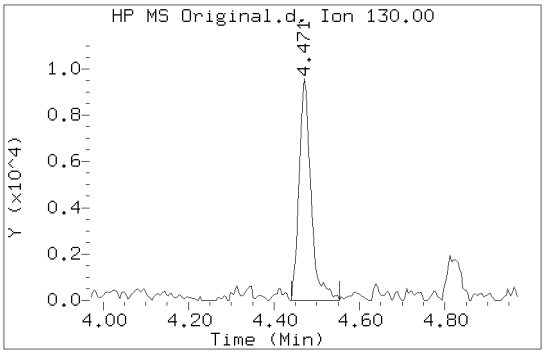
AFTER

MASS
49
AREA
18700
HEIGHT
9215
13-Oct-2023
16:58
linh
pham



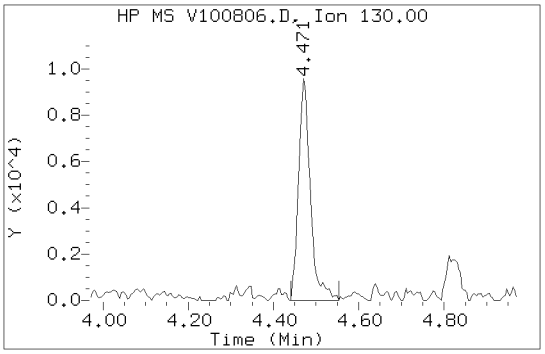
BEFORE

MASS
130
AREA
18853
HEIGHT
9575
13-Oct-2023
16:58
linh
pham



AFTER

MASS
130
AREA
18853
HEIGHT
9575
13-Oct-2023
16:58
linh
pham

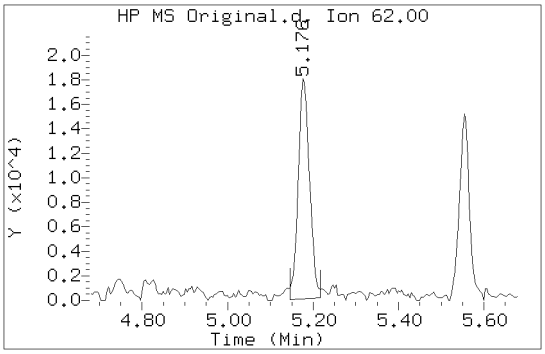


1,2-Dichloroethane (107-06-2)

Reason Code:

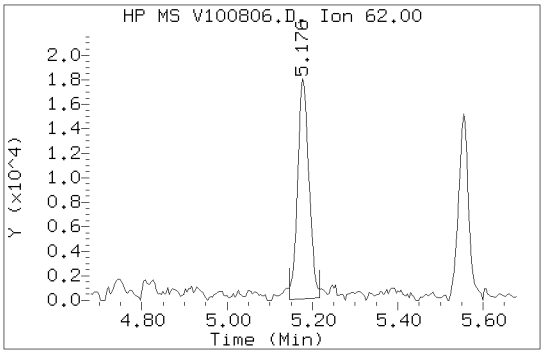
BEFORE

MASS
62
AREA
33863
HEIGHT
17986
13-Oct-2023
16:58
linh
pham



AFTER

MASS
62
AREA
33863
HEIGHT
17986
13-Oct-2023
16:58
linh
pham



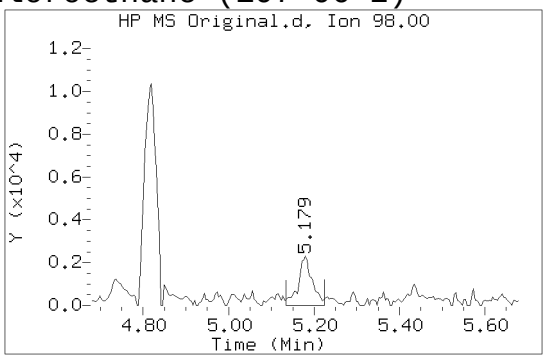
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

1,2-Dichloroethane (107-06-2)

Reason Code:

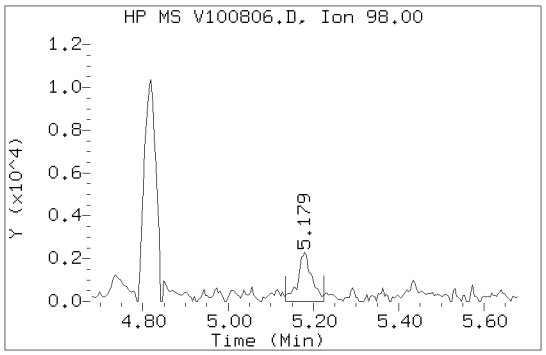
BEFORE

MASS
98
AREA
5260
HEIGHT
2300
13-Oct-2023
16:58
linh
pham



AFTER

MASS
98
AREA
5260
HEIGHT
2300
13-Oct-2023
16:58
linh
pham

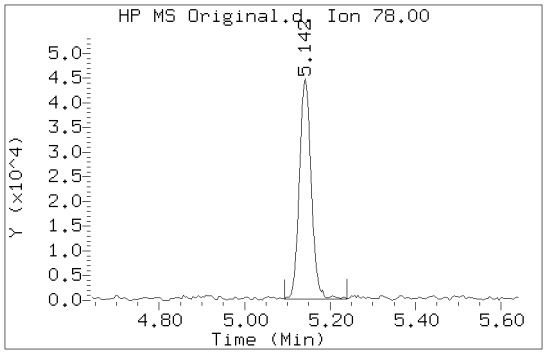


Benzene (71-43-2)

Reason Code:

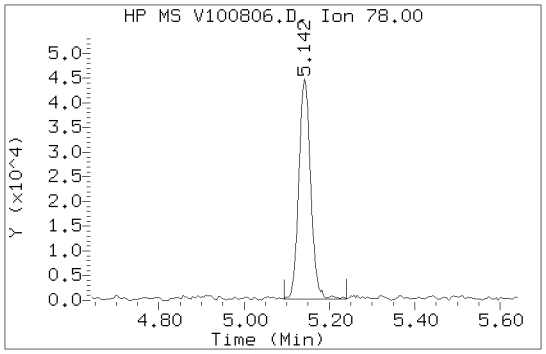
BEFORE

MASS
78
AREA
88622
HEIGHT
44705
13-Oct-2023
16:58
linh
pham



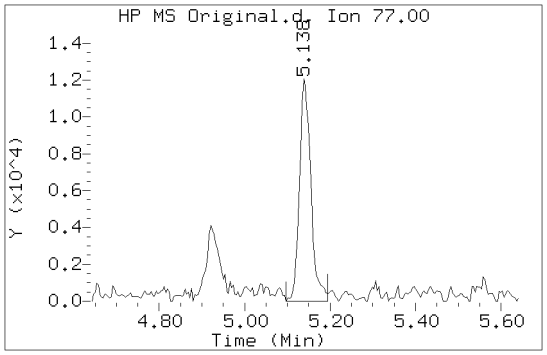
AFTER

MASS
78
AREA
88622
HEIGHT
44705
13-Oct-2023
16:58
linh
pham



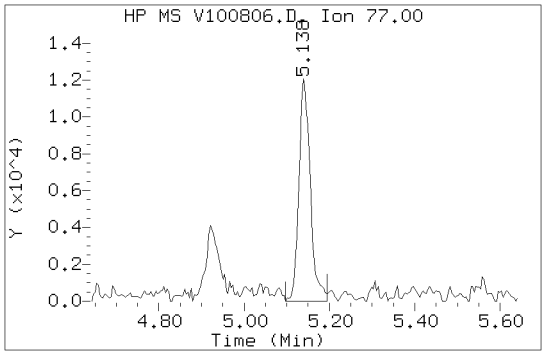
BEFORE

MASS
77
AREA
22916
HEIGHT
12060
13-Oct-2023
16:58
linh
pham



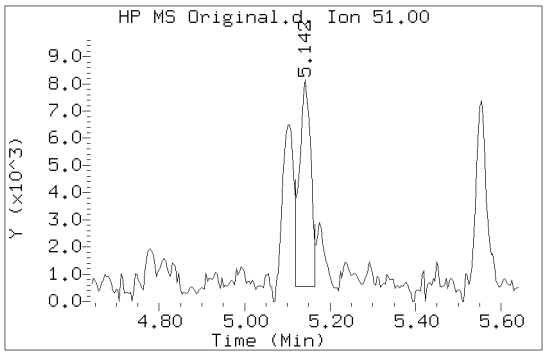
AFTER

MASS
77
AREA
22916
HEIGHT
12060
13-Oct-2023
16:58
linh
pham



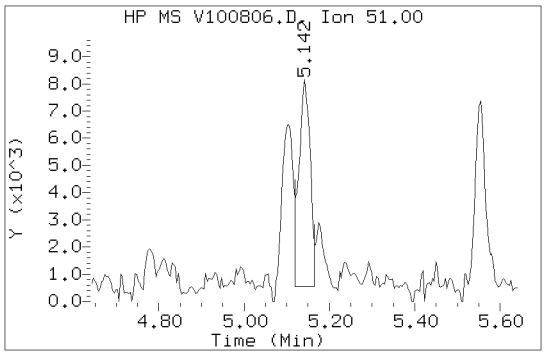
BEFORE

MASS
51
AREA
14486
HEIGHT
7608
13-Oct-2023
16:58
linh
pham



AFTER

MASS
51
AREA
14486
HEIGHT
7608
13-Oct-2023
16:58
linh
pham



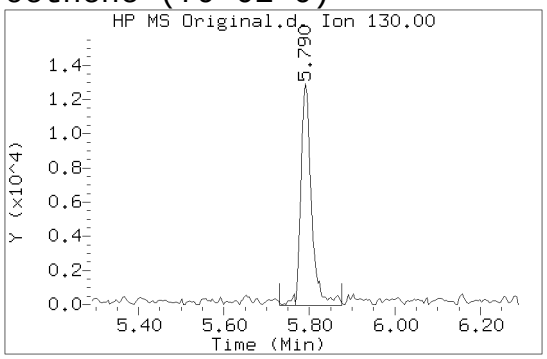
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Trichloroethene (79-01-6)

Reason Code:

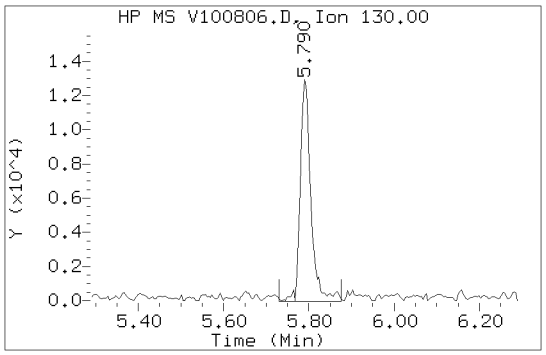
BEFORE

MASS
130
AREA
23077
HEIGHT
12969
13-Oct-2023
16:58
linh
pham



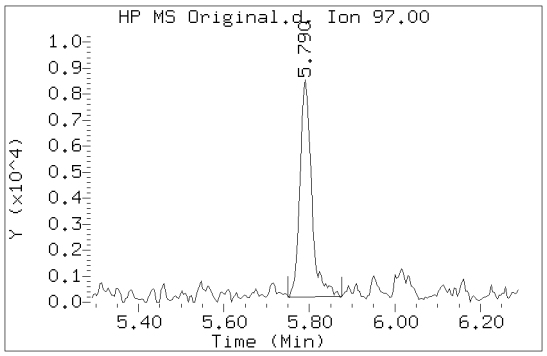
AFTER

MASS
130
AREA
23077
HEIGHT
12969
13-Oct-2023
16:58
linh
pham



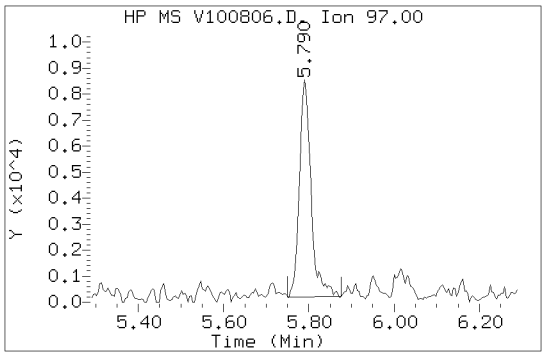
BEFORE

MASS
97
AREA
16156
HEIGHT
8341
13-Oct-2023
16:58
linh
pham



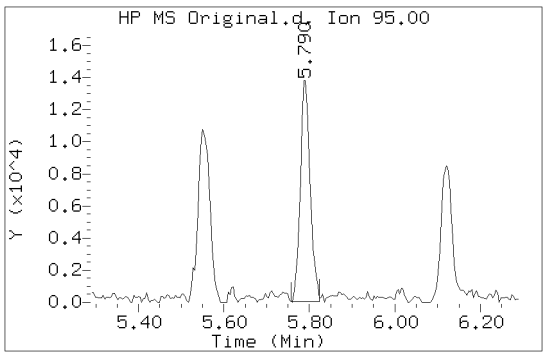
AFTER

MASS
97
AREA
16156
HEIGHT
8341
13-Oct-2023
16:58
linh
pham



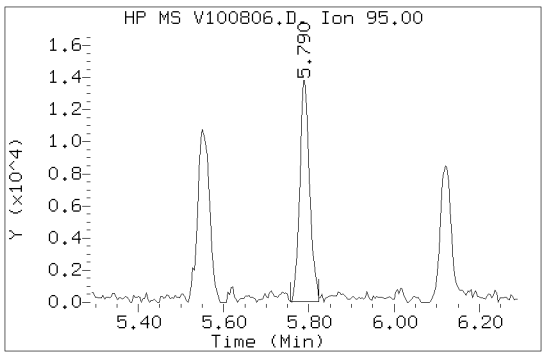
BEFORE

MASS
95
AREA
22454
HEIGHT
13751
13-Oct-2023
16:58
linh
pham



AFTER

MASS
95
AREA
22454
HEIGHT
13751
13-Oct-2023
16:58
linh
pham

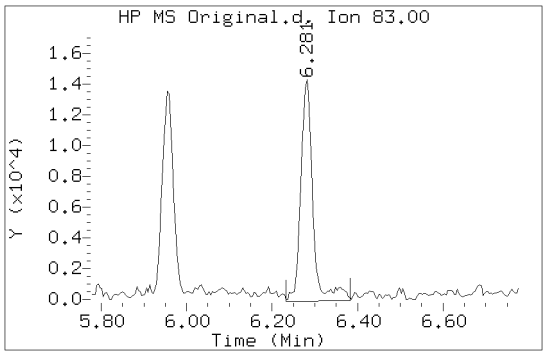


Bromodichloromethane (75-27-4)

Reason Code:

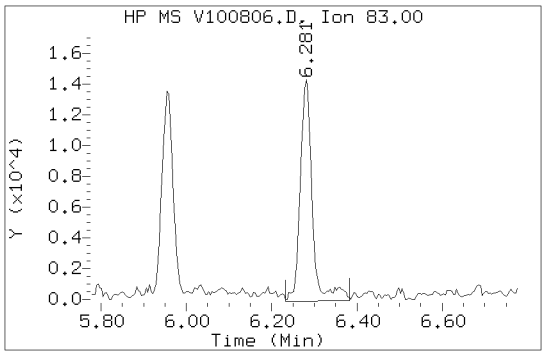
BEFORE

MASS
83
AREA
28950
HEIGHT
14387
13-Oct-2023
16:58
linh
pham



AFTER

MASS
83
AREA
28950
HEIGHT
14387
13-Oct-2023
16:58
linh
pham



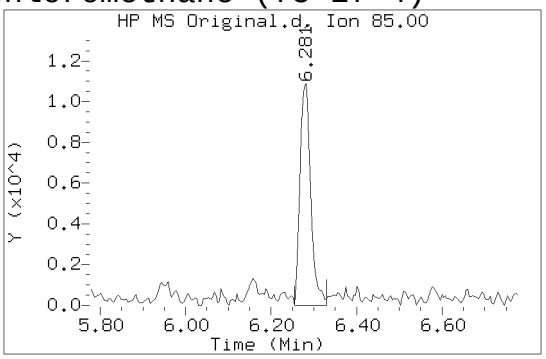
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Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Bromodichloromethane (75-27-4)

Reason Code:

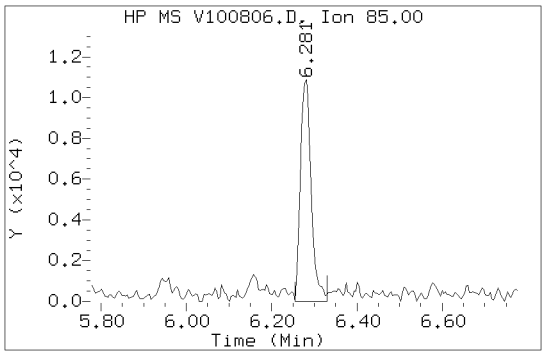
BEFORE

MASS
85
AREA
19538
HEIGHT
10880
13-Oct-2023
16:58
linh
pham



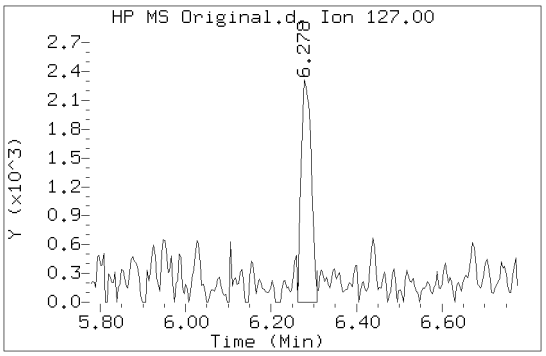
AFTER

MASS
85
AREA
19538
HEIGHT
10880
13-Oct-2023
16:58
linh
pham



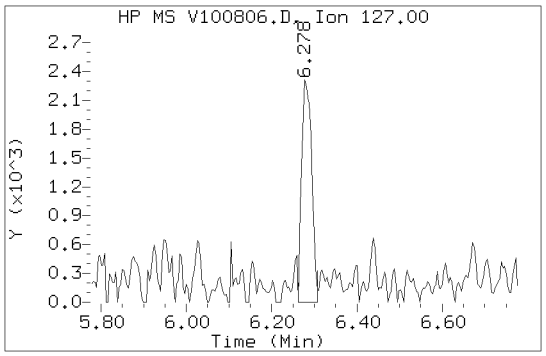
BEFORE

MASS
127
AREA
3869
HEIGHT
2313
13-Oct-2023
16:58
linh
pham



AFTER

MASS
127
AREA
3869
HEIGHT
2313
13-Oct-2023
16:58
linh
pham

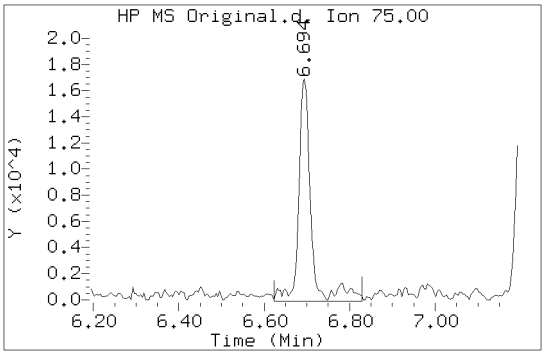


cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

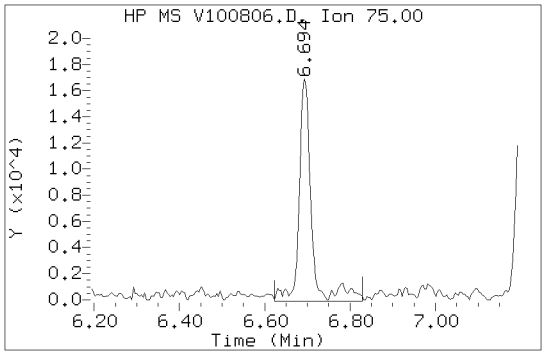
BEFORE

MASS
75
AREA
35027
HEIGHT
17001
13-Oct-2023
16:58
linh
pham



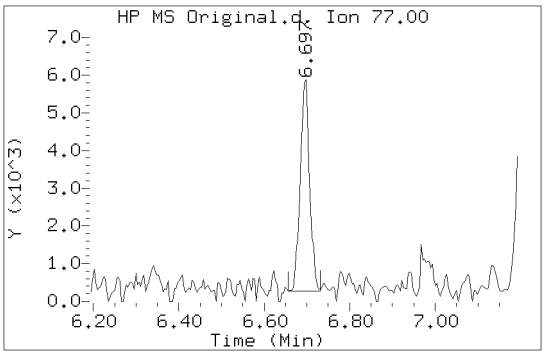
AFTER

MASS
75
AREA
35027
HEIGHT
17001
13-Oct-2023
16:58
linh
pham



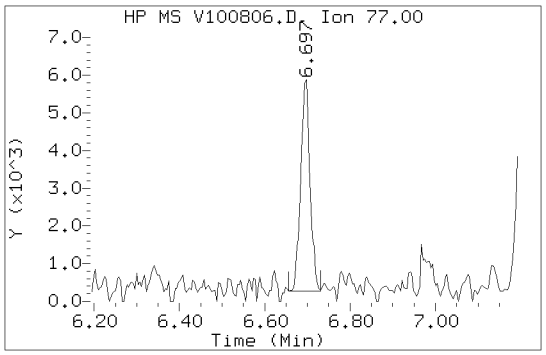
BEFORE

MASS
77
AREA
8726
HEIGHT
5611
13-Oct-2023
16:58
linh
pham



AFTER

MASS
77
AREA
8726
HEIGHT
5611
13-Oct-2023
16:58
linh
pham



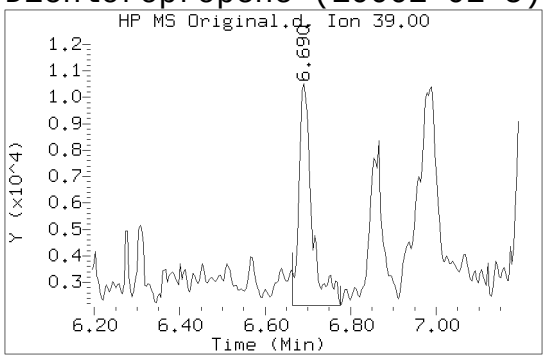
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

cis-1,3-Dichloropropene (10061-01-5)

Reason Code:

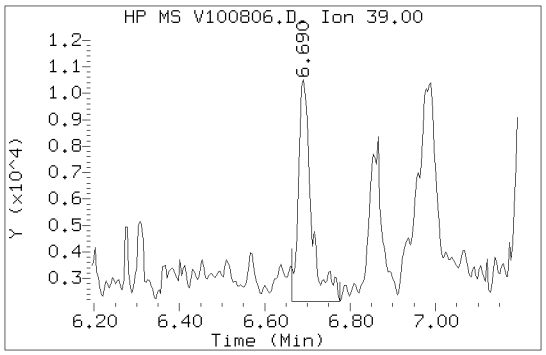
BEFORE

MASS
39
AREA
18206
HEIGHT
8378
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
18206
HEIGHT
8378
13-Oct-2023
16:58
linh
pham

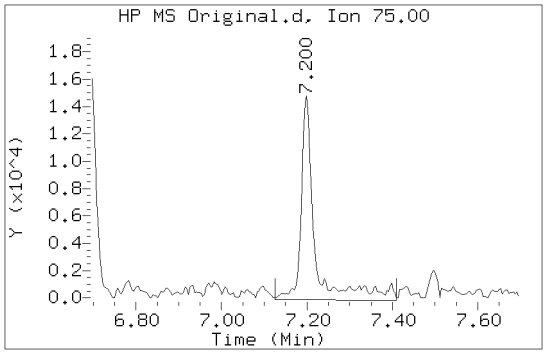


trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

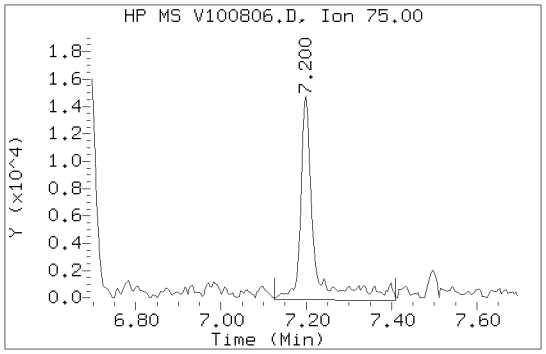
BEFORE

MASS
75
AREA
33814
HEIGHT
14915
13-Oct-2023
16:58
linh
pham



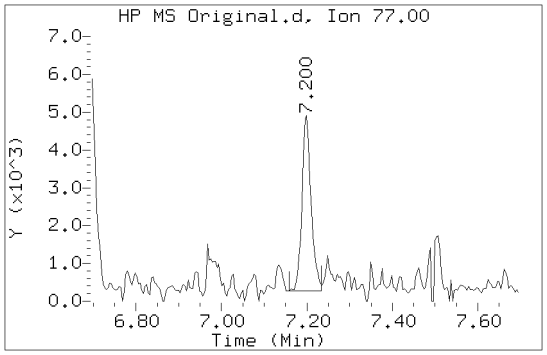
AFTER

MASS
75
AREA
33814
HEIGHT
14915
13-Oct-2023
16:58
linh
pham



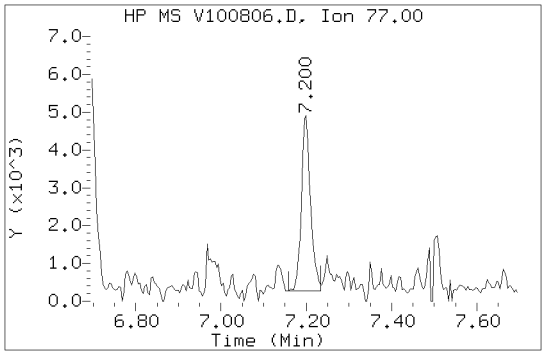
BEFORE

MASS
77
AREA
6974
HEIGHT
4640
13-Oct-2023
16:58
linh
pham



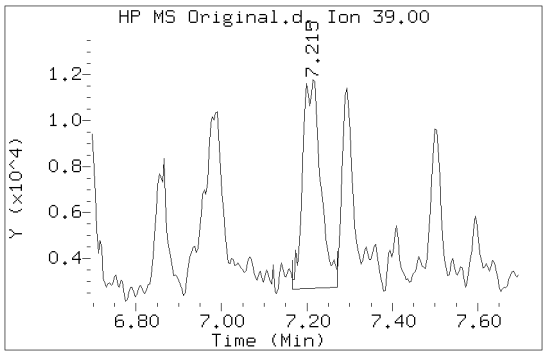
AFTER

MASS
77
AREA
6974
HEIGHT
4640
13-Oct-2023
16:58
linh
pham



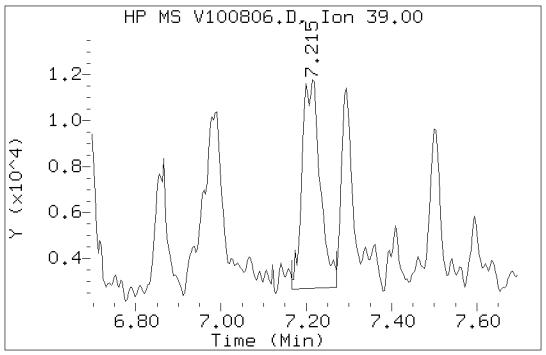
BEFORE

MASS
39
AREA
26765
HEIGHT
9072
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
26765
HEIGHT
9072
13-Oct-2023
16:58
linh
pham



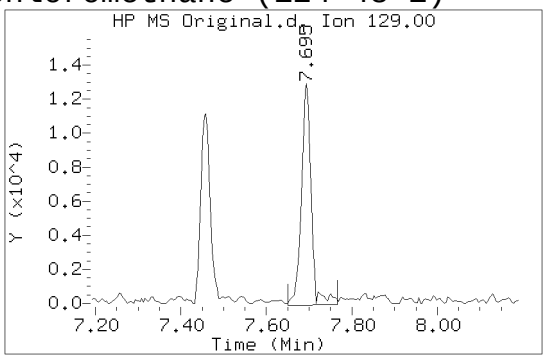
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Dibromochloromethane (124-48-1)

Reason Code:

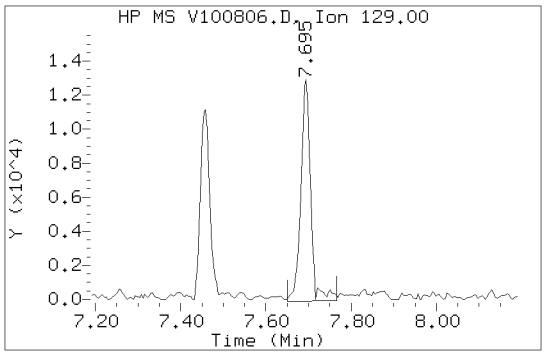
BEFORE

MASS
129
AREA
21431
HEIGHT
13006
13-Oct-2023
16:58
linh
pham



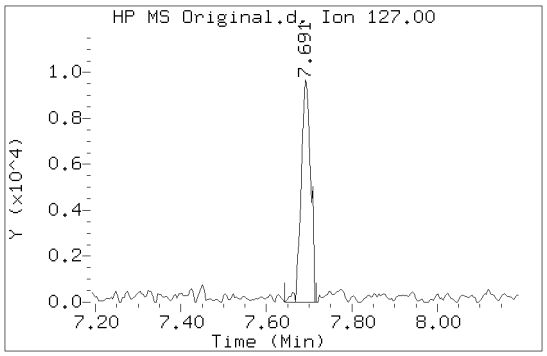
AFTER

MASS
129
AREA
21431
HEIGHT
13006
13-Oct-2023
16:58
linh
pham



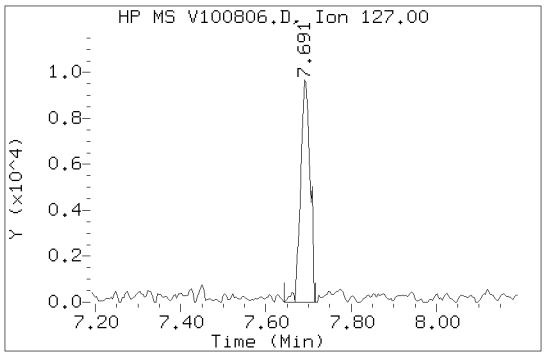
BEFORE

MASS
127
AREA
15399
HEIGHT
9671
13-Oct-2023
16:58
linh
pham



AFTER

MASS
127
AREA
15399
HEIGHT
9671
13-Oct-2023
16:58
linh
pham

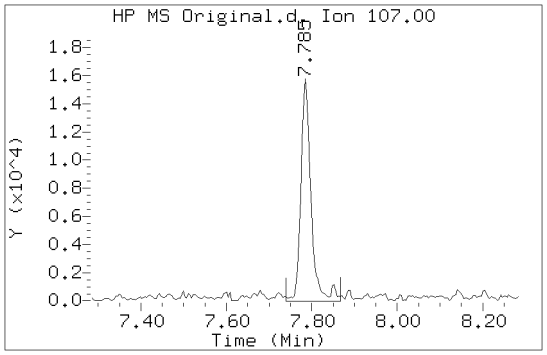


1,2-Dibromoethane (106-93-4)

Reason Code:

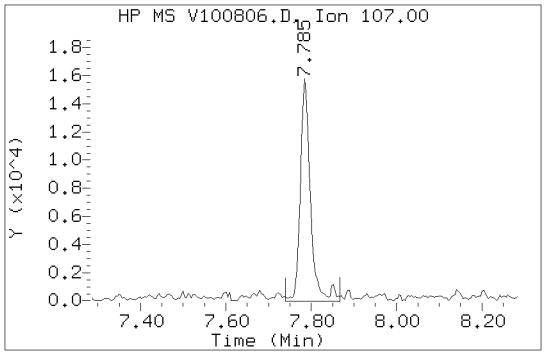
BEFORE

MASS
107
AREA
26823
HEIGHT
15793
13-Oct-2023
16:58
linh
pham



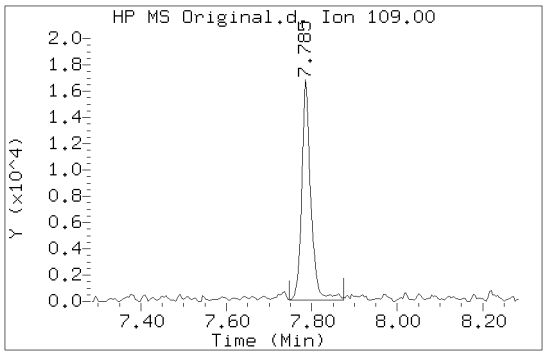
AFTER

MASS
107
AREA
26823
HEIGHT
15793
13-Oct-2023
16:58
linh
pham



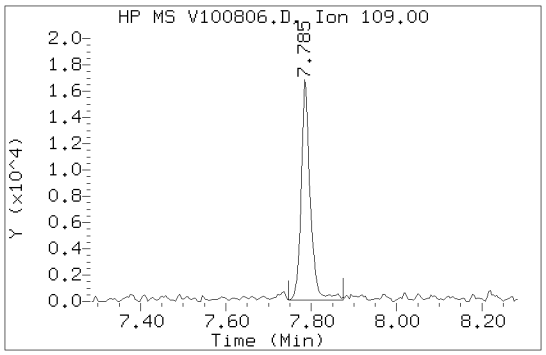
BEFORE

MASS
109
AREA
25397
HEIGHT
16776
13-Oct-2023
16:58
linh
pham



AFTER

MASS
109
AREA
25397
HEIGHT
16776
13-Oct-2023
16:58
linh
pham



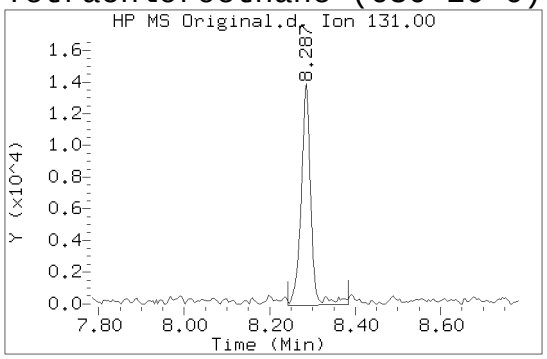
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

1,1,1,2-Tetrachloroethane (630-20-6)

Reason Code:

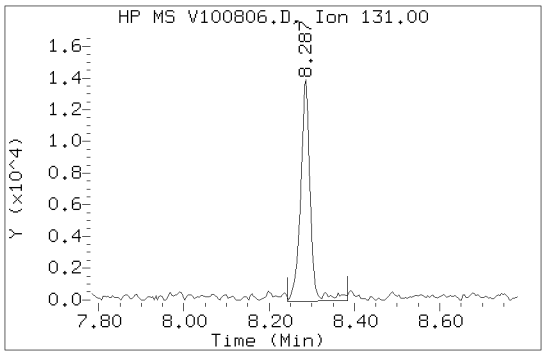
BEFORE

MASS
131
AREA
22743
HEIGHT
13984
13-Oct-2023
16:58
linh
pham



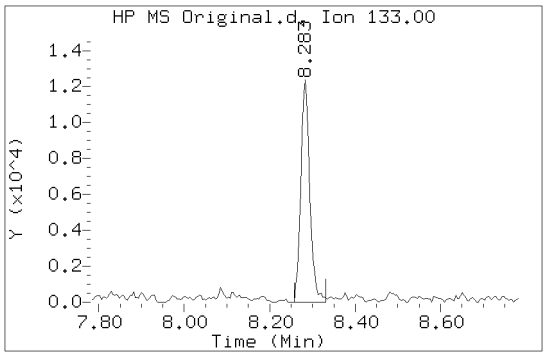
AFTER

MASS
131
AREA
22743
HEIGHT
13984
13-Oct-2023
16:58
linh
pham



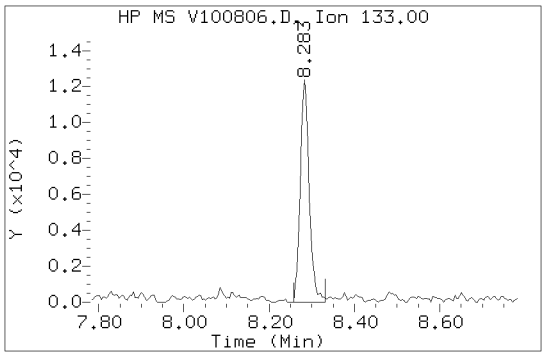
BEFORE

MASS
133
AREA
18656
HEIGHT
12369
13-Oct-2023
16:58
linh
pham



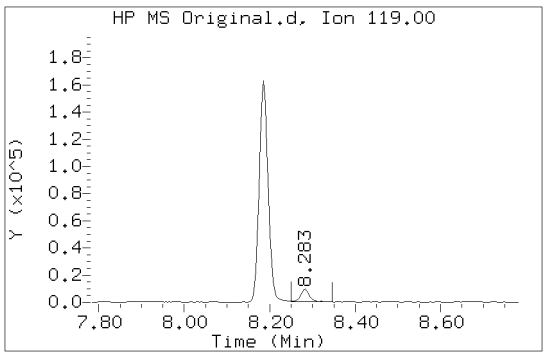
AFTER

MASS
133
AREA
18656
HEIGHT
12369
13-Oct-2023
16:58
linh
pham



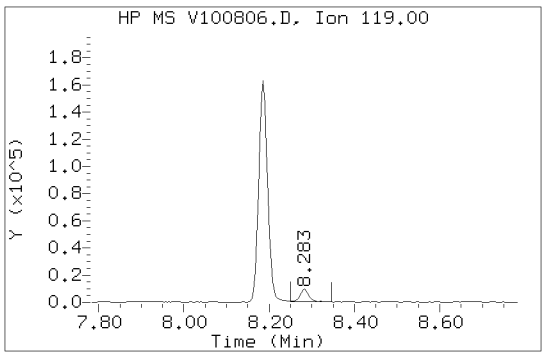
BEFORE

MASS
119
AREA
14673
HEIGHT
9648
13-Oct-2023
16:58
linh
pham



AFTER

MASS
119
AREA
14673
HEIGHT
9648
13-Oct-2023
16:58
linh
pham

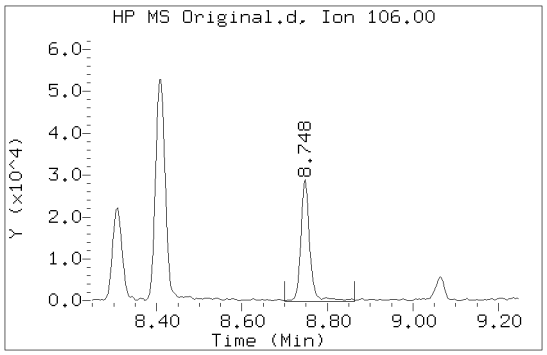


o-Xylene (95-47-6)

Reason Code:

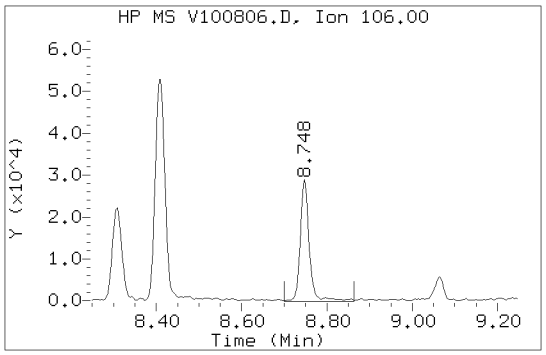
BEFORE

MASS
106
AREA
43711
HEIGHT
29057
13-Oct-2023
16:58
linh
pham



AFTER

MASS
106
AREA
43711
HEIGHT
29057
13-Oct-2023
16:58
linh
pham



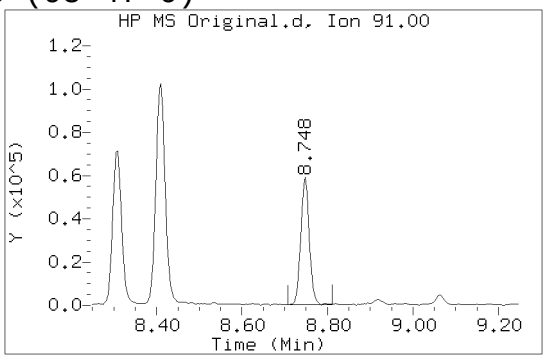
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

o-Xylene (95-47-6)

Reason Code:

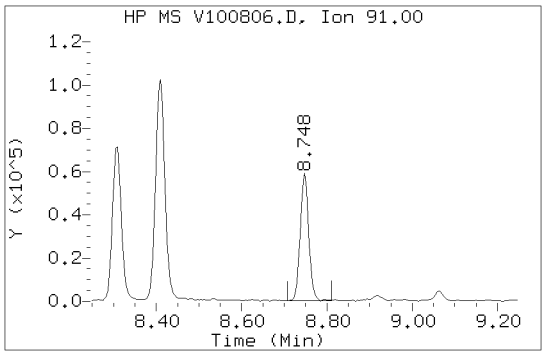
BEFORE

MASS
91
AREA
83325
HEIGHT
59009
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
83325
HEIGHT
59009
13-Oct-2023
16:58
linh
pham

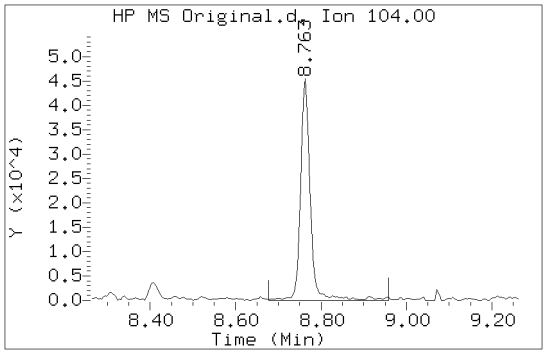


Styrene (100-42-5)

Reason Code:

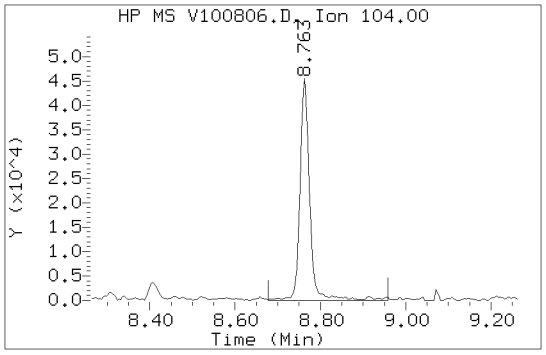
BEFORE

MASS
104
AREA
74495
HEIGHT
45446
13-Oct-2023
16:58
linh
pham



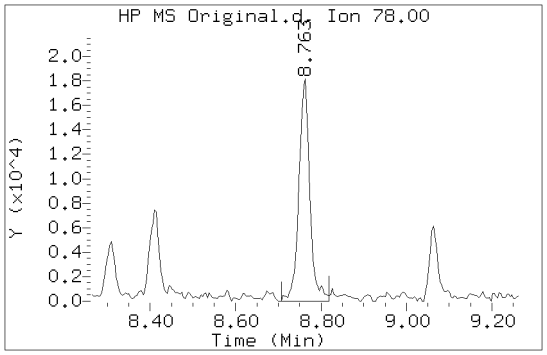
AFTER

MASS
104
AREA
74495
HEIGHT
45446
13-Oct-2023
16:58
linh
pham



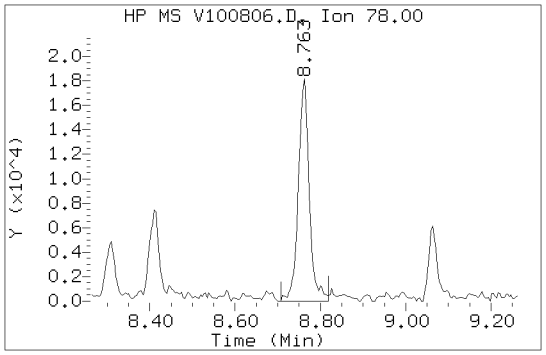
BEFORE

MASS
78
AREA
33193
HEIGHT
18160
13-Oct-2023
16:58
linh
pham



AFTER

MASS
78
AREA
33193
HEIGHT
18160
13-Oct-2023
16:58
linh
pham

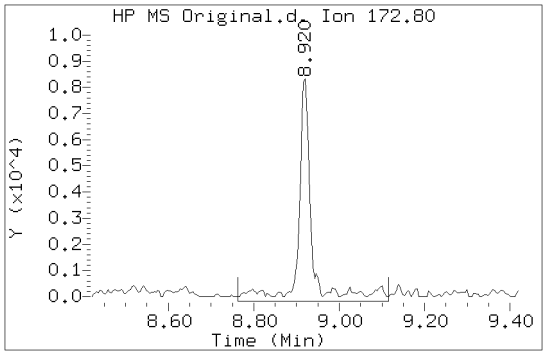


Bromoform (75-25-2)

Reason Code:

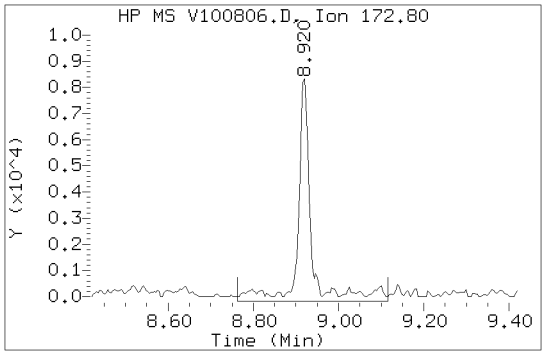
BEFORE

MASS
172.8
AREA
18874
HEIGHT
8493
13-Oct-2023
16:58
linh
pham



AFTER

MASS
172.8
AREA
18874
HEIGHT
8493
13-Oct-2023
16:58
linh
pham



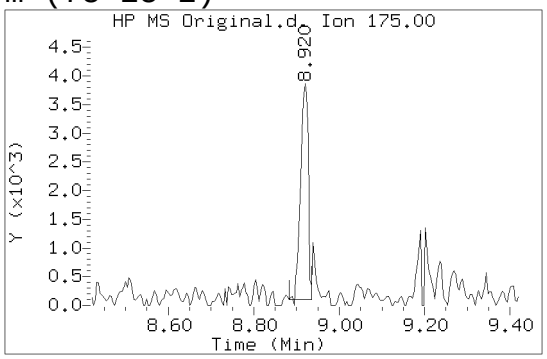
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Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Bromoform (75-25-2)

Reason Code:

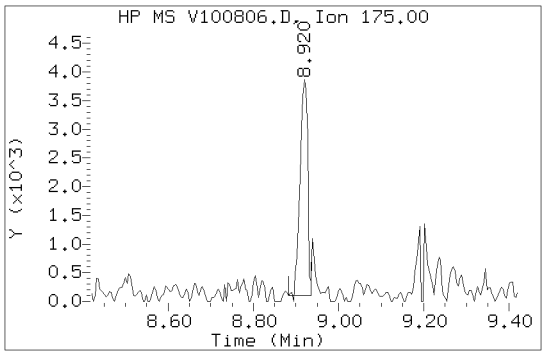
BEFORE

MASS
175
AREA
4826
HEIGHT
3763
13-Oct-2023
16:58
linh
pham



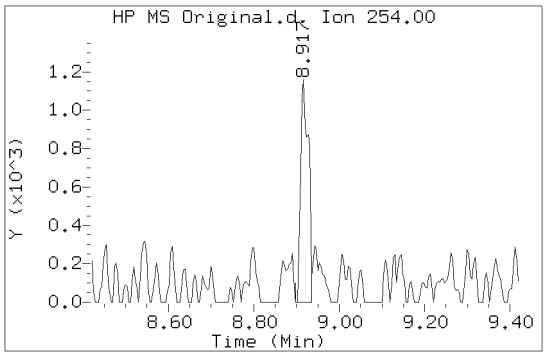
AFTER

MASS
175
AREA
4826
HEIGHT
3763
13-Oct-2023
16:58
linh
pham



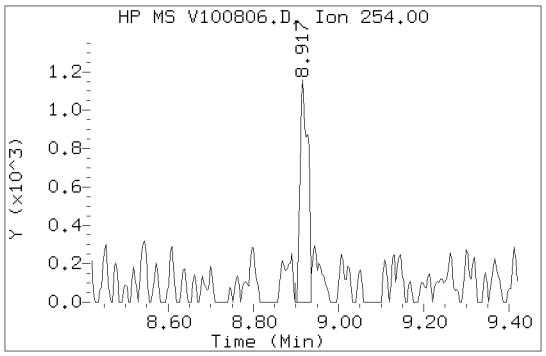
BEFORE

MASS
254
AREA
1521
HEIGHT
1158
13-Oct-2023
16:58
linh
pham



AFTER

MASS
254
AREA
1521
HEIGHT
1158
13-Oct-2023
16:58
linh
pham

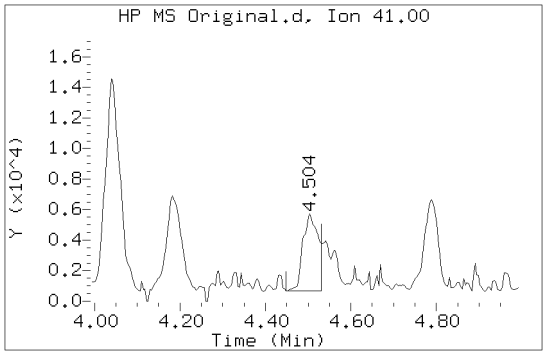


Methacrylonitrile (126-98-7)

Reason Code:

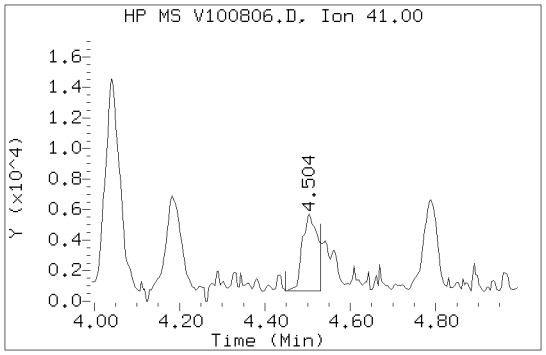
BEFORE

MASS
41
AREA
12444
HEIGHT
5044
13-Oct-2023
16:58
linh
pham



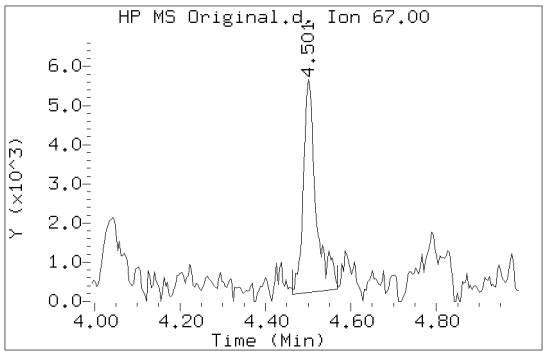
AFTER

MASS
41
AREA
12444
HEIGHT
5044
13-Oct-2023
16:58
linh
pham



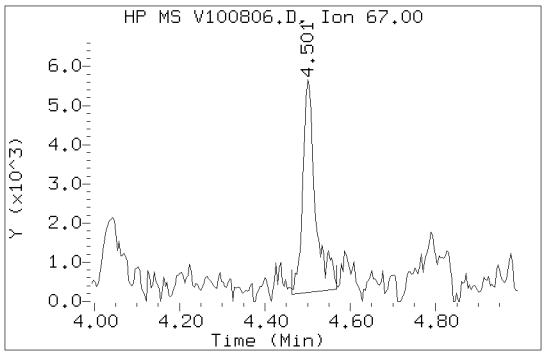
BEFORE

MASS
67
AREA
11357
HEIGHT
5441
13-Oct-2023
16:58
linh
pham



AFTER

MASS
67
AREA
11357
HEIGHT
5441
13-Oct-2023
16:58
linh
pham



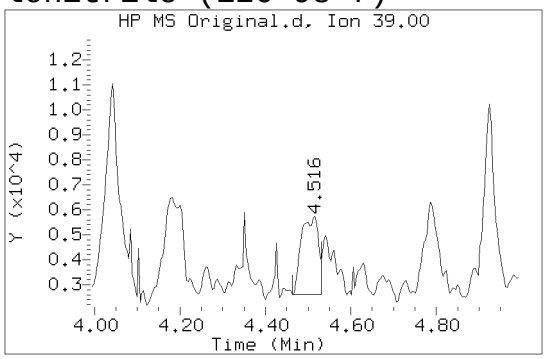
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Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Methacrylonitrile (126-98-7)

Reason Code:

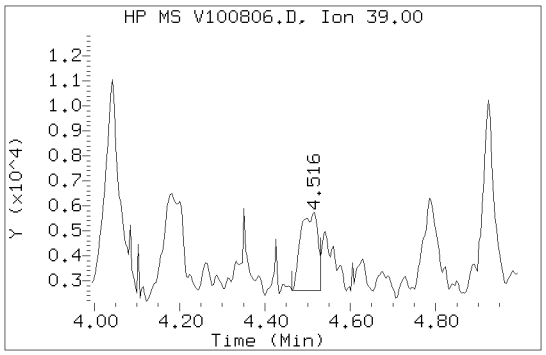
BEFORE

MASS
39
AREA
8811
HEIGHT
3143
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
8811
HEIGHT
3143
13-Oct-2023
16:58
linh
pham

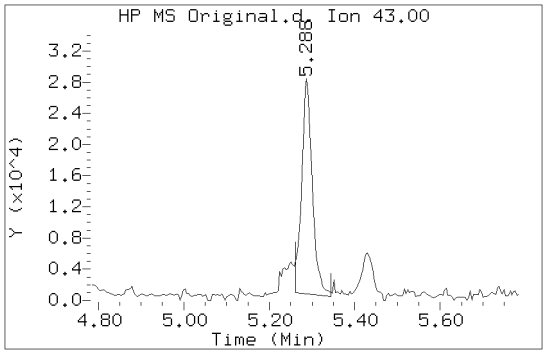


Isobutyl Alcohol (78-83-1)

Reason Code:

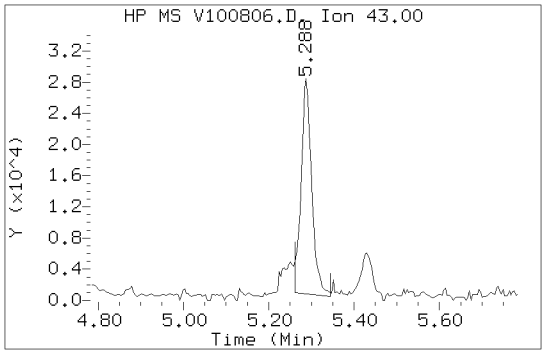
BEFORE

MASS
43
AREA
49031
HEIGHT
27585
13-Oct-2023
16:58
linh
pham



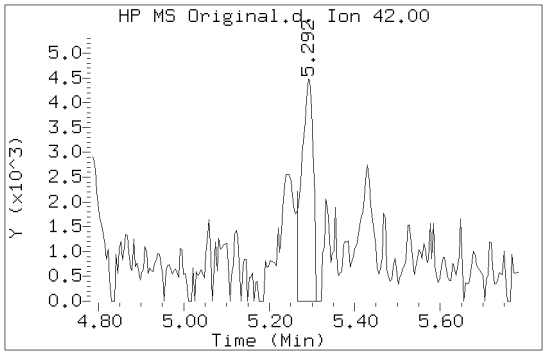
AFTER

MASS
43
AREA
49031
HEIGHT
27585
13-Oct-2023
16:58
linh
pham



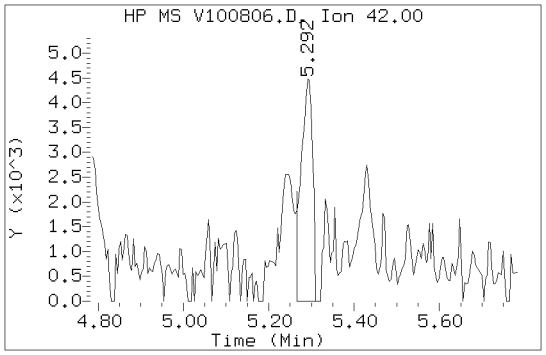
BEFORE

MASS
42
AREA
8586
HEIGHT
4481
13-Oct-2023
16:58
linh
pham



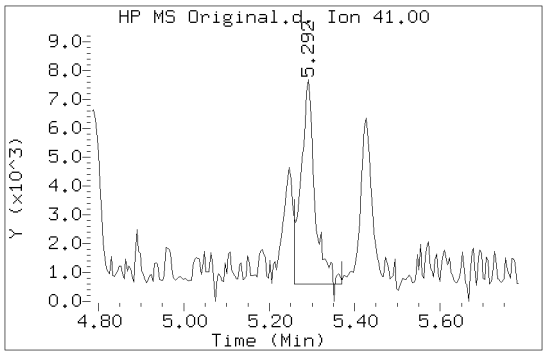
AFTER

MASS
42
AREA
8586
HEIGHT
4481
13-Oct-2023
16:58
linh
pham



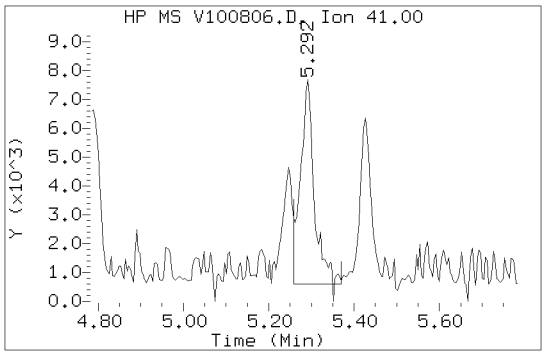
BEFORE

MASS
41
AREA
16345
HEIGHT
7069
13-Oct-2023
16:58
linh
pham



AFTER

MASS
41
AREA
16345
HEIGHT
7069
13-Oct-2023
16:58
linh
pham



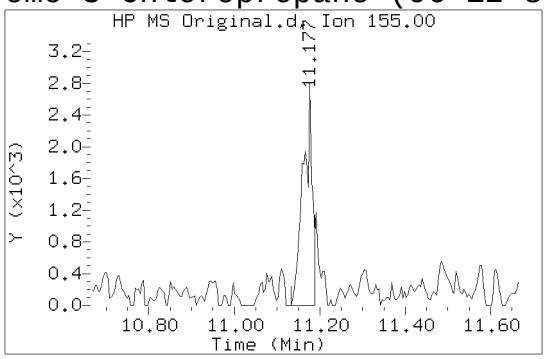
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Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

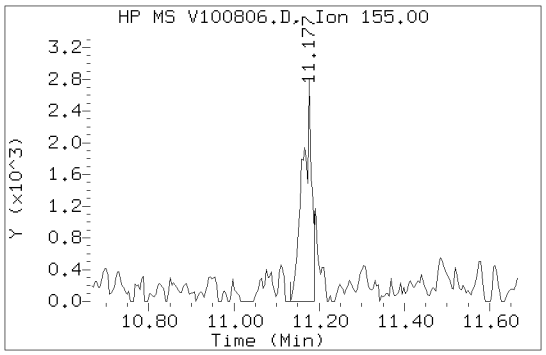
BEFORE

MASS
155
AREA
4226
HEIGHT
2795
13-Oct-2023
16:58
linh
pham



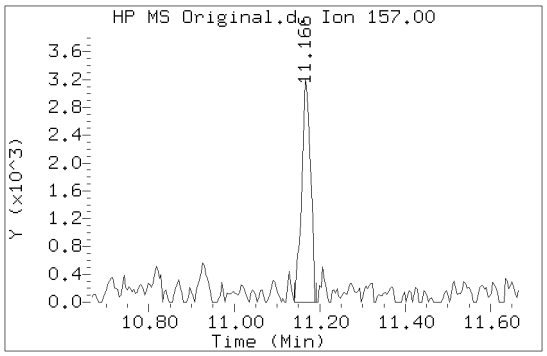
AFTER

MASS
155
AREA
4226
HEIGHT
2795
13-Oct-2023
16:58
linh
pham



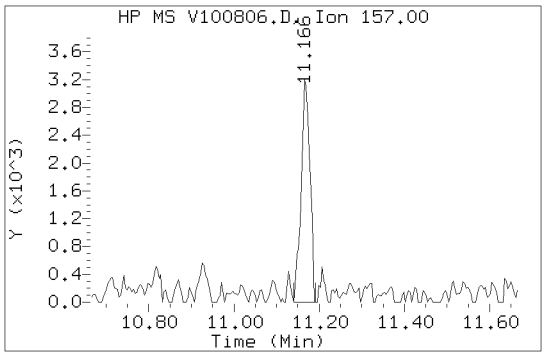
BEFORE

MASS
157
AREA
4730
HEIGHT
3196
13-Oct-2023
16:58
linh
pham



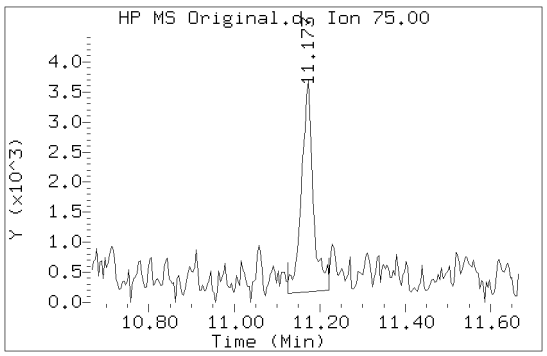
AFTER

MASS
157
AREA
4730
HEIGHT
3196
13-Oct-2023
16:58
linh
pham



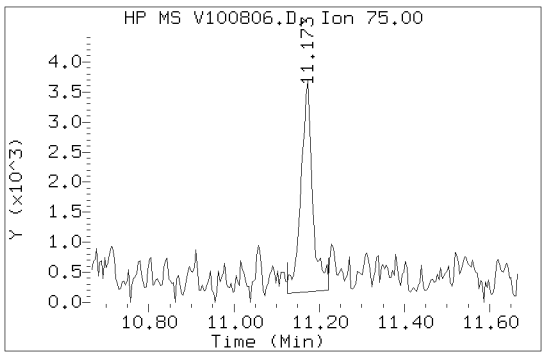
BEFORE

MASS
75
AREA
6816
HEIGHT
3507
13-Oct-2023
16:58
linh
pham



AFTER

MASS
75
AREA
6816
HEIGHT
3507
13-Oct-2023
16:58
linh
pham

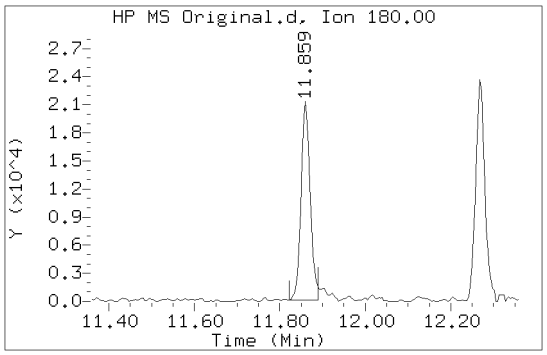


1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

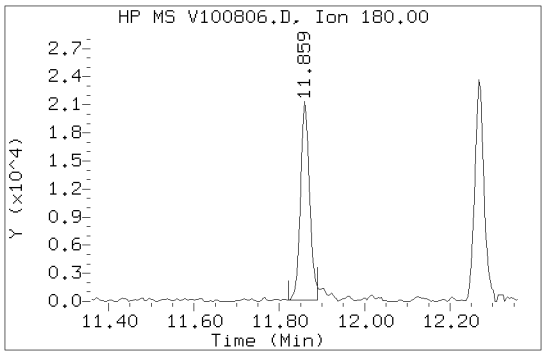
BEFORE

MASS
180
AREA
32392
HEIGHT
21235
13-Oct-2023
16:58
linh
pham



AFTER

MASS
180
AREA
32392
HEIGHT
21235
13-Oct-2023
16:58
linh
pham



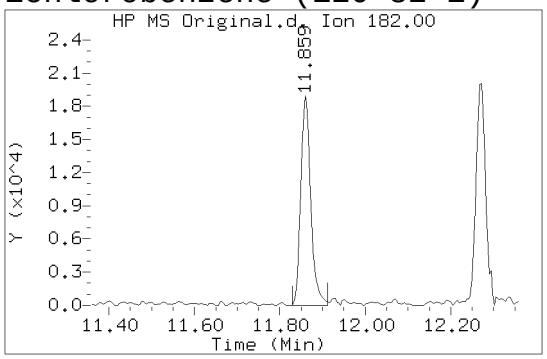
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

1,2,4-Trichlorobenzene (120-82-1)

Reason Code:

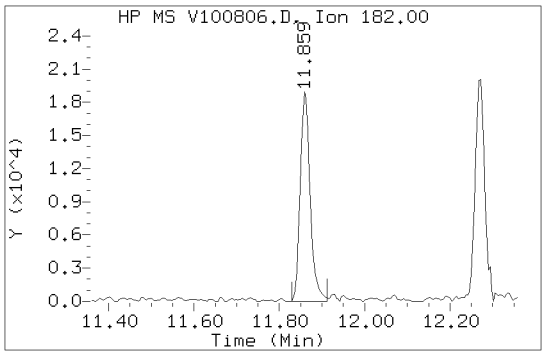
BEFORE

MASS
182
AREA
31495
HEIGHT
18944
13-Oct-2023
16:58
linh
pham



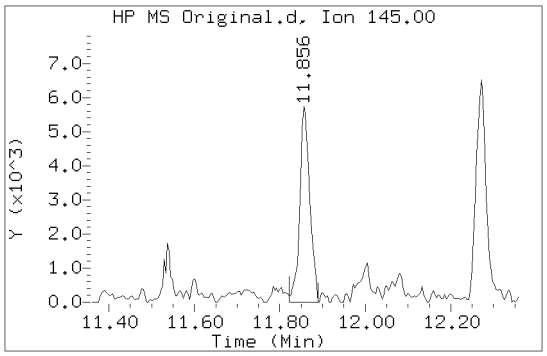
AFTER

MASS
182
AREA
31495
HEIGHT
18944
13-Oct-2023
16:58
linh
pham



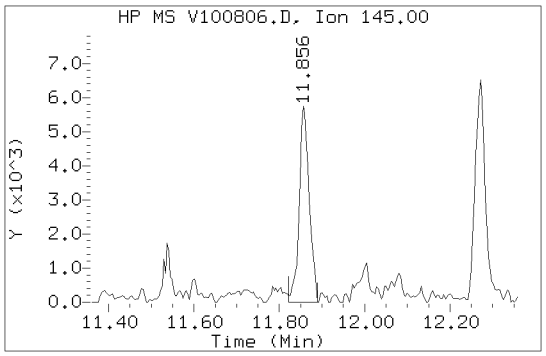
BEFORE

MASS
145
AREA
9621
HEIGHT
5743
13-Oct-2023
16:58
linh
pham



AFTER

MASS
145
AREA
9621
HEIGHT
5743
13-Oct-2023
16:58
linh
pham

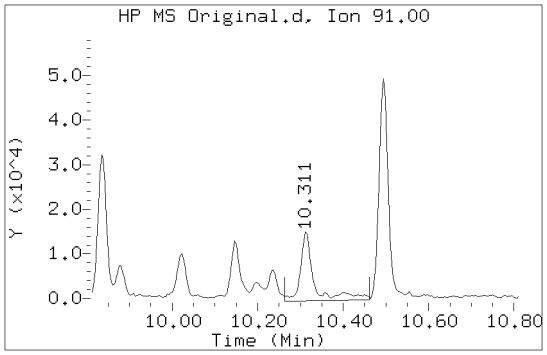


Benzyl Chloride (100-44-7)

Reason Code:

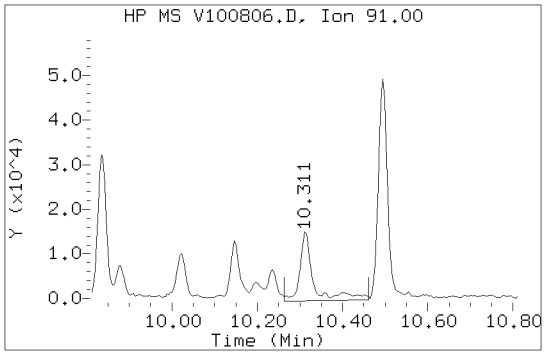
BEFORE

MASS
91
AREA
34985
HEIGHT
15457
13-Oct-2023
16:58
linh
pham



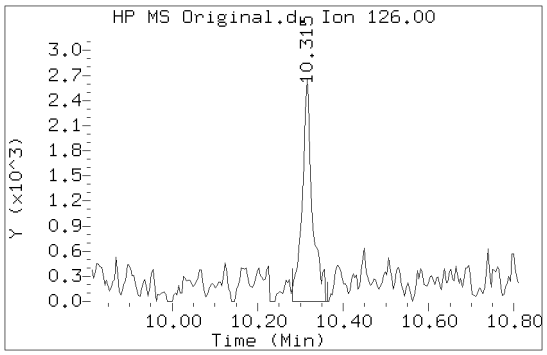
AFTER

MASS
91
AREA
34985
HEIGHT
15457
13-Oct-2023
16:58
linh
pham



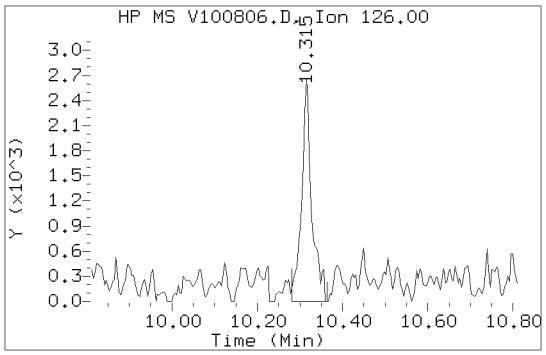
BEFORE

MASS
126
AREA
4474
HEIGHT
2649
13-Oct-2023
16:58
linh
pham



AFTER

MASS
126
AREA
4474
HEIGHT
2649
13-Oct-2023
16:58
linh
pham



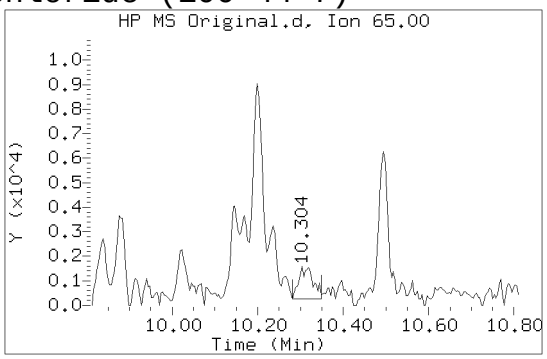
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Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Benzyl Chloride (100-44-7)

Reason Code:

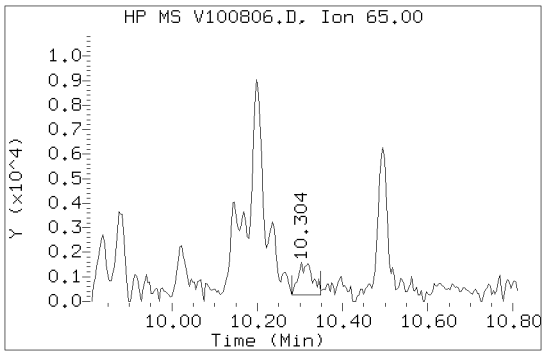
BEFORE

MASS
65
AREA
3090
HEIGHT
1339
13-Oct-2023
16:58
linh
pham



AFTER

MASS
65
AREA
3090
HEIGHT
1339
13-Oct-2023
16:58
linh
pham

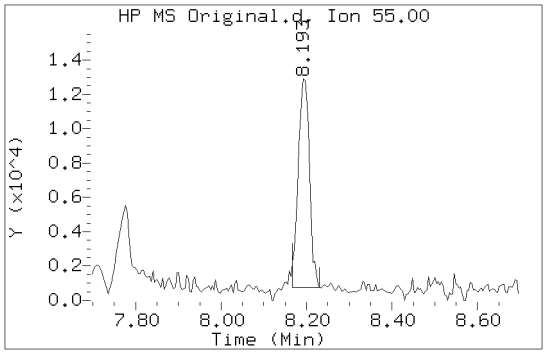


1-Chlorohexane (544-10-5)

Reason Code:

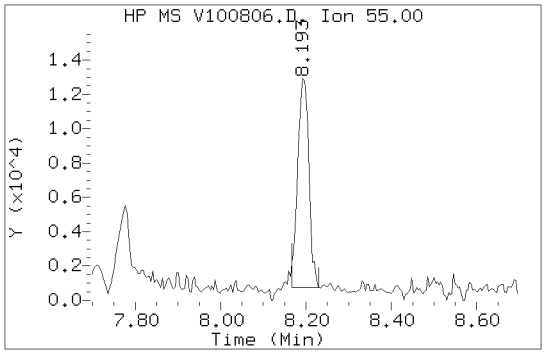
BEFORE

MASS
55
AREA
22806
HEIGHT
12162
13-Oct-2023
16:58
linh
pham



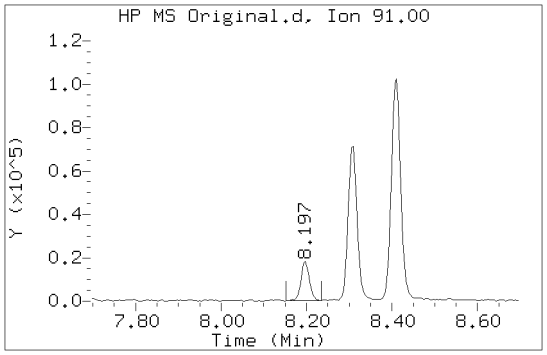
AFTER

MASS
55
AREA
22806
HEIGHT
12162
13-Oct-2023
16:58
linh
pham



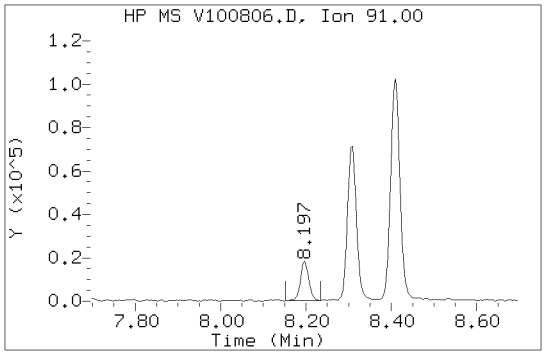
BEFORE

MASS
91
AREA
25494
HEIGHT
18072
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
25494
HEIGHT
18072
13-Oct-2023
16:58
linh
pham

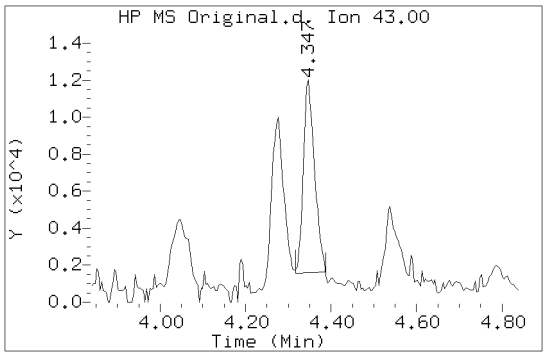


Ethyl Acetate (141-78-6)

Reason Code:

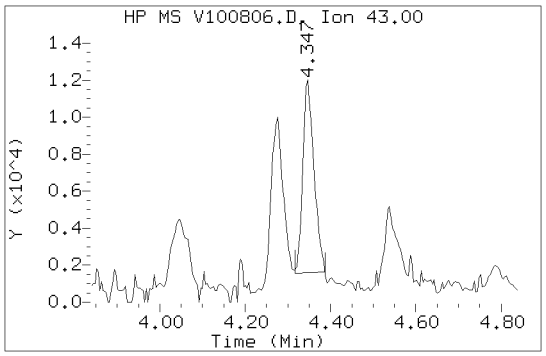
BEFORE

MASS
43
AREA
19070
HEIGHT
10428
13-Oct-2023
16:58
linh
pham



AFTER

MASS
43
AREA
19070
HEIGHT
10428
13-Oct-2023
16:58
linh
pham



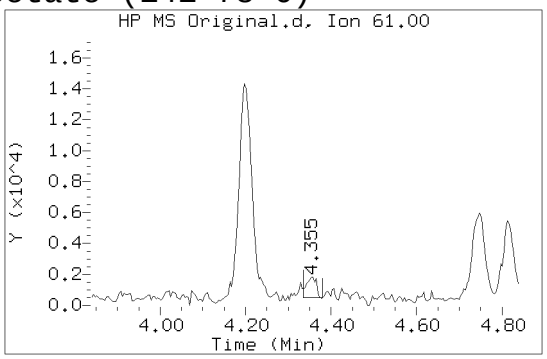
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Ethyl Acetate (141-78-6)

Reason Code:

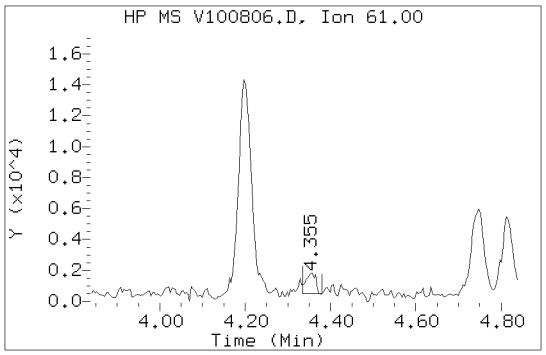
BEFORE

MASS
61
AREA
2170
HEIGHT
1350
13-Oct-2023
16:58
linh
pham



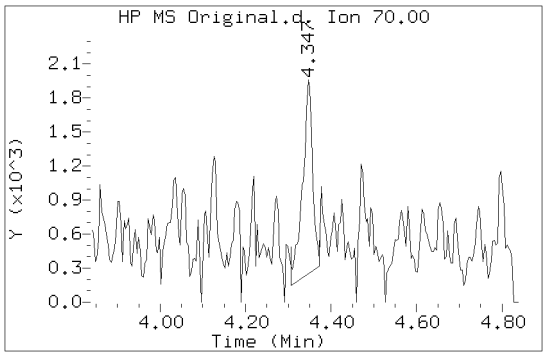
AFTER

MASS
61
AREA
2170
HEIGHT
1350
13-Oct-2023
16:58
linh
pham



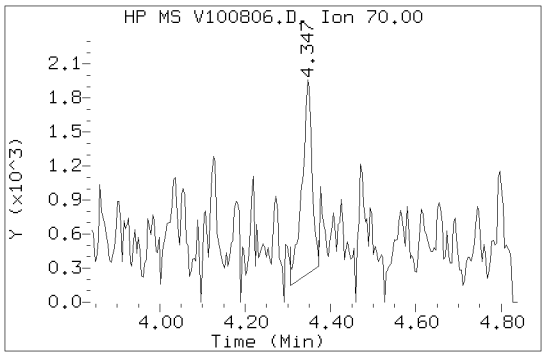
BEFORE

MASS
70
AREA
2839
HEIGHT
1708
13-Oct-2023
16:58
linh
pham



AFTER

MASS
70
AREA
2839
HEIGHT
1708
13-Oct-2023
16:58
linh
pham

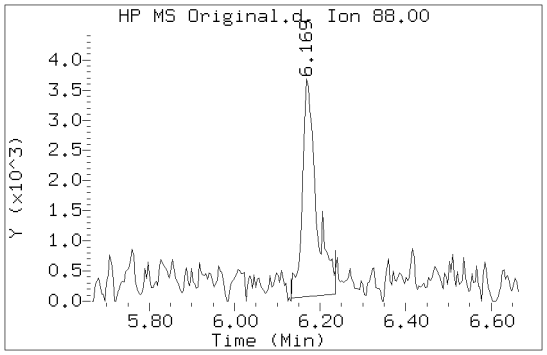


1,4-Dioxane ()

Reason Code:

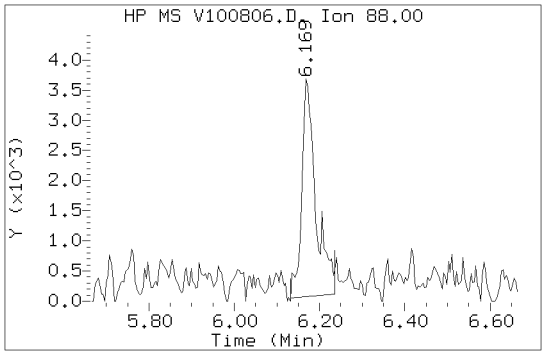
BEFORE

MASS
88
AREA
8318
HEIGHT
3611
13-Oct-2023
16:58
linh
pham



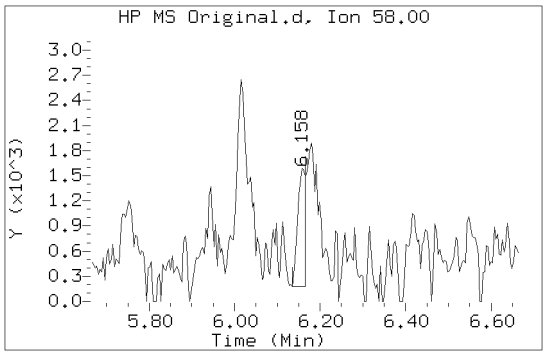
AFTER

MASS
88
AREA
8318
HEIGHT
3611
13-Oct-2023
16:58
linh
pham



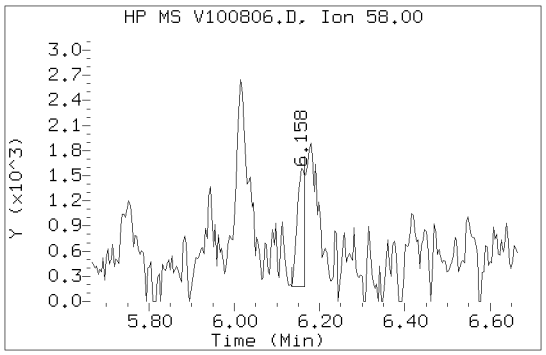
BEFORE

MASS
58
AREA
1785
HEIGHT
1407
13-Oct-2023
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linh
pham



AFTER

MASS
58
AREA
1785
HEIGHT
1407
13-Oct-2023
16:58
linh
pham



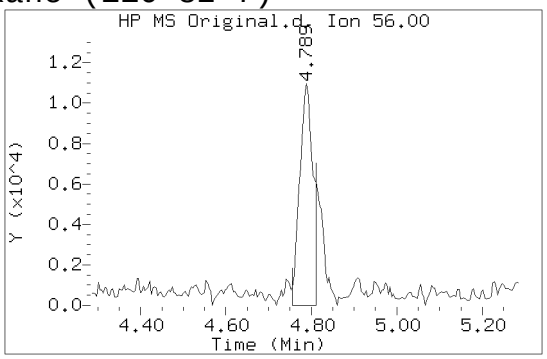
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Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Cyclohexane (110-82-7)

Reason Code:

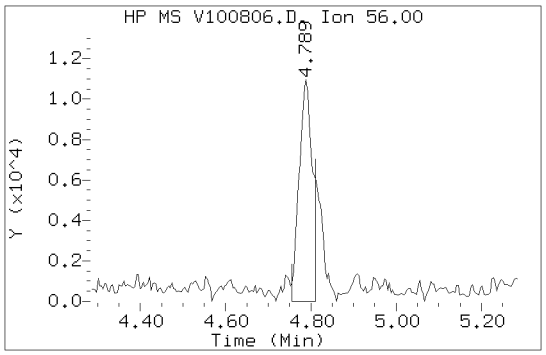
BEFORE

MASS
56
AREA
24107
HEIGHT
10960
13-Oct-2023
16:58
linh
pham



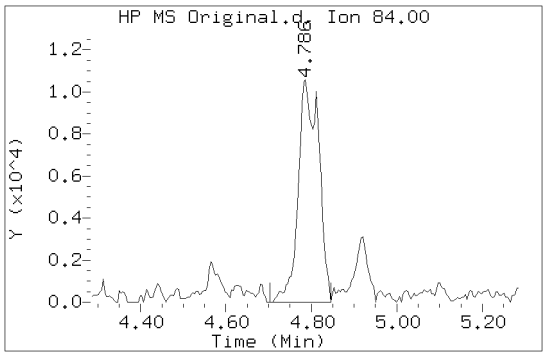
AFTER

MASS
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AREA
24107
HEIGHT
10960
13-Oct-2023
16:58
linh
pham



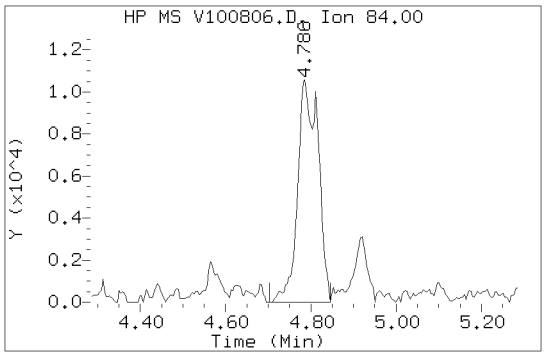
BEFORE

MASS
84
AREA
35707
HEIGHT
10572
13-Oct-2023
16:58
linh
pham



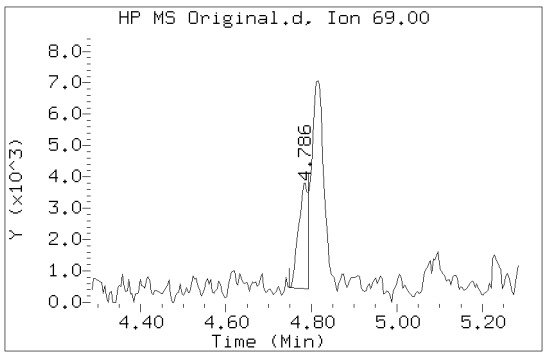
AFTER

MASS
84
AREA
35707
HEIGHT
10572
13-Oct-2023
16:58
linh
pham



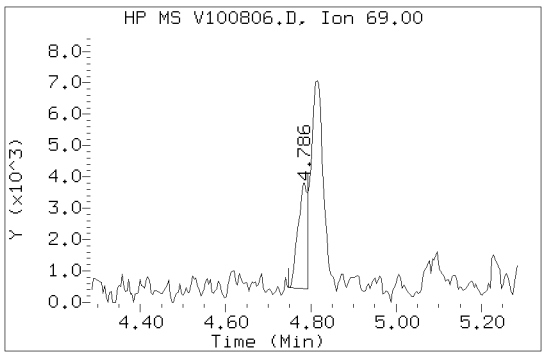
BEFORE

MASS
69
AREA
5387
HEIGHT
3375
13-Oct-2023
16:58
linh
pham



AFTER

MASS
69
AREA
5387
HEIGHT
3375
13-Oct-2023
16:58
linh
pham

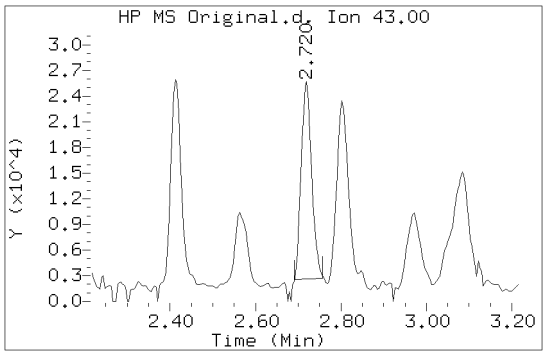


Methyl Acetate (79-20-9)

Reason Code:

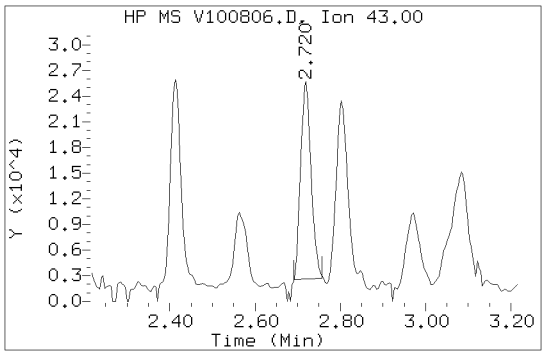
BEFORE

MASS
43
AREA
40112
HEIGHT
23086
13-Oct-2023
16:58
linh
pham



AFTER

MASS
43
AREA
40112
HEIGHT
23086
13-Oct-2023
16:58
linh
pham



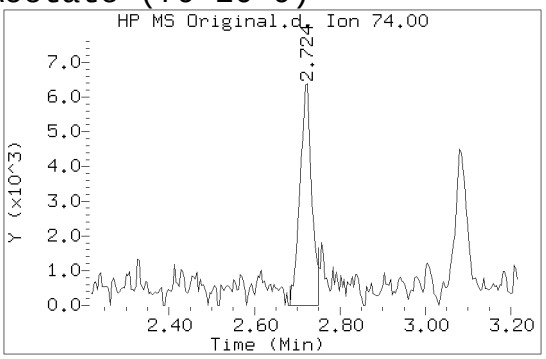
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Methyl Acetate (79-20-9)

Reason Code:

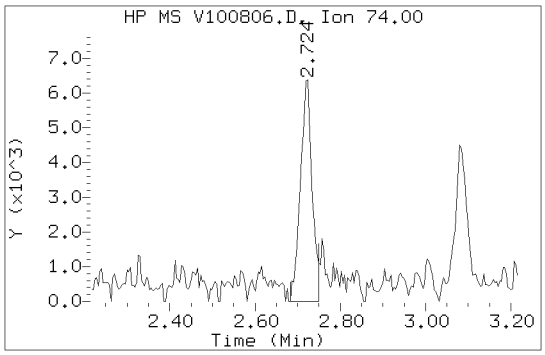
BEFORE

MASS
74
AREA
12424
HEIGHT
6387
13-Oct-2023
16:58
linh
pham



AFTER

MASS
74
AREA
12424
HEIGHT
6387
13-Oct-2023
16:58
linh
pham

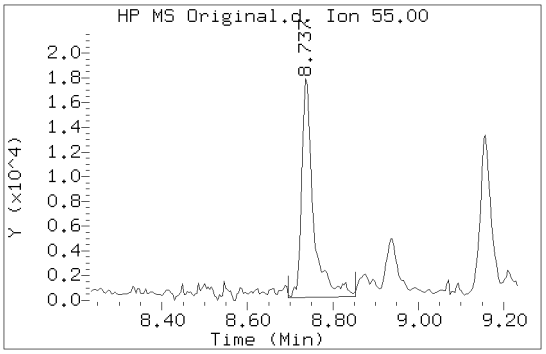


Butyl acrylate (141-32-2)

Reason Code:

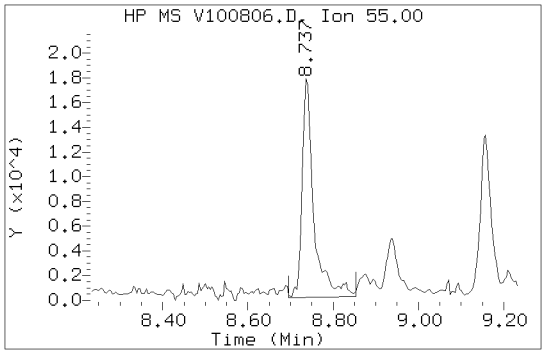
BEFORE

MASS
55
AREA
34091
HEIGHT
17686
13-Oct-2023
16:58
linh
pham



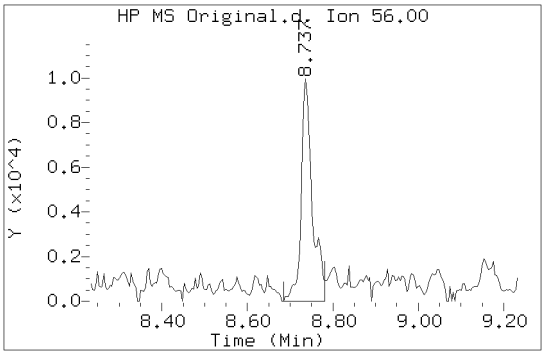
AFTER

MASS
55
AREA
34091
HEIGHT
17686
13-Oct-2023
16:58
linh
pham



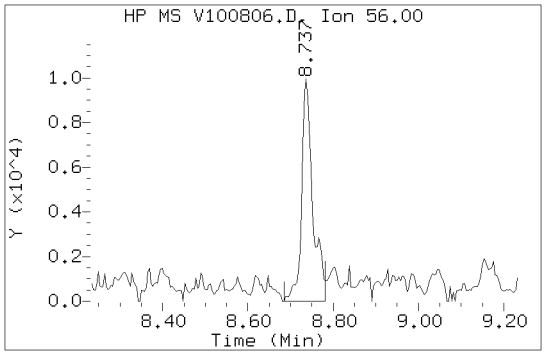
BEFORE

MASS
56
AREA
18294
HEIGHT
9956
13-Oct-2023
16:58
linh
pham



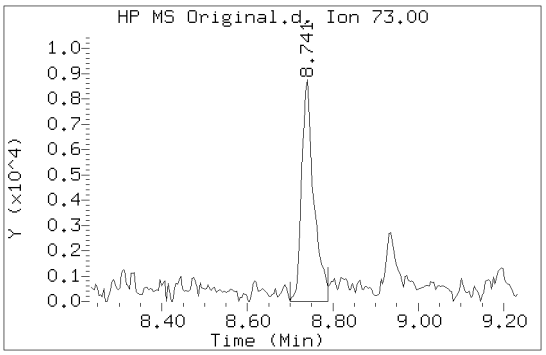
AFTER

MASS
56
AREA
18294
HEIGHT
9956
13-Oct-2023
16:58
linh
pham



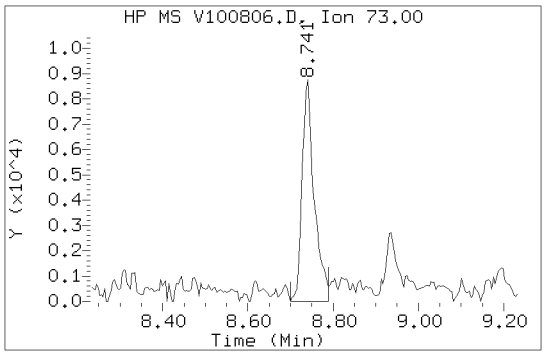
BEFORE

MASS
73
AREA
17406
HEIGHT
8756
13-Oct-2023
16:58
linh
pham



AFTER

MASS
73
AREA
17406
HEIGHT
8756
13-Oct-2023
16:58
linh
pham



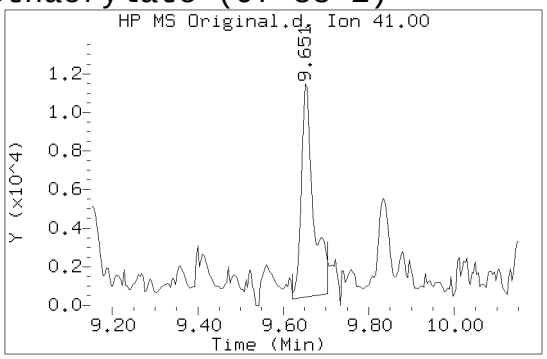
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Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Butyl methacrylate (97-88-1)

Reason Code:

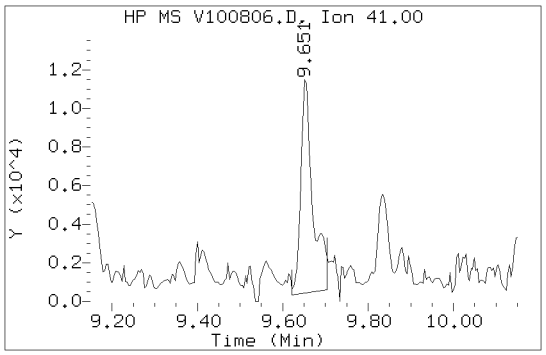
BEFORE

MASS
41
AREA
22320
HEIGHT
11064
13-Oct-2023
16:58
linh
pham



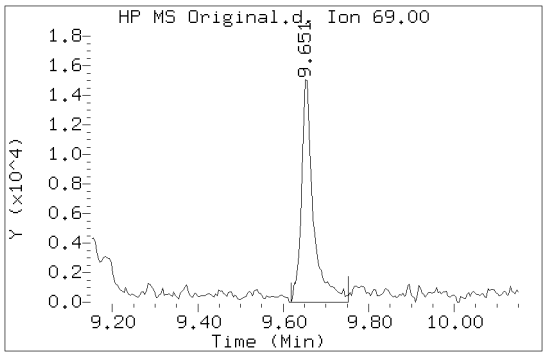
AFTER

MASS
41
AREA
22320
HEIGHT
11064
13-Oct-2023
16:58
linh
pham



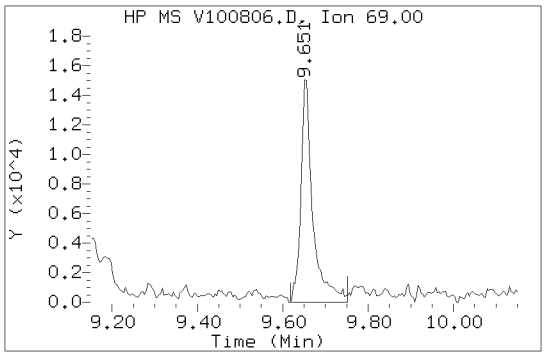
BEFORE

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69
AREA
29966
HEIGHT
15039
13-Oct-2023
16:58
linh
pham



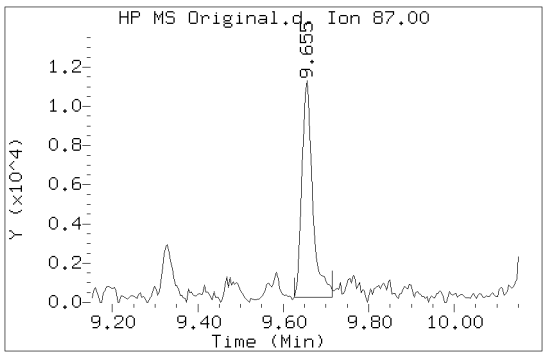
AFTER

MASS
69
AREA
29966
HEIGHT
15039
13-Oct-2023
16:58
linh
pham



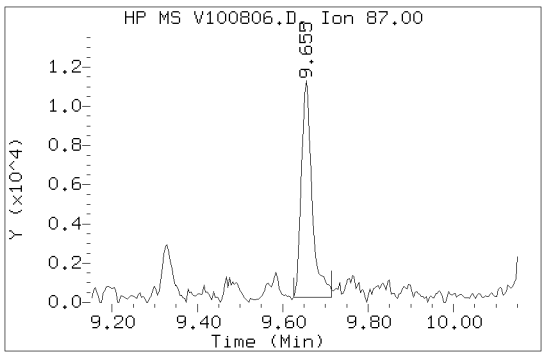
BEFORE

MASS
87
AREA
19827
HEIGHT
11057
13-Oct-2023
16:58
linh
pham



AFTER

MASS
87
AREA
19827
HEIGHT
11057
13-Oct-2023
16:58
linh
pham

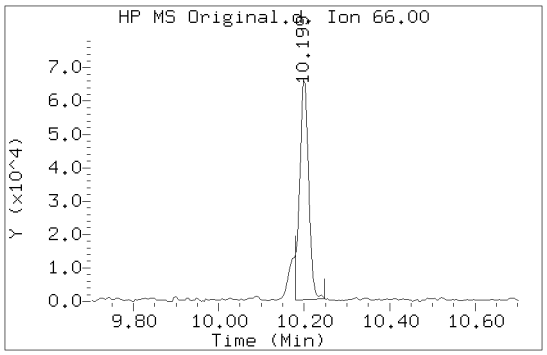


Dicyclopentadiene (77-73-6)

Reason Code:

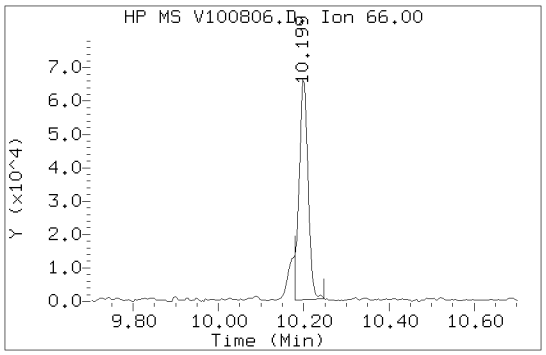
BEFORE

MASS
66
AREA
98958
HEIGHT
65954
13-Oct-2023
16:58
linh
pham



AFTER

MASS
66
AREA
98958
HEIGHT
65954
13-Oct-2023
16:58
linh
pham



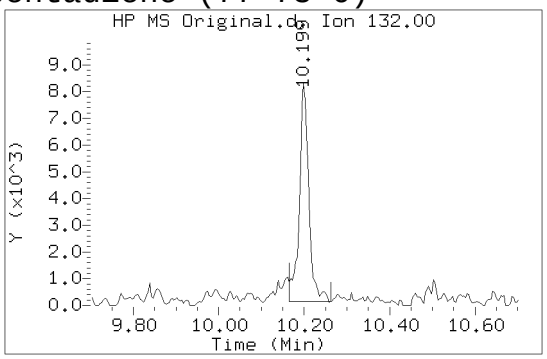
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Dicyclopentadiene (77-73-6)

Reason Code:

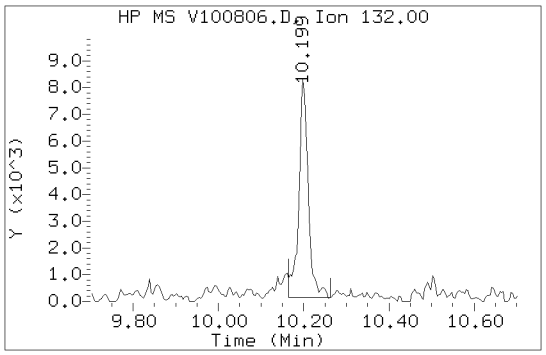
BEFORE

MASS
132
AREA
12939
HEIGHT
8156
13-Oct-2023
16:58
linh
pham



AFTER

MASS
132
AREA
12939
HEIGHT
8156
13-Oct-2023
16:58
linh
pham

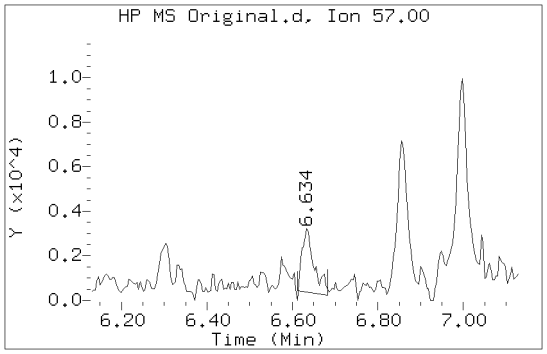


Epichlorohydrin (106-89-8)

Reason Code:

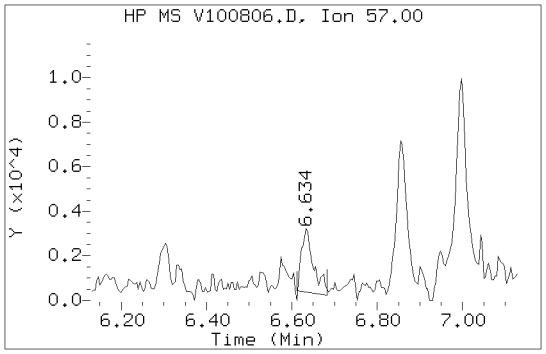
BEFORE

MASS
57
AREA
5579
HEIGHT
2867
13-Oct-2023
16:58
linh
pham



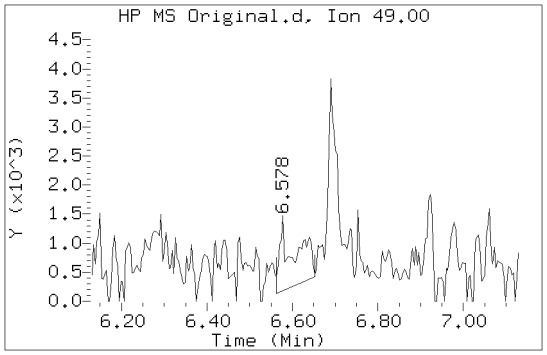
AFTER

MASS
57
AREA
5579
HEIGHT
2867
13-Oct-2023
16:58
linh
pham



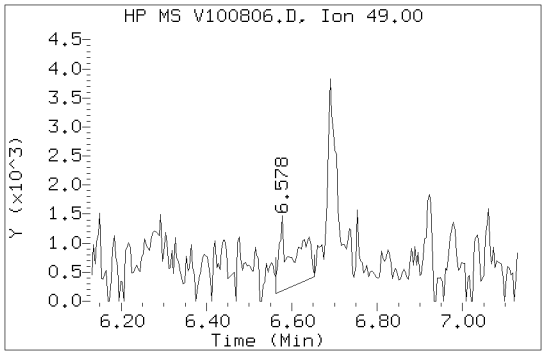
BEFORE

MASS
49
AREA
3188
HEIGHT
1285
13-Oct-2023
16:58
linh
pham



AFTER

MASS
49
AREA
3188
HEIGHT
1285
13-Oct-2023
16:58
linh
pham

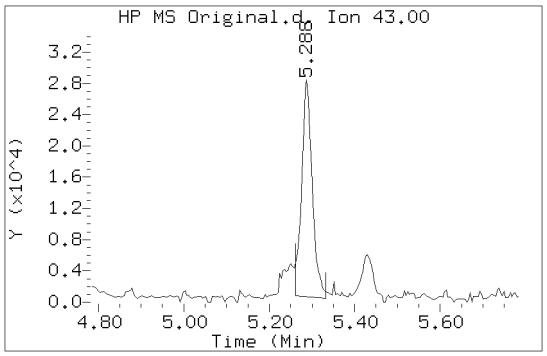


Isopropyl acetate (108-21-4)

Reason Code:

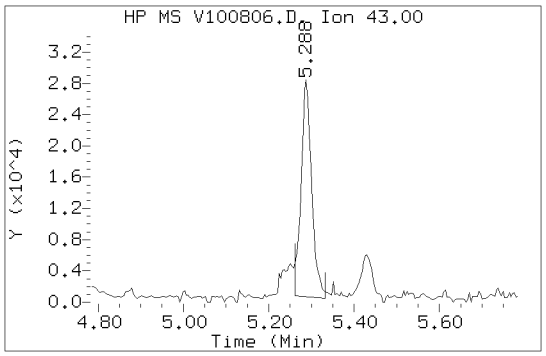
BEFORE

MASS
43
AREA
49178
HEIGHT
27717
13-Oct-2023
16:58
linh
pham



AFTER

MASS
43
AREA
49178
HEIGHT
27717
13-Oct-2023
16:58
linh
pham



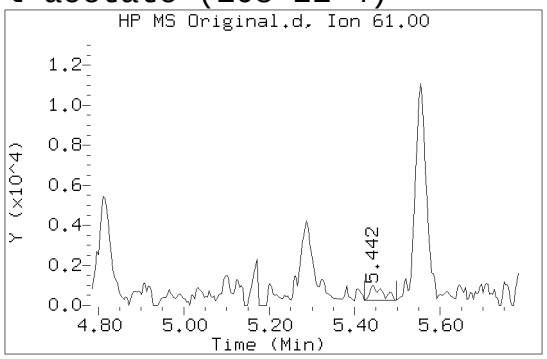
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100806.D
Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

Isopropyl acetate (108-21-4)

Reason Code:

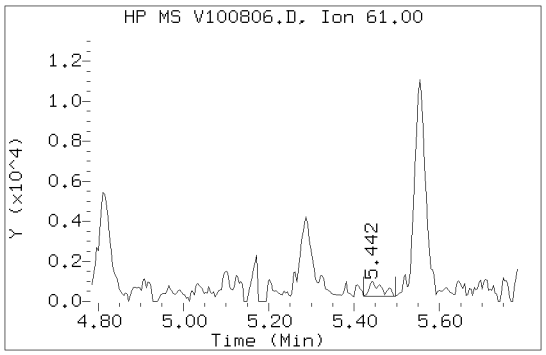
BEFORE

MASS
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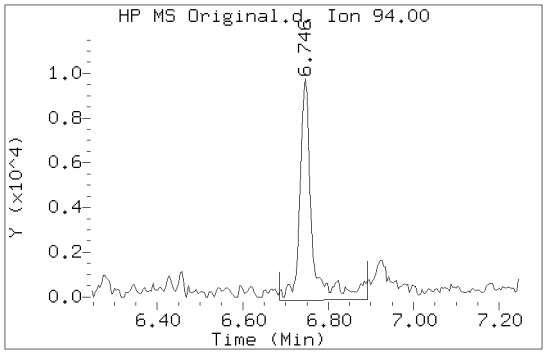


Dimethyl Disulfide (624-92-0)

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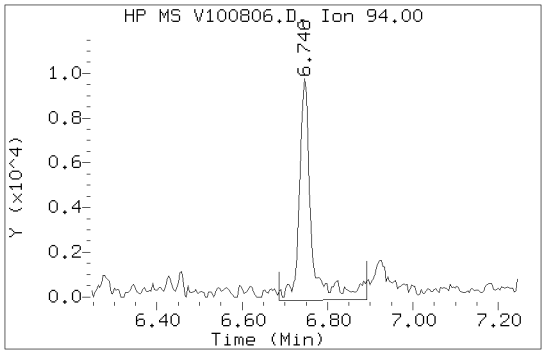
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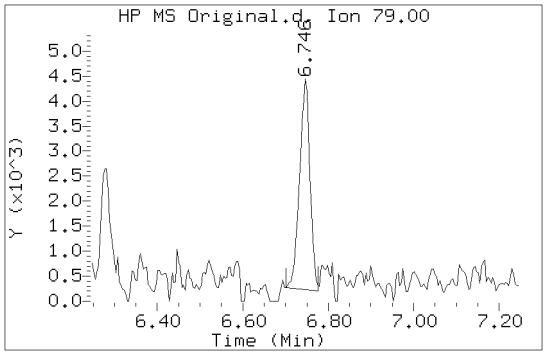
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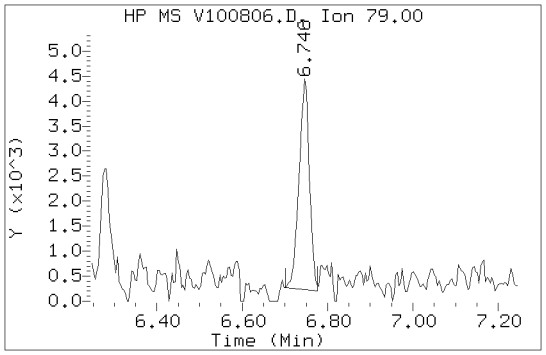
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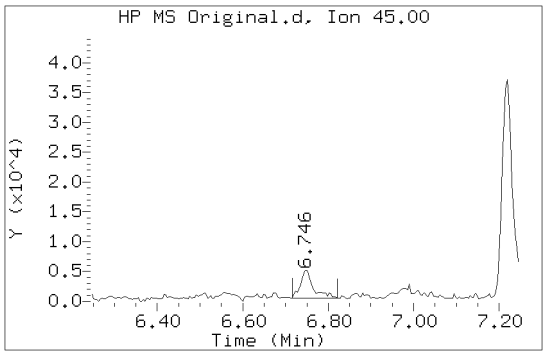
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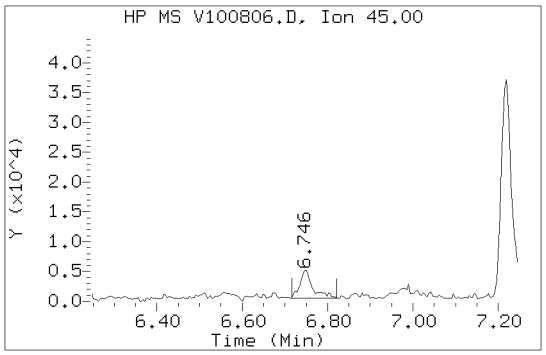
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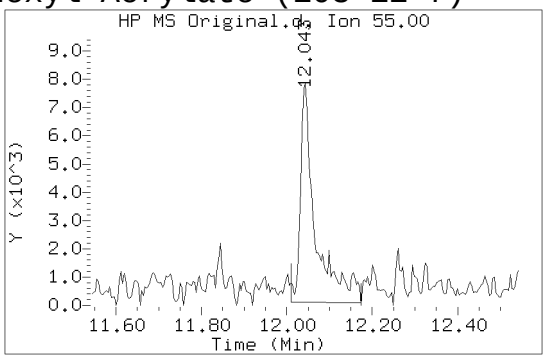
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Inj Date : 08-OCT-2023 15:41
InstruID : VOA9.i
LabSampID : VSTD005

2-Ethylhexyl Acrylate (103-11-7)

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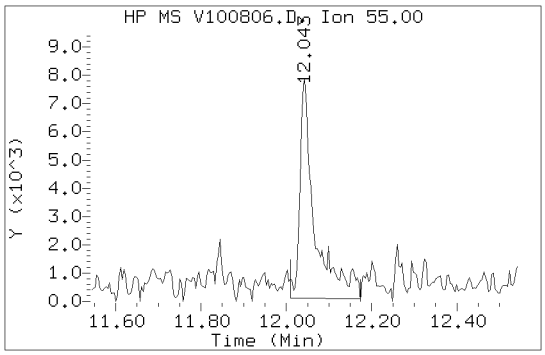
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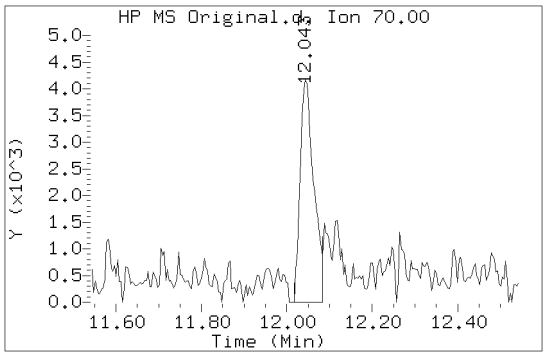
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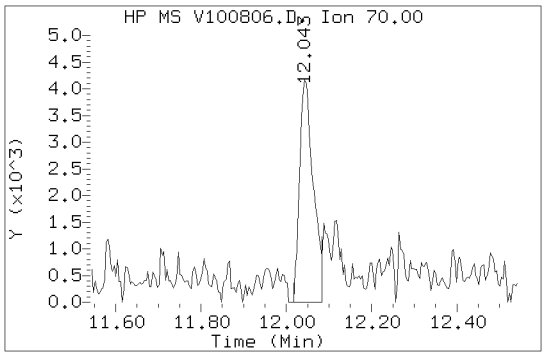
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Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100807.D Page 1
Report Date: 13-Oct-2023 17:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100807.D
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Inj Date : 08-OCT-2023 16:03
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : V9;WATER;0;1;
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Cal Date : 08-OCT-2023 15:41 Cal File: V100806.D
Als bottle: 8 Calibration Sample, Level: 6
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	4.815	4.815	(1.000)	413577	50.0000	
2 Dichlorodifluoromethane	85	1.160	1.160	(0.241)	85283	20.0000	19.47
3 Chloromethane	50	1.295	1.295	(0.269)	91992	20.0000	19.91
5 Vinyl Chloride	62	1.374	1.374	(0.285)	129975	20.0000	19.55
6 Bromomethane	94	1.617	1.617	(0.336)	117550	20.0000	19.81
7 Chloroethane	64	1.696	1.696	(0.352)	130656	20.0000	19.97
8 Trichlorofluoromethane	101	1.895	1.895	(0.394)	315592	20.0000	20.92
9 Acrolein	56	2.262	2.262	(0.470)	15273	40.0000	41.02
10 Acetone	43	2.405	2.405	(0.499)	161522	40.0000	45.71
11 1,1-Dichloroethene	96	2.330	2.330	(0.484)	175487	20.0000	21.25
15 Iodomethane	142	2.465	2.465	(0.512)	361765	40.0000	36.07
16 Acrylonitrile	53	3.064	3.064	(0.636)	152609	40.0000	40.74
17 Methylene Chloride	84	2.791	2.791	(0.580)	241859	20.0000	19.80
18 Methyl tert-butyl ether	73	3.079	3.079	(0.640)	665843	20.0000	19.60
19 Carbon Disulfide	76	2.517	2.517	(0.523)	985033	40.0000	41.46
20 trans-1,2-Dichloroethene	96	3.057	3.057	(0.635)	206984	20.0000	20.10
21 Vinyl Acetate	43	3.604	3.604	(0.749)	712215	40.0000	47.54
22 1,1-Dichloroethane	63	3.511	3.511	(0.729)	179417	20.0000	17.09(M)
24 2-Butanone	43	4.264	4.264	(0.886)	77507	40.0000	40.39
26 2,2-Dichloropropane	77	4.182	4.182	(0.868)	112342	20.0000	19.89

27 cis-1,2-Dichloroethene	96	4.197	4.197 (0.872)	107491	20.0000	20.50
28 Chloroform	83	4.571	4.571 (0.949)	175719	20.0000	18.26

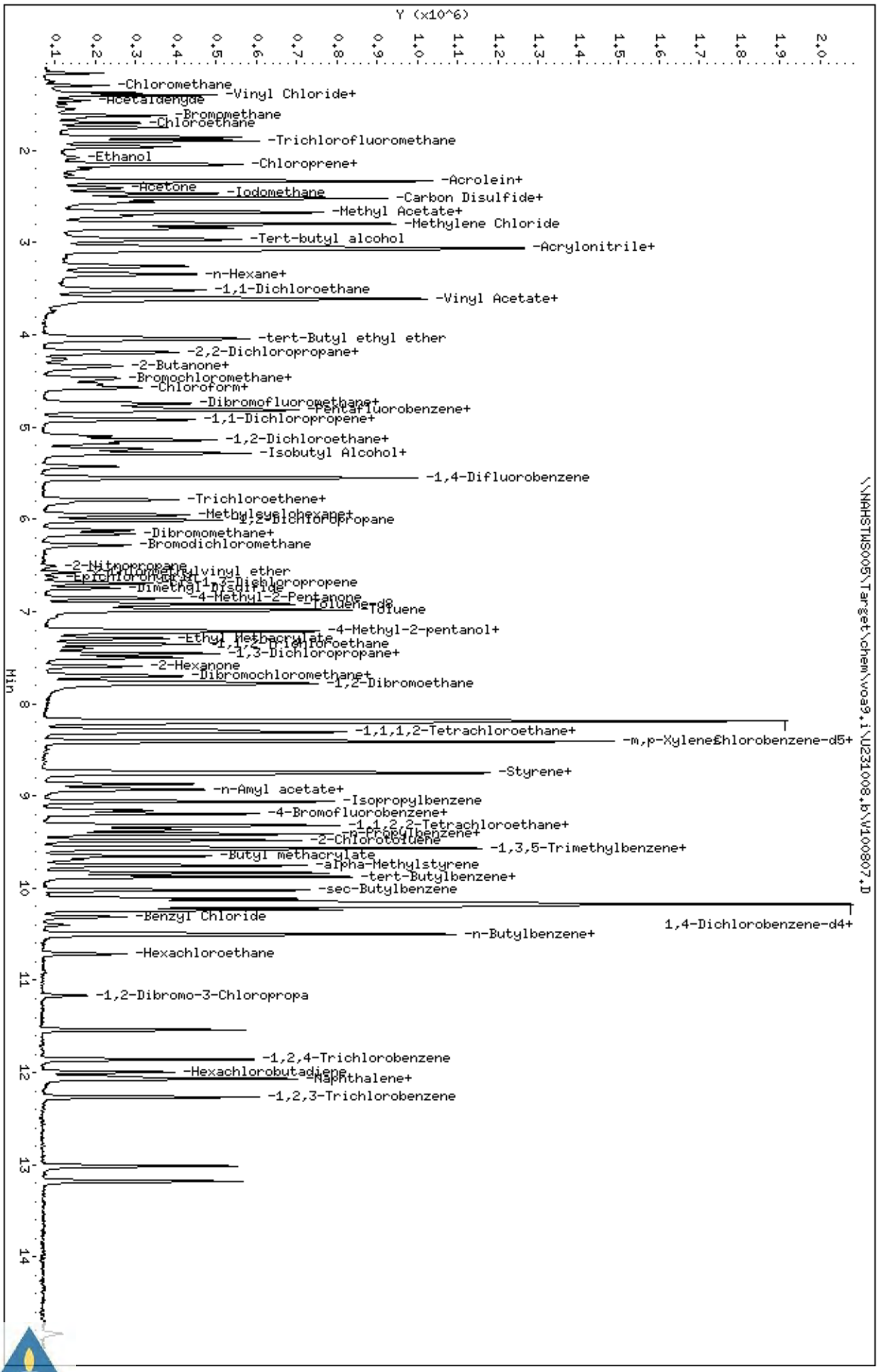
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	29 Bromochloromethane	128	4.466	4.466	(0.928)	52921	20.0000	20.91
$	30 Dibromofluoromethane	113	4.748	4.748	(0.986)	94694	20.0000	21.62
	31 1,1,1-Trichloroethane	97	4.744	4.744	(0.985)	130421	20.0000	18.19
	32 1,1-Dichloropropene	75	4.920	4.920	(0.886)	116017	20.0000	18.82
	33 1,2-Dichloroethane	62	5.175	5.175	(0.932)	143149	20.0000	20.13
	34 Carbon Tetrachloride	117	4.913	4.913	(0.885)	102899	20.0000	18.07
$	35 1,2-Dichloroethane-d4	65	5.096	5.096	(1.058)	110471	20.0000	21.10
*	36 1,4-Difluorobenzene	114	5.554	5.554	(1.000)	718896	50.0000	
	37 Benzene	78	5.137	5.137	(0.925)	377262	20.0000	19.69
	38 Trichloroethene	130	5.790	5.790	(1.043)	100036	20.0000	20.16
	39 Bromodichloromethane	83	6.277	6.277	(1.130)	117780	20.0000	17.72
	41 2-Chloroethylvinyl ether	63	6.577	6.577	(1.184)	36060	40.0000	34.98
	42 1,2-Dichloropropane	63	6.007	6.007	(1.082)	88792	20.0000	18.23
	44 Dibromomethane	93	6.120	6.120	(1.102)	70543	20.0000	18.25
	45 4-Methyl-2-Pentanone	43	6.854	6.854	(0.837)	196854	40.0000	42.31
	46 cis-1,3-Dichloropropene	75	6.689	6.689	(1.205)	138173	20.0000	17.46
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	784289	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	379133	20.0000	20.36
	50 Toluene	91	6.978	6.978	(0.853)	427725	20.0000	19.97
	51 trans-1,3-Dichloropropene	75	7.196	7.196	(1.296)	125611	20.0000	20.36(M)
	52 2-Hexanone	43	7.593	7.593	(0.928)	136765	40.0000	42.38
	53 1,1,2-Trichloroethane	83	7.353	7.353	(0.898)	89427	20.0000	20.64
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	184206	20.0000	20.41
	55 Dibromochloromethane	129	7.690	7.690	(0.940)	96514	20.0000	18.38
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	77303	20.0000	18.99
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	104624	20.0000	18.39
	58 1-Chlorohexane	55	8.196	8.196	(1.476)	79931	20.0000	20.48(M)
	59 Chlorobenzene	112	8.208	8.208	(1.003)	293106	20.0000	19.27
	60 1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	92055	20.0000	18.49
	61 Ethylbenzene	106	8.305	8.305	(1.015)	139507	20.0000	19.24
	62 m,p-Xylenes	106	8.406	8.406	(1.027)	373859	40.0000	38.50
	63 o-Xylene	106	8.747	8.747	(1.069)	177902	20.0000	18.15(M)
	64 Styrene	104	8.762	8.762	(1.071)	310721	20.0000	18.65
	66 Bromoform	173	8.920	8.920	(1.090)	67480	20.0000	17.79(M)
	67 Isopropylbenzene	105	9.062	9.062	(1.107)	436683	20.0000	18.64
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	164599	20.0000	21.61
$	69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	132497	20.0000	18.54
*	70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	455479	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.921)	148808	20.0000	19.42
	73 n-Propylbenzene	91	9.411	9.411	(0.926)	497457	20.0000	19.92
	74 Bromobenzene	156	9.317	9.317	(0.916)	128615	20.0000	20.33
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	366364	20.0000	18.98
	76 2-Chlorotoluene	91	9.482	9.482	(0.933)	307653	20.0000	19.44
	77 4-Chlorotoluene	91	9.576	9.576	(0.942)	361308	20.0000	19.23
	78 tert-Butylbenzene	119	9.835	9.835	(0.967)	311208	20.0000	18.80
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.972)	386684	20.0000	19.14
	81 sec-Butylbenzene	105	10.022	10.022	(0.986)	422630	20.0000	18.94
	82 p-Isopropyltoluene	119	10.146	10.146	(0.998)	372699	20.0000	18.98
	83 1,3-Dichlorobenzene	146	10.116	10.116	(0.995)	231510	20.0000	19.55
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	244537	20.0000	18.30
	87 n-Butylbenzene	91	10.491	10.491	(1.032)	343264	20.0000	18.84
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	240671	20.0000	19.72

89	1,2-Dibromo-3-Chloropropane	155	11.165	11.165 (1.098)	22269	20.0000	22.94
90	1,2,4-Trichlorobenzene	180	11.855	11.855 (1.166)	144357	20.0000	20.05

	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)	49142	20.0000	18.54
92	Naphthalene	128	12.065	12.065	(1.187)	435067	20.0000	20.50
93	1,2,3-Trichlorobenzene	180	12.267	12.267	(1.206)	142905	20.0000	19.94
M 94	1,2-Dichloroethylene (total)	96				314475	40.0000	(a)
135	1,4-Dioxane	88	6.165	6.165	(1.280)	30270	400.000	346.41
141	Cyclohexane	56	4.785	4.785	(0.994)	108521	20.0000	20.63
138	Freon TF	101	2.333	2.333	(0.485)	167596	20.0000	21.51
140	1,3-Butadiene	54	1.400	1.400	(0.291)	109660	20.0000	18.94
147	Methylcyclohexane	55	5.947	5.947	(1.071)	188325	20.0000	18.70
146	Methyl Acetate	43	2.712	2.712	(0.563)	164327	20.0000	20.57
148	Tert-Butyl alcohol	59	2.963	2.963	(0.615)	489646	400.000	399.03
149	Isopropyl Alcohol	45	2.558	2.558	(0.531)	252112	400.000	378.87
72	trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	32791	20.0000	18.91(H)
12	Isobutyl Alcohol	43	5.284	5.284	(1.097)	235281	400.000	371.67
13	Acetonitrile	39	2.671	2.671	(0.555)	225995	200.000	197.43
14	Allyl Chloride	41	2.671	2.671	(0.555)	430481	20.0000	20.83
25	Methacrylonitrile	41	4.493	4.493	(0.933)	53349	20.0000	19.76(M)
40	Methyl Methacrylate	41	6.157	6.157	(1.279)	79454	20.0000	18.89
43	2-Nitropropane	43	6.509	6.509	(1.352)	23951	20.0000	23.78(M)
4	Propionitrile	54	4.335	4.335	(0.900)	138037	200.000	207.33(a)
136	n-Hexane	57	3.338	3.338	(0.693)	168848	20.0000	22.32
194	Acetaldehyde	44	1.456	1.456	(0.302)	54050	80.0000	66.44
131	Methyl Acrylate	55	4.369	4.369	(0.907)	107592	20.0000	19.88
200	Dimethyl Disulfide	94	6.746	6.746	(0.824)	93475	20.0000	16.36(M)
23	Chloroprene	53	2.157	2.157	(0.448)	59316	20.0000	21.25
49	Ethyl Methacrylate	69	7.289	7.289	(1.313)	155032	20.0000	20.04
166	1,2,3-Trimethylbenzene	105	10.236	10.236	(1.007)	379818	20.0000	18.71
167	Ethanol	45	2.079	2.079	(0.432)	39998	400.000	393.01
164	Dicyclopentadiene	66	10.198	10.198	(1.003)	478168	20.0000	19.89
145	alpha-Methylstyrene	118	9.752	9.752	(0.959)	179473	20.0000	18.62
142	Tetrahydrofuran	42	4.541	4.541	(0.943)	35702	40.0000	41.19(H)
156	Diisopropyl ether	45	3.619	3.619	(0.752)	323291	20.0000	22.92
151	4-Methyl-2-pentanol	45	7.218	7.218	(1.300)	355042	400.000	396.80
150	Allyl alcohol	57	3.338	3.338	(0.693)	168848	400.000	404.29
86	Benzyl Chloride	91	10.311	10.311	(1.260)	151545	20.0000	14.37(M)
162	Butyl acrylate	55	8.736	8.736	(1.067)	174716	20.0000	16.88
139	Diethyl ether	59	2.142	2.142	(0.445)	137819	20.0000	19.03
203	2-Ethylhexyl Acrylate	55	12.043	12.043	(1.184)	72595	20.0000	15.74
134	Cyclohexanone	55	9.156	9.156	(0.900)	105961	400.000	408.98(a)
130	Ethyl Acetate	43	4.339	4.339	(0.901)	94612	20.0000	22.29(M)
189	n-Butyl acetate	43	7.705	7.705	(0.941)	158667	20.0000	21.97
182	Epichlorohydrin	57	6.629	6.629	(1.194)	20889	80.0000	68.04(H)
132	n-Butanol	56	5.823	5.823	(1.209)	41160	400.000	411.85(a)
133	Ethyl Acrylate	55	5.947	5.947	(1.235)	188325	20.0000	17.75
163	Butyl methacrylate	41	9.651	9.651	(0.949)	120247	20.0000	20.54
174	tert-Amyl methyl ether	73	5.284	5.284	(1.097)	273219	20.0000	17.51
175	tert-Butyl ethyl ether	59	4.047	4.047	(0.840)	240805	20.0000	18.54
187	n-Amyl acetate	43	8.931	8.931	(1.091)	186907	20.0000	19.92
188	Isopropyl acetate	43	5.284	5.284	(0.951)	231336	20.0000	19.61(M)
179	Hexachloroethane	166	10.712	10.712	(1.053)	27058	20.0000	19.71

QC Flag Legend

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: VSTD020
Sample Info: VSTD020;VSTD020;1;6;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

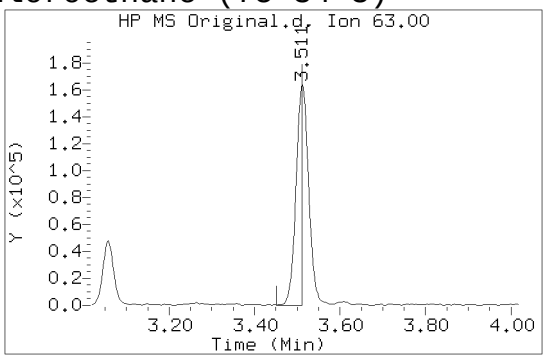
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Inj Date : 08-OCT-2023 16:03
InstruID : VOA9.i
LabSampID : VSTD020

1,1-Dichloroethane (75-34-3)

Reason Code:

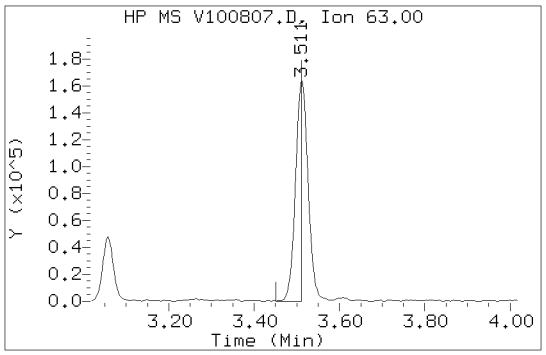
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pham



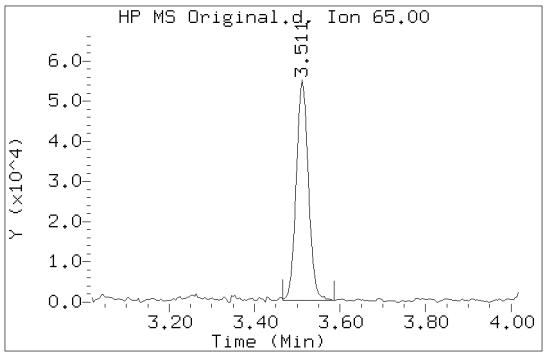
AFTER

MASS
63
AREA
179417
HEIGHT
164672
13-Oct-2023
16:58
linh
pham



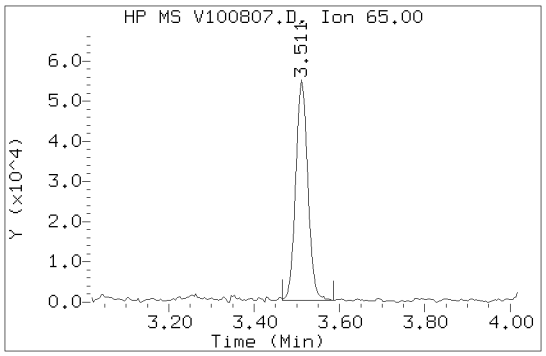
BEFORE

MASS
65
AREA
110803
HEIGHT
54852
13-Oct-2023
16:58
linh
pham



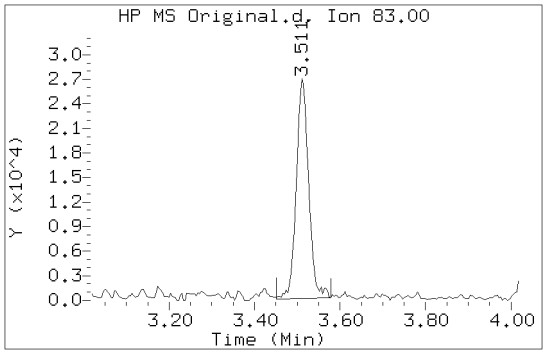
AFTER

MASS
65
AREA
110803
HEIGHT
54852
13-Oct-2023
16:58
linh
pham



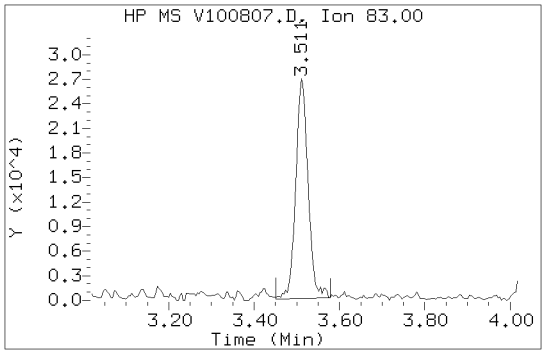
BEFORE

MASS
83
AREA
55221
HEIGHT
26832
13-Oct-2023
16:58
linh
pham



AFTER

MASS
83
AREA
55221
HEIGHT
26832
13-Oct-2023
16:58
linh
pham

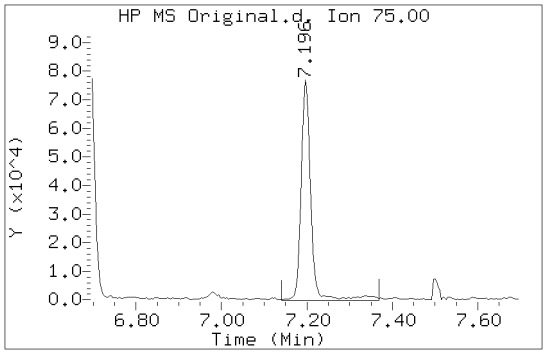


trans-1,3-Dichloropropene (10061-02-6)

Reason Code:

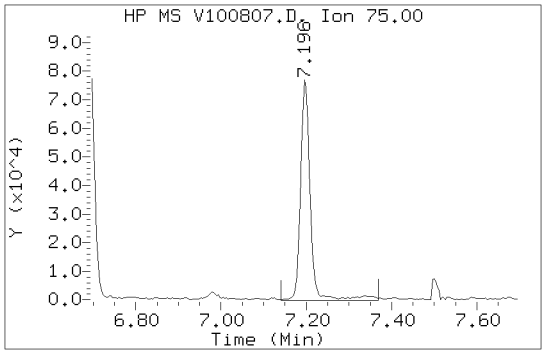
BEFORE

MASS
75
AREA
125611
HEIGHT
77070
13-Oct-2023
16:58
linh
pham



AFTER

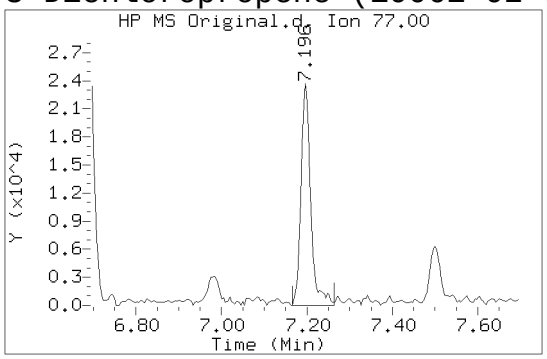
MASS
75
AREA
125611
HEIGHT
77070
13-Oct-2023
16:58
linh
pham



Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100807.D
Inj Date : 08-OCT-2023 16:03
InstruID : VOA9.i
LabSampID : VSTD020

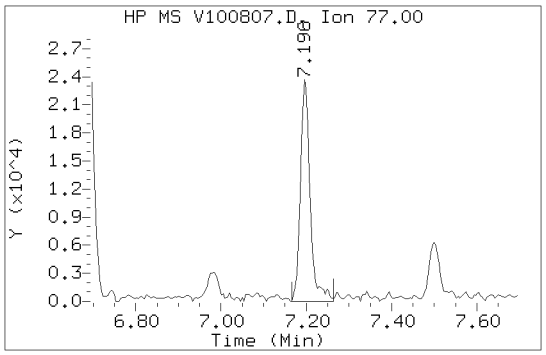
trans-1,3-Dichloropropene (10061-02-6)

BEFORE
MASS
77
AREA
38485
HEIGHT
23688
13-Oct-2023
16:58
linh
pham

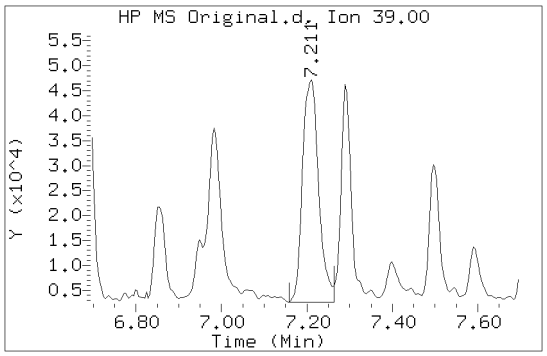


Reason Code:

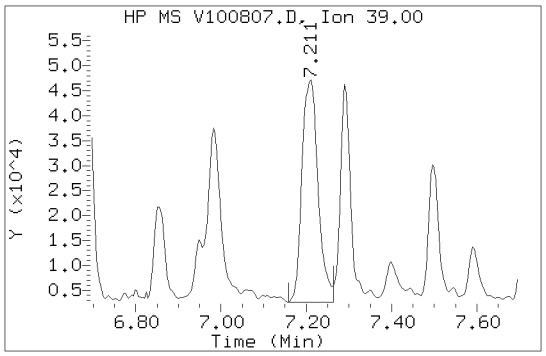
AFTER
MASS
77
AREA
38485
HEIGHT
23688
13-Oct-2023
16:58
linh
pham



BEFORE
MASS
39
AREA
119073
HEIGHT
44550
13-Oct-2023
16:58
linh
pham

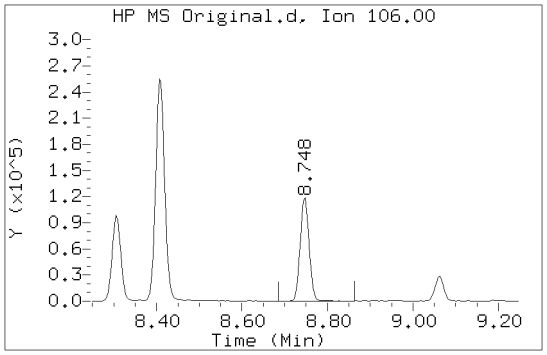


AFTER
MASS
39
AREA
119073
HEIGHT
44550
13-Oct-2023
16:58
linh
pham



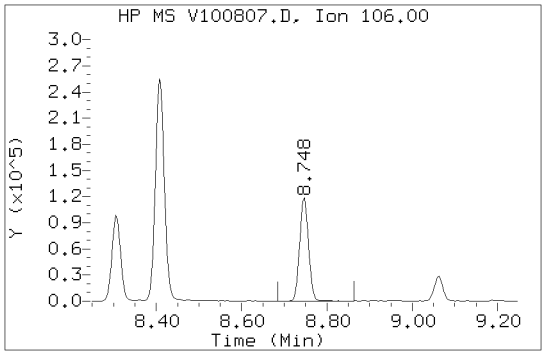
o-Xylene (95-47-6)

BEFORE
MASS
106
AREA
177902
HEIGHT
118394
13-Oct-2023
16:58
linh
pham

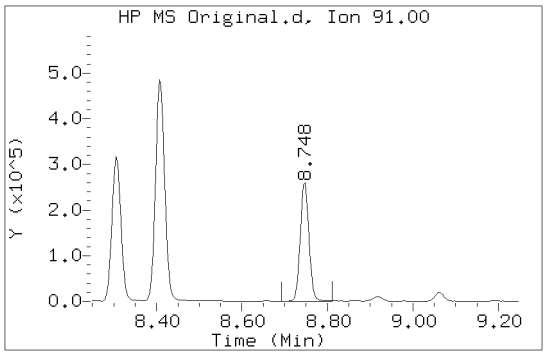


Reason Code:

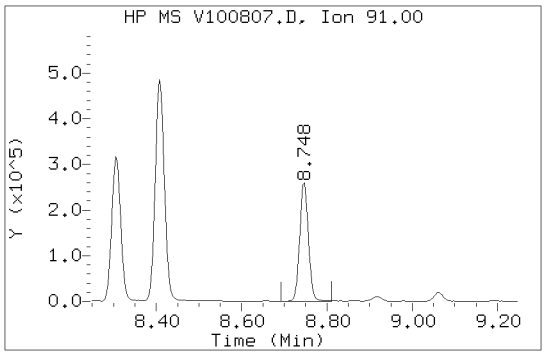
AFTER
MASS
106
AREA
177902
HEIGHT
118394
13-Oct-2023
16:58
linh
pham



BEFORE
MASS
91
AREA
380096
HEIGHT
260352
13-Oct-2023
16:58
linh
pham



AFTER
MASS
91
AREA
380096
HEIGHT
260352
13-Oct-2023
16:58
linh
pham



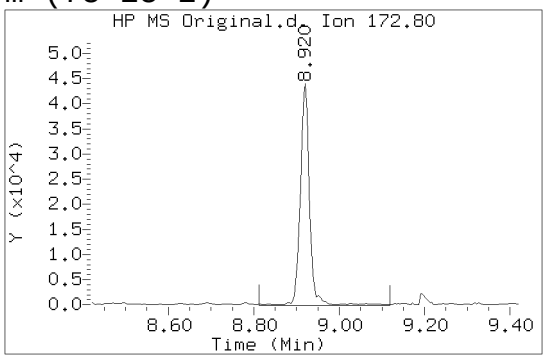
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100807.D
Inj Date : 08-OCT-2023 16:03
InstruID : VOA9.i
LabSampID : VSTD020

Bromoform (75-25-2)

Reason Code:

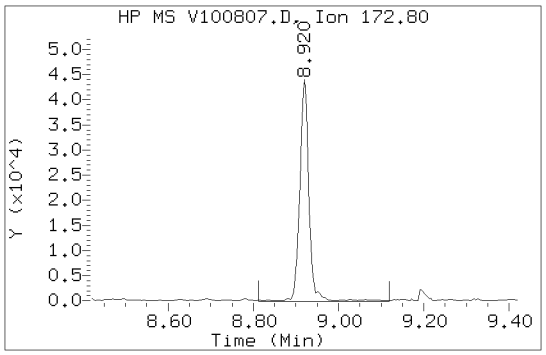
BEFORE

MASS
172.8
AREA
67480
HEIGHT
44071
13-Oct-2023
16:58
linh
pham



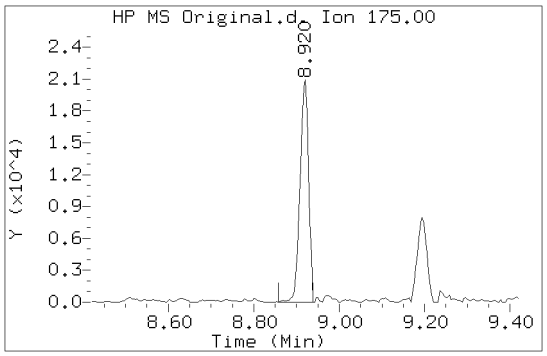
AFTER

MASS
172.8
AREA
67480
HEIGHT
44071
13-Oct-2023
16:58
linh
pham



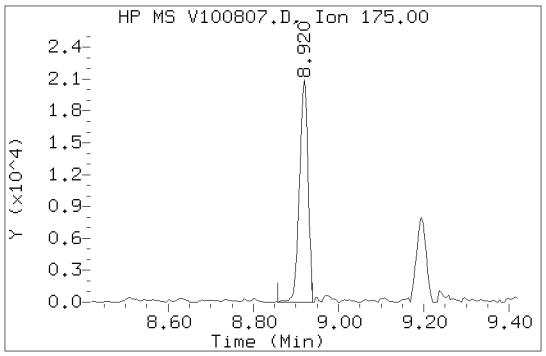
BEFORE

MASS
175
AREA
29714
HEIGHT
20920
13-Oct-2023
16:58
linh
pham



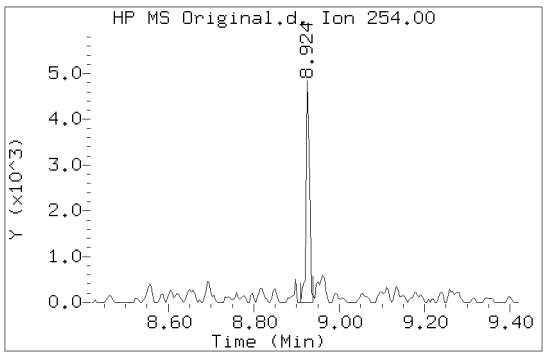
AFTER

MASS
175
AREA
29714
HEIGHT
20920
13-Oct-2023
16:58
linh
pham



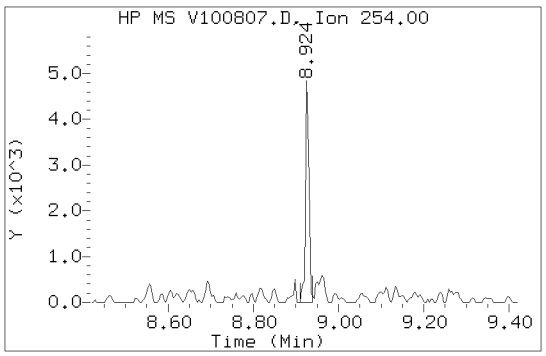
BEFORE

MASS
254
AREA
2909
HEIGHT
4845
13-Oct-2023
16:58
linh
pham



AFTER

MASS
254
AREA
2909
HEIGHT
4845
13-Oct-2023
16:58
linh
pham

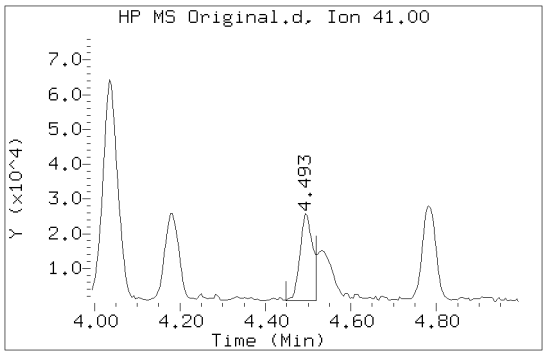


Methacrylonitrile (126-98-7)

Reason Code:

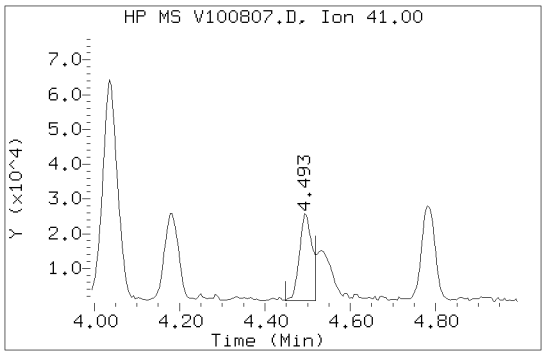
BEFORE

MASS
41
AREA
53349
HEIGHT
25013
13-Oct-2023
16:58
linh
pham



AFTER

MASS
41
AREA
53349
HEIGHT
25013
13-Oct-2023
16:58
linh
pham



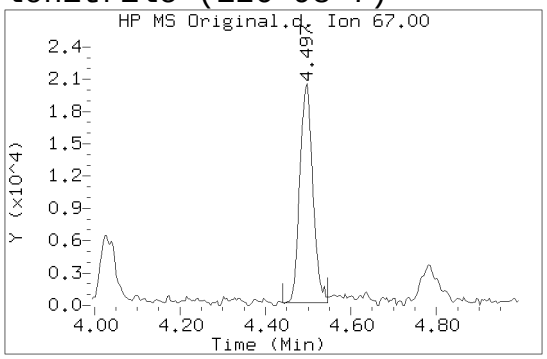
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100807.D
Inj Date : 08-OCT-2023 16:03
InstruID : VOA9.i
LabSampID : VSTD020

Methacrylonitrile (126-98-7)

Reason Code:

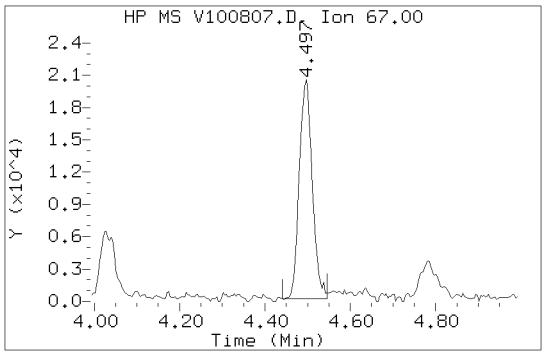
BEFORE

MASS
67
AREA
43901
HEIGHT
20361
13-Oct-2023
16:58
linh
pham



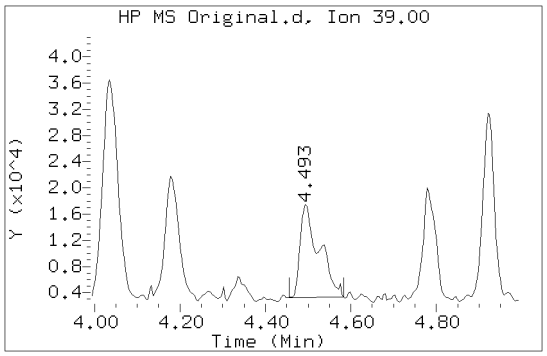
AFTER

MASS
67
AREA
43901
HEIGHT
20361
13-Oct-2023
16:58
linh
pham



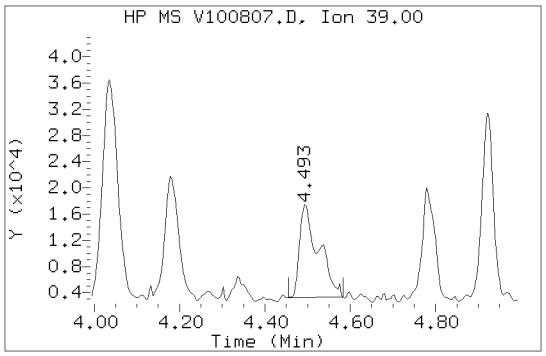
BEFORE

MASS
39
AREA
44600
HEIGHT
14188
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
44600
HEIGHT
14188
13-Oct-2023
16:58
linh
pham

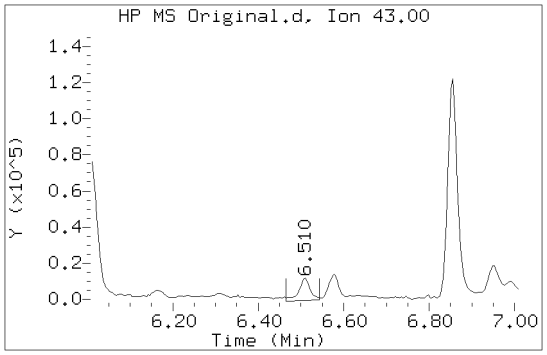


2-Nitropropane (79-46-9)

Reason Code:

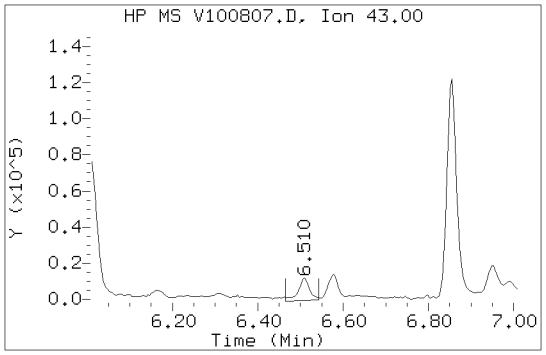
BEFORE

MASS
43
AREA
23951
HEIGHT
12425
13-Oct-2023
16:58
linh
pham



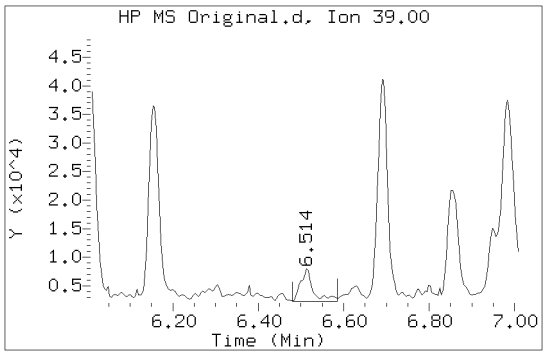
AFTER

MASS
43
AREA
23951
HEIGHT
12425
13-Oct-2023
16:58
linh
pham



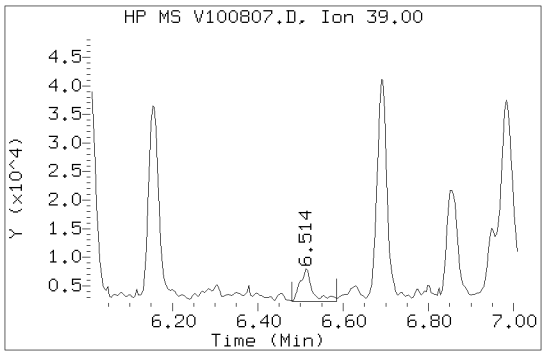
BEFORE

MASS
39
AREA
11813
HEIGHT
5756
13-Oct-2023
16:58
linh
pham



AFTER

MASS
39
AREA
11813
HEIGHT
5756
13-Oct-2023
16:58
linh
pham



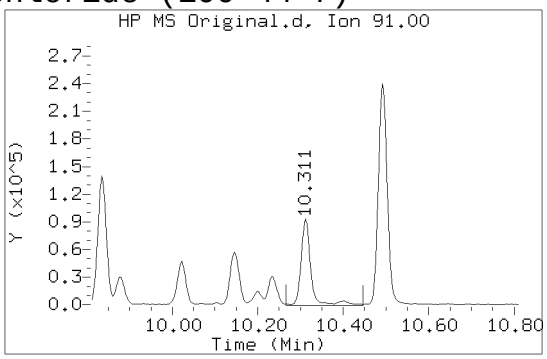
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100807.D
Inj Date : 08-OCT-2023 16:03
InstruID : VOA9.i
LabSampID : VSTD020

Benzyl Chloride (100-44-7)

Reason Code:

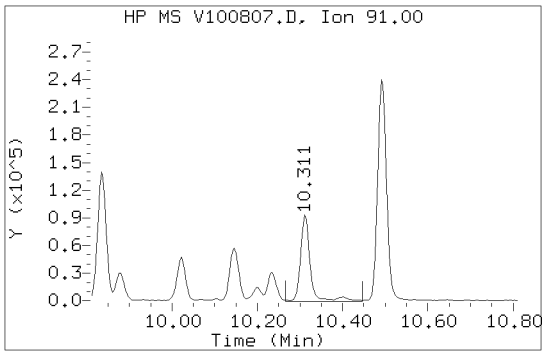
BEFORE

MASS
91
AREA
151545
HEIGHT
93486
13-Oct-2023
16:58
linh
pham



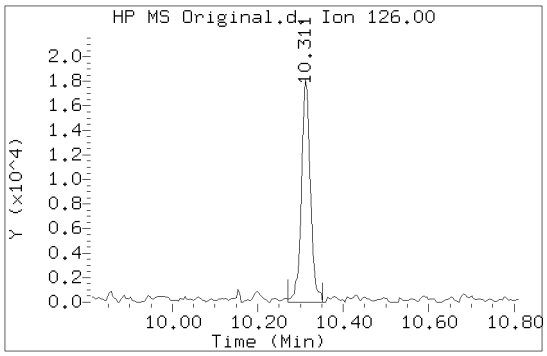
AFTER

MASS
91
AREA
151545
HEIGHT
93486
13-Oct-2023
16:58
linh
pham



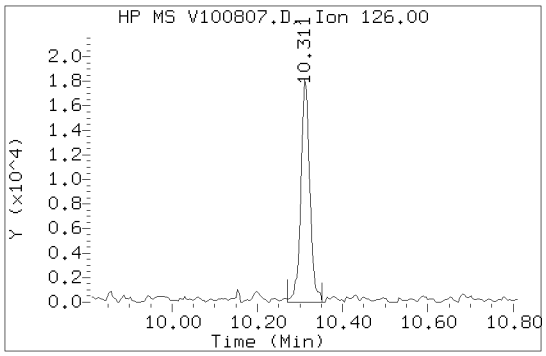
BEFORE

MASS
126
AREA
27122
HEIGHT
18112
13-Oct-2023
16:58
linh
pham



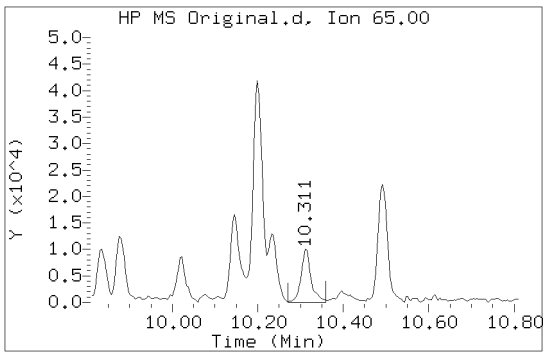
AFTER

MASS
126
AREA
27122
HEIGHT
18112
13-Oct-2023
16:58
linh
pham



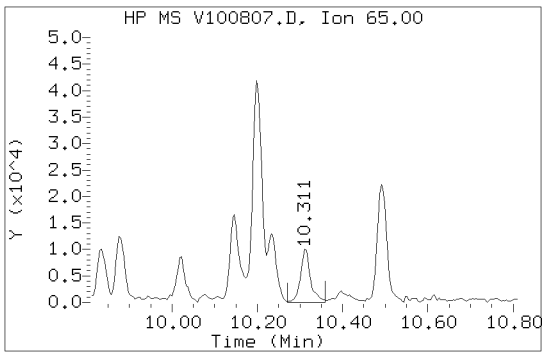
BEFORE

MASS
65
AREA
16846
HEIGHT
10091
13-Oct-2023
16:58
linh
pham



AFTER

MASS
65
AREA
16846
HEIGHT
10091
13-Oct-2023
16:58
linh
pham

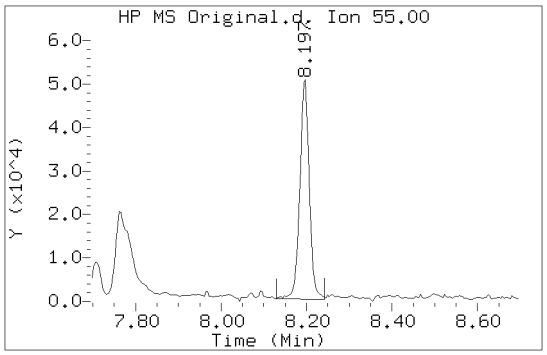


1-Chlorohexane (544-10-5)

Reason Code:

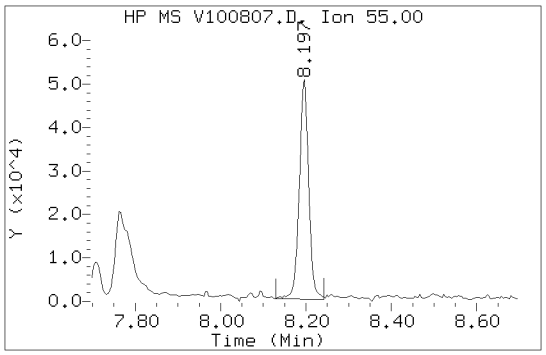
BEFORE

MASS
55
AREA
79931
HEIGHT
50513
13-Oct-2023
16:58
linh
pham



AFTER

MASS
55
AREA
79931
HEIGHT
50513
13-Oct-2023
16:58
linh
pham



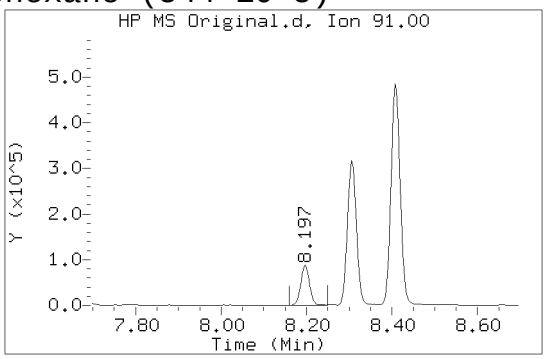
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Inj Date : 08-OCT-2023 16:03
InstruID : VOA9.i
LabSampID : VSTD020

1-Chlorohexane (544-10-5)

Reason Code:

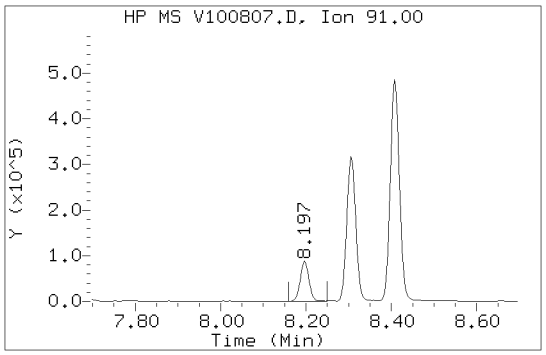
BEFORE

MASS
91
AREA
129284
HEIGHT
88104
13-Oct-2023
16:58
linh
pham



AFTER

MASS
91
AREA
129284
HEIGHT
88104
13-Oct-2023
16:58
linh
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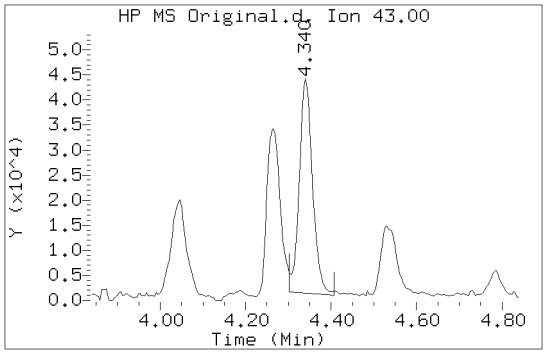


Ethyl Acetate (141-78-6)

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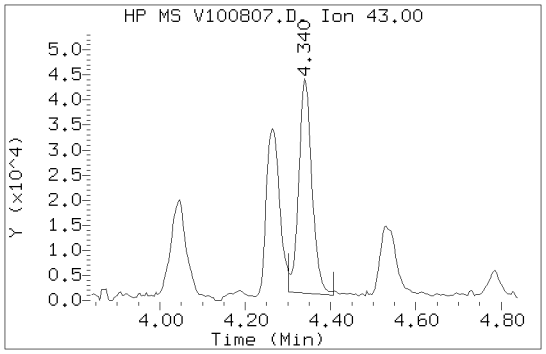
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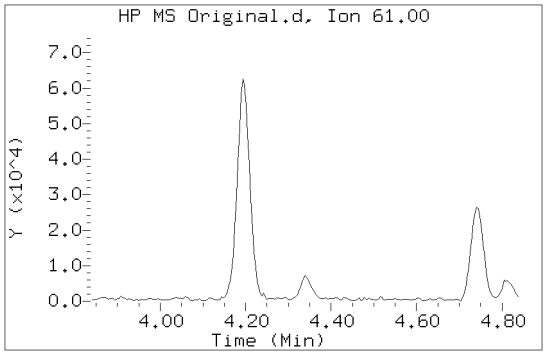
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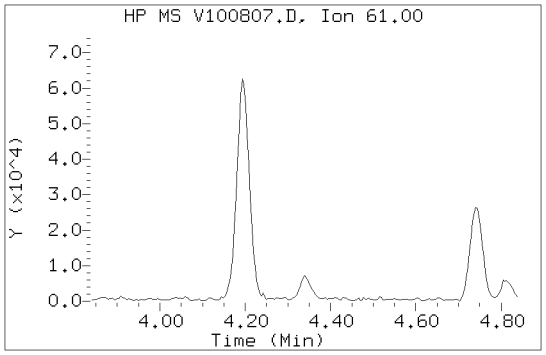
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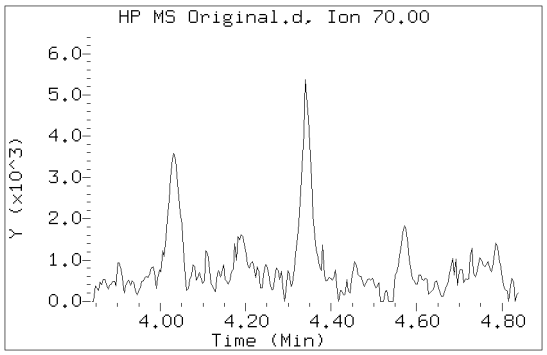
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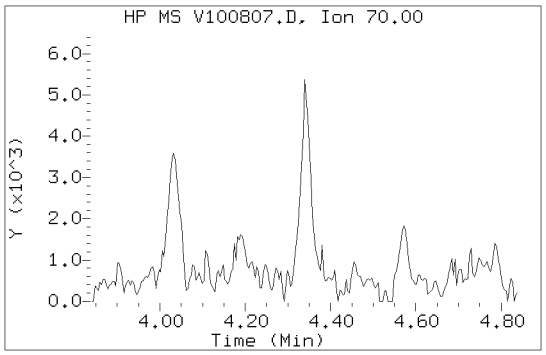
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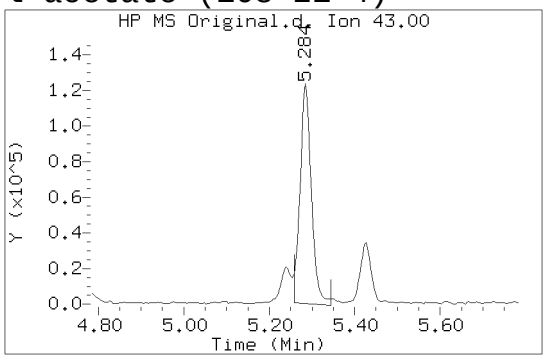


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InstruID : VOA9.i
LabSampID : VSTD020

Isopropyl acetate (108-21-4)

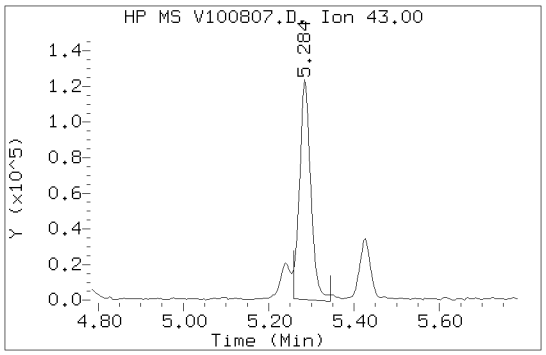
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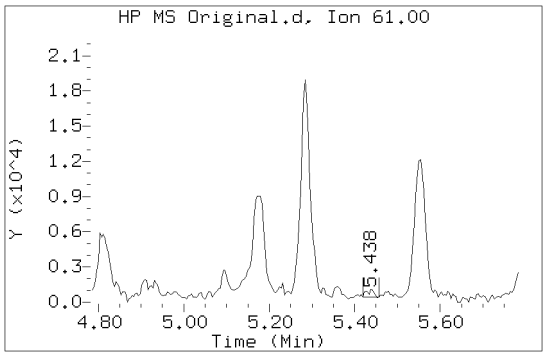
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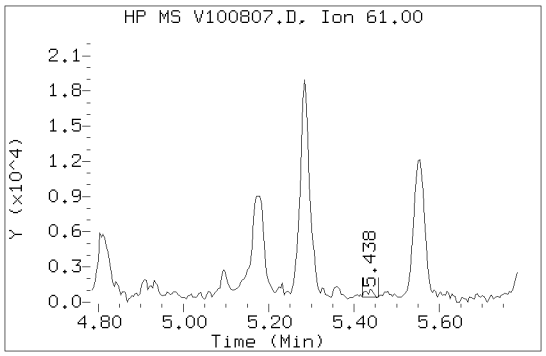
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AFTER

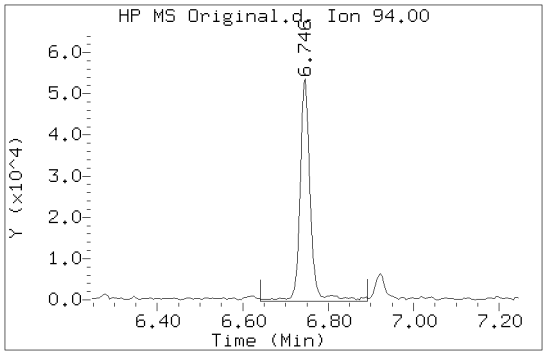
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Dimethyl Disulfide (624-92-0)

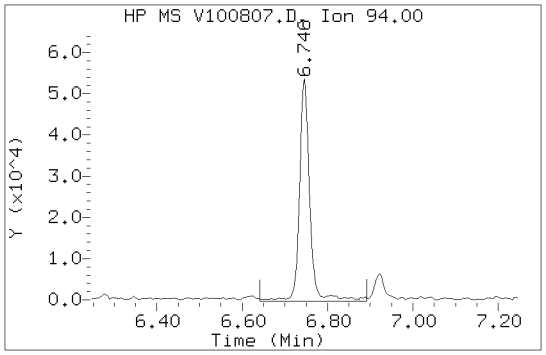
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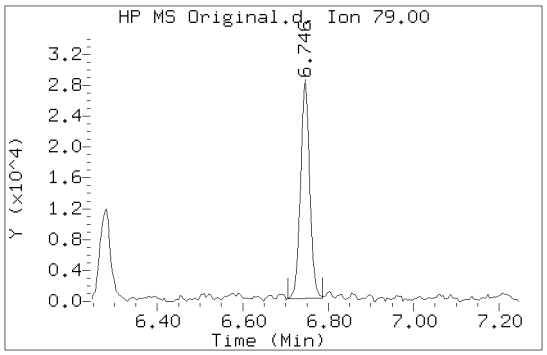
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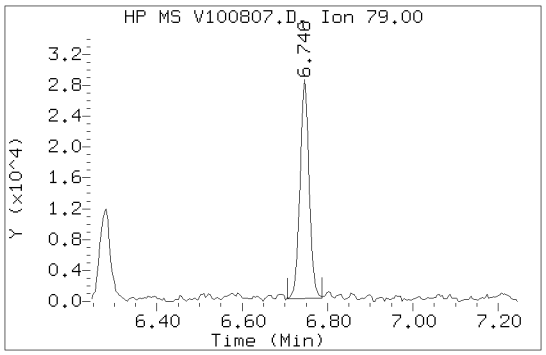
BEFORE

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28373
13-Oct-2023
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AFTER

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AREA
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HEIGHT
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13-Oct-2023
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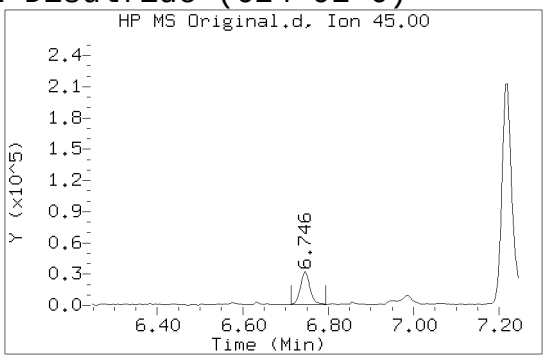
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InstruID : VOA9.i
LabSampID : VSTD020

Dimethyl Disulfide (624-92-0)

Reason Code:

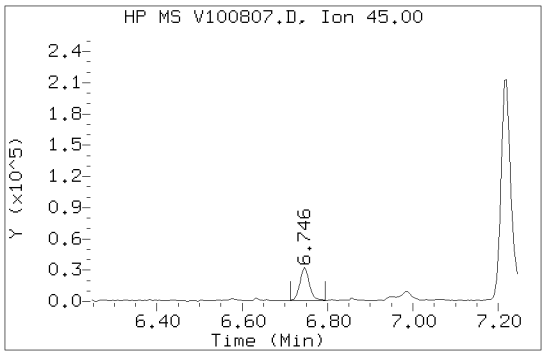
BEFORE

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HEIGHT
32073
13-Oct-2023
16:58
linh
pham



AFTER

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HEIGHT
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13-Oct-2023
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pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100808.D Page 1
Report Date: 13-Oct-2023 17:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100808.D
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Inj Date : 08-OCT-2023 16:25
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Smp Info : VSTD050;VSTD050;1;7;
Misc Info : V9;WATER;0;1;
Comment   :
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Meth Date : 13-Oct-2023 17:00 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:03 Cal File: V100807.D
Als bottle: 9 Calibration Sample, Level: 7
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	4.819	4.819	(1.000)	434459	50.0000	
2	Dichlorodifluoromethane	85	1.172	1.172	(0.243)	211181	50.0000	44.52
3	Chloromethane	50	1.307	1.307	(0.271)	234994	50.0000	50.08
5	Vinyl Chloride	62	1.385	1.385	(0.288)	341330	50.0000	48.88
6	Bromomethane	94	1.629	1.629	(0.338)	283418	50.0000	44.83
7	Chloroethane	64	1.708	1.708	(0.354)	334217	50.0000	48.65
8	Trichlorofluoromethane	101	1.906	1.906	(0.396)	761630	50.0000	48.07
9	Acrolein	56	2.274	2.274	(0.472)	35714	100.000	91.19
10	Acetone	43	2.416	2.416	(0.501)	374534	100.000	106.19
11	1,1-Dichloroethene	96	2.345	2.345	(0.487)	438324	50.0000	50.53
15	Iodomethane	142	2.480	2.480	(0.515)	1171064	100.000	102.05
16	Acrylonitrile	53	3.072	3.072	(0.638)	417294	100.000	106.04
17	Methylene Chloride	84	2.802	2.802	(0.582)	586083	50.0000	45.68
18	Methyl tert-butyl ether	73	3.087	3.087	(0.641)	1757445	50.0000	49.26
19	Carbon Disulfide	76	2.532	2.532	(0.526)	2589069	100.000	103.75
20	trans-1,2-Dichloroethene	96	3.068	3.068	(0.637)	557722	50.0000	51.58
21	Vinyl Acetate	43	3.616	3.616	(0.750)	1341569	100.000	85.24
22	1,1-Dichloroethane	63	3.522	3.522	(0.731)	564901	50.0000	51.22
24	2-Butanone	43	4.268	4.268	(0.886)	193469	100.000	95.99
26	2,2-Dichloropropane	77	4.189	4.189	(0.869)	292973	50.0000	48.19

27 cis-1,2-Dichloroethene	96	4.204	4.204 (0.872)	267054	50.0000	48.48
28 Chloroform	83	4.579	4.579 (0.950)	467223	50.0000	46.24

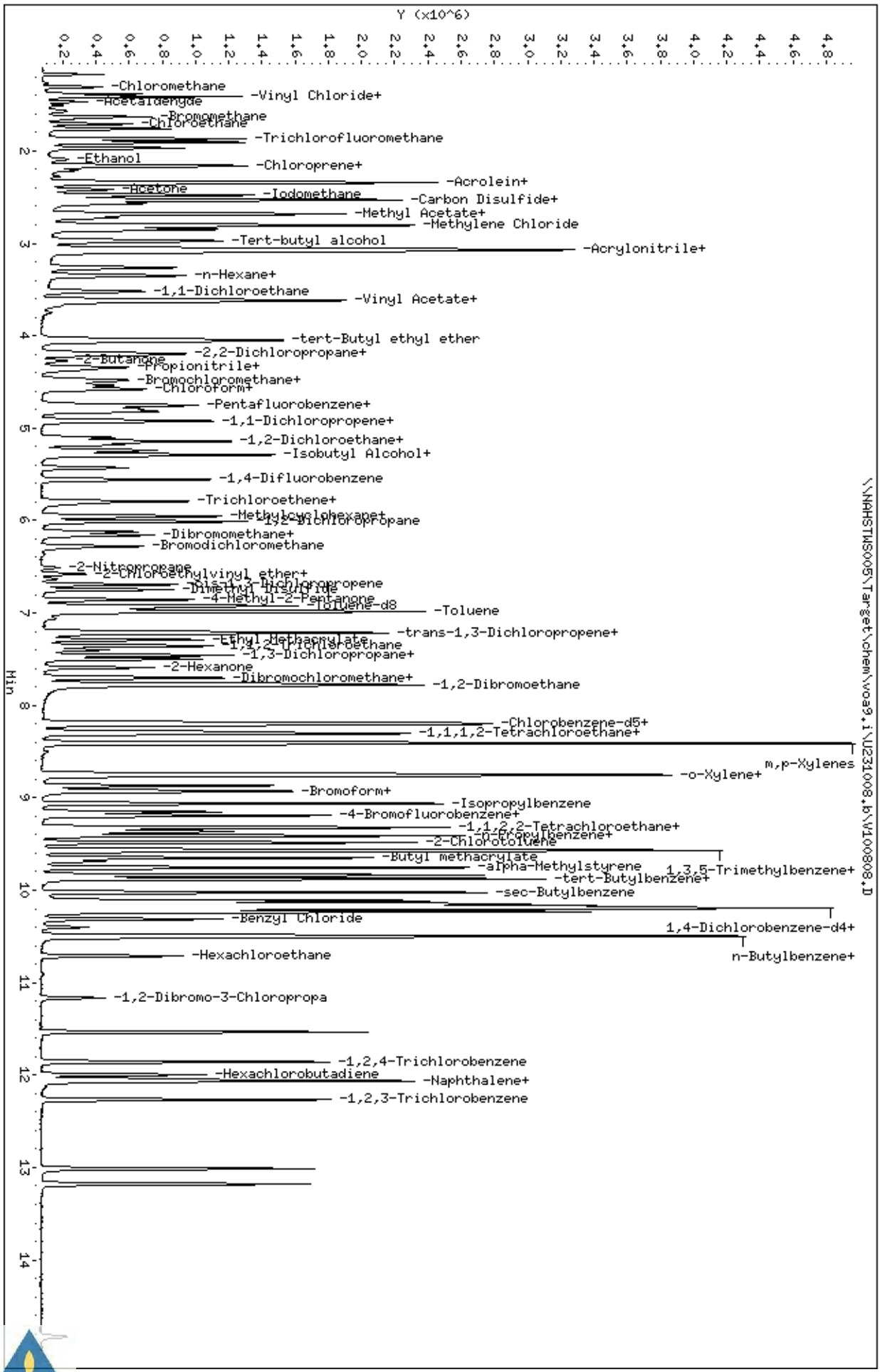
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	29 Bromochloromethane	128	4.474	4.474	(0.928)	140787	50.0000	52.96
$	30 Dibromofluoromethane	113	4.752	4.752	(0.986)	230912	50.0000	49.03
	31 1,1,1-Trichloroethane	97	4.748	4.748	(0.985)	352003	50.0000	46.73
	32 1,1-Dichloropropene	75	4.928	4.928	(0.887)	299893	50.0000	46.22
	33 1,2-Dichloroethane	62	5.179	5.179	(0.932)	346255	50.0000	46.25
	34 Carbon Tetrachloride	117	4.916	4.916	(0.885)	288544	50.0000	48.13
$	35 1,2-Dichloroethane-d4	65	5.100	5.100	(1.058)	273135	50.0000	49.29
*	36 1,4-Difluorobenzene	114	5.558	5.558	(1.000)	756823	50.0000	
	37 Benzene	78	5.141	5.141	(0.925)	966778	50.0000	47.94
	38 Trichloroethene	130	5.790	5.790	(1.042)	261944	50.0000	50.14
	39 Bromodichloromethane	83	6.281	6.281	(1.130)	329758	50.0000	47.13
	41 2-Chloroethylvinyl ether	63	6.577	6.577	(1.183)	97582	100.000	89.93
	42 1,2-Dichloropropane	63	6.011	6.011	(1.082)	243346	50.0000	47.47
	44 Dibromomethane	93	6.120	6.120	(1.101)	189408	50.0000	46.56
	45 4-Methyl-2-Pentanone	43	6.855	6.855	(0.837)	508235	100.000	97.04
	46 cis-1,3-Dichloropropene	75	6.693	6.693	(1.204)	395556	50.0000	47.50
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	882926	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	909708	50.0000	43.41
	50 Toluene	91	6.982	6.982	(0.853)	1188798	50.0000	49.31
	51 trans-1,3-Dichloropropene	75	7.196	7.196	(1.295)	352232	50.0000	49.75
	52 2-Hexanone	43	7.593	7.593	(0.928)	371631	100.000	102.31
	53 1,1,2-Trichloroethane	83	7.357	7.357	(0.899)	229486	50.0000	47.04
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	478839	50.0000	47.14
	55 Dibromochloromethane	129	7.694	7.694	(0.940)	296696	50.0000	50.19
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	213749	50.0000	46.64
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	324503	50.0000	50.67
	58 1-Chlorohexane	55	8.197	8.197	(1.475)	219605	50.0000	49.66
	59 Chlorobenzene	112	8.208	8.208	(1.003)	824926	50.0000	48.19
	60 1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	278292	50.0000	49.65
	61 Ethylbenzene	106	8.305	8.305	(1.015)	402085	50.0000	49.26
	62 m,p-Xylenes	106	8.410	8.410	(1.027)	1204609	100.000	110.21
	63 o-Xylene	106	8.748	8.748	(1.069)	590166	50.0000	53.49
	64 Styrene	104	8.763	8.763	(1.071)	1054239	50.0000	56.22
	66 Bromoform	173	8.920	8.920	(1.090)	215148	50.0000	48.82
	67 Isopropylbenzene	105	9.063	9.063	(1.107)	1421089	50.0000	53.90
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	513002	50.0000	44.10
$	69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	422439	50.0000	50.84
*	70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	688424	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.921)	459606	50.0000	39.68
	73 n-Propylbenzene	91	9.411	9.411	(0.926)	1710644	50.0000	45.32
	74 Bromobenzene	156	9.317	9.317	(0.916)	415245	50.0000	43.42
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	1373496	50.0000	47.09
	76 2-Chlorotoluene	91	9.482	9.482	(0.933)	1082931	50.0000	45.28
	77 4-Chlorotoluene	91	9.576	9.576	(0.942)	1406698	50.0000	49.54
	78 tert-Butylbenzene	119	9.835	9.835	(0.967)	1161683	50.0000	46.45
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.972)	1516738	50.0000	49.67
	81 sec-Butylbenzene	105	10.022	10.022	(0.986)	1622217	50.0000	48.10
	82 p-Isopropyltoluene	119	10.146	10.146	(0.998)	1459652	50.0000	49.19
	83 1,3-Dichlorobenzene	146	10.116	10.116	(0.995)	826514	50.0000	46.19
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	945740	50.0000	46.84
	87 n-Butylbenzene	91	10.491	10.491	(1.032)	1393927	50.0000	50.62
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	928516	50.0000	50.34

89	1,2-Dibromo-3-Chloropropane	155	11.166	11.166 (1.098)	74921	50.0000	48.29
90	1,2,4-Trichlorobenzene	180	11.855	11.855 (1.166)	464123	50.0000	42.65

	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)	153461	50.0000	38.32
92	Naphthalene	128	12.065	12.065	(1.187)	1442988	50.0000	44.99
93	1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	462799	50.0000	42.73
M 94	1,2-Dichloroethylene (total)	96				824776	100.000	(a)
135	1,4-Dioxane	88	6.169	6.169	(1.280)	79478	1000.00	865.83
141	Cyclohexane	56	4.789	4.789	(0.994)	248223	50.0000	44.93
138	Freon TF	101	2.345	2.345	(0.487)	415227	50.0000	49.09
140	1,3-Butadiene	54	1.411	1.411	(0.293)	311224	50.0000	51.18
147	Methylcyclohexane	55	5.947	5.947	(1.070)	541900	50.0000	51.12
146	Methyl Acetate	43	2.724	2.724	(0.565)	389749	50.0000	46.45
148	Tert-Butyl alcohol	59	2.975	2.975	(0.617)	1163298	1000.00	902.45
149	Isopropyl Alcohol	45	2.570	2.570	(0.533)	617684	1000.00	883.63
72	trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	91648	50.0000	46.96(MH)
12	Isobutyl Alcohol	43	5.288	5.288	(1.097)	632322	1000.00	950.86
13	Acetonitrile	39	2.682	2.682	(0.557)	615655	500.000	512.00
14	Allyl Chloride	41	2.682	2.682	(0.557)	1148439	50.0000	52.91
25	Methacrylonitrile	41	4.500	4.500	(0.934)	128458	50.0000	45.30(M)
40	Methyl Methacrylate	41	6.157	6.157	(1.278)	213465	50.0000	48.32
43	2-Nitropropane	43	6.510	6.510	(1.351)	52971	50.0000	47.72
4	Propionitrile	54	4.339	4.339	(0.900)	350261	500.000	500.81
136	n-Hexane	57	3.350	3.350	(0.695)	401190	50.0000	48.58
194	Acetaldehyde	44	1.468	1.468	(0.305)	171333	200.000	214.82
131	Methyl Acrylate	55	4.373	4.373	(0.907)	281974	50.0000	49.61
200	Dimethyl Disulfide	94	6.750	6.750	(0.825)	357164	50.0000	51.76
23	Chloroprene	53	2.169	2.169	(0.450)	150156	50.0000	51.21
49	Ethyl Methacrylate	69	7.293	7.293	(1.312)	452321	50.0000	50.01
166	1,2,3-Trimethylbenzene	105	10.236	10.236	(1.007)	1701987	50.0000	55.49
167	Ethanol	45	2.090	2.090	(0.434)	102840	1000.00	969.60
164	Dicyclopentadiene	66	10.198	10.198	(1.003)	1993306	50.0000	54.87
145	alpha-Methylstyrene	118	9.752	9.752	(0.959)	707055	50.0000	48.54
142	Tetrahydrofuran	42	4.545	4.545	(0.943)	89244	100.000	98.03
156	Diisopropyl ether	45	3.627	3.627	(0.753)	701740	50.0000	47.36
151	4-Methyl-2-pentanol	45	7.218	7.218	(1.299)	1059067	1000.00	1002.13
150	Allyl alcohol	57	3.350	3.350	(0.695)	401190	1000.00	914.45
86	Benzyl Chloride	91	10.311	10.311	(1.260)	708473	50.0000	52.24
162	Butyl acrylate	55	8.733	8.733	(1.067)	626040	50.0000	51.14
139	Diethyl ether	59	2.154	2.154	(0.447)	370956	50.0000	48.76
203	2-Ethylhexyl Acrylate	55	12.043	12.043	(1.184)	324200	50.0000	46.51
134	Cyclohexanone	55	9.156	9.156	(0.900)	373826	1000.00	987.12
130	Ethyl Acetate	43	4.347	4.347	(0.902)	236751	50.0000	53.11
189	n-Butyl acetate	43	7.706	7.706	(0.941)	431005	50.0000	53.02
182	Epichlorohydrin	57	6.630	6.630	(1.193)	63724	200.000	187.67(H)
132	n-Butanol	56	5.824	5.824	(1.208)	113815	1000.00	994.87
133	Ethyl Acrylate	55	5.947	5.947	(1.234)	541900	50.0000	45.80
163	Butyl methacrylate	41	9.651	9.651	(0.949)	493507	50.0000	55.79
174	tert-Amyl methyl ether	73	5.291	5.291	(1.098)	780376	50.0000	47.60
175	tert-Butyl ethyl ether	59	4.058	4.058	(0.842)	653104	50.0000	47.87
187	n-Amyl acetate	43	8.931	8.931	(1.091)	586130	50.0000	55.51
188	Isopropyl acetate	43	5.288	5.288	(0.951)	624672	50.0000	50.31(M)
179	Hexachloroethane	166	10.712	10.712	(1.053)	99028	50.0000	47.73

QC Flag Legend

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\voa9.i\U231008.b\V100808.D
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Client ID: VSTD050
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Column phase: DB624

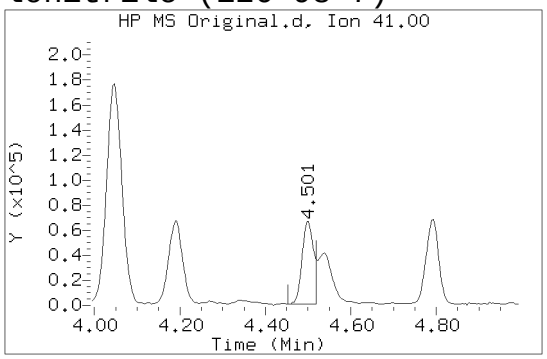
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Operator: PC
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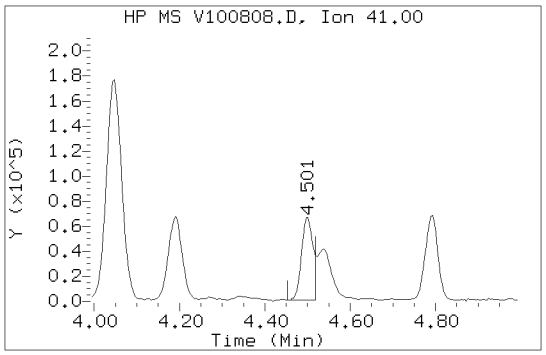
Methacrylonitrile (126-98-7)

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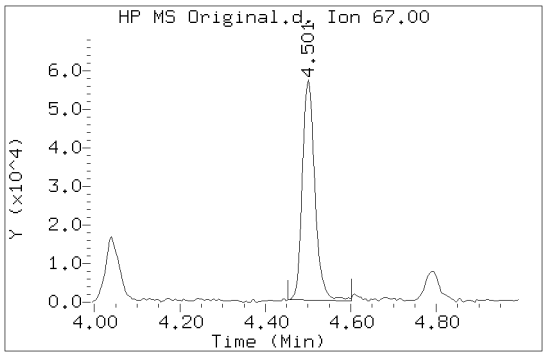
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13-Oct-2023
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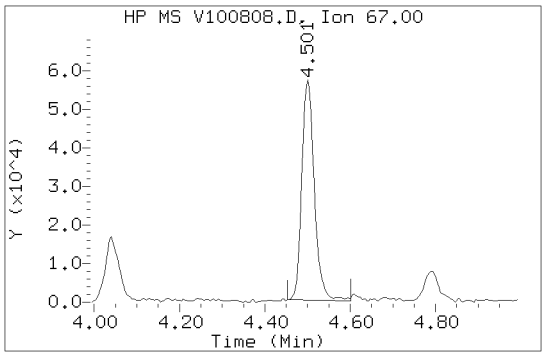
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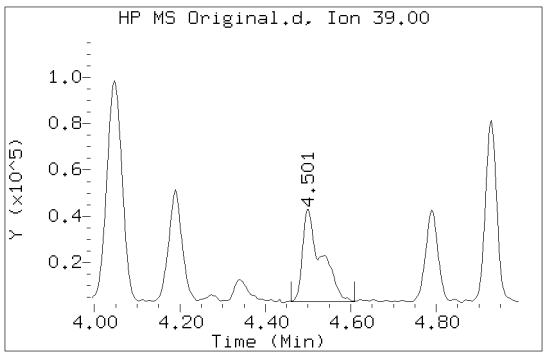
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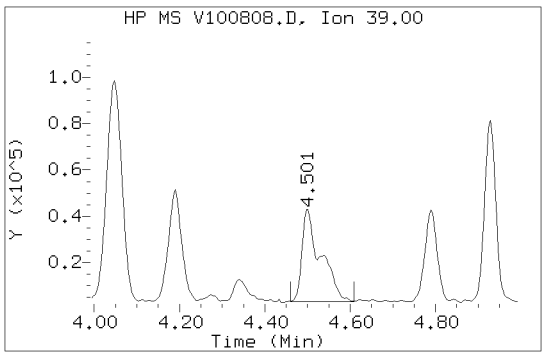
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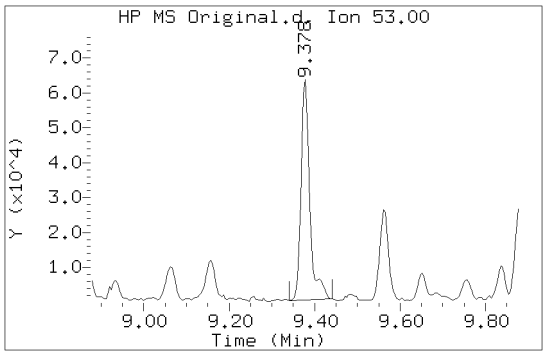
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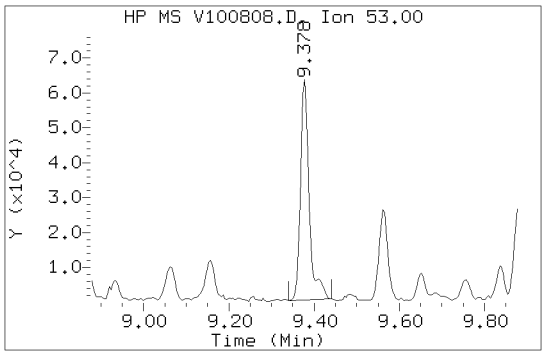
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Reason Code:

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AFTER
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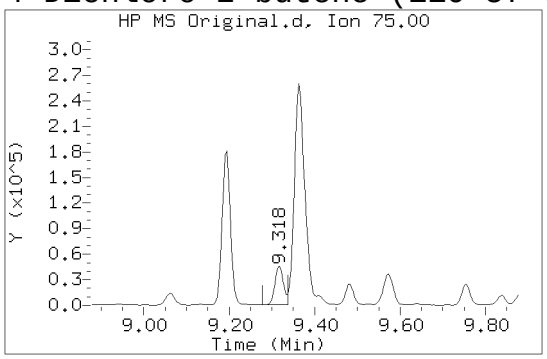
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Inj Date : 08-OCT-2023 16:25
InstruID : VOA9.i
LabSampID : VSTD050

trans-1,4-Dichloro-2-butene (110-57-6)

Reason Code:

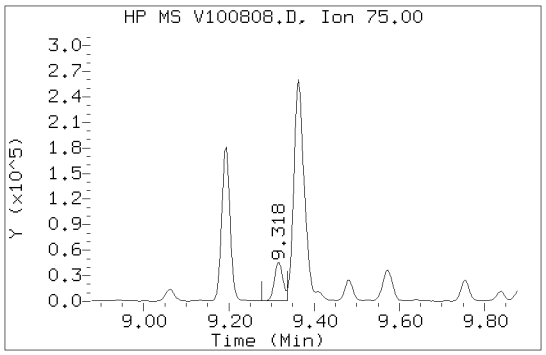
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AFTER

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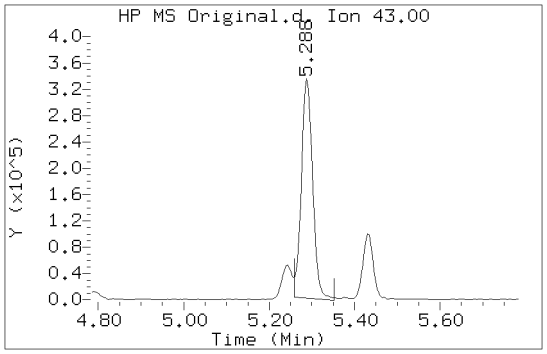


Isopropyl acetate (108-21-4)

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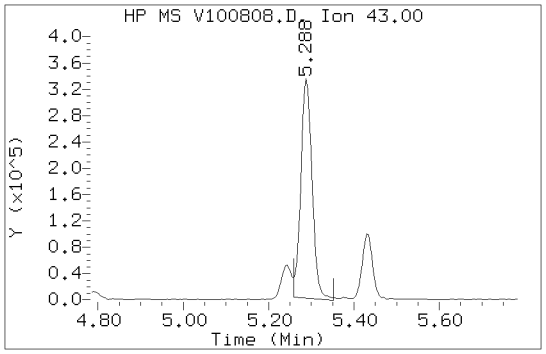
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13-Oct-2023
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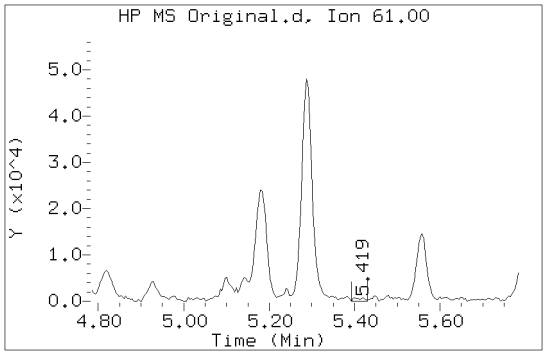
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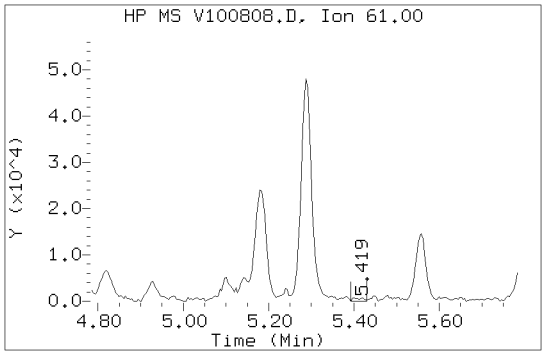
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AFTER

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13-Oct-2023
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Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100809.D Page 1
Report Date: 13-Oct-2023 17:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100809.D
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Inj Date : 08-OCT-2023 16:47
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 : 13-Oct-2023 17:00 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 10 Calibration Sample, Level: 8
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	4.819	4.819	(1.000)	490452	50.0000	
2	Dichlorodifluoromethane	85	1.168	1.168	(0.242)	554285	100.000	102.18
3	Chloromethane	50	1.303	1.303	(0.270)	550291	100.000	105.12
5	Vinyl Chloride	62	1.378	1.378	(0.286)	939416	100.000	119.17
6	Bromomethane	94	1.618	1.618	(0.336)	721761	100.000	100.52
7	Chloroethane	64	1.700	1.700	(0.353)	726344	100.000	93.66
8	Trichlorofluoromethane	101	1.899	1.899	(0.394)	1892013	100.000	105.79
9	Acrolein	56	2.270	2.270	(0.471)	90074	200.000	203.59
10	Acetone	43	2.412	2.412	(0.501)	763186	200.000	195.21
11	1,1-Dichloroethene	96	2.337	2.337	(0.485)	1036186	100.000	105.82
15	Iodomethane	142	2.472	2.472	(0.513)	2873660	200.000	199.65
16	Acrylonitrile	53	3.068	3.068	(0.637)	908174	200.000	204.45
17	Methylene Chloride	84	2.798	2.798	(0.581)	1298505	100.000	89.65
18	Methyl tert-butyl ether	73	3.083	3.083	(0.640)	3799668	100.000	94.36
19	Carbon Disulfide	76	2.525	2.525	(0.524)	6042683	200.000	214.50
20	trans-1,2-Dichloroethene	96	3.061	3.061	(0.635)	1218854	100.000	99.85
21	Vinyl Acetate	43	3.612	3.612	(0.750)	3060307	200.000	172.25
22	1,1-Dichloroethane	63	3.514	3.514	(0.729)	963453	100.000	77.39
24	2-Butanone	43	4.264	4.264	(0.885)	435682	200.000	191.49
26	2,2-Dichloropropane	77	4.185	4.185	(0.869)	712934	100.000	102.97

27 cis-1,2-Dichloroethene	96	4.200	4.200 (0.872)	611195	100.000	98.30
28 Chloroform	83	4.575	4.575 (0.949)	1109332	100.000	97.25

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	29 Bromochloromethane	128	4.474	4.474	(0.928)	292071	100.000	97.33
$	30 Dibromofluoromethane	113	4.751	4.751	(0.986)	573846	100.000	100.13
	31 1,1,1-Trichloroethane	97	4.744	4.744	(0.984)	890984	100.000	104.79
	32 1,1-Dichloropropene	75	4.924	4.924	(0.887)	766736	100.000	100.78
	33 1,2-Dichloroethane	62	5.179	5.179	(0.933)	840380	100.000	95.74
	34 Carbon Tetrachloride	117	4.913	4.913	(0.885)	776934	100.000	110.52
$	35 1,2-Dichloroethane-d4	65	5.100	5.100	(1.058)	648141	100.000	100.11
*	36 1,4-Difluorobenzene	114	5.554	5.554	(1.000)	887504	50.0000	
	37 Benzene	78	5.141	5.141	(0.926)	2368578	100.000	100.16
	38 Trichloroethene	130	5.790	5.790	(1.043)	646589	100.000	105.55
	39 Bromodichloromethane	83	6.277	6.277	(1.130)	864171	100.000	105.33
	41 2-Chloroethylvinyl ether	63	6.577	6.577	(1.184)	288668	200.000	226.86
	42 1,2-Dichloropropane	63	6.011	6.011	(1.082)	632288	100.000	105.19
	44 Dibromomethane	93	6.120	6.120	(1.102)	477590	100.000	100.11
	45 4-Methyl-2-Pentanone	43	6.854	6.854	(0.837)	1461121	200.000	172.52
	46 cis-1,3-Dichloropropene	75	6.693	6.693	(1.205)	1054109	100.000	107.94
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	1427891	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	2965586	100.000	87.51
	50 Toluene	91	6.982	6.982	(0.853)	4090139	100.000	104.90
	51 trans-1,3-Dichloropropene	75	7.196	7.196	(1.296)	1288347	100.000	100.01
	52 2-Hexanone	43	7.589	7.589	(0.927)	1185968	200.000	201.90
	53 1,1,2-Trichloroethane	83	7.357	7.357	(0.899)	784986	100.000	99.51
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	1600190	100.000	97.41
	55 Dibromochloromethane	129	7.694	7.694	(0.940)	1054444	100.000	110.30
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	749647	100.000	101.15
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	1080996	100.000	104.38
	58 1-Chlorohexane	55	8.197	8.197	(1.476)	760460	100.000	100.02
	59 Chlorobenzene	112	8.208	8.208	(1.003)	2764551	100.000	99.87
	60 1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	981180	100.000	108.24
	61 Ethylbenzene	106	8.305	8.305	(1.015)	1424905	100.000	107.96
	62 m,p-Xylenes	106	8.410	8.410	(1.027)	3700421	200.000	209.35(M)
	63 o-Xylene	106	8.748	8.748	(1.069)	1833836	100.000	102.78
	64 Styrene	104	8.759	8.759	(1.070)	3255341	100.000	107.34
	66 Bromoform	173	8.920	8.920	(1.090)	753576	100.000	100.57
	67 Isopropylbenzene	105	9.062	9.062	(1.107)	4703908	100.000	110.32
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	1519145	100.000	102.64
$	69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	1394794	100.000	99.84
*	70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	870965	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.921)	1571615	100.000	107.26
	73 n-Propylbenzene	91	9.411	9.411	(0.926)	5358829	100.000	112.23
	74 Bromobenzene	156	9.317	9.317	(0.916)	1239474	100.000	102.46
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	4042532	100.000	109.56
	76 2-Chlorotoluene	91	9.482	9.482	(0.933)	3213988	100.000	106.22
	77 4-Chlorotoluene	91	9.576	9.576	(0.942)	3979227	100.000	110.78
	78 tert-Butylbenzene	119	9.838	9.838	(0.968)	3467714	100.000	109.60
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.972)	4252007	100.000	110.07
	81 sec-Butylbenzene	105	10.022	10.022	(0.986)	4855528	100.000	113.81
	82 p-Isopropyltoluene	119	10.146	10.146	(0.998)	4280086	100.000	114.01
	83 1,3-Dichlorobenzene	146	10.112	10.112	(0.994)	2315474	100.000	102.30
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	2502306	100.000	97.97
	87 n-Butylbenzene	91	10.491	10.491	(1.032)	3980258	100.000	114.25
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	2389664	100.000	102.42

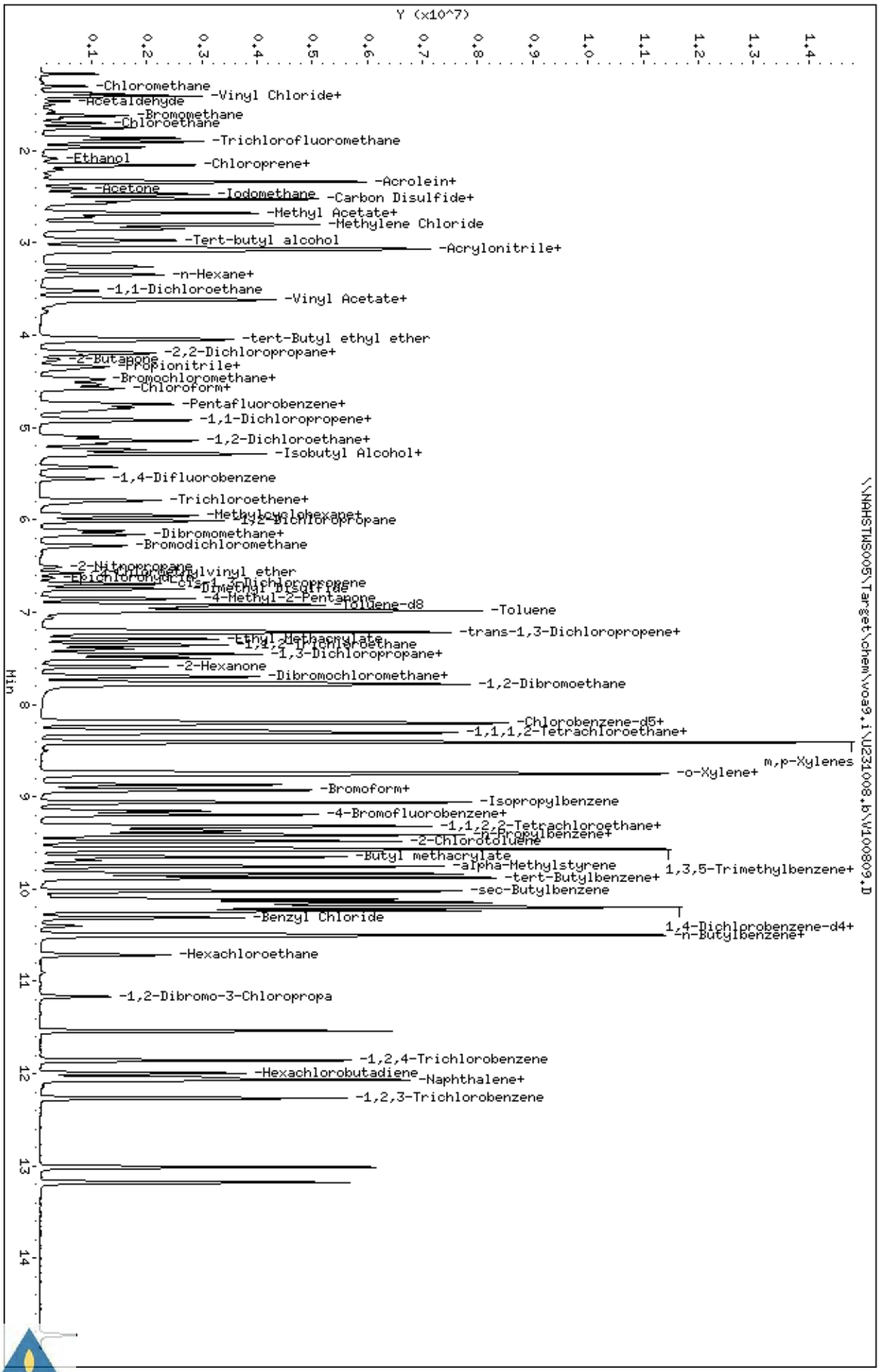
89	1,2-Dibromo-3-Chloropropane	155	11.165	11.165 (1.098)	245117	100.000	100.16
90	1,2,4-Trichlorobenzene	180	11.855	11.855 (1.166)	1481454	100.000	107.62

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100809.D Page 3
Report Date: 13-Oct-2023 17:00

	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)	587789	100.000	116.02
	92 Naphthalene	128	12.065	12.065	(1.187)	4477293	100.000	110.36
	93 1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	1476283	100.000	107.75
M	94 1,2-Dichloroethylene (total)	96				1830049	200.000	(a)
	135 1,4-Dioxane	88	6.165	6.165	(1.279)	218522	2000.00	2108.79
	141 Cyclohexane	56	4.785	4.785	(0.993)	695225	100.000	111.48
	138 Freon TF	101	2.337	2.337	(0.485)	1055638	100.000	100.12
	140 1,3-Butadiene	54	1.408	1.408	(0.292)	801219	100.000	116.73
	147 Methylcyclohexane	55	5.947	5.947	(1.071)	1391896	100.000	111.97(A)
	146 Methyl Acetate	43	2.716	2.716	(0.564)	872541	100.000	92.13
	148 Tert-Butyl alcohol	59	2.971	2.971	(0.617)	2702629	2000.00	1857.26
	149 Isopropyl Alcohol	45	2.566	2.566	(0.533)	1439354	2000.00	1824.00
	72 trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	312609	100.000	99.05(H)
	12 Isobutyl Alcohol	43	5.284	5.284	(1.096)	1796408	2000.00	2392.97
	13 Acetonitrile	39	2.675	2.675	(0.555)	1281661	1000.00	944.20
	14 Allyl Chloride	41	2.675	2.675	(0.555)	2533400	100.000	103.40
	25 Methacrylonitrile	41	4.497	4.497	(0.933)	304986	100.000	95.28(M)
	40 Methyl Methacrylate	41	6.157	6.157	(1.278)	570893	100.000	114.48
	43 2-Nitropropane	43	6.510	6.510	(1.351)	162252	100.000	100.19
	4 Propionitrile	54	4.339	4.339	(0.900)	798352	1000.00	1011.19
	136 n-Hexane	57	3.346	3.346	(0.694)	1065659	100.000	100.17
	194 Acetaldehyde	44	1.464	1.464	(0.304)	349347	400.000	393.75
	131 Methyl Acrylate	55	4.369	4.369	(0.907)	677029	100.000	105.53
	200 Dimethyl Disulfide	94	6.746	6.746	(0.824)	1168959	100.000	99.64
	23 Chloroprene	53	2.161	2.161	(0.449)	372649	100.000	112.60
	49 Ethyl Methacrylate	69	7.289	7.289	(1.312)	1553942	100.000	99.99
	166 1,2,3-Trimethylbenzene	105	10.236	10.236	(1.007)	4211225	100.000	108.52
	167 Ethanol	45	2.086	2.086	(0.433)	240577	2000.00	2014.97
	164 Dicyclopentadiene	66	10.202	10.202	(1.003)	4805630	100.000	104.57
	145 alpha-Methylstyrene	118	9.752	9.752	(0.959)	1971749	100.000	107.01
	142 Tetrahydrofuran	42	4.542	4.542	(0.942)	208390	200.000	202.78
	156 Diisopropyl ether	45	3.623	3.623	(0.752)	1553164	100.000	92.87
	151 4-Methyl-2-pentanol	45	7.218	7.218	(1.300)	3748670	2000.00	1999.81
	150 Allyl alcohol	57	3.346	3.346	(0.694)	1065659	2000.00	2151.70
	86 Benzyl Chloride	91	10.311	10.311	(1.260)	2352023	100.000	99.54
	162 Butyl acrylate	55	8.733	8.733	(1.067)	2000731	100.000	99.91
	139 Diethyl ether	59	2.150	2.150	(0.446)	808485	100.000	94.13
	203 2-Ethylhexyl Acrylate	55	12.039	12.039	(1.184)	1035253	100.000	117.40
	134 Cyclohexanone	55	9.152	9.152	(0.900)	1025987	2000.00	2169.89
	130 Ethyl Acetate	43	4.343	4.343	(0.901)	575140	100.000	114.29
	189 n-Butyl acetate	43	7.705	7.705	(0.941)	1427867	100.000	108.62
	182 Epichlorohydrin	57	6.630	6.630	(1.194)	164509	400.000	407.15(H)
	132 n-Butanol	56	5.820	5.820	(1.208)	325883	2000.00	2000.54
	133 Ethyl Acrylate	55	5.947	5.947	(1.234)	1391896	100.000	102.15
	163 Butyl methacrylate	41	9.651	9.651	(0.949)	1187675	100.000	106.12
	174 tert-Amyl methyl ether	73	5.288	5.288	(1.097)	2175660	100.000	117.57
	175 tert-Butyl ethyl ether	59	4.050	4.050	(0.841)	1477548	100.000	95.94
	187 n-Amyl acetate	43	8.931	8.931	(1.091)	1753034	100.000	102.65
	188 Isopropyl acetate	43	5.284	5.284	(0.951)	1731341	100.000	118.92(M)
	179 Hexachloroethane	166	10.712	10.712	(1.053)	255382	100.000	97.29

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.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100809.D
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Client ID: VSTD100
Sample Info: VSTD100;VSTD100;1;8;
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Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

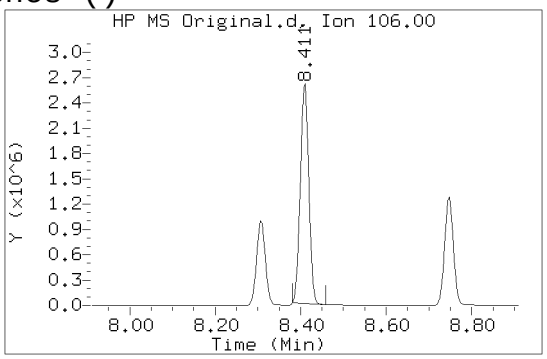
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InstruID : VOA9.i
LabSampID : VSTD100

m,p-Xylenes ()

Reason Code:

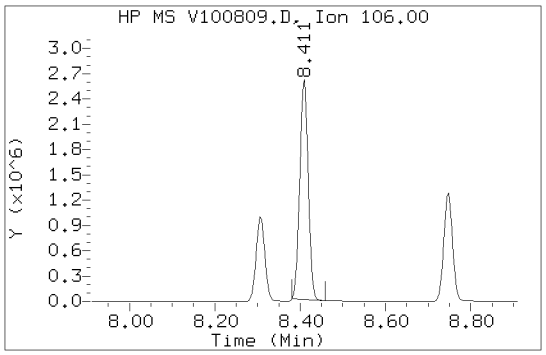
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13-Oct-2023
16:58
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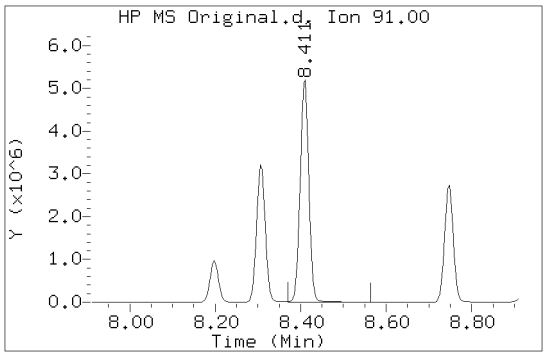
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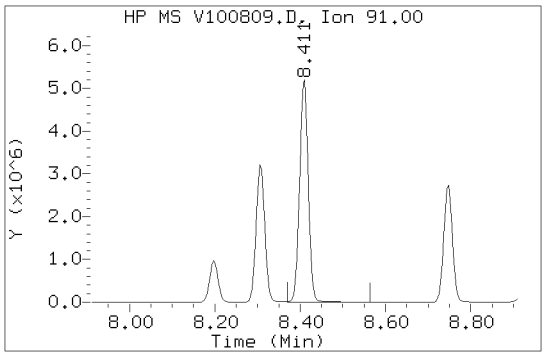
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AFTER

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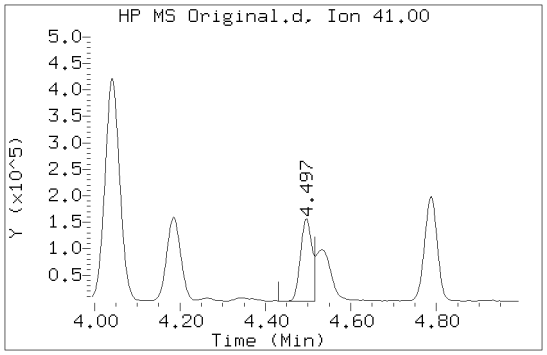


Methacrylonitrile (126-98-7)

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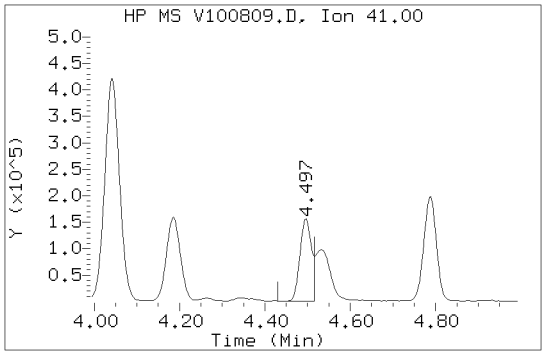
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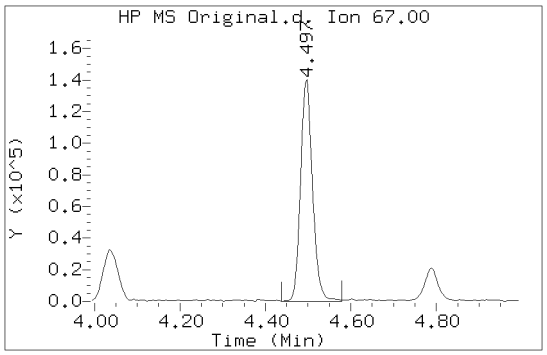
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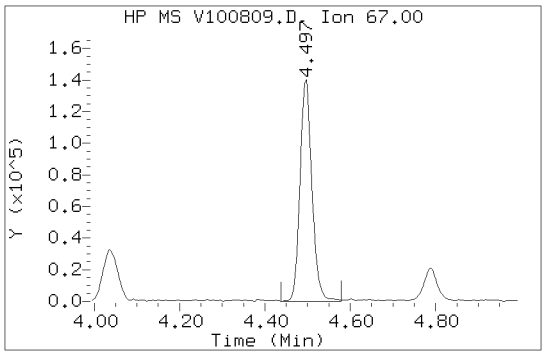
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AFTER

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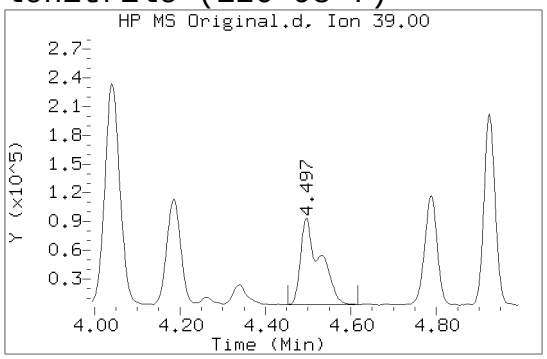
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InstruID : VOA9.i
LabSampID : VSTD100

Methacrylonitrile (126-98-7)

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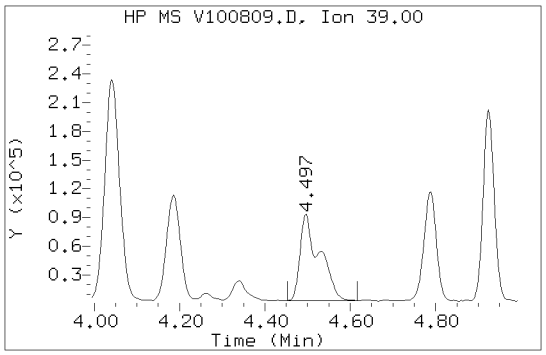
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AFTER

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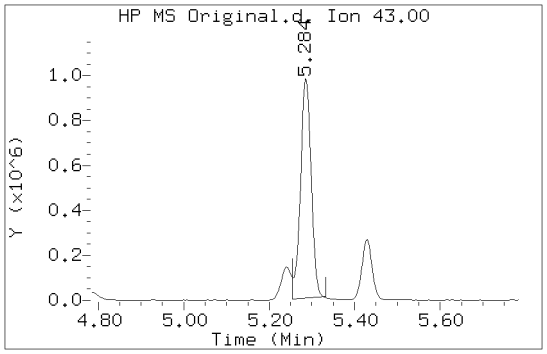


Isopropyl acetate (108-21-4)

Reason Code:

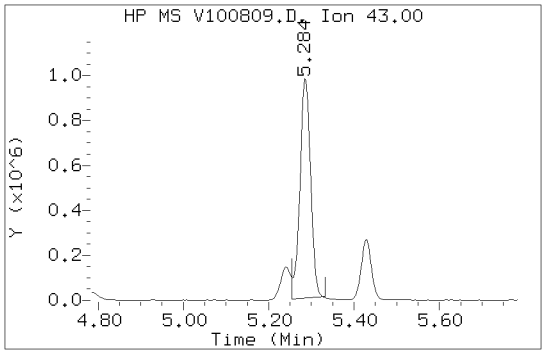
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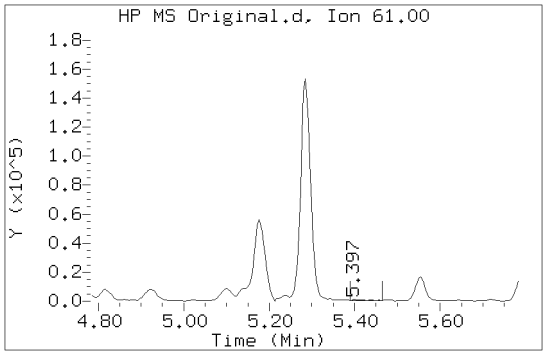
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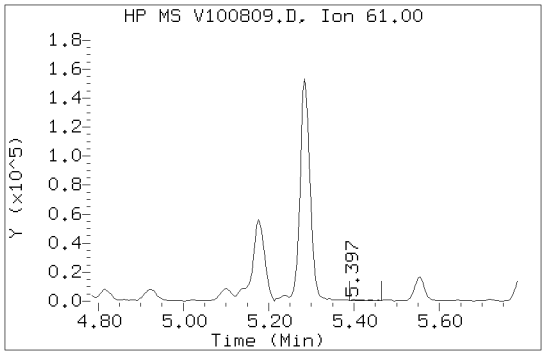
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13-Oct-2023
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AFTER

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13-Oct-2023
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Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100810.D Page 1
Report Date: 13-Oct-2023 17:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100810.D
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Inj Date : 08-OCT-2023 17:10
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Smp Info : VSTD150;VSTD150;1;9;
Misc Info : V9;WATER;0;1;
Comment :
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Meth Date : 13-Oct-2023 17:00 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:47 Cal File: V100809.D
Als bottle: 11 Calibration Sample, Level: 9
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	4.819	4.819	(1.000)	621287	50.0000	
2 Dichlorodifluoromethane	85	1.168	1.168	(0.242)	1036788	150.000	150.40
3 Chloromethane	50	1.303	1.303	(0.270)	1050020	150.000	158.93
5 Vinyl Chloride	62	1.381	1.381	(0.287)	1468679	150.000	147.08
6 Bromomethane	94	1.617	1.617	(0.336)	1376761	150.000	151.11
7 Chloroethane	64	1.700	1.700	(0.353)	1146774	150.000	116.73
8 Trichlorofluoromethane	101	1.902	1.902	(0.395)	2883984	150.000	127.30
9 Acrolein	56	2.270	2.270	(0.471)	144745	300.000	258.24
10 Acetone	43	2.416	2.416	(0.501)	1152266	300.000	233.51
11 1,1-Dichloroethene	96	2.337	2.337	(0.485)	1610496	150.000	129.84
15 Iodomethane	142	2.472	2.472	(0.513)	4426267	300.000	232.62
16 Acrylonitrile	53	3.068	3.068	(0.637)	1427658	300.000	253.71
17 Methylene Chloride	84	2.798	2.798	(0.581)	2015105	150.000	109.83
18 Methyl tert-butyl ether	73	3.083	3.083	(0.640)	5923307	150.000	116.12
19 Carbon Disulfide	76	2.525	2.525	(0.524)	9397643	300.000	263.34
20 trans-1,2-Dichloroethene	96	3.064	3.064	(0.636)	1928591	150.000	124.72
21 Vinyl Acetate	43	3.612	3.612	(0.750)	5779276	300.000	256.79
22 1,1-Dichloroethane	63	3.518	3.518	(0.730)	1352844	150.000	85.79
24 2-Butanone	43	4.264	4.264	(0.885)	732401	300.000	254.12
26 2,2-Dichloropropane	77	4.189	4.189	(0.869)	1246693	150.000	141.85

27 cis-1,2-Dichloroethene	96	4.200	4.200 (0.872)	1083264	150.000	137.53
28 Chloroform	83	4.575	4.575 (0.949)	2359477	150.000	163.29

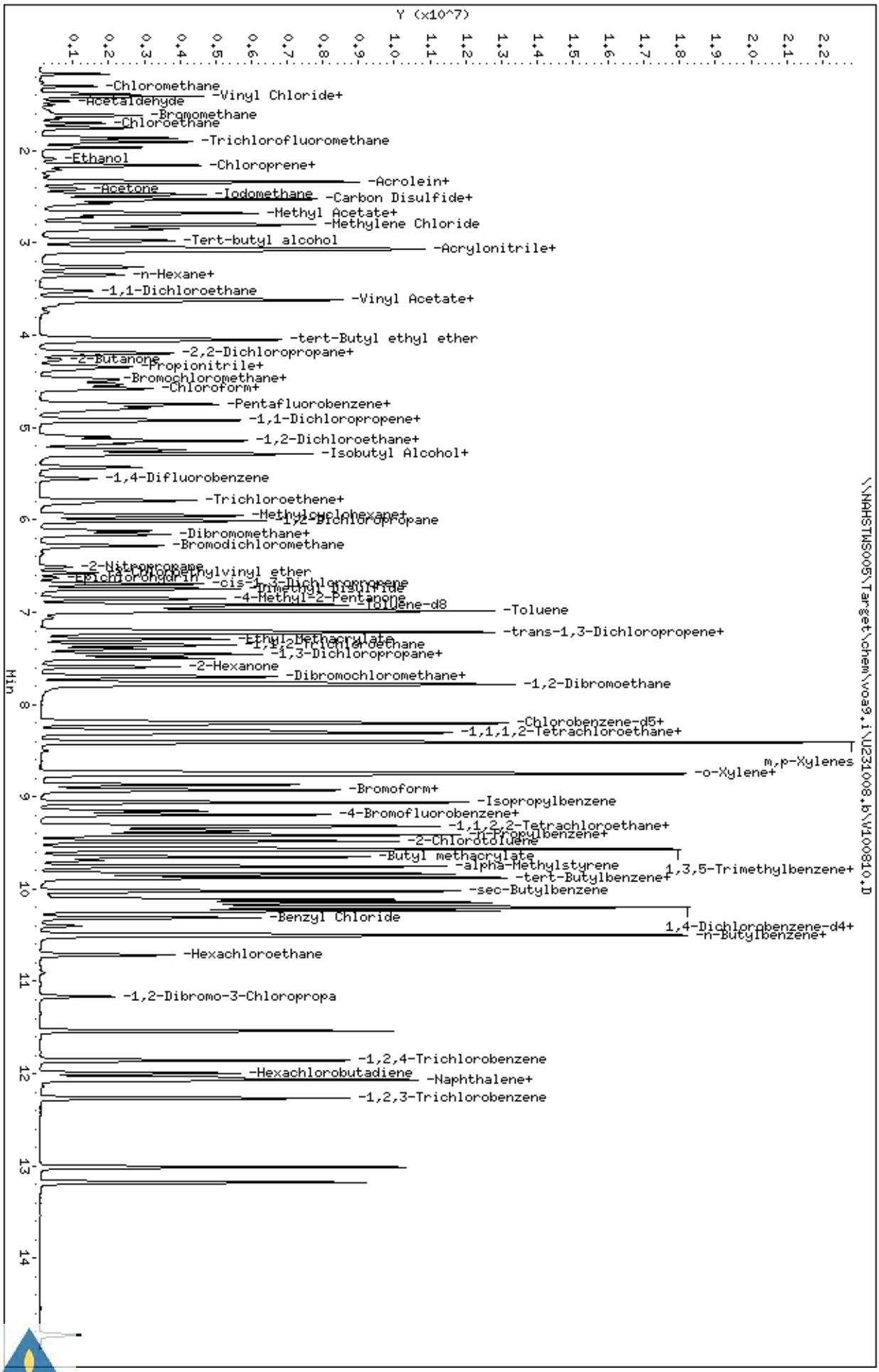
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	29 Bromochloromethane	128	4.474	4.474	(0.928)	549942	150.000	144.68
$	30 Dibromofluoromethane	113	4.751	4.751	(0.986)	1139724	150.000	143.57
	31 1,1,1-Trichloroethane	97	4.748	4.748	(0.985)	1847840	150.000	171.56
	32 1,1-Dichloropropene	75	4.924	4.924	(0.887)	1494477	150.000	149.31
	33 1,2-Dichloroethane	62	5.179	5.179	(0.933)	1718113	150.000	148.78
	34 Carbon Tetrachloride	117	4.916	4.916	(0.885)	1573185	150.000	170.10
$	35 1,2-Dichloroethane-d4	65	5.100	5.100	(1.058)	1235961	150.000	145.14
*	36 1,4-Difluorobenzene	114	5.554	5.554	(1.000)	1167610	50.0000	
	37 Benzene	78	5.141	5.141	(0.926)	4739533	150.000	152.34
	38 Trichloroethene	130	5.790	5.790	(1.043)	1222784	150.000	151.73
	39 Bromodichloromethane	83	6.281	6.281	(1.131)	1895444	150.000	175.61
	41 2-Chloroethylvinyl ether	63	6.577	6.577	(1.184)	629862	300.000	376.26
	42 1,2-Dichloropropane	63	6.011	6.011	(1.082)	1253221	150.000	158.47
	44 Dibromomethane	93	6.120	6.120	(1.102)	997323	150.000	158.91
	45 4-Methyl-2-Pentanone	43	6.854	6.854	(0.837)	2646735	300.000	283.31
	46 cis-1,3-Dichloropropene	75	6.693	6.693	(1.205)	2310078	150.000	179.81
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	1575029	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	5063048	150.000	135.44
	50 Toluene	91	6.982	6.982	(0.853)	6484190	150.000	150.77
	51 trans-1,3-Dichloropropene	75	7.196	7.196	(1.296)	2199822	150.000	97.95
	52 2-Hexanone	43	7.593	7.593	(0.928)	1932227	300.000	298.21
	53 1,1,2-Trichloroethane	83	7.357	7.357	(0.899)	1254669	150.000	144.20
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	2588287	150.000	142.84
	55 Dibromochloromethane	129	7.694	7.694	(0.940)	1731748	150.000	164.23
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	1194267	150.000	146.09
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	1751298	150.000	153.31
	58 1-Chlorohexane	55	8.196	8.196	(1.476)	1166165	150.000	102.64
	59 Chlorobenzene	112	8.208	8.208	(1.003)	4361898	150.000	142.86
	60 1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	1598273	150.000	159.85
	61 Ethylbenzene	106	8.309	8.309	(1.015)	2202961	150.000	151.31
	62 m,p-Xylenes	106	8.410	8.410	(1.027)	5957140	300.000	305.53
	63 o-Xylene	106	8.748	8.748	(1.069)	2944814	150.000	149.62
	64 Styrene	104	8.762	8.762	(1.071)	5184786	150.000	154.99
	66 Bromoform	173	8.920	8.920	(1.090)	1318684	150.000	150.83
	67 Isopropylbenzene	105	9.062	9.062	(1.107)	7289161	150.000	154.98
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	2421796	150.000	147.93
$	69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	2233088	150.000	140.10
*	70 1,4-Dichlorobenzene-d4	152	10.172	10.172	(1.000)	962116	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.920)	2538481	150.000	156.84
	73 n-Propylbenzene	91	9.411	9.411	(0.925)	8110629	150.000	153.77
	74 Bromobenzene	156	9.317	9.317	(0.916)	1989967	150.000	148.91
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	6196528	150.000	152.02
	76 2-Chlorotoluene	91	9.482	9.482	(0.932)	4964502	150.000	148.53
	77 4-Chlorotoluene	91	9.576	9.576	(0.941)	6190279	150.000	156.01
	78 tert-Butylbenzene	119	9.838	9.838	(0.967)	5392643	150.000	154.30
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.971)	6587671	150.000	154.38
	81 sec-Butylbenzene	105	10.022	10.022	(0.985)	7422233	150.000	157.50
	82 p-Isopropyltoluene	119	10.146	10.146	(0.997)	6590436	150.000	158.92
	83 1,3-Dichlorobenzene	146	10.116	10.116	(0.994)	3625497	150.000	145.00
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	3932186	150.000	139.37
	87 n-Butylbenzene	91	10.491	10.491	(1.031)	6105269	150.000	158.64
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	3829611	150.000	148.58

89	1,2-Dibromo-3-Chloropropane	155	11.165	11.165 (1.098)	407951	150.000	119.38
90	1,2,4-Trichlorobenzene	180	11.855	11.855 (1.165)	2363525	150.000	155.43

	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)	875532	150.000	156.45
92	Naphthalene	128	12.065	12.065	(1.186)	7100792	150.000	158.44
93	1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	2329591	150.000	153.92
M 94	1,2-Dichloroethylene (total)	96				3011855	300.000	(a)
135	1,4-Dioxane	88	6.165	6.165	(1.279)	439248	3000.00	3346.21
141	Cyclohexane	56	4.789	4.789	(0.994)	1255661	150.000	158.95
138	Freon TF	101	2.341	2.341	(0.486)	1594361	150.000	114.92
140	1,3-Butadiene	54	1.408	1.408	(0.292)	1292422	150.000	148.64
147	Methylcyclohexane	55	5.947	5.947	(1.071)	2819952	150.000	172.43(A)
146	Methyl Acetate	43	2.720	2.720	(0.564)	1333894	150.000	111.18
148	Tert-Butyl alcohol	59	2.975	2.975	(0.617)	4209751	3000.00	2283.75
149	Isopropyl Alcohol	45	2.570	2.570	(0.533)	2219976	3000.00	2220.80
72	trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	518245	150.000	148.86(H)
12	Isobutyl Alcohol	43	5.284	5.284	(1.096)	3374305	3000.00	3548.30
13	Acetonitrile	39	2.678	2.678	(0.556)	2019094	1500.00	1174.23
14	Allyl Chloride	41	2.678	2.678	(0.556)	3925082	150.000	126.46
25	Methacrylonitrile	41	4.496	4.496	(0.933)	597355	150.000	147.33
40	Methyl Methacrylate	41	6.153	6.153	(1.277)	1095117	150.000	173.36
43	2-Nitropropane	43	6.510	6.510	(1.351)	329076	150.000	113.67
4	Propionitrile	54	4.339	4.339	(0.900)	1558183	1500.00	1557.97
136	n-Hexane	57	3.346	3.346	(0.694)	1149367	150.000	88.48
194	Acetaldehyde	44	1.464	1.464	(0.304)	536444	600.000	478.82
131	Methyl Acrylate	55	4.369	4.369	(0.907)	1317369	150.000	162.10
200	Dimethyl Disulfide	94	6.746	6.746	(0.824)	2666650	150.000	187.14
23	Chloroprene	53	2.161	2.161	(0.449)	567262	150.000	135.31
49	Ethyl Methacrylate	69	7.293	7.293	(1.313)	2536220	150.000	103.07
166	1,2,3-Trimethylbenzene	105	10.236	10.236	(1.006)	6598600	150.000	153.94
167	Ethanol	45	2.094	2.094	(0.435)	372454	3000.00	2463.76
164	Dicyclopentadiene	66	10.202	10.202	(1.003)	7396571	150.000	145.70
145	alpha-Methylstyrene	118	9.752	9.752	(0.959)	3098538	150.000	152.23
142	Tetrahydrofuran	42	4.541	4.541	(0.942)	409790	300.000	314.78
156	Diisopropyl ether	45	3.623	3.623	(0.752)	2992022	150.000	141.23
151	4-Methyl-2-pentanol	45	7.218	7.218	(1.300)	6508939	3000.00	2000.21
150	Allyl alcohol	57	3.346	3.346	(0.694)	1149367	3000.00	1832.00
86	Benzyl Chloride	91	10.311	10.311	(1.260)	3956885	150.000	141.69
162	Butyl acrylate	55	8.733	8.733	(1.067)	3347883	150.000	150.95
139	Diethyl ether	59	2.150	2.150	(0.446)	1260360	150.000	115.85
203	2-Ethylhexyl Acrylate	55	12.039	12.039	(1.184)	1656280	150.000	170.03
134	Cyclohexanone	55	9.152	9.152	(0.900)	1556174	3000.00	2988.48
130	Ethyl Acetate	43	4.343	4.343	(0.901)	1123001	150.000	176.17
189	n-Butyl acetate	43	7.705	7.705	(0.941)	2378468	150.000	164.04
182	Epichlorohydrin	57	6.629	6.629	(1.194)	340523	600.000	637.72(H)
132	n-Butanol	56	5.820	5.820	(1.208)	679500	3000.00	2384.05
133	Ethyl Acrylate	55	5.947	5.947	(1.234)	2819952	150.000	162.41
163	Butyl methacrylate	41	9.651	9.651	(0.949)	1926537	150.000	155.84
174	tert-Amyl methyl ether	73	5.287	5.287	(1.097)	4161696	150.000	177.54
175	tert-Butyl ethyl ether	59	4.054	4.054	(0.841)	2886455	150.000	147.96
187	n-Amyl acetate	43	8.931	8.931	(1.091)	2883131	150.000	153.06
188	Isopropyl acetate	43	5.284	5.284	(0.951)	3282717	150.000	171.39(M)
179	Hexachloroethane	166	10.712	10.712	(1.053)	385441	150.000	132.93

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.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100810.D
Date : 08-OCT-2023 17:10
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

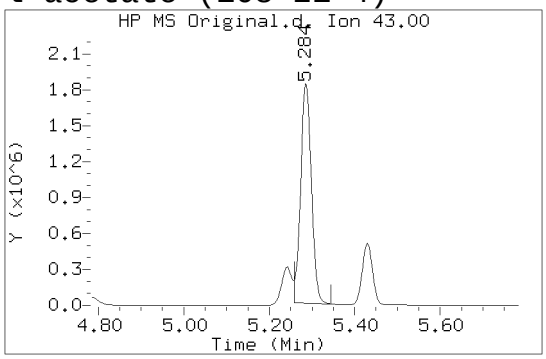
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InstruID : VOA9.i
LabSampID : VSTD150

Isopropyl acetate (108-21-4)

Reason Code:

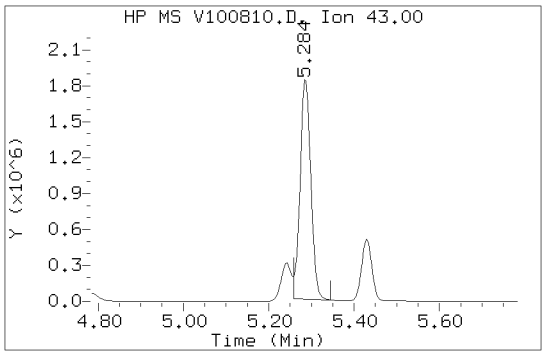
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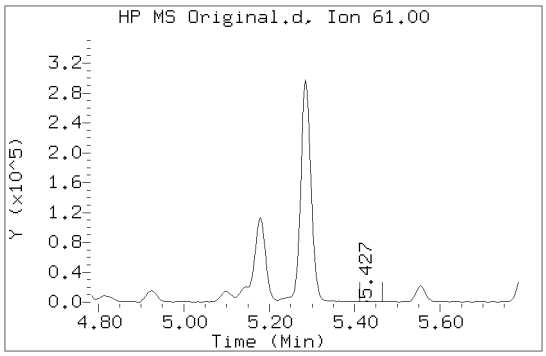
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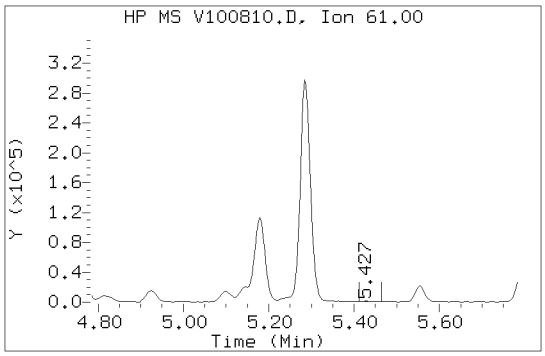
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AFTER

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Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100811.D Page 1
Report Date: 13-Oct-2023 17:00

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100811.D
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Inj Date : 08-OCT-2023 17:32
Operator : PC Inst ID: VOA9.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231008.b\8260C.m
Meth Date : 13-Oct-2023 17:00 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 17:10 Cal File: V100810.D
Als bottle: 12 Calibration Sample, Level: 10
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	4.812	4.812	(1.000)	781592	50.0000	
2 Dichlorodifluoromethane	85	1.157	1.157	(0.240)	1735562	200.000	199.79
3 Chloromethane	50	1.288	1.288	(0.268)	1574687	200.000	189.68
5 Vinyl Chloride	62	1.367	1.367	(0.284)	2074484	200.000	165.14
6 Bromomethane	94	1.599	1.599	(0.332)	3232847	200.000	281.63(A)
7 Chloroethane	64	1.685	1.685	(0.350)	1607090	200.000	130.04
8 Trichlorofluoromethane	101	1.888	1.888	(0.392)	4030635	200.000	141.42
9 Acrolein	56	2.259	2.259	(0.469)	192422	400.000	272.88
10 Acetone	43	2.401	2.401	(0.499)	1637356	400.000	264.33
11 1,1-Dichloroethene	96	2.326	2.326	(0.484)	2292358	200.000	146.90
15 Iodomethane	142	2.461	2.461	(0.512)	6288613	400.000	254.45
16 Acrylonitrile	53	3.061	3.061	(0.636)	2003336	400.000	283.00
17 Methylene Chloride	84	2.787	2.787	(0.579)	2897191	200.000	125.52
18 Methyl tert-butyl ether	73	3.076	3.076	(0.639)	8393431	200.000	130.79
19 Carbon Disulfide	76	2.514	2.514	(0.522)	13158776	400.000	293.11
20 trans-1,2-Dichloroethene	96	3.053	3.053	(0.635)	2772617	200.000	142.53
21 Vinyl Acetate	43	3.601	3.601	(0.748)	8814362	400.000	311.33
22 1,1-Dichloroethane	63	3.507	3.507	(0.729)	2460549	200.000	124.03
24 2-Butanone	43	4.257	4.257	(0.885)	1255002	400.000	346.13
26 2,2-Dichloropropane	77	4.178	4.178	(0.868)	2265591	200.000	204.55(A)

27 cis-1,2-Dichloroethene	96	4.193	4.193 (0.871)	1968849	200.000	198.70
28 Chloroform	83	4.568	4.568 (0.949)	3612803	200.000	198.75

	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)	911533	200.000	190.62
$	30 Dibromofluoromethane	113	4.744	4.744	(0.986)	1850812	200.000	171.26
	31 1,1,1-Trichloroethane	97	4.740	4.740	(0.985)	3025568	200.000	223.30(A)
	32 1,1-Dichloropropene	75	4.920	4.920	(0.887)	2402246	200.000	197.70
	33 1,2-Dichloroethane	62	5.171	5.171	(0.932)	2662970	200.000	189.95
	34 Carbon Tetrachloride	117	4.909	4.909	(0.885)	2540258	200.000	226.25(A)
$	35 1,2-Dichloroethane-d4	65	5.093	5.093	(1.058)	2116843	200.000	189.29
*	36 1,4-Difluorobenzene	114	5.550	5.550	(1.000)	1417495	50.0000	
	37 Benzene	78	5.138	5.138	(0.926)	7297639	200.000	193.21
	38 Trichloroethene	130	5.786	5.786	(1.043)	1981771	200.000	202.56(A)
	39 Bromodichloromethane	83	6.277	6.277	(1.131)	2834117	200.000	216.29(A)
	41 2-Chloroethylvinyl ether	63	6.573	6.573	(1.184)	997609	400.000	490.89(A)
	42 1,2-Dichloropropane	63	6.007	6.007	(1.082)	1814006	200.000	188.95
	44 Dibromomethane	93	6.116	6.116	(1.102)	1475053	200.000	193.60
	45 4-Methyl-2-Pentanone	43	6.851	6.851	(0.837)	3913896	400.000	393.13
	46 cis-1,3-Dichloropropene	75	6.690	6.690	(1.205)	3409142	200.000	218.57(A)
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	1678490	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	7368347	200.000	184.96
	50 Toluene	91	6.978	6.978	(0.853)	9229043	200.000	201.37(A)
	51 trans-1,3-Dichloropropene	75	7.196	7.196	(1.296)	3202006	200.000	84.28
	52 2-Hexanone	43	7.589	7.589	(0.927)	2842440	400.000	411.65(A)
	53 1,1,2-Trichloroethane	83	7.353	7.353	(0.898)	1805337	200.000	194.70
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	3706997	200.000	191.97
	55 Dibromochloromethane	129	7.691	7.691	(0.940)	2594195	200.000	230.86(A)
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	1673518	200.000	192.10
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	2586152	200.000	212.44(A)
	58 1-Chlorohexane	55	8.197	8.197	(1.477)	1661732	200.000	100.40
	59 Chlorobenzene	112	8.208	8.208	(1.003)	6322683	200.000	194.31
	60 1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	2309601	200.000	216.76(A)
	61 Ethylbenzene	106	8.305	8.305	(1.015)	3142617	200.000	202.55(A)
	62 m,p-Xylenes	106	8.410	8.410	(1.027)	8480020	400.000	408.12(A)
	63 o-Xylene	106	8.748	8.748	(1.069)	4278398	200.000	203.99(A)
	64 Styrene	104	8.763	8.763	(1.071)	7542587	200.000	211.58(A)
	66 Bromoform	173	8.916	8.916	(1.089)	1986877	200.000	199.52
	67 Isopropylbenzene	105	9.063	9.063	(1.107)	10329869	200.000	206.10(A)
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	3494354	200.000	201.23(A)
$	69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	3206664	200.000	181.64
*	70 1,4-Dichlorobenzene-d4	152	10.172	10.172	(1.000)	1019732	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.920)	3688675	200.000	215.03(A)
	73 n-Propylbenzene	91	9.411	9.411	(0.925)	11322681	200.000	202.54(A)
	74 Bromobenzene	156	9.318	9.318	(0.916)	2912311	200.000	205.62(A)
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	8842546	200.000	204.69(A)
	76 2-Chlorotoluene	91	9.482	9.482	(0.932)	7020897	200.000	198.18
	77 4-Chlorotoluene	91	9.576	9.576	(0.941)	8744989	200.000	207.94(A)
	78 tert-Butylbenzene	119	9.839	9.839	(0.967)	7706528	200.000	208.04(A)
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.971)	9240286	200.000	204.31(A)
	81 sec-Butylbenzene	105	10.022	10.022	(0.985)	10397594	200.000	208.17(A)
	82 p-Isopropyltoluene	119	10.146	10.146	(0.997)	9280718	200.000	211.14(A)
	83 1,3-Dichlorobenzene	146	10.116	10.116	(0.994)	5255289	200.000	198.31
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	5718986	200.000	191.25
	87 n-Butylbenzene	91	10.491	10.491	(1.031)	8591528	200.000	210.63(A)
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	5515497	200.000	201.90(A)

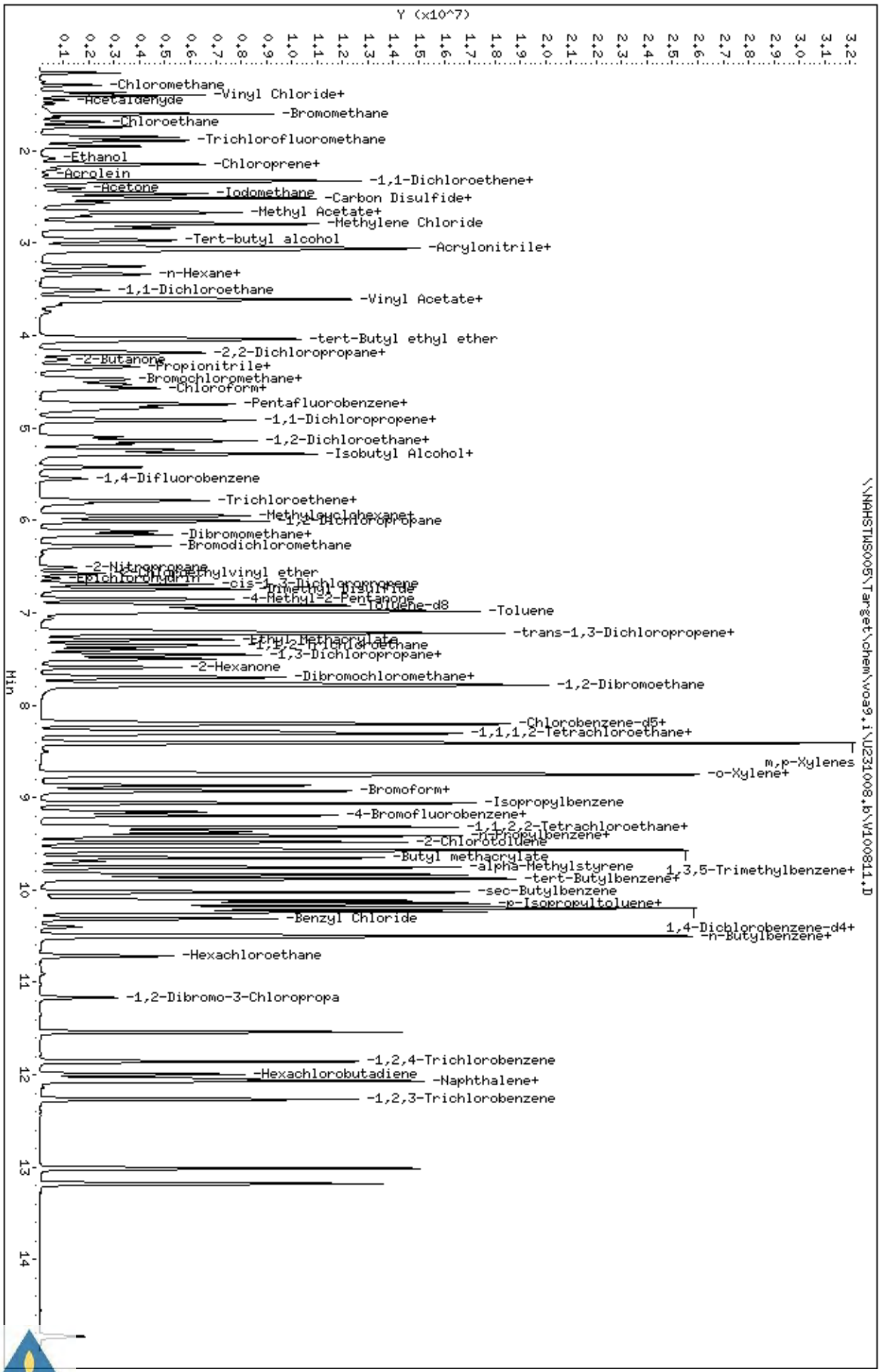
89	1,2-Dibromo-3-Chloropropane	155	11.166	11.166 (1.098)	598172	200.000	115.19
90	1,2,4-Trichlorobenzene	180	11.855	11.855 (1.165)	3406612	200.000	211.37(A)

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100811.D Page 3
Report Date: 13-Oct-2023 17:00

	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)	1270724	200.000	214.24(A)
92	Naphthalene	128	12.065	12.065	(1.186)	10124768	200.000	213.15(A)
93	1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	3365601	200.000	209.81(A)
M 94	1,2-Dichloroethylene (total)	96				4741466	400.000	(a)
135	1,4-Dioxane	88	6.165	6.165	(1.281)	637400	4000.00	3859.83
141	Cyclohexane	56	4.782	4.782	(0.994)	2015089	200.000	202.76(A)
138	Freon TF	101	2.326	2.326	(0.484)	2264099	200.000	125.70
140	1,3-Butadiene	54	1.397	1.397	(0.290)	1798399	200.000	164.41
147	Methylcyclohexane	55	5.944	5.944	(1.071)	4113623	200.000	207.19(A)
146	Methyl Acetate	43	2.709	2.709	(0.563)	1899197	200.000	125.83
148	Tert-Butyl alcohol	59	2.967	2.967	(0.617)	6184704	4000.00	2667.00
149	Isopropyl Alcohol	45	2.562	2.562	(0.533)	3184422	4000.00	2532.24
72	trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	744040	200.000	200.55(AH)
12	Isobutyl Alcohol	43	5.280	5.280	(1.097)	5066825	4000.00	4235.30(A)
13	Acetonitrile	39	2.664	2.664	(0.554)	2599848	2000.00	1201.86
14	Allyl Chloride	41	2.667	2.667	(0.554)	5262559	200.000	134.78
25	Methacrylonitrile	41	4.489	4.489	(0.933)	996334	200.000	195.33
40	Methyl Methacrylate	41	6.154	6.154	(1.279)	1579321	200.000	198.74
43	2-Nitropropane	43	6.506	6.506	(1.352)	519720	200.000	102.51
4	Propionitrile	54	4.336	4.336	(0.901)	2447656	2000.00	1945.38
136	n-Hexane	57	3.335	3.335	(0.693)	2080233	200.000	115.69
194	Acetaldehyde	44	1.453	1.453	(0.302)	733130	800.000	520.77
131	Methyl Acrylate	55	4.362	4.362	(0.907)	2071331	200.000	202.60(A)
200	Dimethyl Disulfide	94	6.746	6.746	(0.824)	4075660	200.000	246.41(A)
23	Chloroprene	53	2.150	2.150	(0.447)	793430	200.000	150.44
49	Ethyl Methacrylate	69	7.289	7.289	(1.313)	3598913	200.000	99.13
166	1,2,3-Trimethylbenzene	105	10.236	10.236	(1.006)	9157867	200.000	201.57(A)
167	Ethanol	45	2.083	2.083	(0.433)	538887	4000.00	2834.38
164	Dicyclopentadiene	66	10.202	10.202	(1.003)	10265627	200.000	190.80
145	alpha-Methylstyrene	118	9.752	9.752	(0.959)	4546552	200.000	210.75(A)
142	Tetrahydrofuran	42	4.534	4.534	(0.942)	590271	400.000	360.42
156	Diisopropyl ether	45	3.616	3.616	(0.751)	4439017	200.000	166.55
151	4-Methyl-2-pentanol	45	7.218	7.218	(1.301)	9685928	4000.00	1722.99
150	Allyl alcohol	57	3.335	3.335	(0.693)	2080233	4000.00	2635.67
86	Benzyl Chloride	91	10.311	10.311	(1.260)	5966765	200.000	184.03
162	Butyl acrylate	55	8.733	8.733	(1.067)	4846680	200.000	204.64(A)
139	Diethyl ether	59	2.139	2.139	(0.445)	1754739	200.000	128.21
203	2-Ethylhexyl Acrylate	55	12.039	12.039	(1.184)	2488082	200.000	240.99(A)
134	Cyclohexanone	55	9.153	9.153	(0.900)	2157895	4000.00	3917.40
130	Ethyl Acetate	43	4.336	4.336	(0.901)	1737446	200.000	216.67(A)
189	n-Butyl acetate	43	7.706	7.706	(0.941)	3431427	200.000	222.07(A)
182	Epichlorohydrin	57	6.630	6.630	(1.195)	526526	800.000	810.87(AH)
132	n-Butanol	56	5.820	5.820	(1.210)	1072869	4000.00	2251.99
133	Ethyl Acrylate	55	5.944	5.944	(1.235)	4113623	200.000	188.07
163	Butyl methacrylate	41	9.651	9.651	(0.949)	2756595	200.000	210.38(A)
174	tert-Amyl methyl ether	73	5.284	5.284	(1.098)	6278427	200.000	212.91(A)
175	tert-Butyl ethyl ether	59	4.047	4.047	(0.841)	4724708	200.000	192.52
187	n-Amyl acetate	43	8.931	8.931	(1.091)	4216806	200.000	210.07(A)
188	Isopropyl acetate	43	5.280	5.280	(0.951)	4901275	200.000	210.79(AM)
179	Hexachloroethane	166	10.712	10.712	(1.053)	544019	200.000	177.02

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.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100811.D
Date : 08-OCT-2023 17:32
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

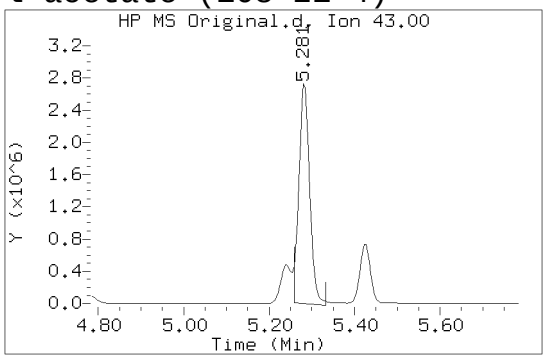
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Inj Date : 08-OCT-2023 17:32
InstruID : VOA9.i
LabSampID : VSTD200

Isopropyl acetate (108-21-4)

Reason Code:

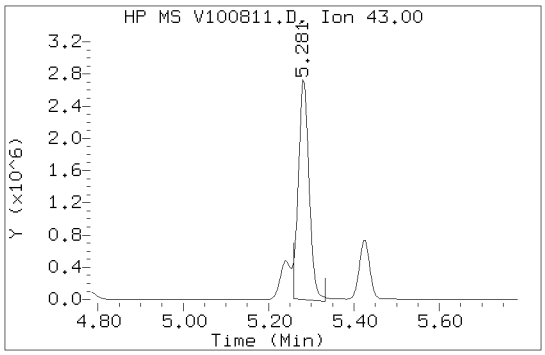
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HEIGHT
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13-Oct-2023
16:58
linh
pham



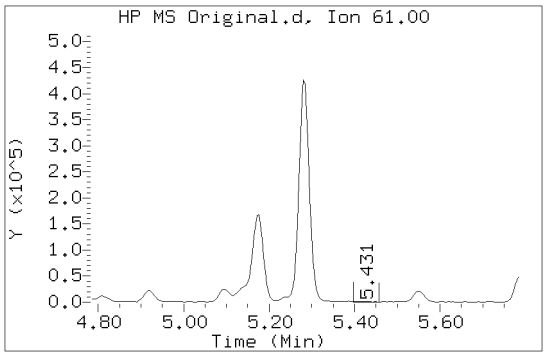
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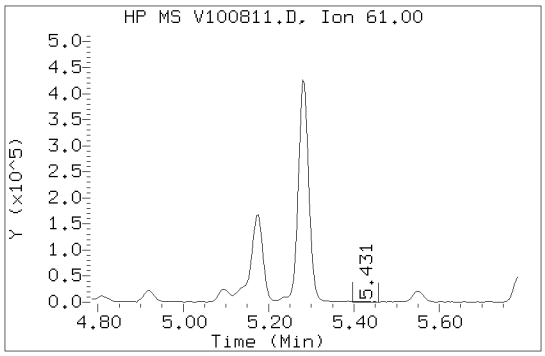
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HEIGHT
809
13-Oct-2023
16:58
linh
pham



AFTER

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1441
HEIGHT
809
13-Oct-2023
16:58
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100814.D Page 1
Report Date: 18-Oct-2023 12:51

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100814.D
Lab Smp Id: ICV Client Smp ID: ICV
Inj Date : 08-OCT-2023 18:39
Operator : PC Inst ID: VOA9.i
Smp Info : ICV;ICV;2;;;ICV
Misc Info : V9;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa9.i\U231008.b\8260C.m
Meth Date : 13-Oct-2023 17:02 Linh.Pham Quant Type: ISTD
Cal Date : 08-OCT-2023 17:32 Cal File: V100811.D
Als bottle: 15 QC Sample: METHSPIKE
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	4.811	4.819	(1.000)	495710	50.0000	
2	Dichlorodifluoromethane	85	1.156	1.164	(0.240)	265017	48.8716	48.87
3	Chloromethane	50	1.291	1.299	(0.268)	300572	56.2828	56.28
5	Vinyl Chloride	62	1.370	1.378	(0.285)	426449	53.5268	53.52
6	Bromomethane	94	1.614	1.621	(0.335)	375133	51.9314	51.93
7	Chloroethane	64	1.693	1.700	(0.352)	364240	46.4709	46.47
8	Trichlorofluoromethane	101	1.891	1.899	(0.393)	837834	46.3525	46.35
9	Acrolein	56	2.259	2.266	(0.469)	47120	105.432	105.43
10	Acetone	43	2.401	2.408	(0.499)	427360	106.201	106.20
11	1,1-Dichloroethene	96	2.326	2.337	(0.483)	481889	48.6931	48.69
15	Iodomethane	142	2.465	2.472	(0.512)	1236159	95.0971	95.09
16	Acrylonitrile	53	3.061	3.068	(0.636)	439852	97.9701	97.97
17	Methylene Chloride	84	2.787	2.795	(0.579)	645809	44.1181	44.11
18	Methyl tert-butyl ether	73	3.076	3.083	(0.639)	1936338	47.5767	47.57
19	Carbon Disulfide	76	2.517	2.525	(0.523)	2827452	99.3057	99.30
20	trans-1,2-Dichloroethene	96	3.053	3.061	(0.635)	592193	48.0008	48.00
21	Vinyl Acetate	43	3.601	3.608	(0.748)	1592494	88.6873	88.68
22	1,1-Dichloroethane	63	3.507	3.518	(0.729)	722876	57.4556	57.45
24	2-Butanone	43	4.260	4.264	(0.885)	224987	97.8390	97.83
26	2,2-Dichloropropane	77	4.178	4.185	(0.868)	318460	45.9559	45.95

27 cis-1,2-Dichloroethene	96	4.193	4.200 (0.871)	294943	46.9343	46.93
28 Chloroform	83	4.572	4.575 (0.950)	512951	44.4942	44.49

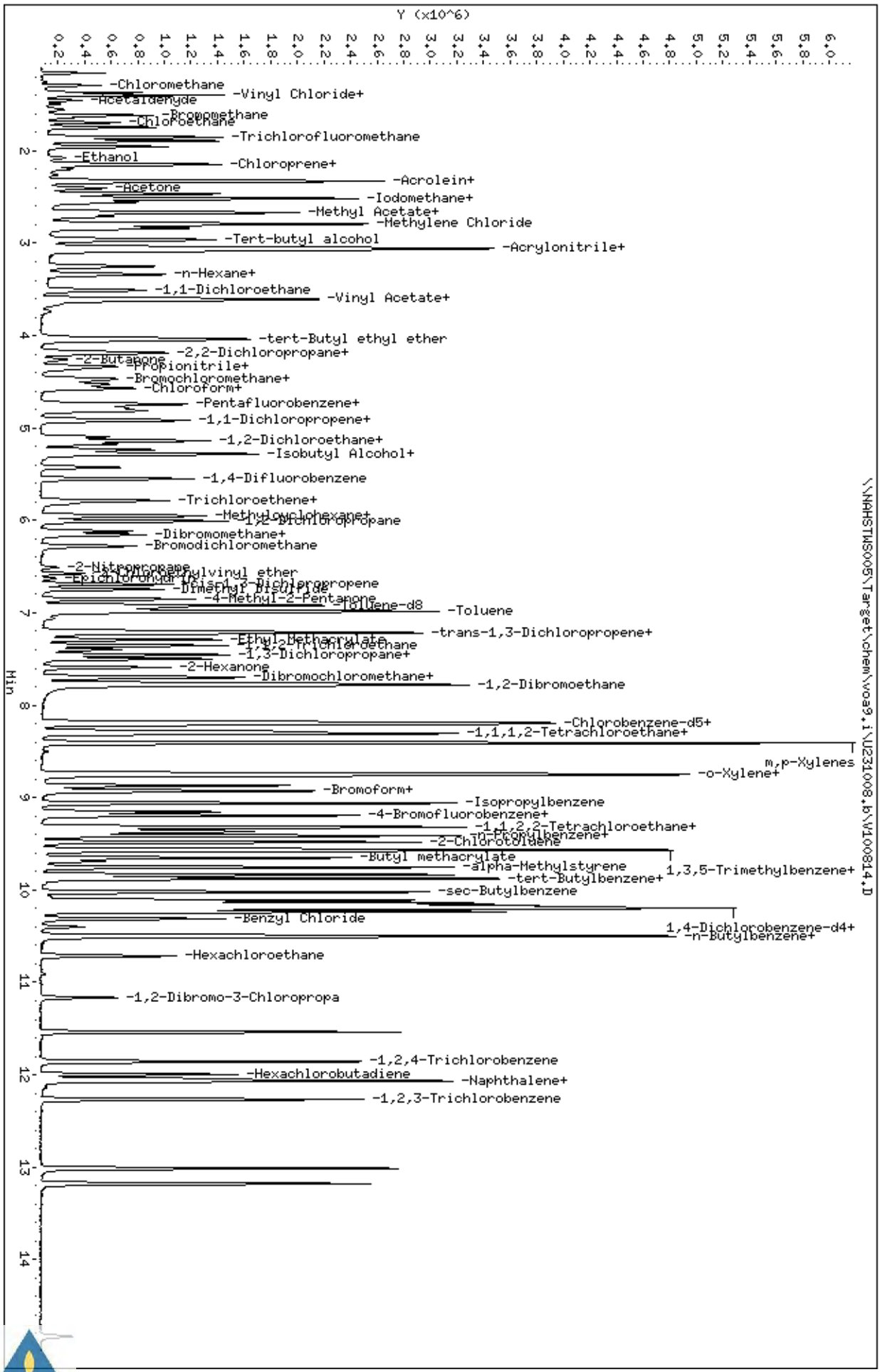
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
	29 Bromochloromethane	128	4.467	4.470	(0.928)	153874	50.7373	50.73
$	30 Dibromofluoromethane	113	4.744	4.751	(0.986)	288408	53.3960	53.39
	31 1,1,1-Trichloroethane	97	4.740	4.744	(0.985)	384765	44.7751	44.77
	32 1,1-Dichloropropene	75	4.920	4.924	(0.887)	337910	45.7516	45.75
	33 1,2-Dichloroethane	62	5.171	5.179	(0.932)	405488	47.5843	47.58
	34 Carbon Tetrachloride	117	4.909	4.913	(0.885)	310511	45.4992	45.49
$	35 1,2-Dichloroethane-d4	65	5.093	5.096	(1.058)	328844	51.9362	51.93
*	36 1,4-Difluorobenzene	114	5.550	5.554	(1.000)	861618	50.0000	
	37 Benzene	78	5.138	5.141	(0.926)	1072420	46.7122	46.71
	38 Trichloroethene	130	5.786	5.790	(1.043)	294516	49.5252	49.52
	39 Bromodichloromethane	83	6.277	6.277	(1.131)	394986	49.5917	49.59
	41 2-Chloroethylvinyl ether	63	6.573	6.577	(1.184)	126370	102.301	102.30
	42 1,2-Dichloropropane	63	6.007	6.011	(1.082)	274329	47.0109	47.01
	44 Dibromomethane	93	6.116	6.120	(1.102)	213602	46.1233	46.12
	45 4-Methyl-2-Pentanone	43	6.851	6.854	(0.837)	642591	83.6718	83.67
	46 cis-1,3-Dichloropropene	75	6.690	6.693	(1.205)	477526	50.3697	50.36
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	1294817	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	1248956	40.6432	40.64
	50 Toluene	91	6.978	6.982	(0.853)	1516778	42.9027	42.90
	51 trans-1,3-Dichloropropene	75	7.196	7.195	(1.296)	481170	57.7639	57.76
	52 2-Hexanone	43	7.589	7.593	(0.927)	506580	95.1049	95.10
	53 1,1,2-Trichloroethane	83	7.353	7.353	(0.898)	309596	43.2826	43.28
	54 1,3-Dichloropropane	76	7.495	7.499	(0.916)	646712	43.4156	43.41
	55 Dibromochloromethane	129	7.690	7.690	(0.940)	409435	47.2338	47.23
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	270024	40.1813	40.18
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	476425	50.7334	50.73
	58 1-Chlorohexane	55	8.197	8.196	(1.477)	286566	55.6434	55.64
	59 Chlorobenzene	112	8.208	8.208	(1.003)	1164974	46.4129	46.41
	60 1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	407786	49.6132	49.61
	61 Ethylbenzene	106	8.305	8.309	(1.015)	577213	48.2284	48.22
	62 m,p-Xylenes	106	8.406	8.410	(1.027)	1562236	97.4665	97.46
	63 o-Xylene	106	8.748	8.747	(1.069)	783822	48.4460	48.44
	64 Styrene	104	8.759	8.762	(1.070)	1391175	50.5892	50.58
	66 Bromoform	173	8.920	8.920	(1.090)	310475	48.0815	48.08
	67 Isopropylbenzene	105	9.062	9.062	(1.107)	1888945	48.8558	48.85
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.328	(0.917)	703694	52.3693	52.36
$	69 4-Bromofluorobenzene	95	9.190	9.194	(1.123)	661592	54.1514	54.15
*	70 1,4-Dichlorobenzene-d4	152	10.168	10.172	(1.000)	794031	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.921)	674850	50.5240	50.52
	73 n-Propylbenzene	91	9.411	9.411	(0.926)	2256799	51.8459	51.84
	74 Bromobenzene	156	9.317	9.317	(0.916)	543505	49.2818	49.28
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	1668172	49.5917	49.59
	76 2-Chlorotoluene	91	9.482	9.482	(0.933)	1396457	50.6240	50.62
	77 4-Chlorotoluene	91	9.576	9.576	(0.942)	1727197	52.7442	52.74
	78 tert-Butylbenzene	119	9.835	9.838	(0.967)	1384046	47.9852	47.98
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.972)	1782722	50.6228	50.62
	81 sec-Butylbenzene	105	10.022	10.022	(0.986)	1902729	48.9236	48.92
	82 p-Isopropyltoluene	119	10.146	10.146	(0.998)	1720959	50.2837	50.28
	83 1,3-Dichlorobenzene	146	10.112	10.116	(0.994)	1007921	48.8463	48.84
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	1090899	46.8513	46.85
	87 n-Butylbenzene	91	10.491	10.491	(1.032)	1561963	49.1798	49.17
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	1057128	49.6980	49.69

89	1,2-Dibromo-3-Chloropropane	155	11.165	11.165 (1.098)	110440	59.6507	59.65(M)
90	1,2,4-Trichlorobenzene	180	11.859	11.859 (1.166)	663115	52.8396	52.83

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
	91 Hexachlorobutadiene	225	11.998	11.998	(1.180)	220726	47.7929	47.79
	92 Naphthalene	128	12.065	12.065	(1.187)	2036796	55.0694	55.06
	93 1,2,3-Trichlorobenzene	180	12.268	12.267	(1.206)	662183	53.0148	53.01
M	94 1,2-Dichloroethylene (total)	96				887136	95.2818	95.28
M	95 Xylenes (total)	106				2346058	170.606	170.60
	135 1,4-Dioxane	88	6.165	6.165	(1.281)	96163	918.157	918.15
	141 Cyclohexane	56	4.781	4.785	(0.994)	269694	42.7884	42.78
	138 Freon TF	101	2.330	2.337	(0.484)	448538	46.6515	46.65
	140 1,3-Butadiene	54	1.396	1.404	(0.290)	364570	52.5531	52.55
	147 Methylcyclohexane	55	5.944	5.947	(1.071)	627865	52.0265	52.02
	146 Methyl Acetate	43	2.708	2.716	(0.563)	462585	48.3261	48.32
	148 Tert-Butyl alcohol	59	2.960	2.967	(0.615)	1421485	966.495	966.49
	149 Isopropyl Alcohol	45	2.555	2.566	(0.531)	734268	920.624	920.62
	72 trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	136875	47.8273	47.82
	12 Isobutyl Alcohol	43	5.280	5.284	(1.097)	786766	1036.92	1036.92
	13 Acetonitrile	39	2.667	2.675	(0.554)	657776	479.446	479.44
	14 Allyl Chloride	41	2.667	2.675	(0.554)	1251825	50.5529	50.55
	25 Methacrylonitrile	41	4.493	4.493	(0.934)	153099	47.3262	47.32
	40 Methyl Methacrylate	41	6.153	6.157	(1.279)	254020	50.4008	50.40
	43 2-Nitropropane	43	6.506	6.509	(1.352)	64577	50.5731	50.57
	4 Propionitrile	54	4.332	4.335	(0.900)	396375	496.723	496.72
	136 n-Hexane	57	3.338	3.342	(0.694)	441509	46.9978	46.99
	194 Acetaldehyde	44	1.453	1.460	(0.302)	199296	219.153	219.15
	131 Methyl Acrylate	55	4.362	4.369	(0.907)	317159	48.9146	48.91
	200 Dimethyl Disulfide	94	6.746	6.746	(0.824)	417949	41.8232	41.82
	23 Chloroprene	53	2.154	2.161	(0.448)	159279	47.6185	47.61
	49 Ethyl Methacrylate	69	7.289	7.289	(1.313)	624937	58.5472	58.54
	166 1,2,3-Trimethylbenzene	105	10.236	10.236	(1.007)	1867285	52.7842	52.78
	167 Ethanol	45	2.075	2.086	(0.431)	120923	999.390	999.39
	164 Dicyclopentadiene	66	10.198	10.202	(1.003)	2134686	50.9545	50.95
	145 alpha-Methylstyrene	118	9.752	9.756	(0.959)	836223	49.7811	49.78
	142 Tetrahydrofuran	42	4.534	4.541	(0.942)	98245	94.5866	94.58
	156 Diisopropyl ether	45	3.616	3.623	(0.751)	782740	46.3074	46.30
	151 4-Methyl-2-pentanol	45	7.214	7.214	(1.300)	1465759	1173.10	1173.10
	150 Allyl alcohol	57	3.338	3.342	(0.694)	441509	882.007	882.00
	86 Benzyl Chloride	91	10.311	10.311	(1.260)	920013	46.7345	46.73
	162 Butyl acrylate	55	8.733	8.732	(1.067)	865316	48.2742	48.27
	139 Diethyl ether	59	2.139	2.146	(0.445)	410677	47.3118	47.31
	203 2-Ethylhexyl Acrylate	55	12.043	12.043	(1.184)	459714	57.1847	57.18
	134 Cyclohexanone	55	9.152	9.156	(0.900)	474341	1088.40	1088.39
	130 Ethyl Acetate	43	4.335	4.339	(0.901)	285649	56.1659	56.16
	189 n-Butyl acetate	43	7.705	7.705	(0.941)	604156	50.6865	50.68
	182 Epichlorohydrin	57	6.630	6.629	(1.195)	72391	187.285	187.28
	132 n-Butanol	56	5.820	5.820	(1.210)	149616	1122.34	1122.33
	133 Ethyl Acrylate	55	5.944	5.947	(1.235)	627865	46.4927	46.49
	163 Butyl methacrylate	41	9.651	9.651	(0.949)	503833	49.3831	49.38
	174 tert-Amyl methyl ether	73	5.284	5.287	(1.098)	909296	48.6195	48.61
	175 tert-Butyl ethyl ether	59	4.047	4.050	(0.841)	726679	46.6886	46.68
	187 n-Amyl acetate	43	8.931	8.931	(1.091)	770735	49.7735	49.77
	188 Isopropyl acetate	43	5.280	5.284	(0.951)	785449	55.5748	55.57
	179 Hexachloroethane	166	10.712	10.712	(1.053)	117591	49.1406	49.14

QC Flag Legend

M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231008.b\V100814.D
Date : 08-OCT-2023 18:39
Client ID: ICV
Sample Info: ICV;ICV;2;;;ICV
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

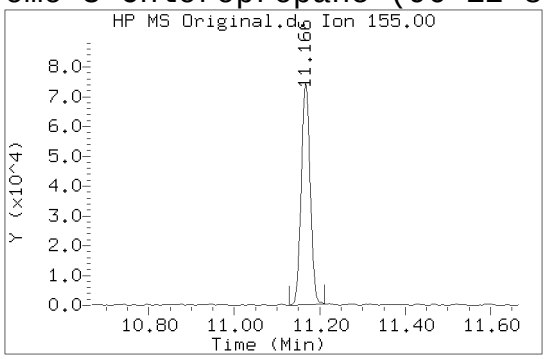
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Inj Date : 08-OCT-2023 18:39
InstruID : VOA9.i
LabSampID : ICV

1,2-Dibromo-3-Chloropropane (96-12-8)

Reason Code:

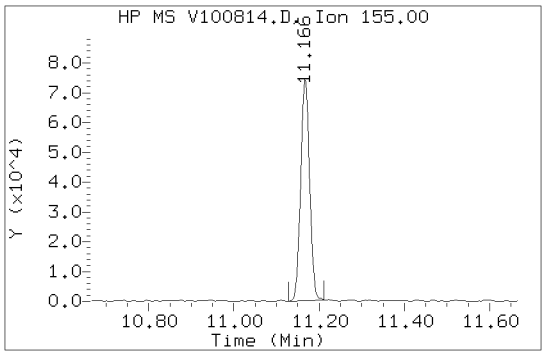
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13-Oct-2023
16:59
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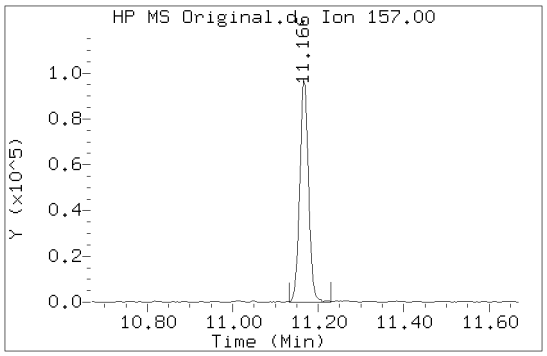
AFTER

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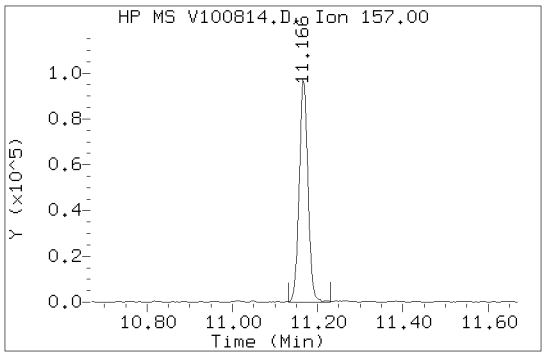
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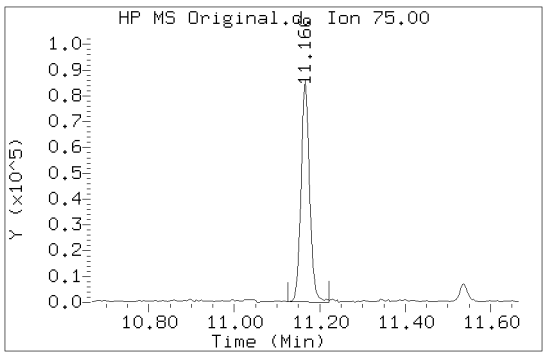
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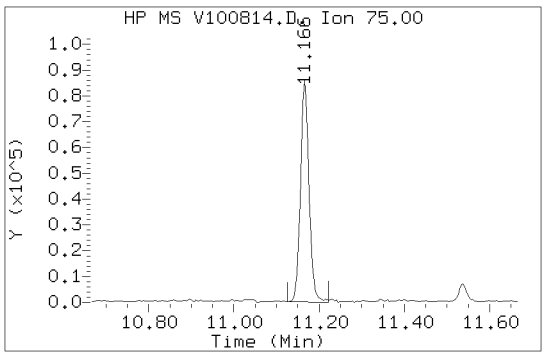
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AFTER

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HEIGHT
85754
18-Oct-2023
12:51
linh
pham



right solutions.
right partner.

Raw Data VOA9 448564

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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\U231009.b\U100901.D Page 1
Report Date: 09-Oct-2023 15:32

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100901.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 09-OCT-2023 14:56
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\U231009.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	171648			0.00- 100.00	100.00
9.194	9.180	(0.000)	50	29432			15.00- 40.00	17.15
9.194	9.180	(0.000)	75	96952			30.00- 60.00	56.48
9.194	9.180	(0.000)	96	9614			5.00- 9.00	5.60
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	169408			50.00- 0.00	98.70
9.194	9.180	(0.000)	175	14651			5.00- 9.00	8.65
9.194	9.180	(0.000)	176	171008			95.00- 101.00	100.94
9.194	9.180	(0.000)	177	10538			5.00- 9.00	6.16

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.15
75	30.00 - 60.00% of mass 95	56.48
96	5.00 - 9.00% of mass 95	5.60
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	98.70
175	5.00 - 9.00% of mass 174	8.54 (8.65)
176	95.00 - 101.00% of mass 174	99.63 (100.94)
177	5.00 - 9.00% of mass 176	6.14 (6.16)

Data File: U100901.D
Spectrum: Scan 2296 (9.20), Background Scan 2288
Location of Maximum: 95.00
Number of points: 169

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.90	1633	106.90	580	167.00	129	263.00	270
36.90	7157	109.20	233	168.40	170	264.50	69
38.00	5600	110.00	378	169.60	347	265.10	14
44.00	1088	111.50	375	171.80	935	268.70	170
45.00	1328	113.00	241	173.90	169408	271.20	139
46.30	232	114.60	125	174.90	14651	271.80	67
47.00	1487	115.70	1147	175.90	171008	273.60	115
47.80	568	116.90	1701	176.90	10538	274.30	2
48.90	6399	117.80	1070	177.80	396	275.50	100
50.00	29432	118.80	986	180.10	83	279.30	188
51.00	8160	122.40	77	181.50	179	281.40	3
56.90	6177	123.30	402	184.10	30	283.00	43
59.90	1766	124.60	426	186.20	67	283.80	140
61.00	9368	125.50	122	188.90	119	286.40	92
62.00	9681	126.90	115	192.70	144	290.00	177
63.00	6164	127.90	1195	195.90	57	293.10	68
63.80	490	129.50	1249	197.00	34	295.60	71
68.00	19528	130.60	1582	199.40	290	297.20	137
71.90	1190	131.50	744	205.10	62	300.10	204
73.00	10907	132.20	45	206.40	143	304.60	106
74.00	37096	133.60	263	210.50	168	307.10	53
75.00	96952	134.90	353	214.70	152	308.50	173
76.00	8842	135.70	263	216.00	94	312.00	84
76.90	1369	136.80	425	218.90	54	314.30	111
78.00	690	138.70	25	220.10	131	314.90	105
78.90	11554	139.80	918	225.60	397	317.50	182
79.80	182	140.80	3642	227.60	177	318.20	59
80.90	12154	142.80	3979	228.50	214	319.30	263
81.90	2560	143.90	538	229.10	89	323.20	87
85.50	156	144.80	148	230.20	60	324.00	126
86.90	7963	146.30	535	232.50	101	325.00	134
88.00	6514	147.90	399	234.60	15	326.20	107
89.60	8	149.50	434	235.30	98	330.50	139
90.70	709	150.00	229	236.00	124	334.00	330
92.00	6880	151.60	587	238.40	313	335.50	145
92.90	10673	153.60	336	241.90	65	340.10	2
94.00	27440	154.70	670	243.60	95	342.20	115
95.00	171648	155.80	165	244.90	96	342.90	6
96.00	9614	157.00	582	246.00	103	345.50	196
101.50	139	161.10	432	248.10	299	349.10	301
102.80	259	163.60	132	250.00	110		
103.70	45	164.80	175	253.10	252		
105.90	1202	166.00	402	254.50	11		

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100901.d Page 1

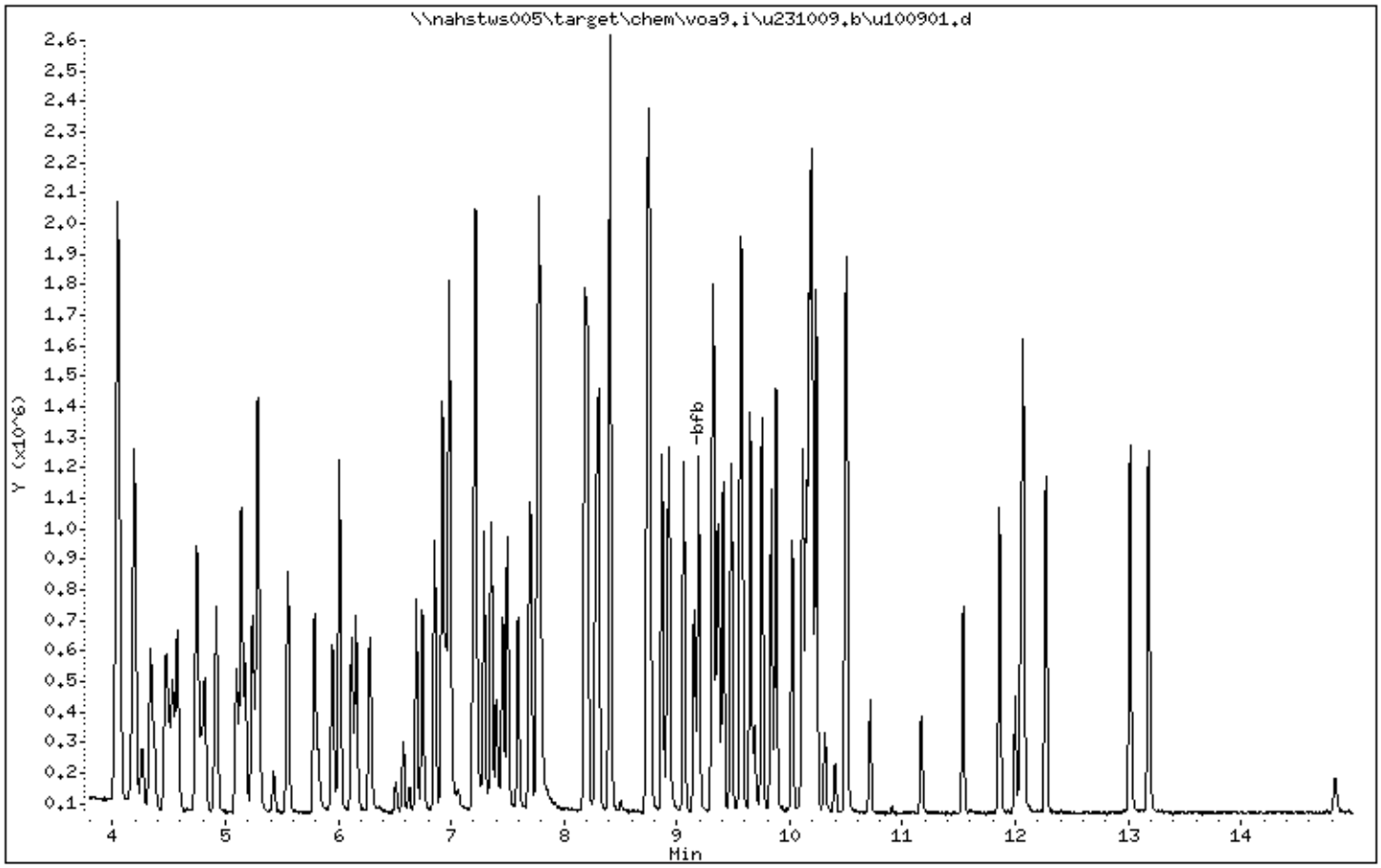
Date : 09-OCT-2023 14:56

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\u231009.b\u100901.d
Inj Date : 09-OCT-2023 14:56
InstruID : VOA9.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100903.D Page 1
Report Date: 10-Oct-2023 15:45

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100903.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 09-OCT-2023 15:40
Operator : PC Inst ID: VOA9.i
Smp Info : CCV;CCV;2;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.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: NAHSTW7051

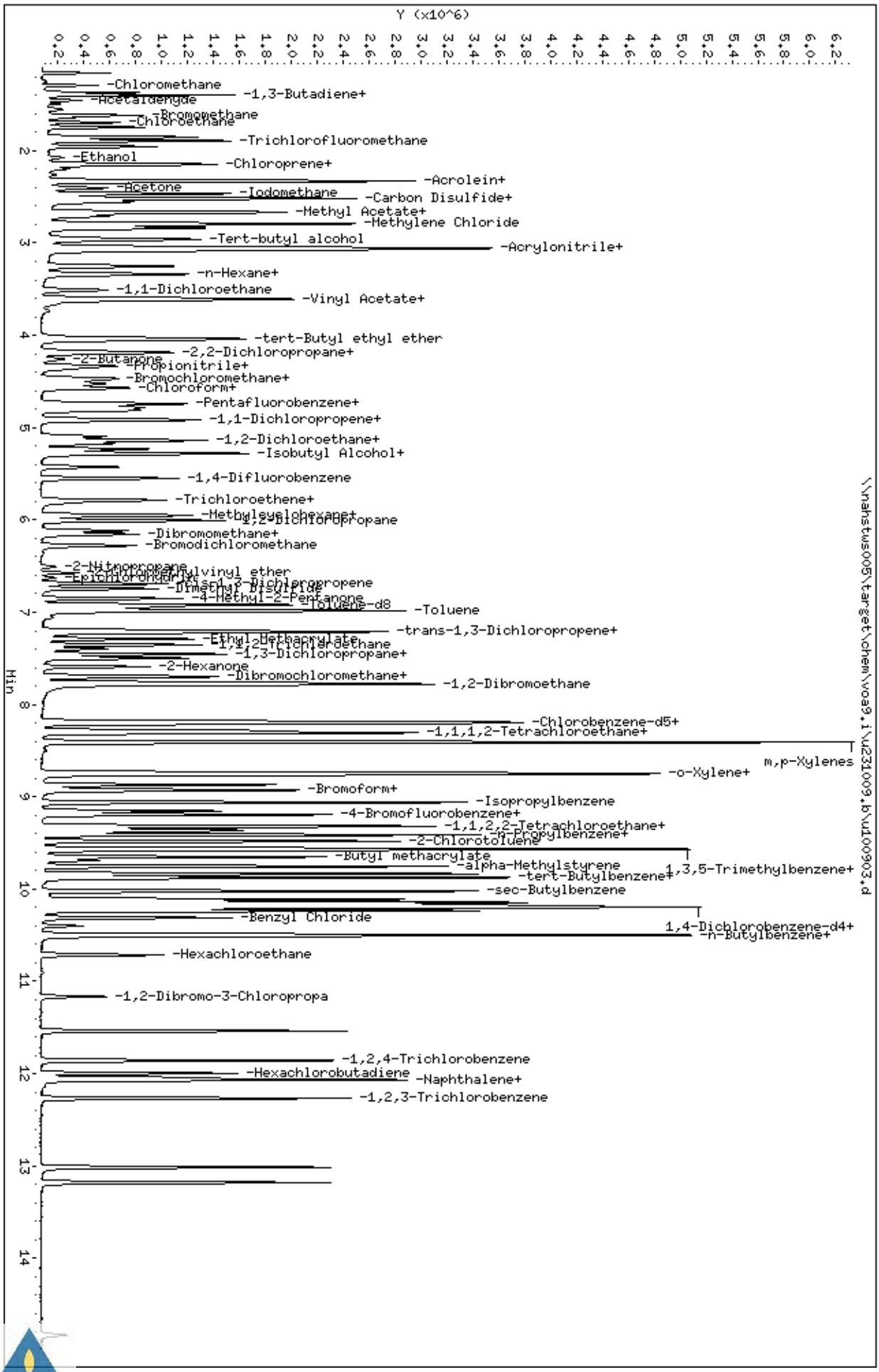
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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)	458272	50.0000	
$ 30 Dibromofluoromethane	113	4.744	4.744	(0.986)	283324	50.0000	56.51
$ 35 1,2-Dichloroethane-d4	65	5.093	5.093	(1.058)	326066	50.0000	55.58
* 36 1,4-Difluorobenzene	114	5.550	5.550	(1.000)	812103	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	1081635	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	1152491	50.0000	44.89
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	604366	50.0000	58.98
* 70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	755209	50.0000	
5 Vinyl Chloride	62	1.370	1.370	(0.285)	441483	50.0000	59.94(M)
11 1,1-Dichloroethene	96	2.330	2.330	(0.484)	494096	50.0000	54.00
20 trans-1,2-Dichloroethene	96	3.053	3.053	(0.635)	587844	50.0000	51.54
27 cis-1,2-Dichloroethene	96	4.193	4.193	(0.871)	301020	50.0000	51.81
33 1,2-Dichloroethane	62	5.171	5.171	(0.932)	403553	50.0000	50.24
38 Trichloroethene	130	5.786	5.786	(1.043)	295629	50.0000	52.74
56 Tetrachloroethene	164	7.454	7.454	(0.911)	273142	50.0000	48.65
16 Acrylonitrile	53	3.061	3.061	(0.636)	449874	100.000	108.38

QC Flag Legend

M - Compound response manually integrated.



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100903.d
Date : 09-OCT-2023 15:40
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

\\nahstws005\target\chem\voa9.i\u231009.b\u100903.d

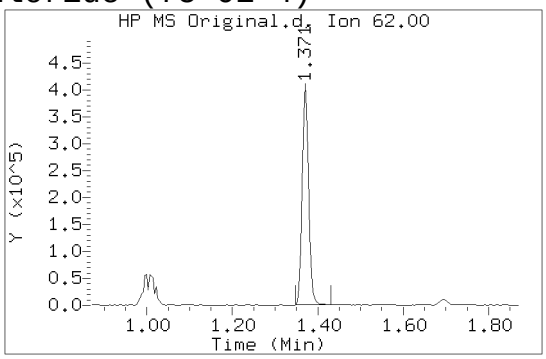
Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100903.d
Inj Date : 09-OCT-2023 15:40
InstruID : VOA9.i
LabSampID : CCV

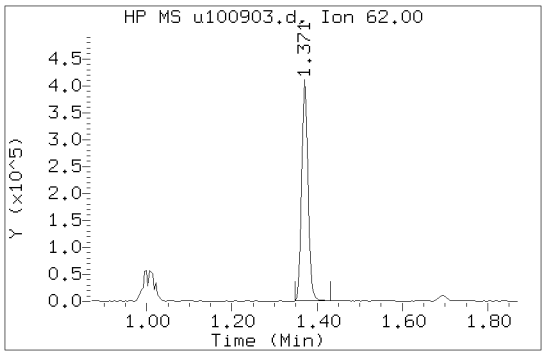
Vinyl Chloride (75-01-4)

Reason Code:

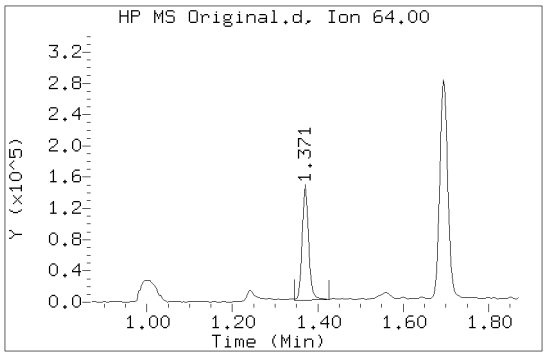
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MASS
62
AREA
441483
HEIGHT
409981
10-Oct-2023
21:40



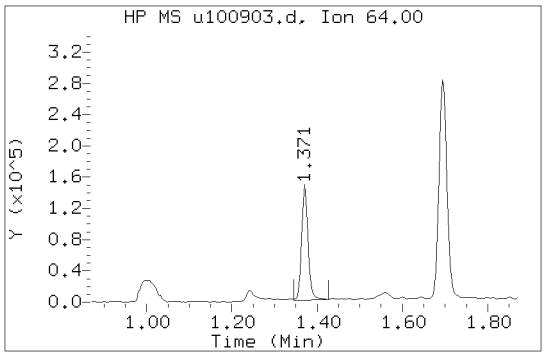
AFTER
MASS
62
AREA
441483
HEIGHT
409981
10-Oct-2023
21:40



BEFORE
MASS
64
AREA
160754
HEIGHT
147573
10-Oct-2023
21:40



AFTER
MASS
64
AREA
160754
HEIGHT
147573
10-Oct-2023
21:40



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100904.D Page 1
Report Date: 10-Oct-2023 15:46

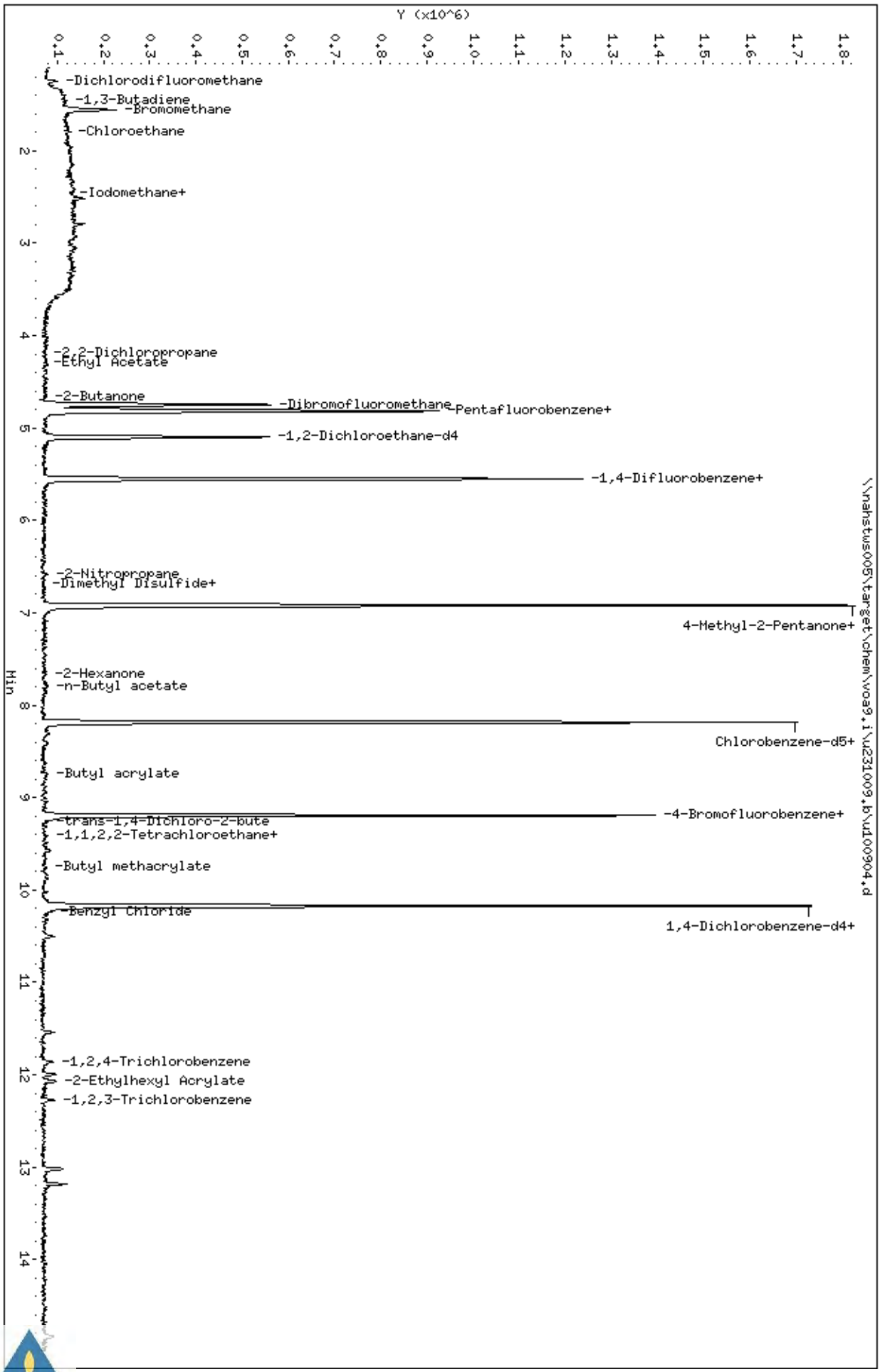
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100904.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 09-OCT-2023 16:02
Operator : PC Inst ID: VOA9.i
Smp Info : CCB;CCB;;;
Misc Info : V9;WATER;0;1;
Comment :
Method : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.811	(1.000)	585581	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	267248	42.4227	42.42
$ 35 1,2-Dichloroethane-d4	65	5.097	5.093	(1.058)	305859	41.1191	41.11
* 36 1,4-Difluorobenzene	114	5.550	5.550	(1.000)	915860	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	818912	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	1055364	54.3017	54.30
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	332458	43.4075	43.40
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	425335	50.0000	



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100904.d
Date : 09-OCT-2023 16:02
Client ID: CCB
Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100904.d
Inj Date : 09-OCT-2023 16:02
InstruID : VOA9.i
LabSampID : CCB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100905.D Page 1
Report Date: 10-Oct-2023 15:46

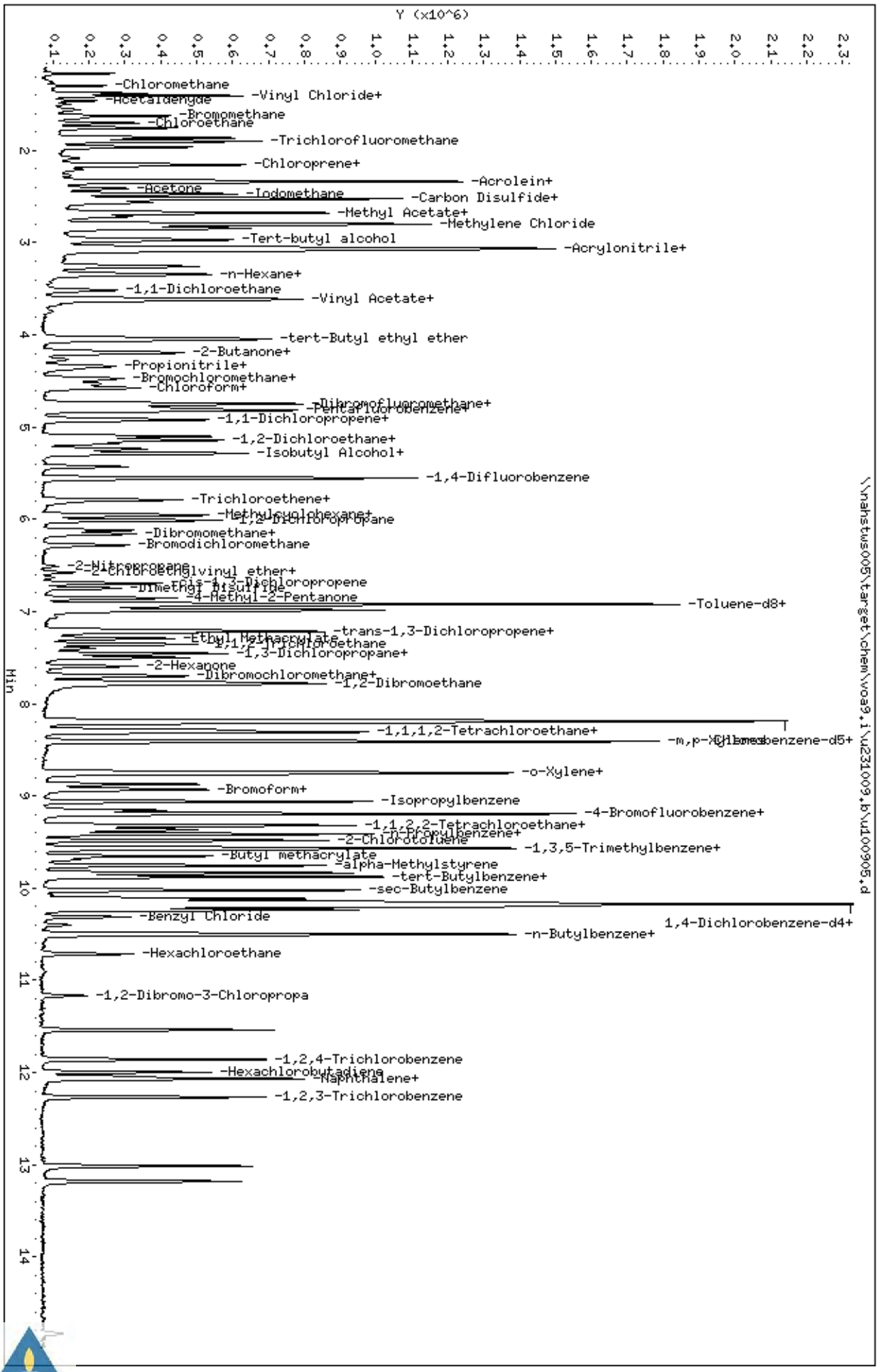
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100905.D
Lab Smp Id: VLCSW-231009 Client Smp ID: VLCSW-231009
Inj Date : 09-OCT-2023 16:25
Operator : PC Inst ID: VOA9.i
Smp Info : VLCSW-231009;VLCSW-231009;3;;LCS
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.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: NAHSTW7051

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	4.811	(1.000)	462036	50.0000	
$ 30 Dibromofluoromethane	113	4.751	4.744	(0.987)	266790	53.0183	53.01
$ 35 1,2-Dichloroethane-d4	65	5.100	5.093	(1.059)	294211	49.9090	49.90
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	808193	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	876967	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	1042303	50.0794	50.07
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	379219	46.1296	46.12
* 70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	506894	50.0000	
5 Vinyl Chloride	62	1.378	1.370	(0.286)	157528	21.2136	21.21
11 1,1-Dichloroethene	96	2.334	2.330	(0.485)	199815	21.6621	21.66
20 trans-1,2-Dichloroethene	96	3.061	3.053	(0.636)	242903	21.1237	21.12
27 cis-1,2-Dichloroethene	96	4.197	4.193	(0.872)	117228	20.0141	20.01
33 1,2-Dichloroethane	62	5.179	5.171	(0.933)	156345	19.5600	19.56
38 Trichloroethene	130	5.790	5.786	(1.043)	111518	19.9923	19.99
56 Tetrachloroethene	164	7.458	7.454	(0.911)	99102	21.7735	21.77
16 Acrylonitrile	53	3.065	3.061	(0.636)	172749	41.2814	41.28



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100905.d
Date : 09-OCT-2023 16:25
Client ID: VLCSW-231009
Sample Info: VLCSW-231009;VLCSW-231009;3;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100905.d
Inj Date : 09-OCT-2023 16:25
InstruID : VOA9.i
LabSampID : VLCSW-231009

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100907.D Page 1
Report Date: 10-Oct-2023 15:46

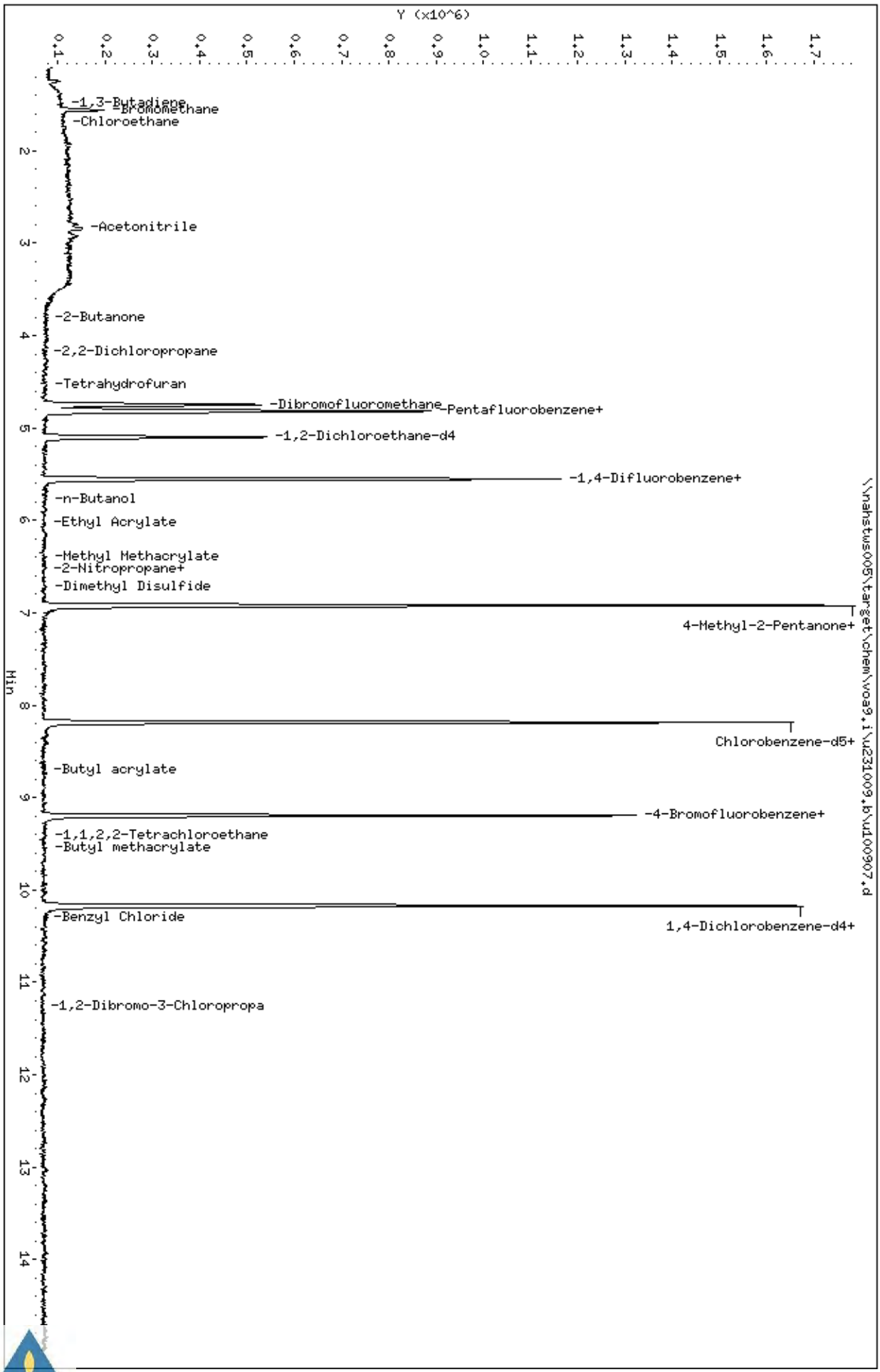
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100907.D
Lab Smp Id: VBLKW-231009 Client Smp ID: VBLKW-231009
Inj Date : 09-OCT-2023 17:09
Operator : PC Inst ID: VOA9.i
Smp Info : VBLKW-231009;VBLKW-231009;3;;BLANK
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.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: NAHSTW7051

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	4.811	(1.000)	565892	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	250344	41.1765	41.17
$ 35 1,2-Dichloroethane-d4	65	5.096	5.093	(1.058)	294084	40.9154	40.91
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	858347	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	795920	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	1042934	55.2123	55.21
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	330875	44.4111	44.41
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	397631	50.0000	



Data File: \\nahstws005\target\chem\voa9,i\u231009,b\u100907,d
Date : 09-OCT-2023 17:09
Client ID: VBLKW-231009
Sample Info: VBLKW-231009;VBLKW-231009;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\u231009.b\u100907.d
Inj Date : 09-OCT-2023 17:09
InstruID : VOA9.i
LabSampID : VBLKW-231009

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100908.D Page 1
Report Date: 10-Oct-2023 15:46

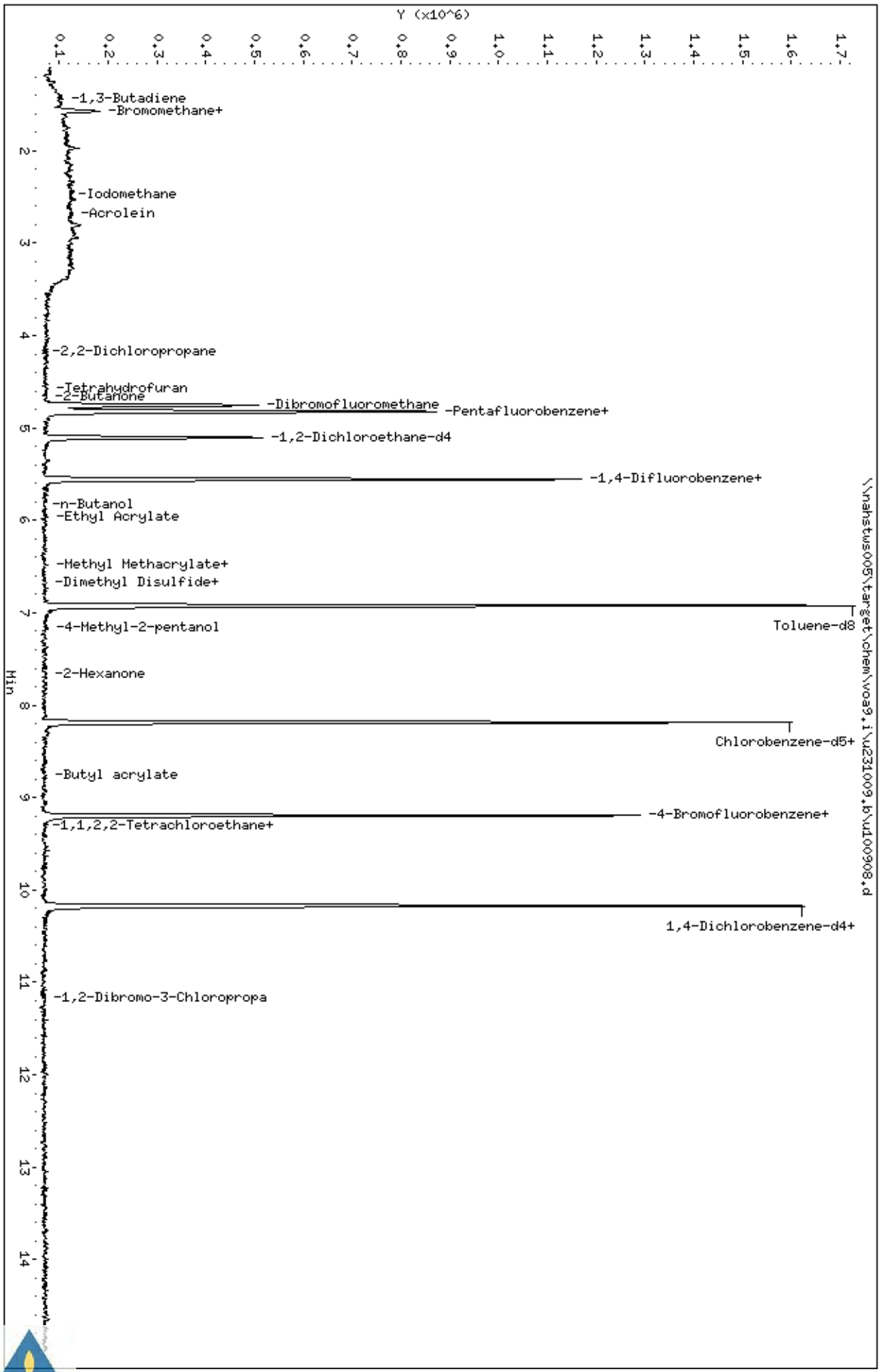
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100908.D
Lab Smp Id: HS23100159-17 Client Smp ID: HS23100159-17
Inj Date : 09-OCT-2023 17:32
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-17;HS23100159-17;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.819	4.811	(1.000)	542370	50.0000	
$ 30 Dibromofluoromethane	113	4.755	4.744	(0.987)	250164	42.8546	42.85
$ 35 1,2-Dichloroethane-d4	65	5.100	5.093	(1.058)	287181	41.6735	41.67
* 36 1,4-Difluorobenzene	114	5.557	5.550	(1.000)	852863	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	763471	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	1010570	55.7728	55.77
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	315175	44.1129	44.11
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	381022	50.0000	



Data File: \\nahstws005\target\chem\voa9,i\u231009,b\u100908,d
Date : 09-OCT-2023 17:32
Client ID: HS23100159-17
Sample Info: HS23100159-17;HS23100159-17;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100908.d
Inj Date : 09-OCT-2023 17:32
InstruID : VOA9.i
LabSampID : HS23100159-17

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100909.D Page 1
Report Date: 10-Oct-2023 15:46

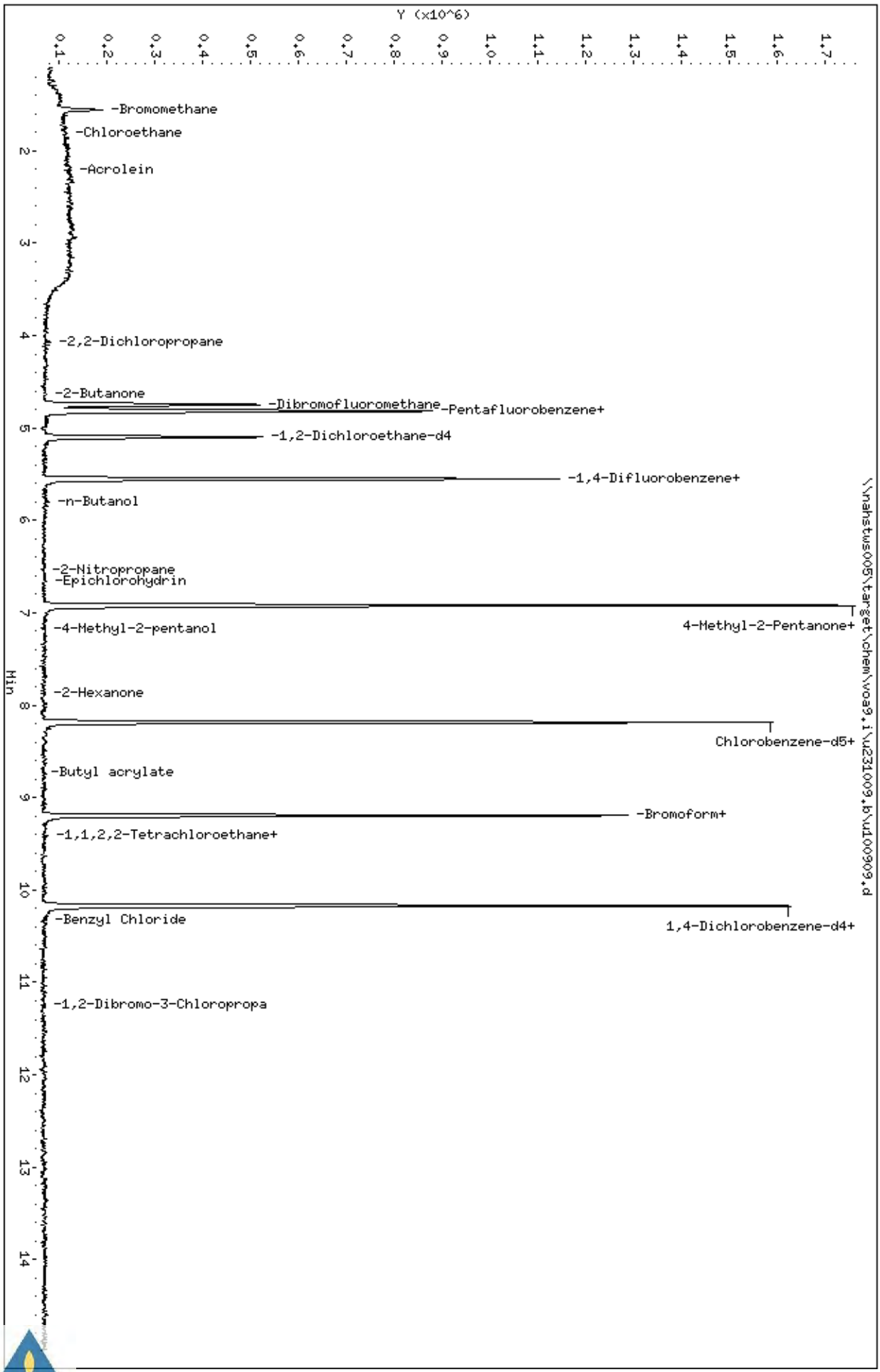
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100909.D
Lab Smp Id: HS23100159-03 Client Smp ID: HS23100159-03
Inj Date : 09-OCT-2023 17:54
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-03;HS23100159-03;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.811	(1.000)	534287	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	244133	42.4717	42.47
$ 35 1,2-Dichloroethane-d4	65	5.096	5.093	(1.058)	281610	41.4868	41.48
* 36 1,4-Difluorobenzene	114	5.550	5.550	(1.000)	830113	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	778039	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	1008911	54.6387	54.63
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	315293	43.3317	43.33
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	392383	50.0000	



Data File: \\nahstws005\target\chem\voa9,i\u231009,b\u100909,d
Date : 09-OCT-2023 17:54
Client ID: HS23100159-03
Sample Info: HS23100159-03;HS23100159-03;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100909.d
Inj Date : 09-OCT-2023 17:54
InstruID : VOA9.i
LabSampID : HS23100159-03

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100910.D Page 1
Report Date: 10-Oct-2023 15:46

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100910.D
Lab Smp Id: HS23100159-02 Client Smp ID: HS23100159-02
Inj Date : 09-OCT-2023 18:17
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-02;HS23100159-02;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

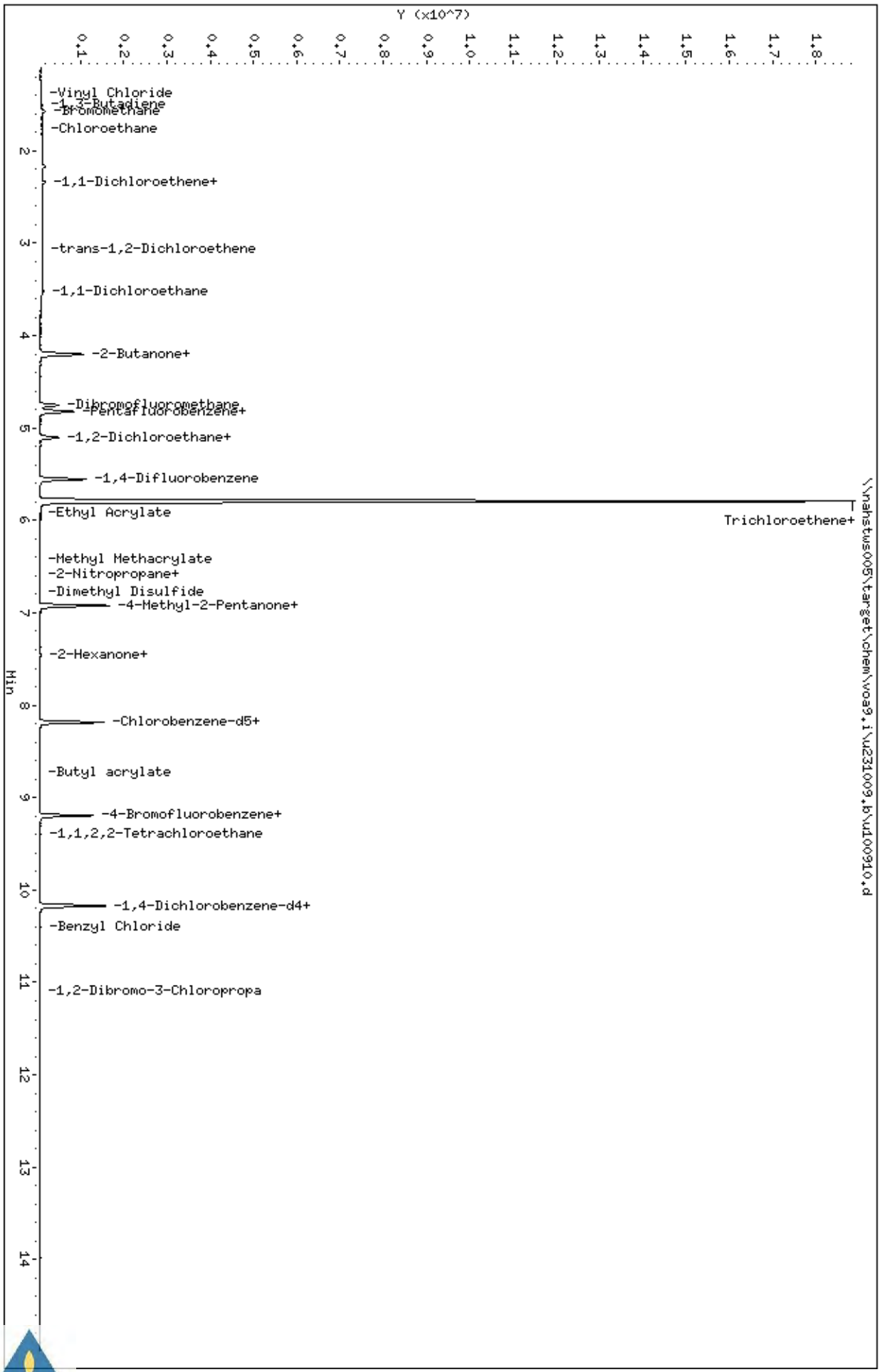
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.819	4.811	(1.000)	523272	50.0000	
$ 30 Dibromofluoromethane	113	4.755	4.744	(0.987)	237830	42.2559	42.25
$ 35 1,2-Dichloroethane-d4	65	5.100	5.093	(1.058)	282706	42.5051	42.50
* 36 1,4-Difluorobenzene	114	5.558	5.550	(1.000)	822728	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	750517	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	963318	54.0826	54.08
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	316658	45.0499	45.04
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	382534	50.0000	
5 Vinyl Chloride	62	1.385	1.370	(0.288)	4695	0.55826	0.55(a)
11 1,1-Dichloroethene	96	2.341	2.330	(0.486)	11002	1.05315	1.05(a)
20 trans-1,2-Dichloroethene	96	3.068	3.053	(0.637)	7454	0.57237	0.57(a)
27 cis-1,2-Dichloroethene	96	4.204	4.193	(0.872)	509080	76.7430	76.74
33 1,2-Dichloroethane	62	5.186	5.171	(0.933)	9269	1.13914	1.13(a)
38 Trichloroethene	130	5.794	5.786	(1.042)	5138280	904.885	904.88(A)
56 Tetrachloroethene	164	7.462	7.454	(0.912)	5520	1.41712	1.41(a)

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.



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100910.d
Date : 09-OCT-2023 18:17
Client ID: HS23100159-02
Sample Info: HS23100159-02;HS23100159-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100910.d Page 2

Date : 09-OCT-2023 18:17

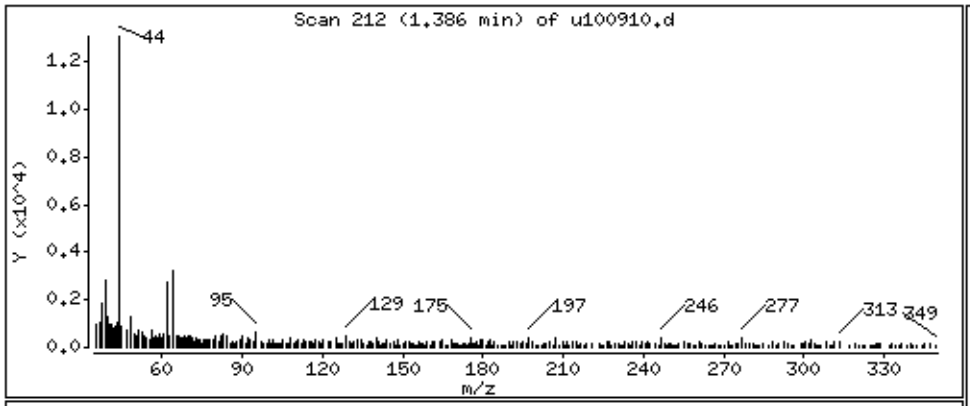
Client ID: HS23100159-02 Instrument: VOA9.i

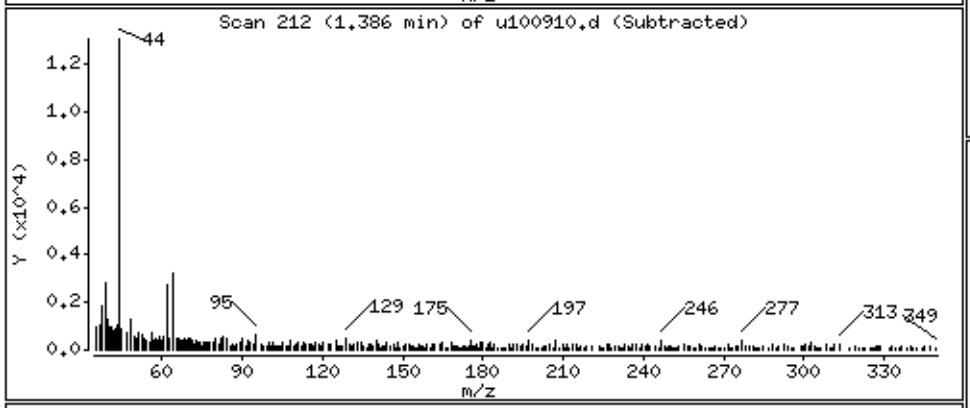
Sample Info: HS23100159-02;HS23100159-02;;;

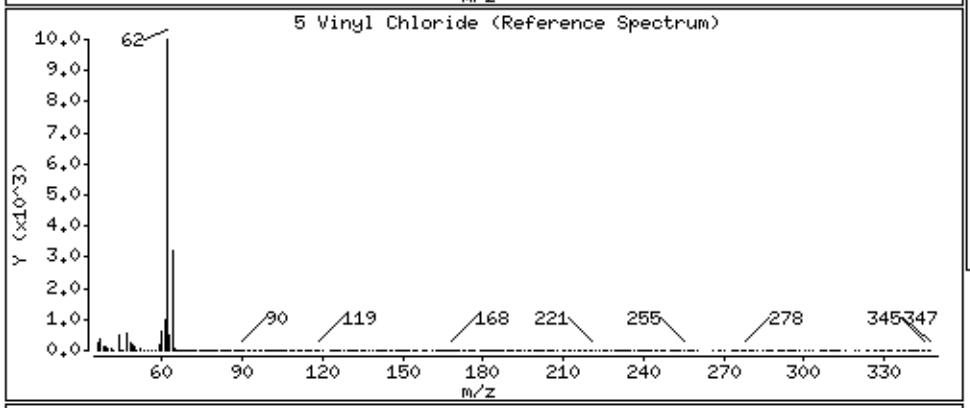
Purge Volume: 5.0 Operator: PC

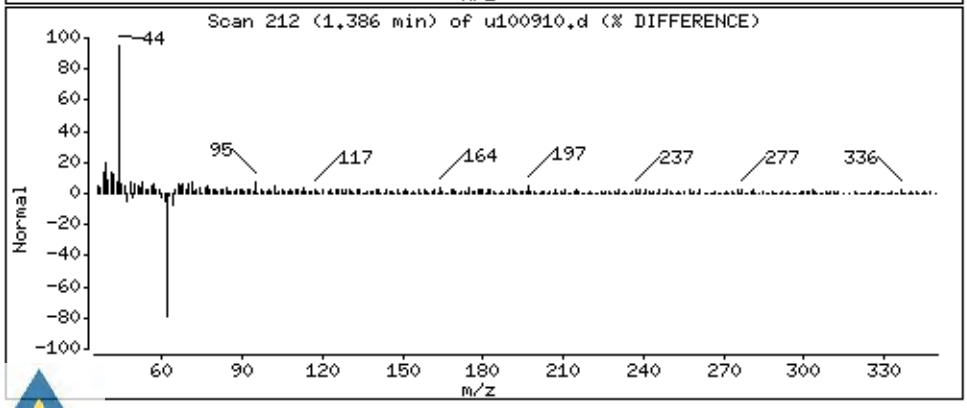
Column phase: DB624 Column diameter: 0.18

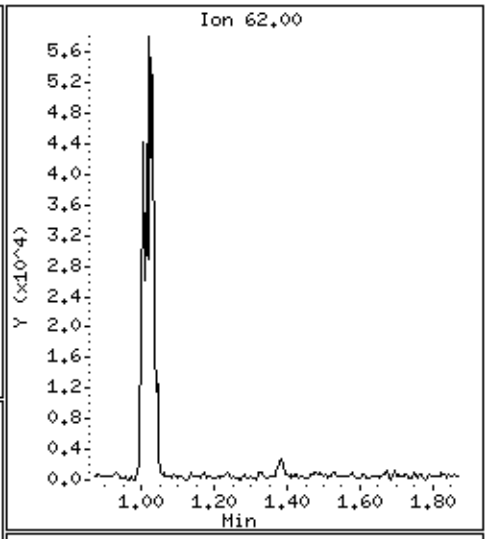
5 Vinyl Chloride Concentration: 0.55 ug/l

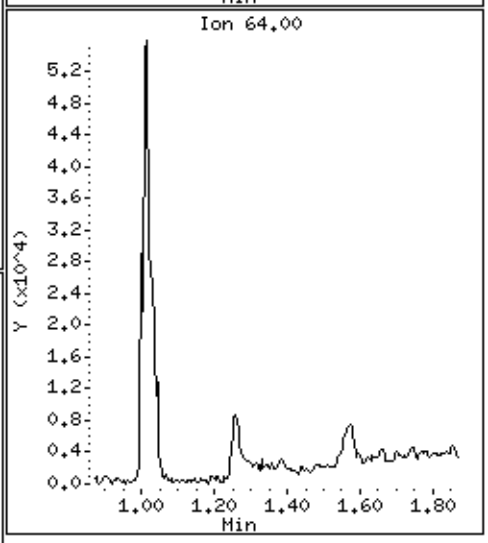












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100910.d Page 3

Date : 09-OCT-2023 18:17

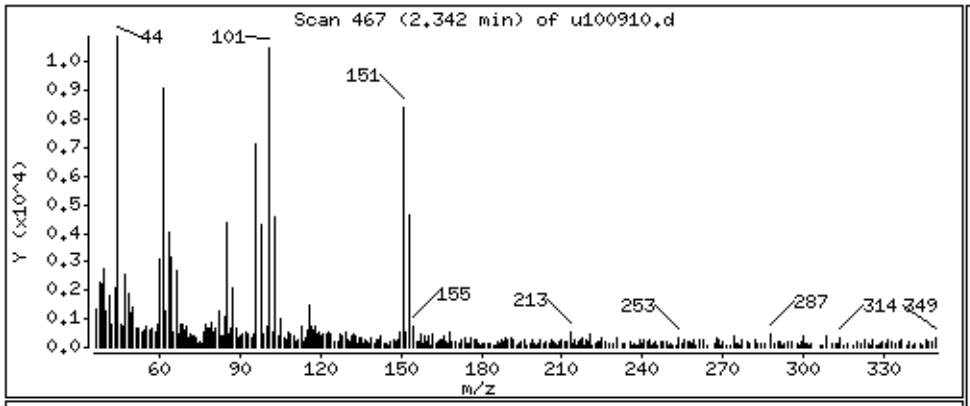
Client ID: HS23100159-02 Instrument: VOA9.i

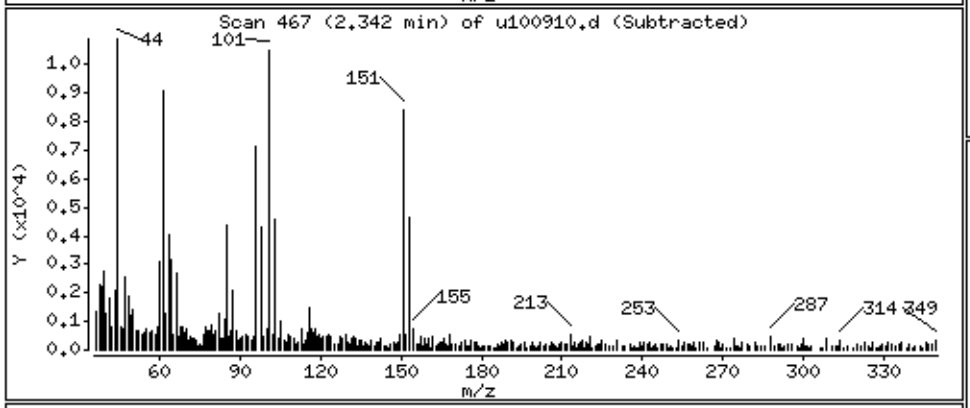
Sample Info: HS23100159-02;HS23100159-02;;;

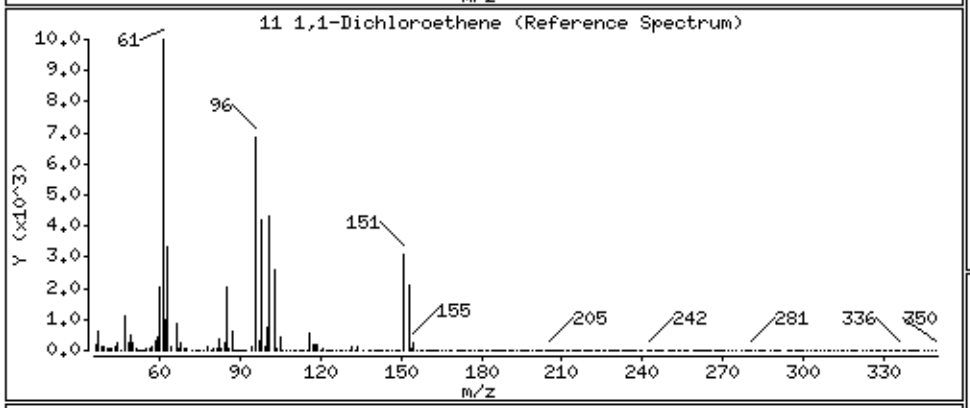
Purge Volume: 5.0 Operator: PC

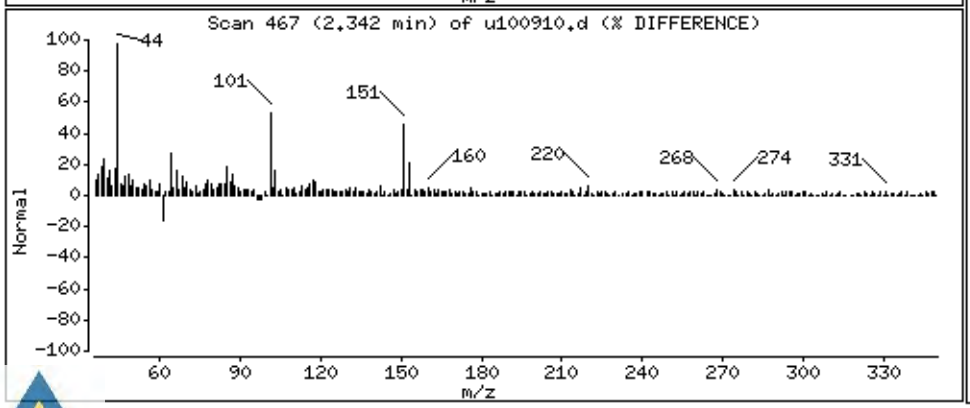
Column phase: DB624 Column diameter: 0.18

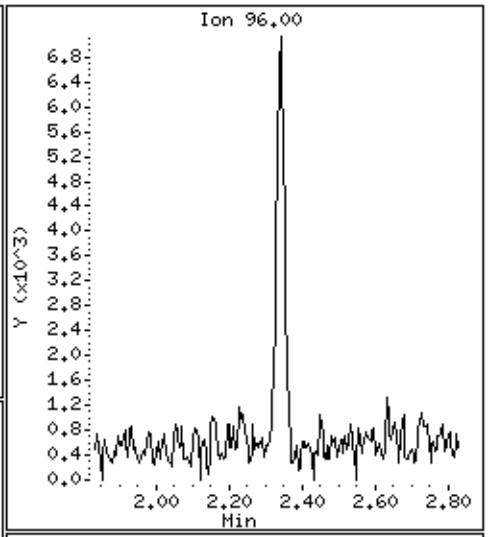
11 1,1-Dichloroethene Concentration: 1.05 ug/l

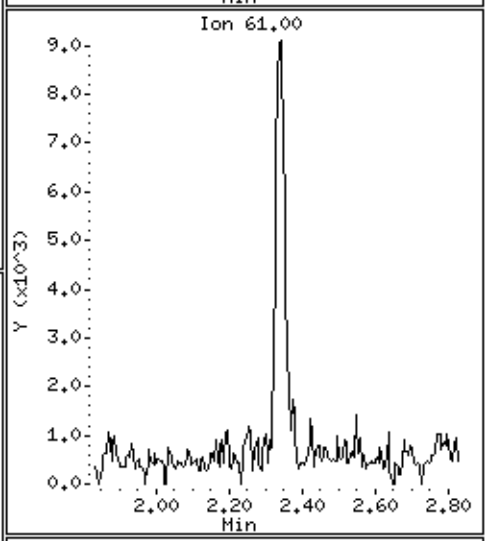


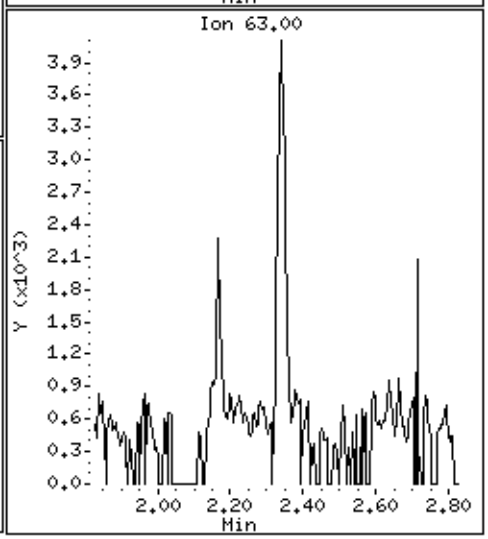












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100910.d Page 4

Date : 09-OCT-2023 18:17

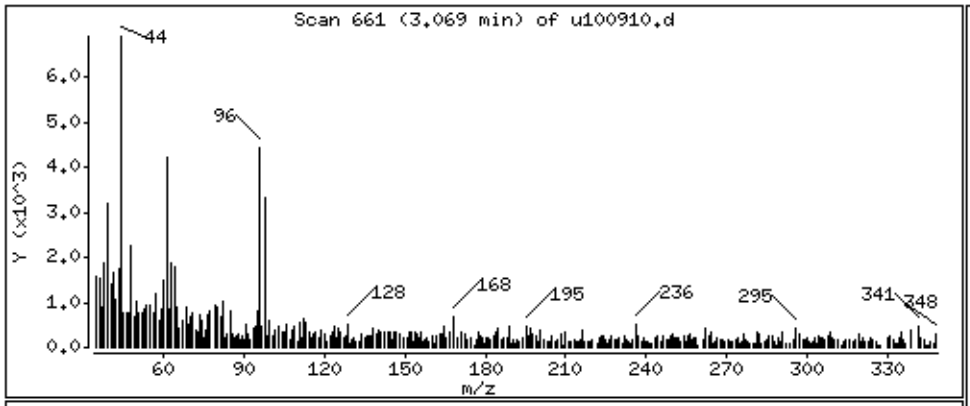
Client ID: HS23100159-02 Instrument: VOA9.i

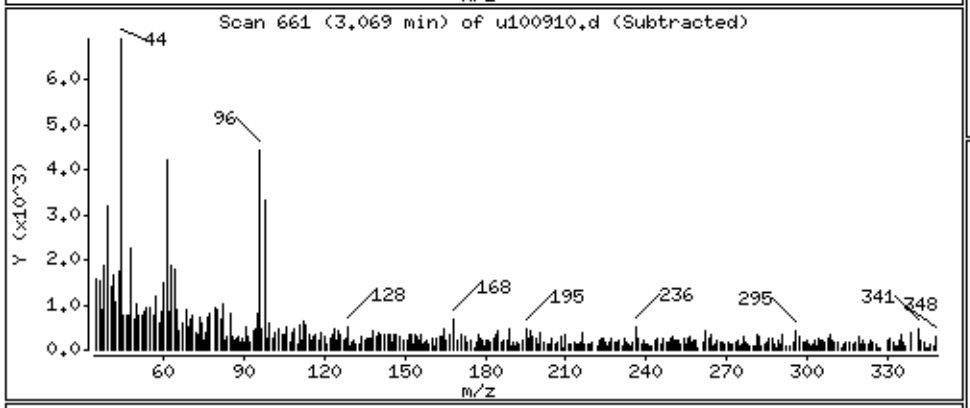
Sample Info: HS23100159-02;HS23100159-02;;;

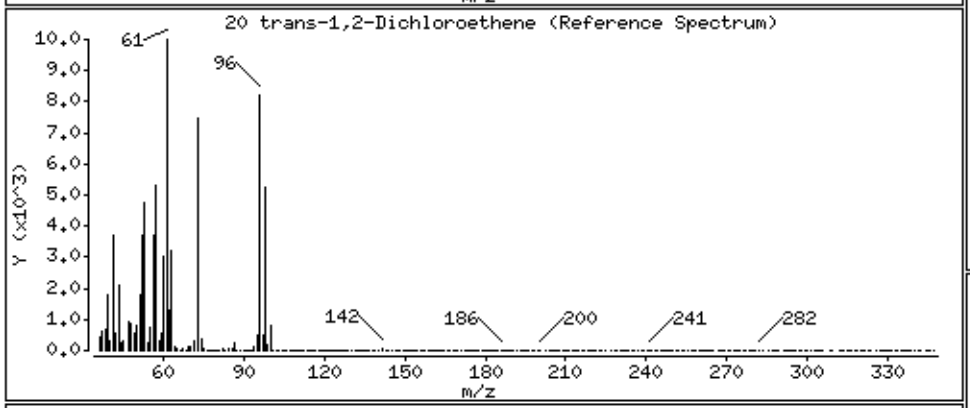
Purge Volume: 5.0 Operator: PC

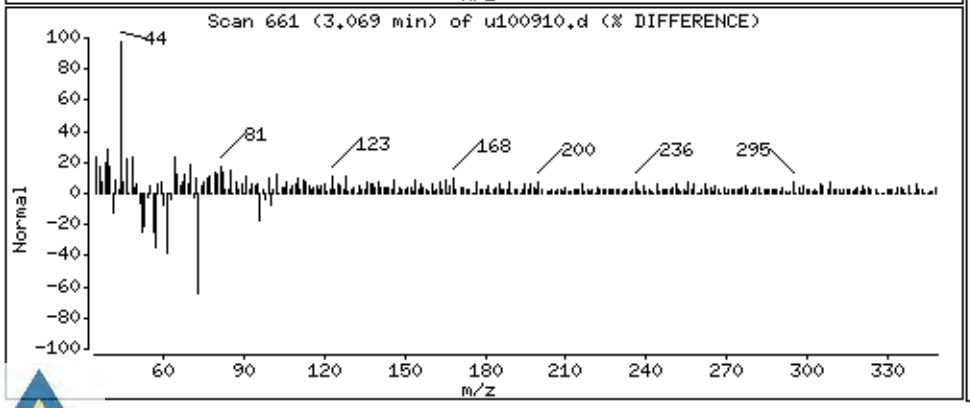
Column phase: DB624 Column diameter: 0.18

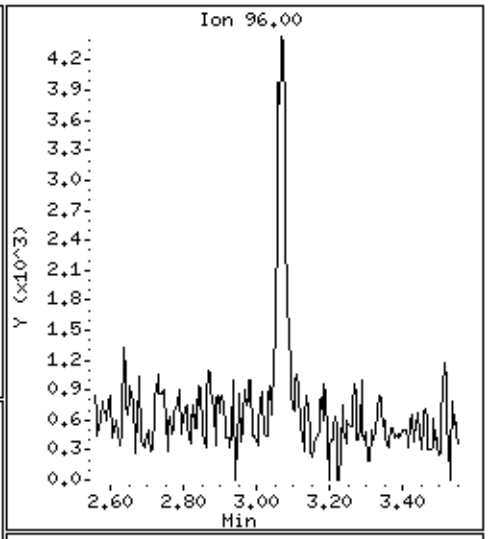
20 trans-1,2-Dichloroethene Concentration: 0.57 ug/l

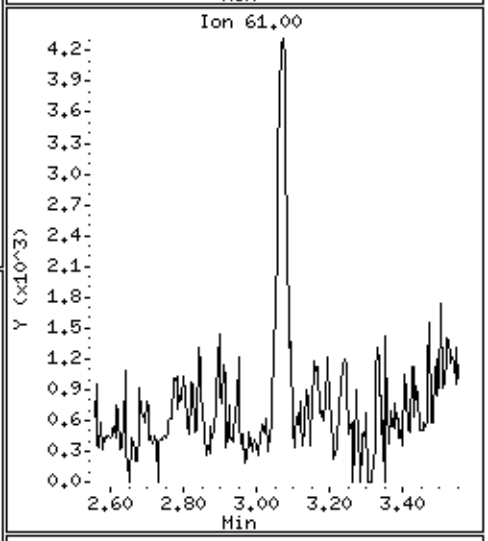


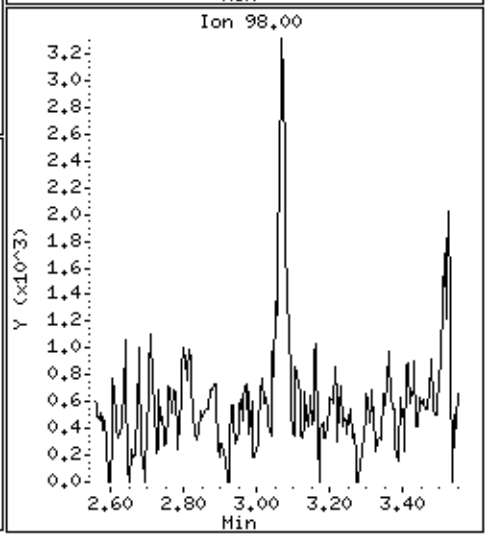












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100910.d Page 5

Date : 09-OCT-2023 18:17

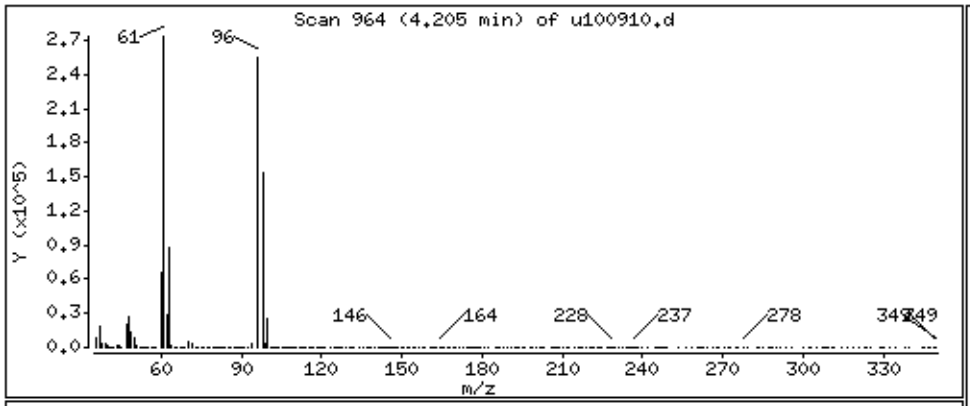
Client ID: HS23100159-02 Instrument: VOA9.i

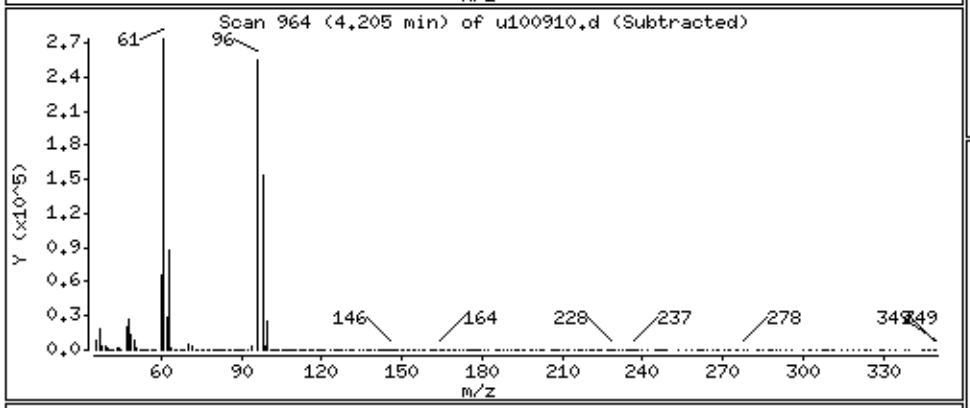
Sample Info: HS23100159-02;HS23100159-02;;;

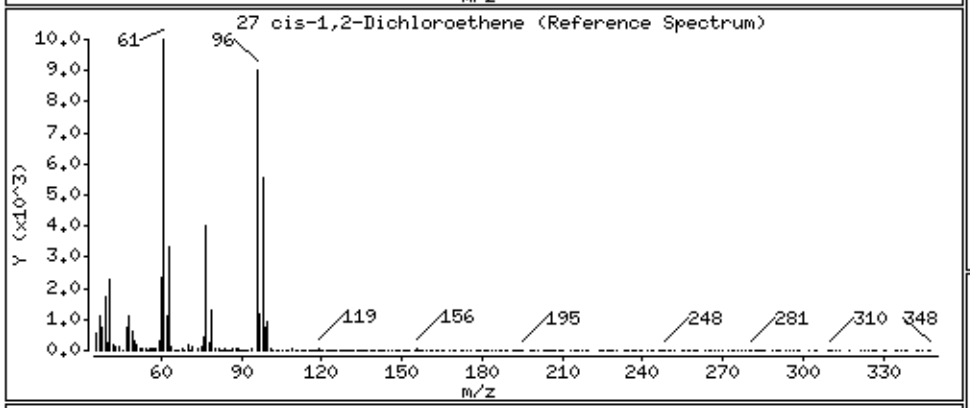
Purge Volume: 5.0 Operator: PC

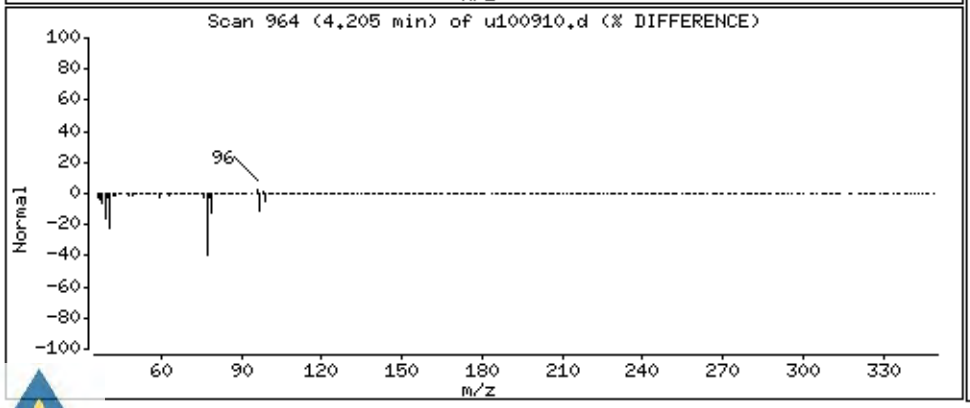
Column phase: DB624 Column diameter: 0.18

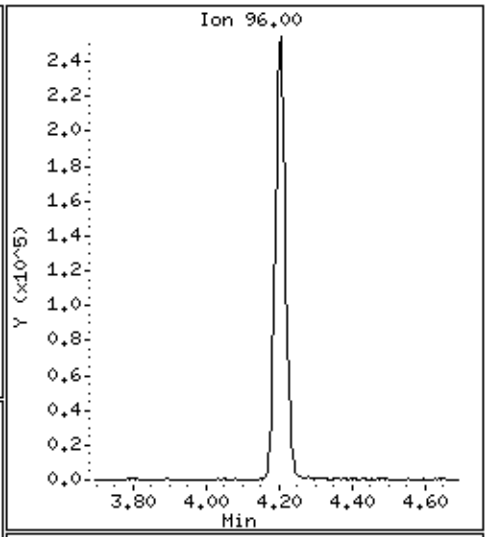
27 cis-1,2-Dichloroethene Concentration: 76.74 ug/l

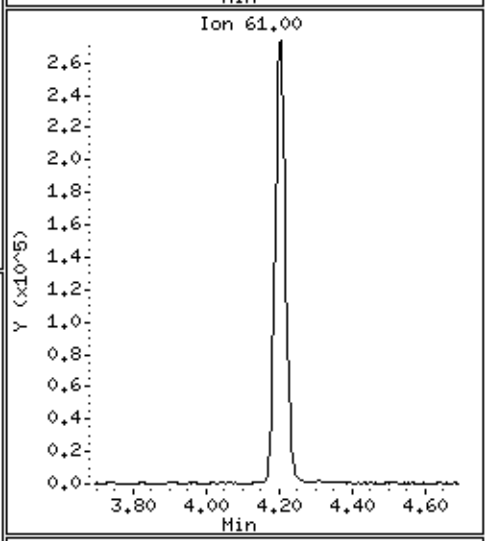


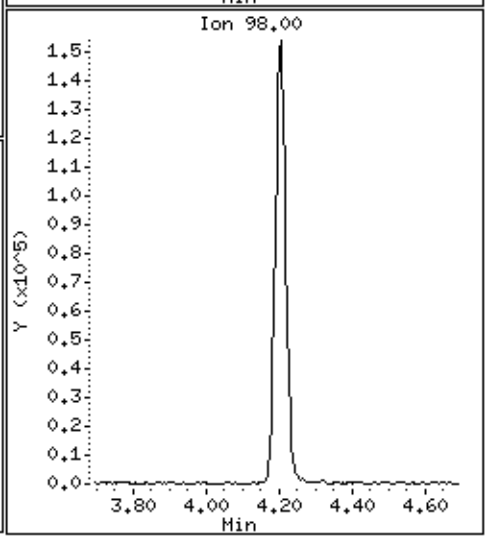












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100910.d Page 6

Date : 09-OCT-2023 18:17

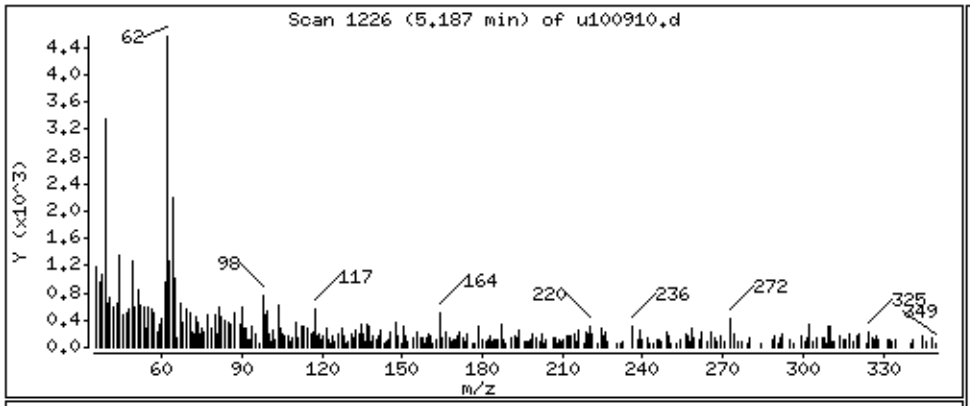
Client ID: HS23100159-02 Instrument: VOA9.i

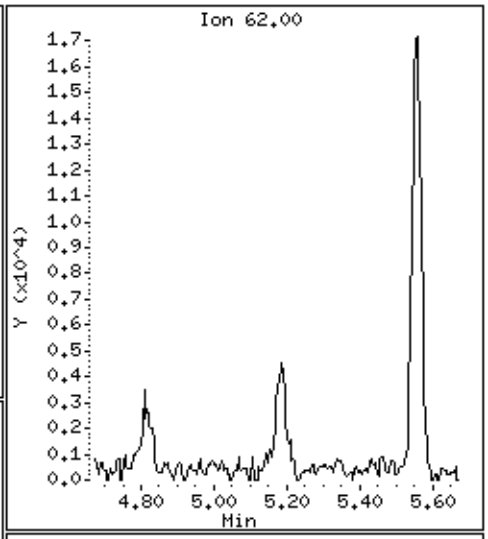
Sample Info: HS23100159-02;HS23100159-02;;;

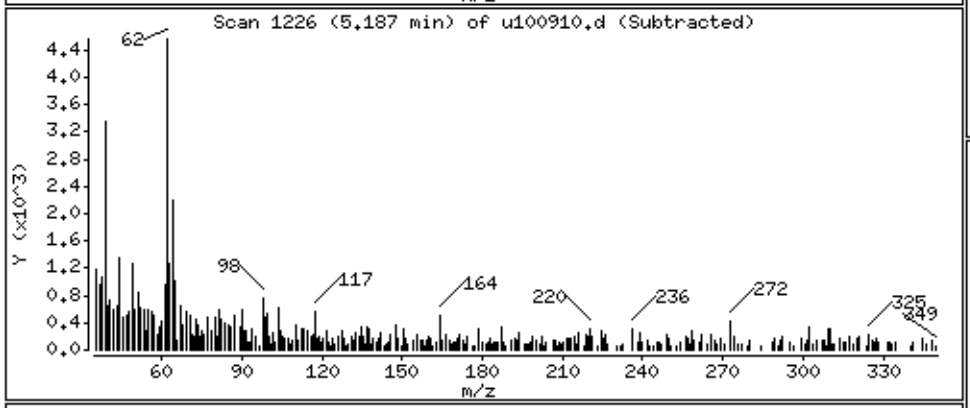
Purge Volume: 5.0 Operator: PC

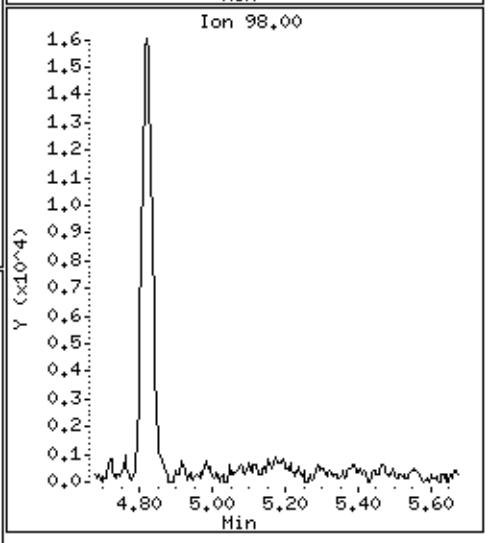
Column phase: DB624 Column diameter: 0.18

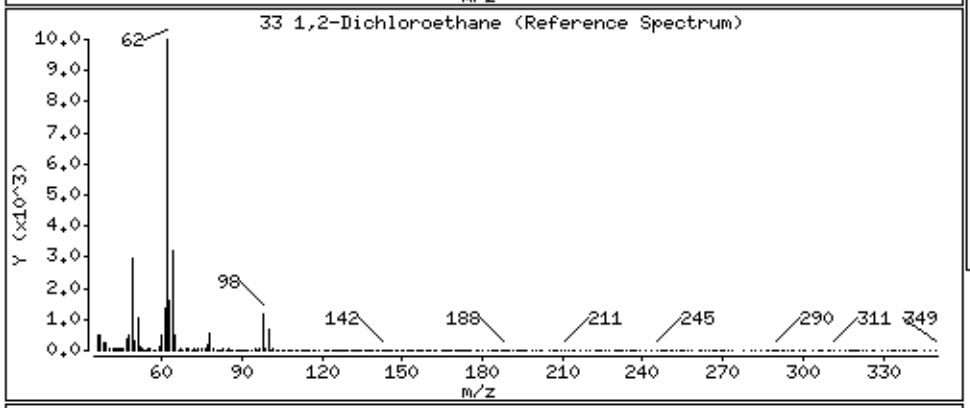
33 1,2-Dichloroethane Concentration: 1.13 ug/l

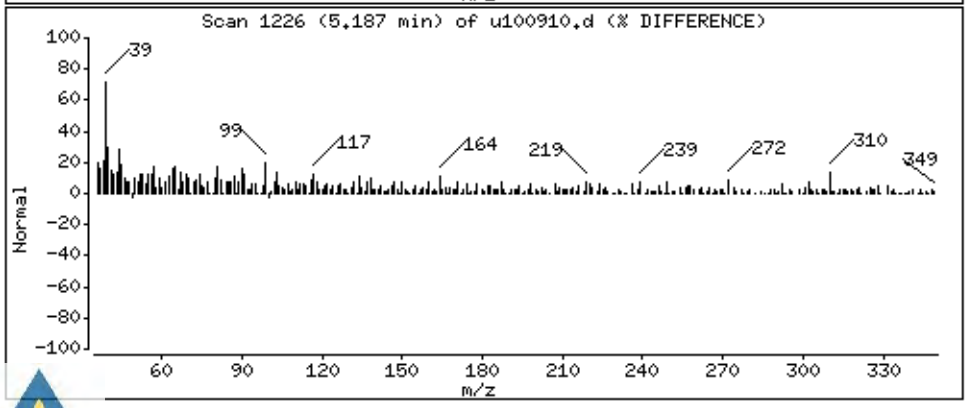












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100910.d Page 7

Date : 09-OCT-2023 18:17

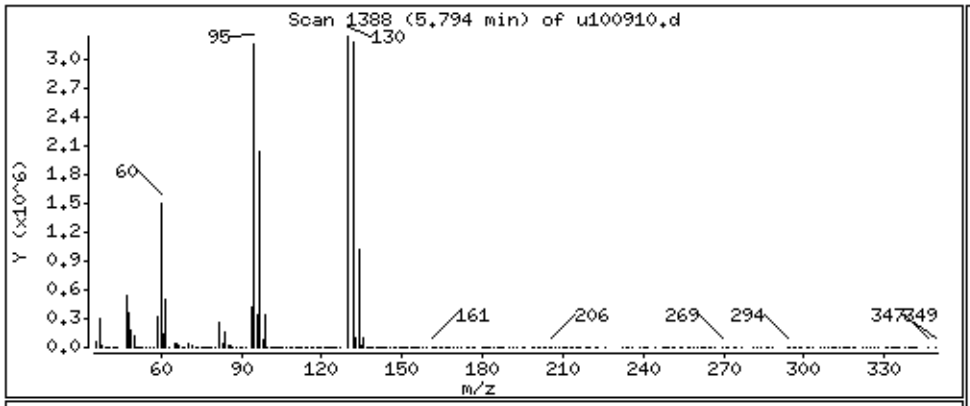
Client ID: HS23100159-02 Instrument: VOA9.i

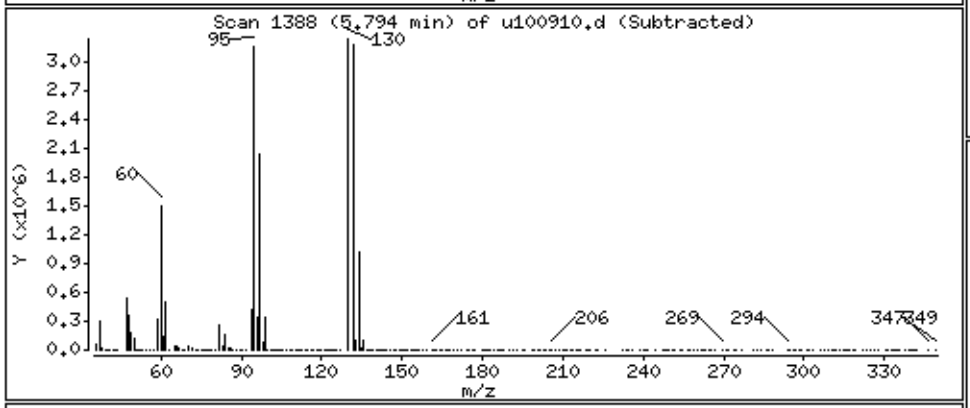
Sample Info: HS23100159-02;HS23100159-02;;;

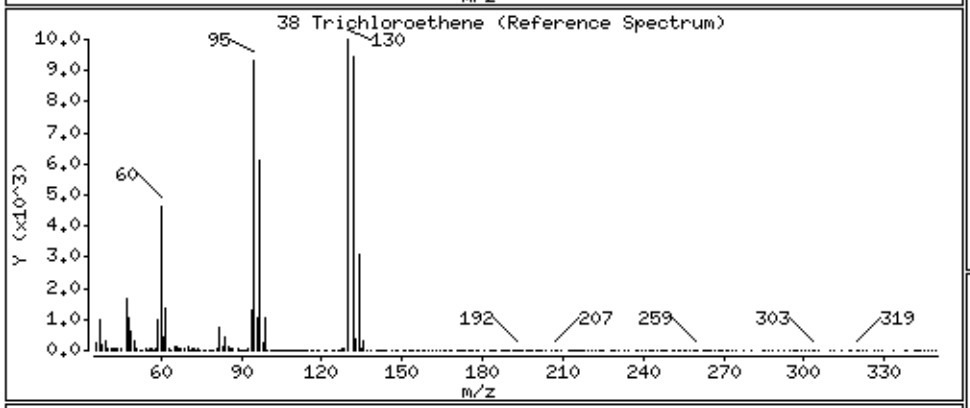
Purge Volume: 5.0 Operator: PC

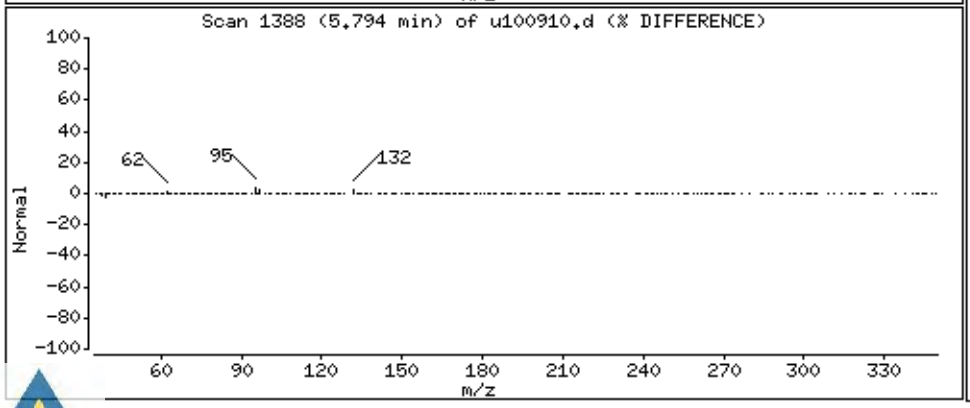
Column phase: DB624 Column diameter: 0.18

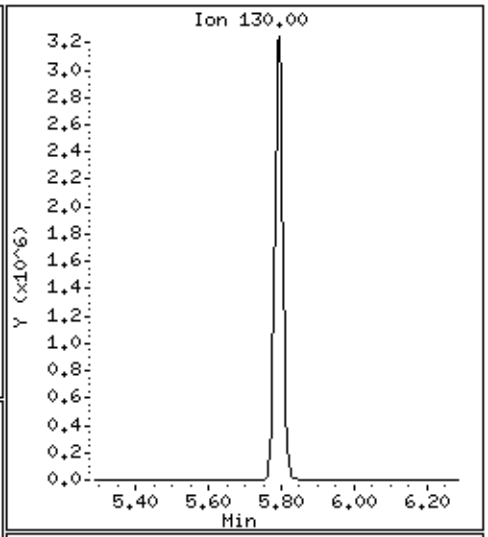
38 Trichloroethene Concentration: 904.88 ug/l

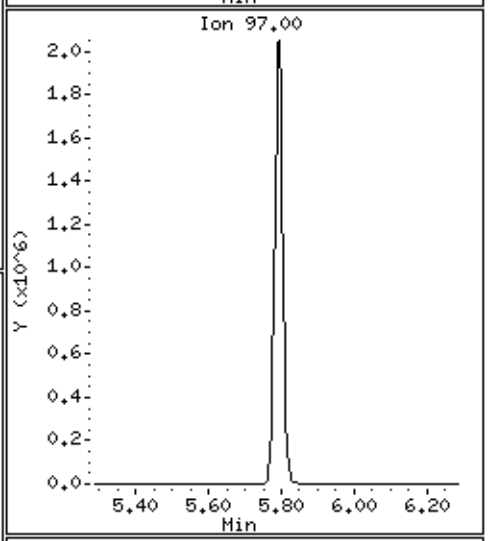


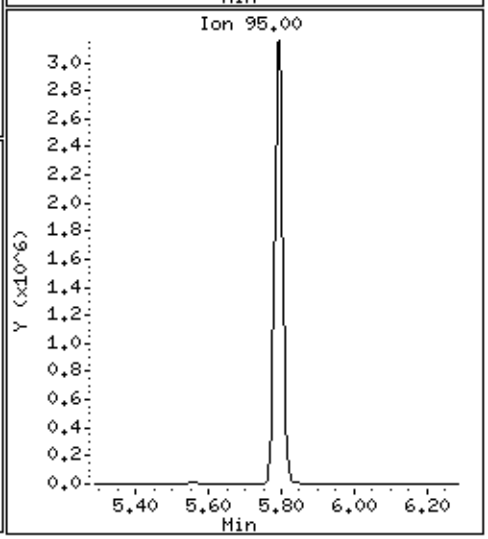












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100910.d Page 8

Date : 09-OCT-2023 18:17

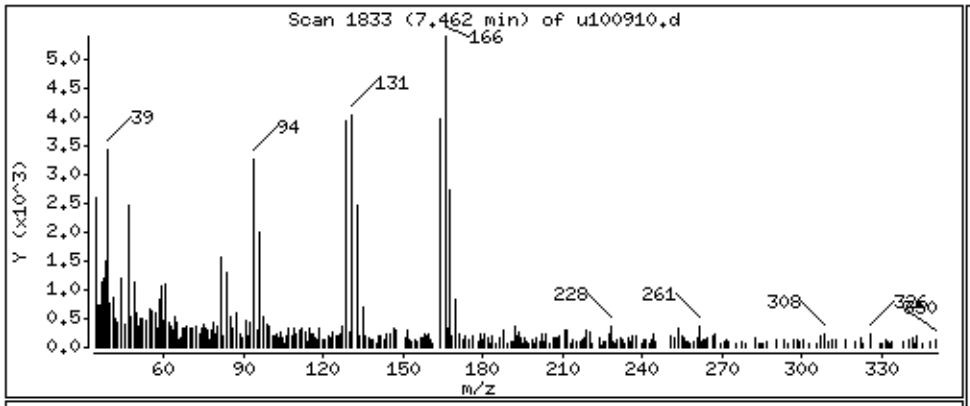
Client ID: HS23100159-02 Instrument: VOA9.i

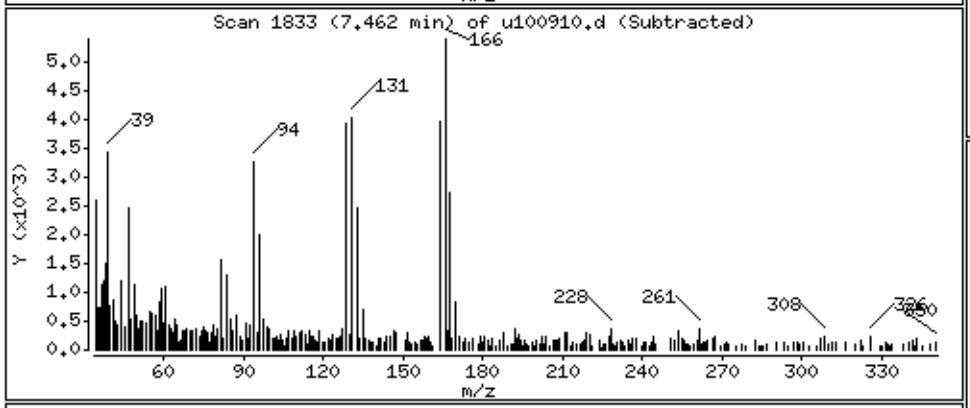
Sample Info: HS23100159-02;HS23100159-02;;;

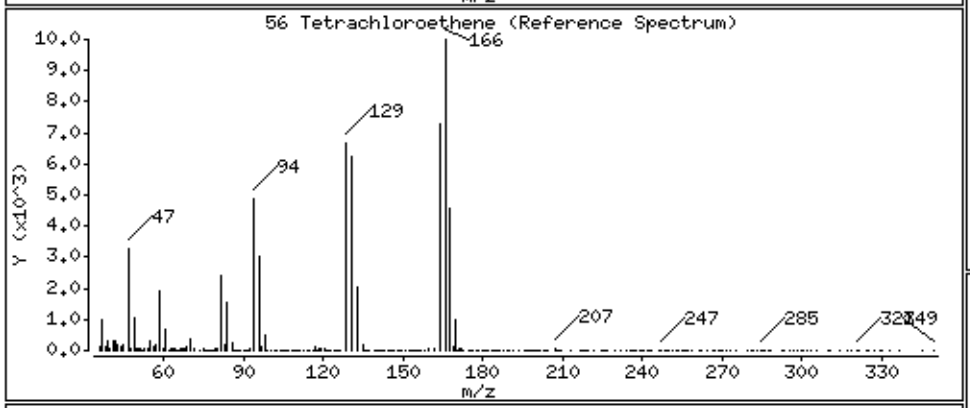
Purge Volume: 5.0 Operator: PC

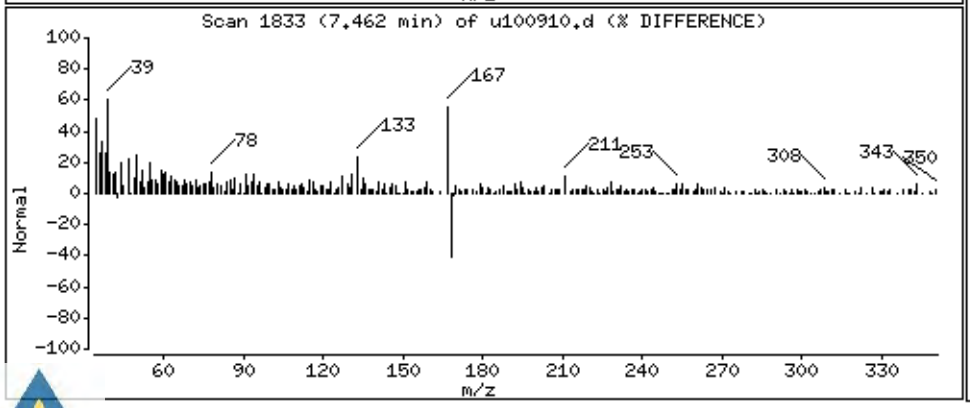
Column phase: DB624 Column diameter: 0.18

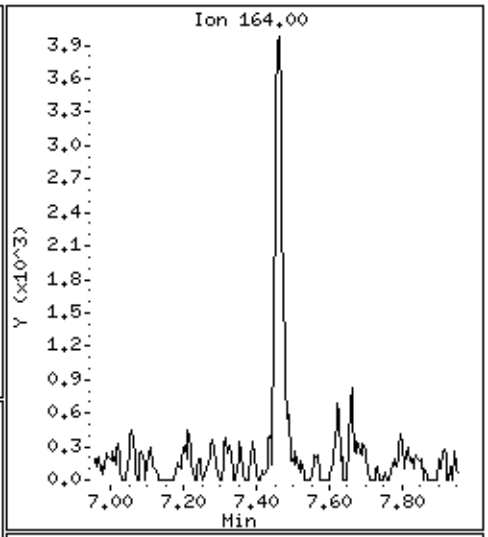
56 Tetrachloroethene Concentration: 1.41 ug/l

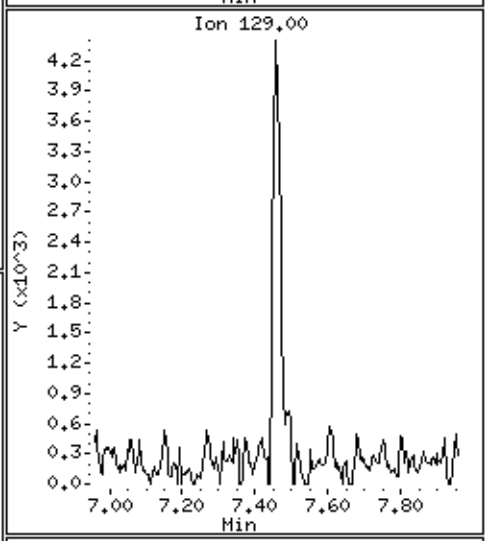


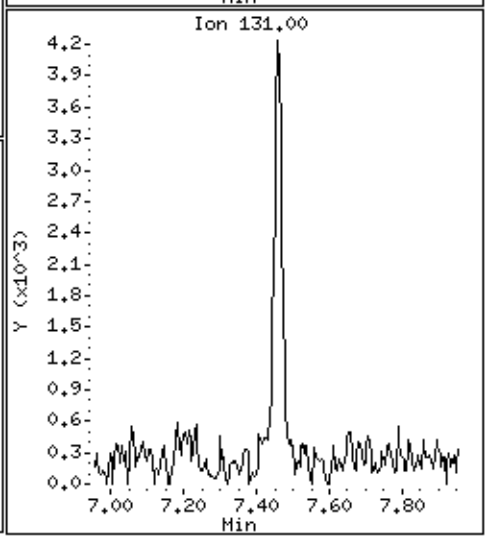












Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100910.d
Inj Date : 09-OCT-2023 18:17
InstruID : VOA9.i
LabSampID : HS23100159-02

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100911.D Page 1
Report Date: 10-Oct-2023 15:46

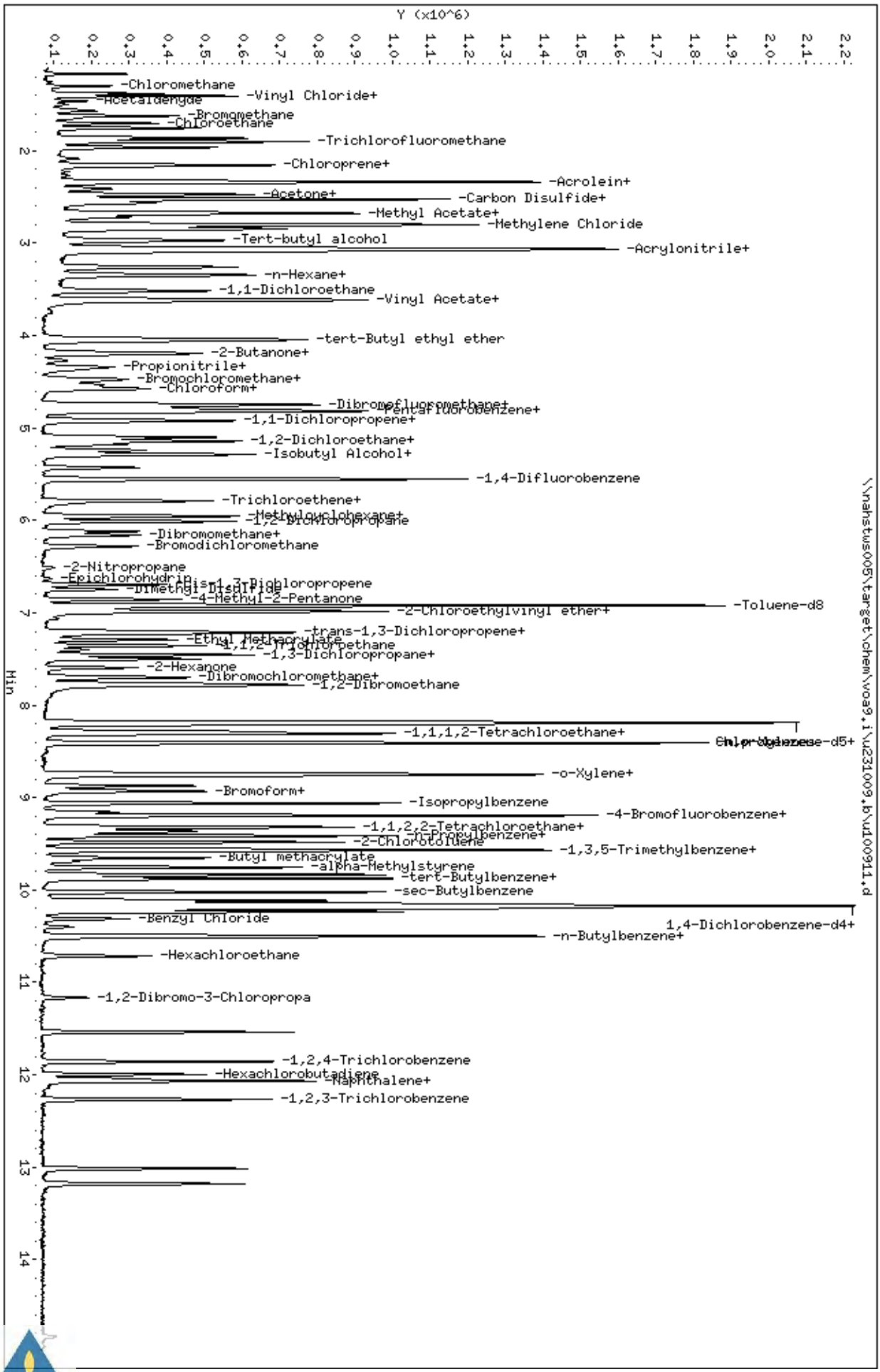
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100911.D
Lab Smp Id: HS23100159-03MS Client Smp ID: HS23100159-03MS
Inj Date : 09-OCT-2023 18:39
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-03MS;HS23100159-03MS;3;;MS
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 10 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.811	(1.000)	554407	50.0000	
$ 30 Dibromofluoromethane	113	4.751	4.744	(0.987)	259749	43.4999	43.49
$ 35 1,2-Dichloroethane-d4	65	5.100	5.093	(1.059)	290251	41.2131	41.21
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	860023	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	829053	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	1059047	53.8247	53.82
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	370725	47.6428	47.64
* 70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	477358	50.0000	
5 Vinyl Chloride	62	1.378	1.370	(0.286)	171775	19.2781	19.27
11 1,1-Dichloroethene	96	2.333	2.330	(0.485)	230379	20.8143	20.81
20 trans-1,2-Dichloroethene	96	3.061	3.053	(0.636)	260765	18.8988	18.89
27 cis-1,2-Dichloroethene	96	4.200	4.193	(0.872)	124896	17.7705	17.77
33 1,2-Dichloroethane	62	5.179	5.171	(0.933)	148736	17.4866	17.48
38 Trichloroethene	130	5.790	5.786	(1.043)	134838	22.7161	22.71
56 Tetrachloroethene	164	7.458	7.454	(0.911)	106247	24.6924	24.69
16 Acrylonitrile	53	3.068	3.061	(0.637)	175816	35.0142	35.01



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100911.d
Date : 09-OCT-2023 18:39
Client ID: HS23100159-03MS
Sample Info: HS23100159-03MS;HS23100159-03MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100911.d
Inj Date : 09-OCT-2023 18:39
InstruID : VOA9.i
LabSampID : HS23100159-03MS

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100912.D Page 1
Report Date: 10-Oct-2023 15:46

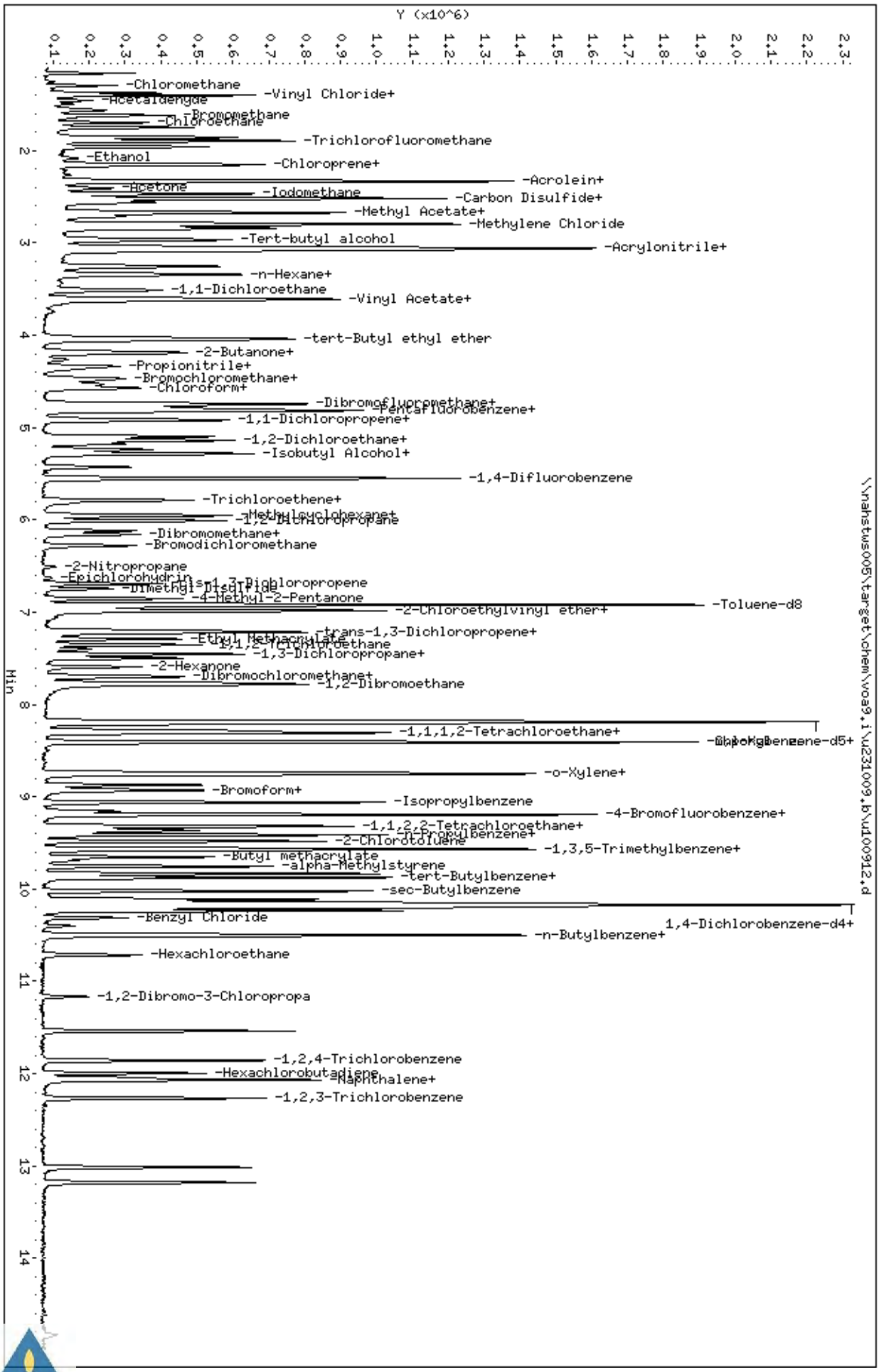
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100912.D
Lab Smp Id: HS23100159-03MSD Client Smp ID: HS23100159-03MSD
Inj Date : 09-OCT-2023 19:01
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-03MSD;HS23100159-03MSD;3;;MSD
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 10 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.811	(1.000)	569502	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	276161	44.9503	44.95
$ 35 1,2-Dichloroethane-d4	65	5.096	5.093	(1.058)	308415	42.6043	42.60
* 36 1,4-Difluorobenzene	114	5.550	5.550	(1.000)	895510	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	891674	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	1097273	51.8510	51.85
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	391477	46.8088	46.80
* 70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	500769	50.0000	
5 Vinyl Chloride	62	1.374	1.370	(0.285)	181491	19.8286	19.82
11 1,1-Dichloroethene	96	2.330	2.330	(0.484)	238870	21.0094	21.00
20 trans-1,2-Dichloroethene	96	3.057	3.053	(0.635)	254890	17.9833	17.98
27 cis-1,2-Dichloroethene	96	4.197	4.193	(0.872)	125640	17.4026	17.40
33 1,2-Dichloroethane	62	5.175	5.171	(0.932)	161237	18.2052	18.20
38 Trichloroethene	130	5.786	5.786	(1.043)	120395	19.4792	19.47
56 Tetrachloroethene	164	7.454	7.454	(0.911)	104840	22.6543	22.65
16 Acrylonitrile	53	3.065	3.061	(0.636)	178304	34.5685	34.56



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100912.d
Date : 09-OCT-2023 19:01
Client ID: HS23100159-03MSD
Sample Info: HS23100159-03MSD;HS23100159-03MSD;3;;MSD
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

\\nahstws005\target\chem\voa9.i\u231009.b\u100912.d

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100912.d
Inj Date : 09-OCT-2023 19:01
InstruID : VOA9.i
LabSampID : HS23100159-03MSD

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100914.D Page 1
Report Date: 10-Oct-2023 15:55

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100914.D
Lab Smp Id: HS23100159-01 Client Smp ID: HS23100159-01
Inj Date : 09-OCT-2023 19:46
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-01;HS23100159-01;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14

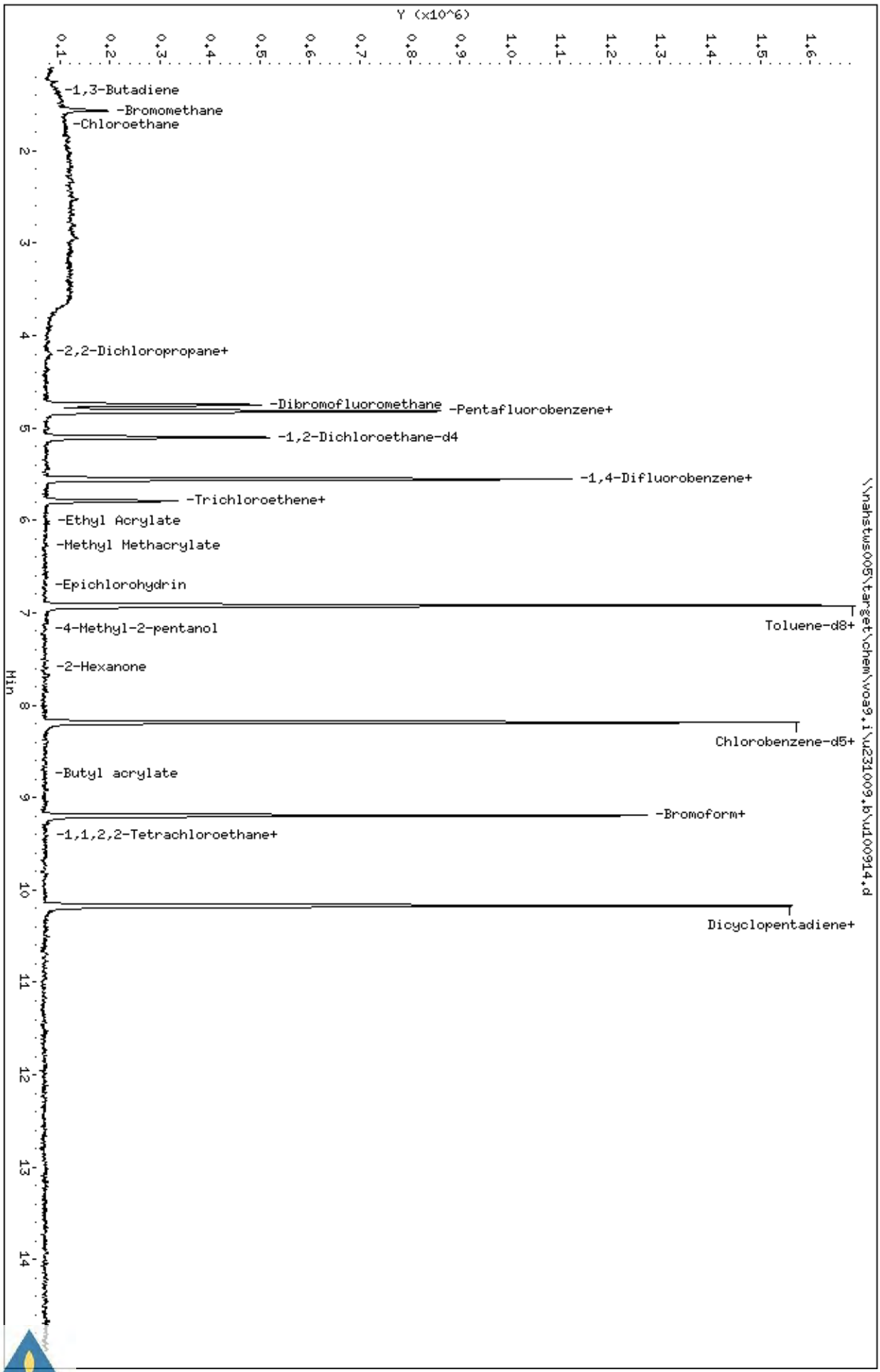
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	4.819	4.811	(1.000)	533373	50.0000	
$ 30 Dibromofluoromethane	113	4.751	4.744	(0.986)	233166	40.7092	40.70
$ 35 1,2-Dichloroethane-d4	65	5.100	5.093	(1.058)	282102	41.6279	41.62
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	818965	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	749917	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	981334	55.1382	55.13
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	305874	43.6036	43.60
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	377721	50.0000	(M)
27 cis-1,2-Dichloroethene	96	4.204	4.193	(0.872)	7981	1.18034	1.18(a)
38 Trichloroethene	130	5.790	5.786	(1.043)	81676	14.4498	14.44

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\voa9.i\u231009.b\u100914.d
Date : 09-OCT-2023 19:46
Client ID: HS23100159-01
Sample Info: HS23100159-01;HS23100159-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100914.d Page 2

Date : 09-OCT-2023 19:46

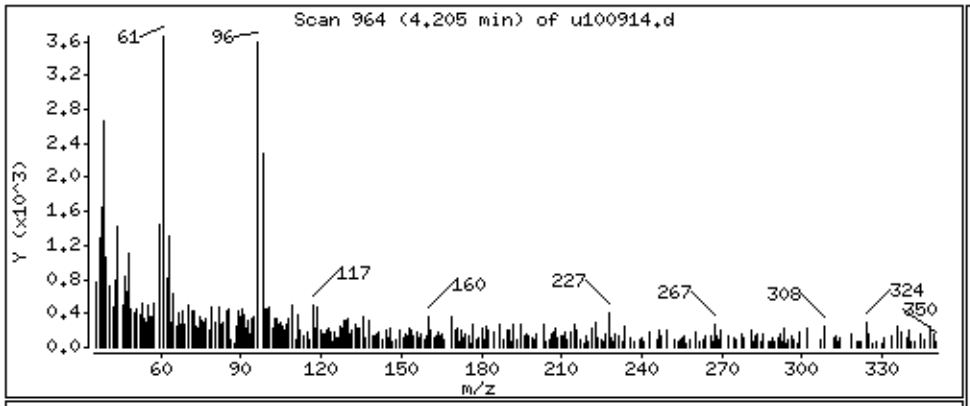
Client ID: HS23100159-01 Instrument: VOA9.i

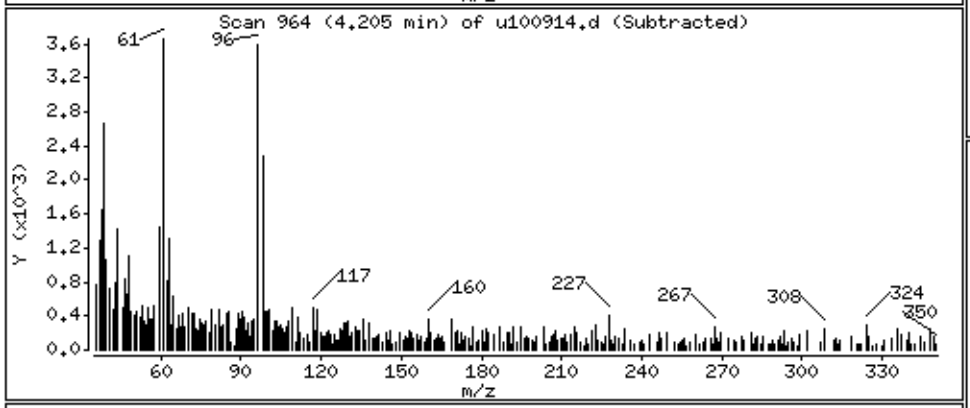
Sample Info: HS23100159-01;HS23100159-01;;;

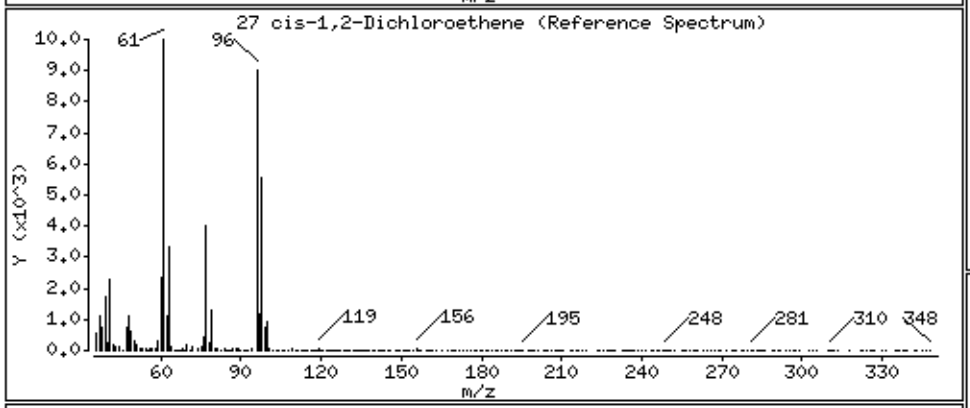
Purge Volume: 5.0 Operator: PC

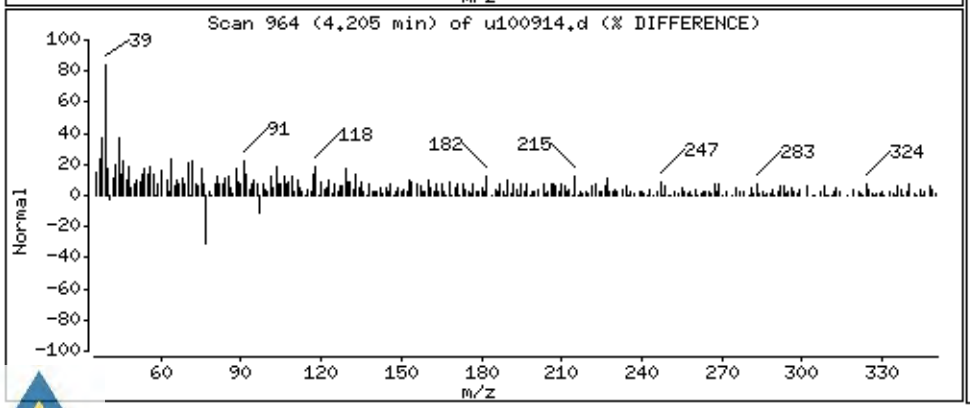
Column phase: DB624 Column diameter: 0.18

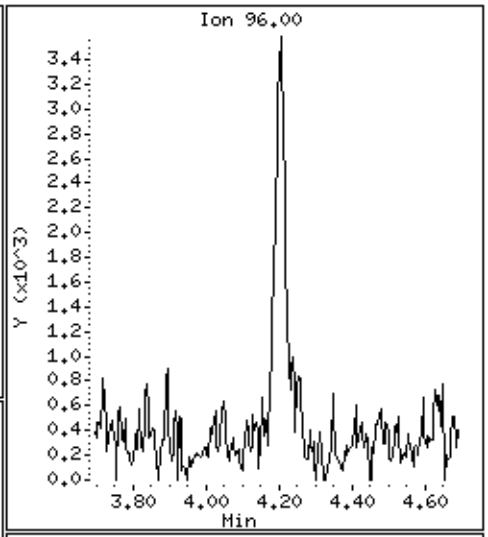
27 cis-1,2-Dichloroethene Concentration: 1.18 ug/l

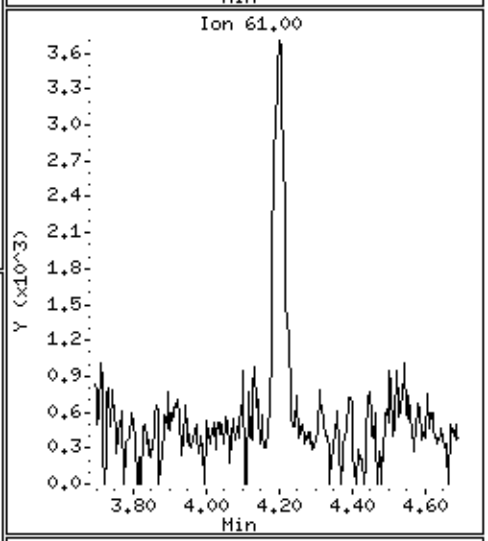


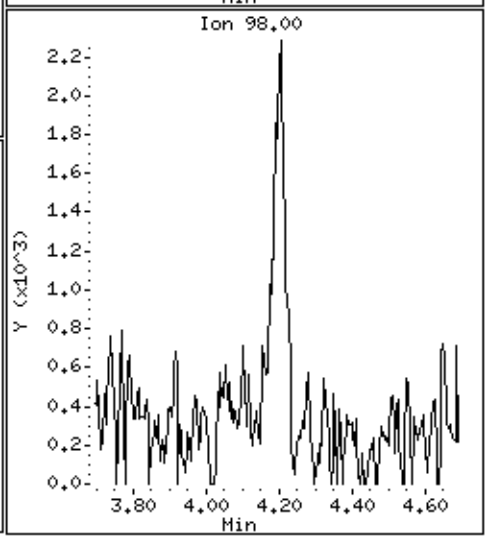












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100914.d Page 3

Date : 09-OCT-2023 19:46

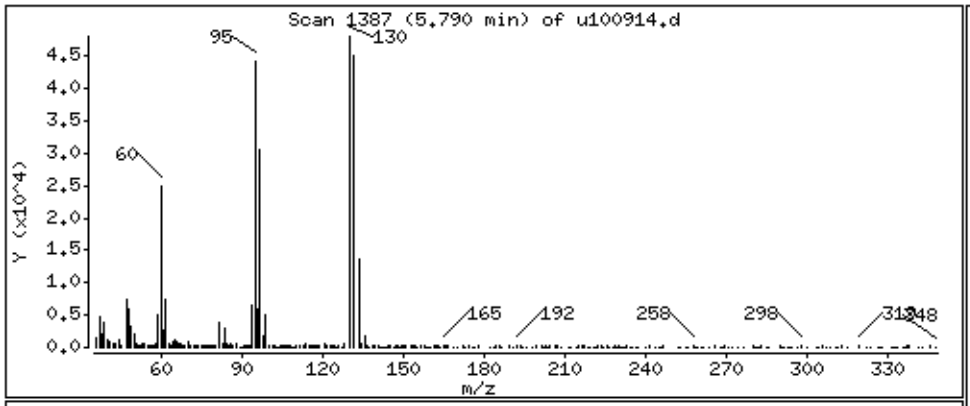
Client ID: HS23100159-01 Instrument: VOA9.i

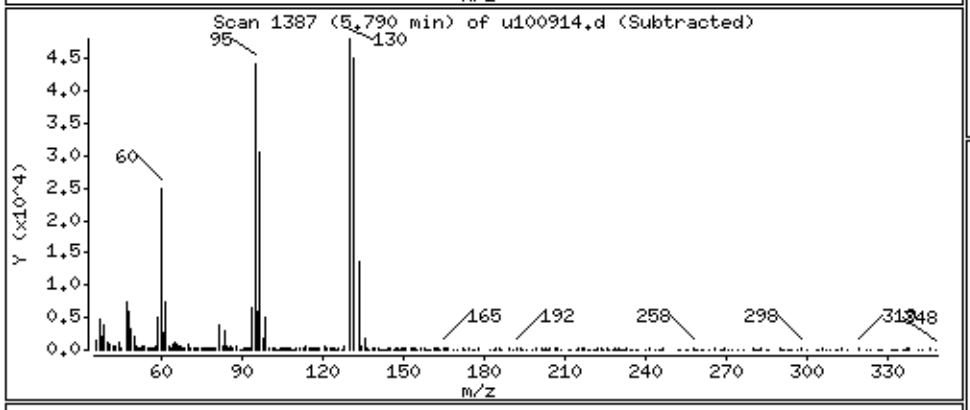
Sample Info: HS23100159-01;HS23100159-01;;;

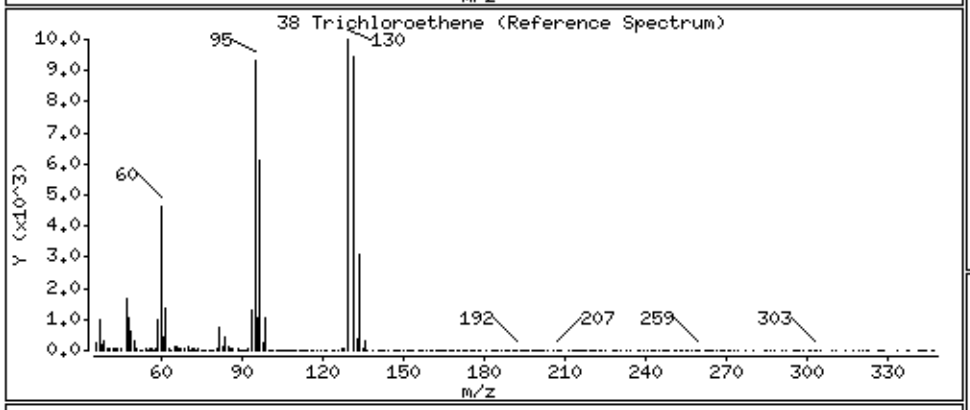
Purge Volume: 5.0 Operator: PC

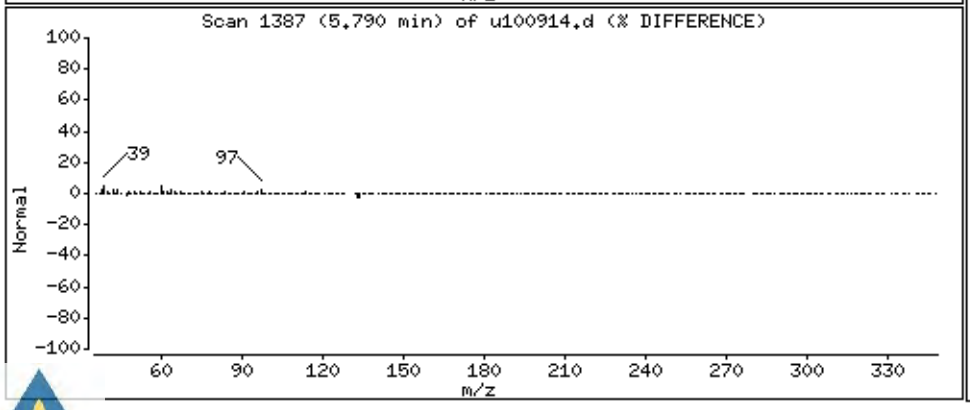
Column phase: DB624 Column diameter: 0.18

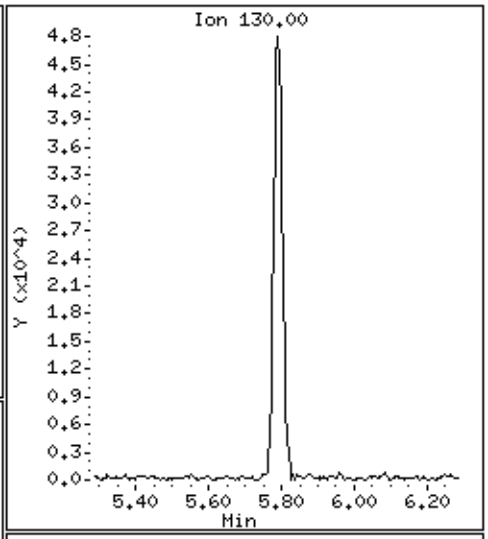
38 Trichloroethene Concentration: 14.44 ug/l

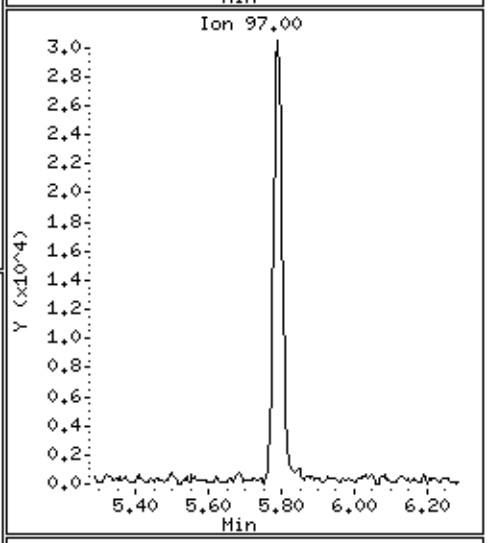


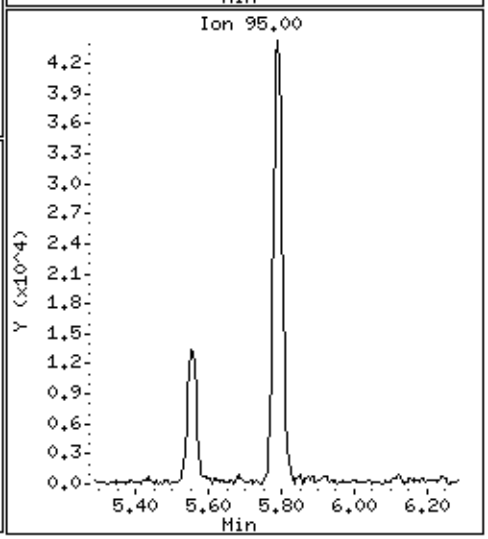










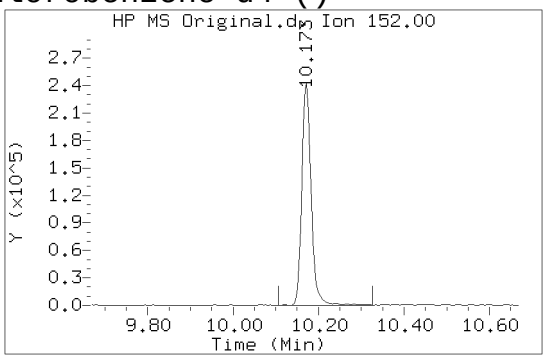


Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100914.d
Inj Date : 09-OCT-2023 19:46
InstruID : VOA9.i
LabSampID : HS23100159-01

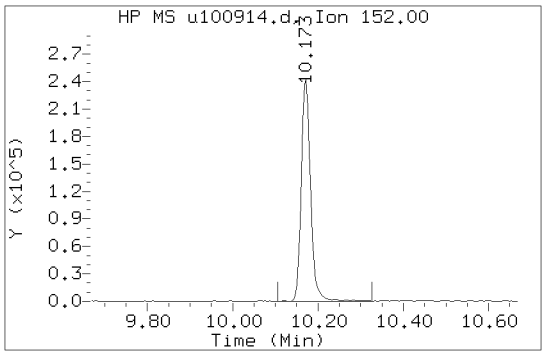
1,4-Dichlorobenzene-d4 ()

Reason Code:

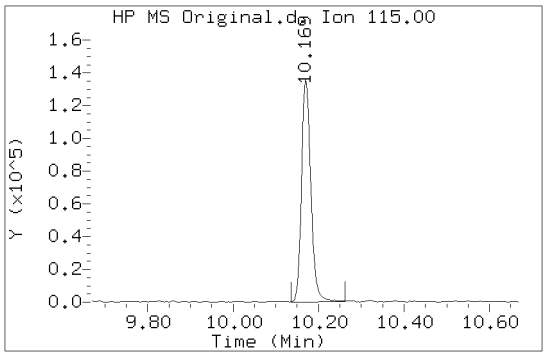
BEFORE
MASS
152
AREA
377721
HEIGHT
242073
10-Oct-2023
21:40



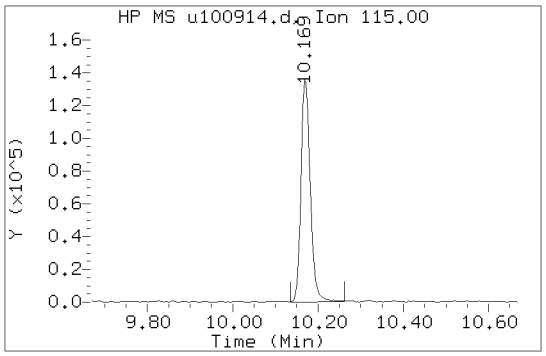
AFTER
MASS
152
AREA
377721
HEIGHT
242073
10-Oct-2023
21:40



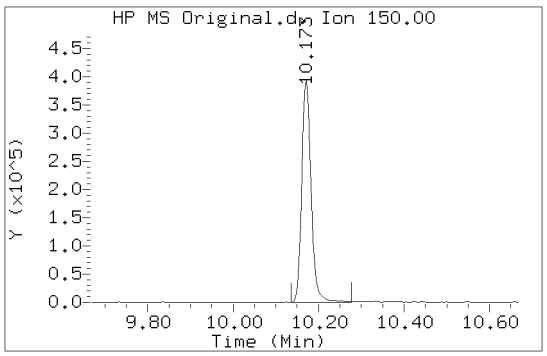
BEFORE
MASS
115
AREA
210597
HEIGHT
135638
10-Oct-2023
21:40



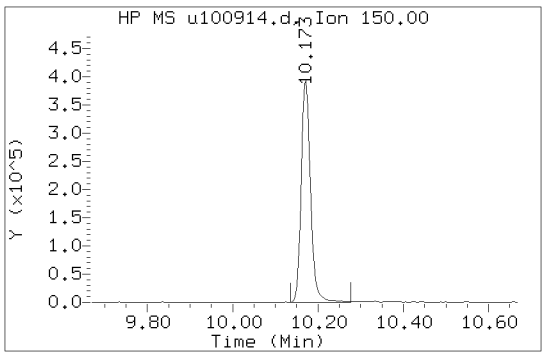
AFTER
MASS
115
AREA
210597
HEIGHT
135638
10-Oct-2023
21:40



BEFORE
MASS
150
AREA
608265
HEIGHT
392691
10-Oct-2023
21:40



AFTER
MASS
150
AREA
608265
HEIGHT
392691
10-Oct-2023
21:40



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100915.D Page 1
Report Date: 10-Oct-2023 15:46

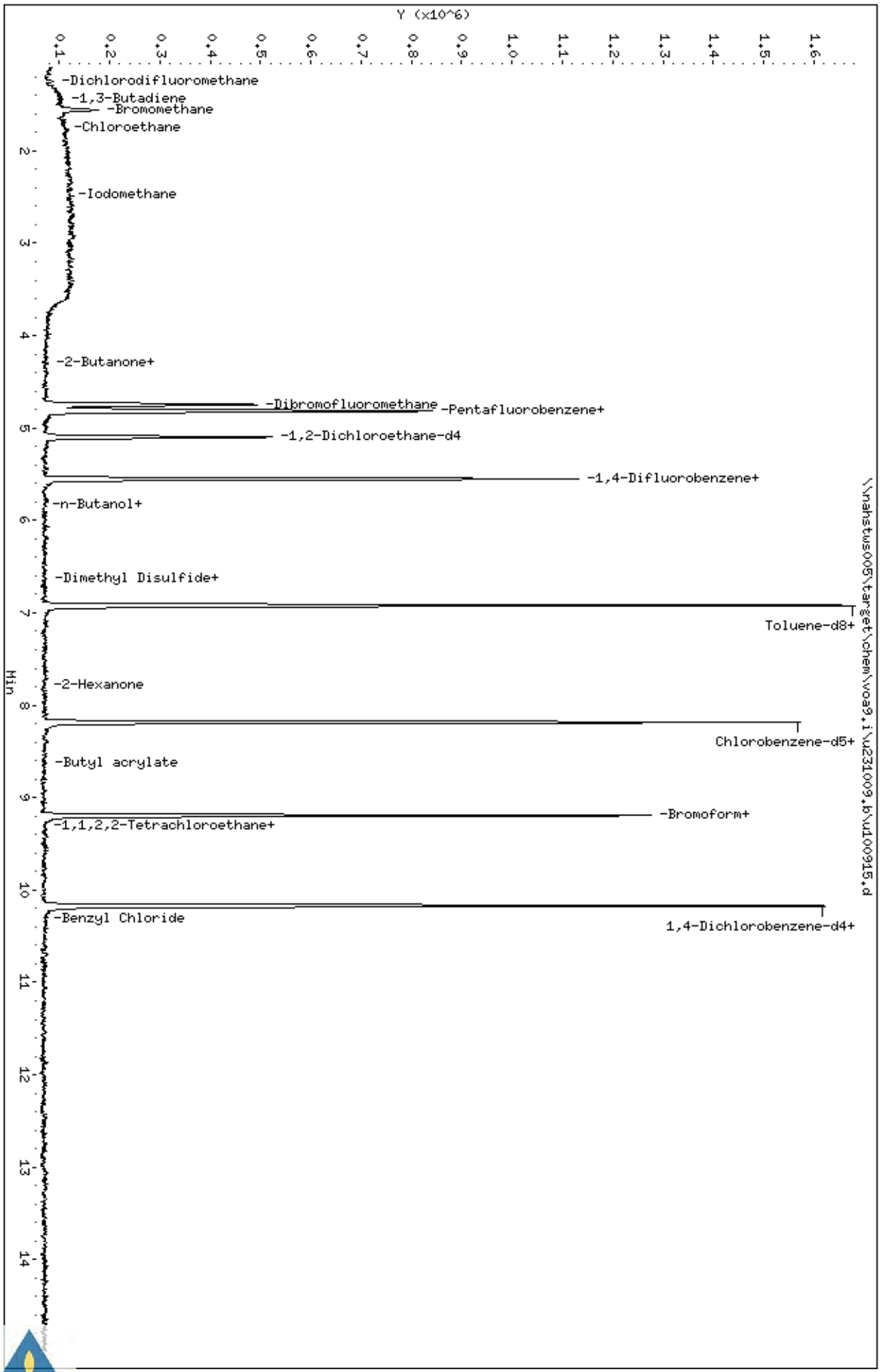
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100915.D
Lab Smp Id: HS23100159-04 Client Smp ID: HS23100159-04
Inj Date : 09-OCT-2023 20:08
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-04;HS23100159-04;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.811	(1.000)	526472	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	236906	41.8539	41.85
$ 35 1,2-Dichloroethane-d4	65	5.096	5.093	(1.058)	283192	42.3229	42.32
* 36 1,4-Difluorobenzene	114	5.550	5.550	(1.000)	820817	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	756603	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	981954	54.6855	54.68
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	313021	44.2056	44.20
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	378704	50.0000	



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100915.d
Date : 09-OCT-2023 20:08
Client ID: HS23100159-04
Sample Info: HS23100159-04;HS23100159-04;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100915.d
Inj Date : 09-OCT-2023 20:08
InstruID : VOA9.i
LabSampID : HS23100159-04

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100916.D Page 1
Report Date: 10-Oct-2023 15:57

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100916.D
Lab Smp Id: HS23100159-05 Client Smp ID: HS23100159-05
Inj Date : 09-OCT-2023 20:31
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-05;HS23100159-05;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14

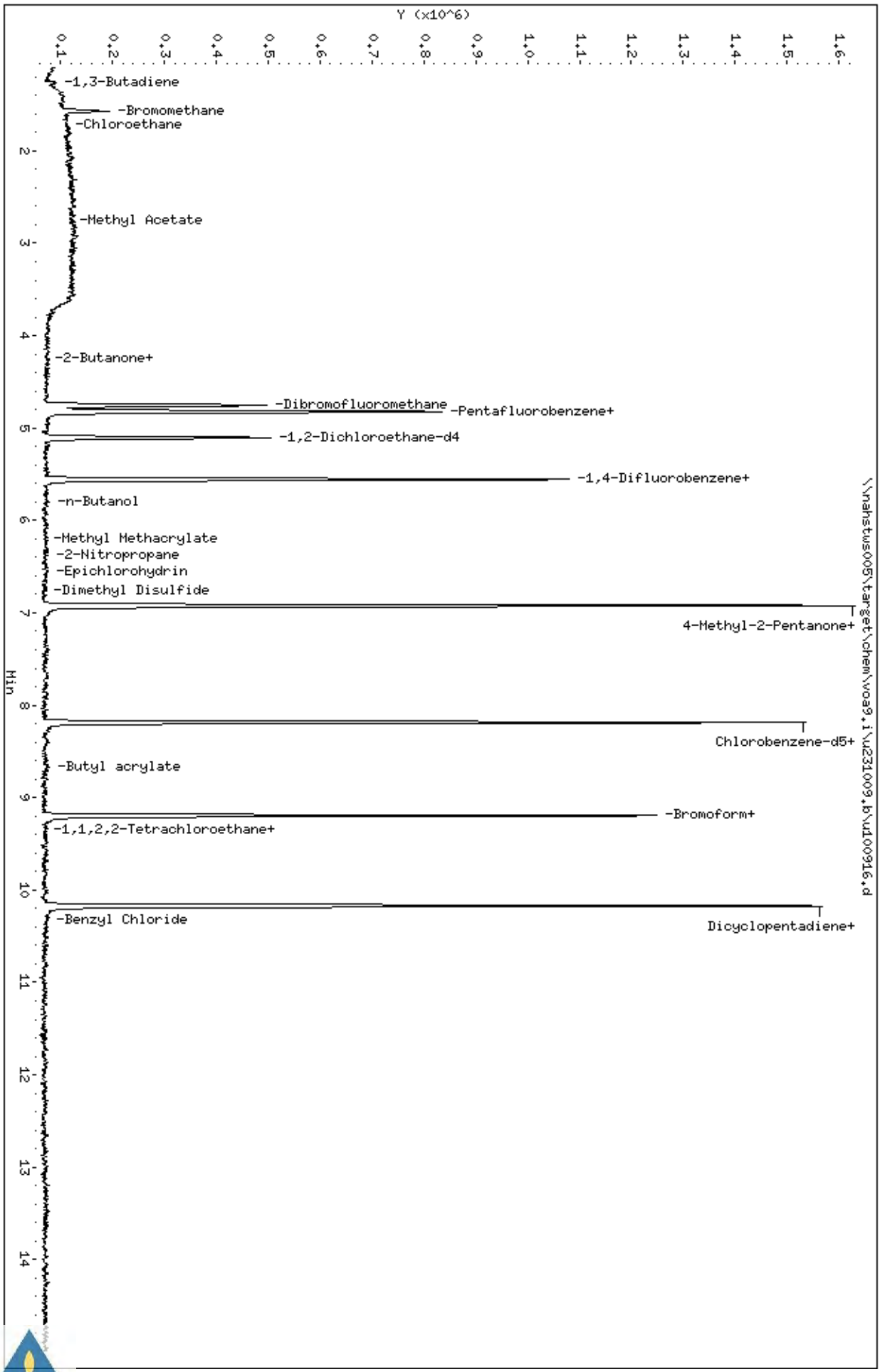
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	4.823	4.811	(1.000)	511659	50.0000		
$ 30 Dibromofluoromethane	113	4.755	4.744	(0.986)	229646	41.7504	41.75	
$ 35 1,2-Dichloroethane-d4	65	5.104	5.093	(1.058)	273586	42.0759	42.07	
* 36 1,4-Difluorobenzene	114	5.557	5.550	(1.000)	788647	50.0000		
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	731080	50.0000		
$ 48 Toluene-d8	98	6.926	6.922	(0.846)	945262	54.4799	54.47	
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	302745	44.2456	44.24	
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	379225	50.0000		(M)

QC Flag Legend

M - Compound response manually integrated.



Data File: \\nahstws005\target\chem\voa9,i\u231009,b\u100916,d
Date : 09-OCT-2023 20:31
Client ID: HS23100159-05
Sample Info: HS23100159-05;HS23100159-05;;;
Purge Volume: 5.0
Column phase: DB624

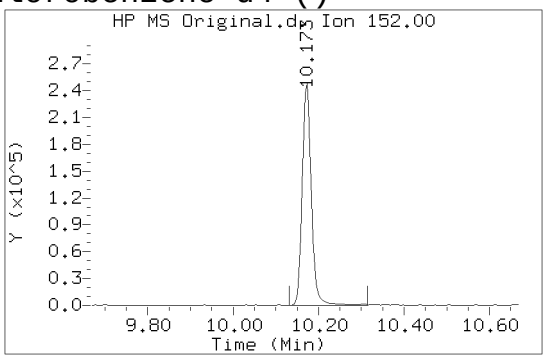
Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100916.d
Inj Date : 09-OCT-2023 20:31
InstruID : VOA9.i
LabSampID : HS23100159-05

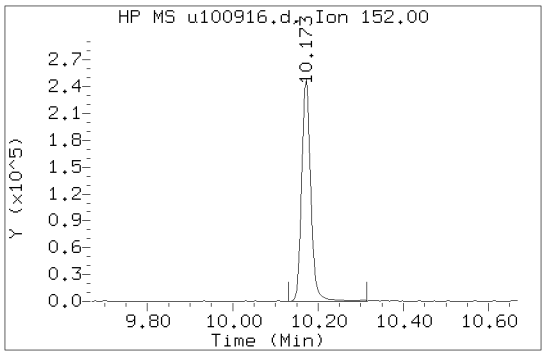
1,4-Dichlorobenzene-d4 ()

Reason Code:

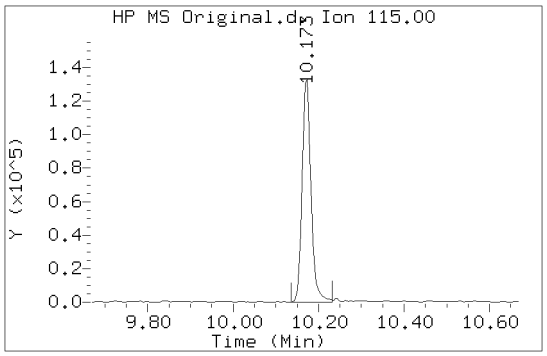
BEFORE
MASS
152
AREA
379225
HEIGHT
247872
10-Oct-2023
21:40



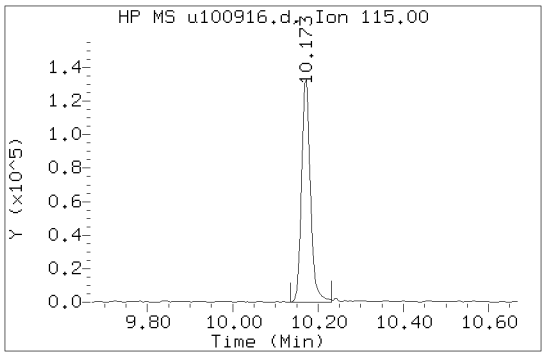
AFTER
MASS
152
AREA
379225
HEIGHT
247872
10-Oct-2023
21:40



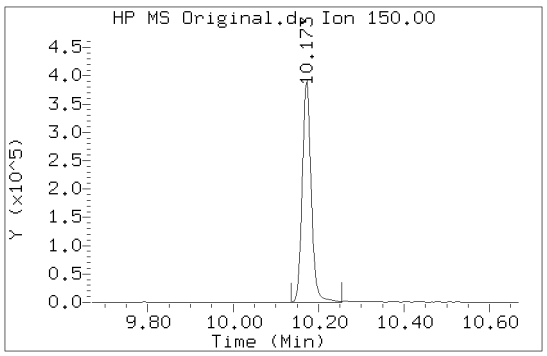
BEFORE
MASS
115
AREA
197767
HEIGHT
132672
10-Oct-2023
21:40



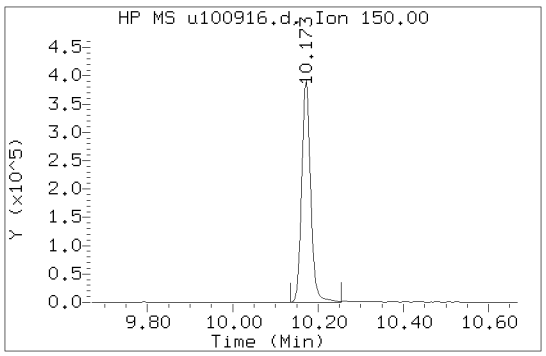
AFTER
MASS
115
AREA
197767
HEIGHT
132672
10-Oct-2023
21:40



BEFORE
MASS
150
AREA
583196
HEIGHT
390817
10-Oct-2023
21:40



AFTER
MASS
150
AREA
583196
HEIGHT
390817
10-Oct-2023
21:40



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100917.D Page 1
Report Date: 10-Oct-2023 15:58

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100917.D
Lab Smp Id: HS23100159-07 Client Smp ID: HS23100159-07
Inj Date : 09-OCT-2023 20:53
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-07;HS23100159-07;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14

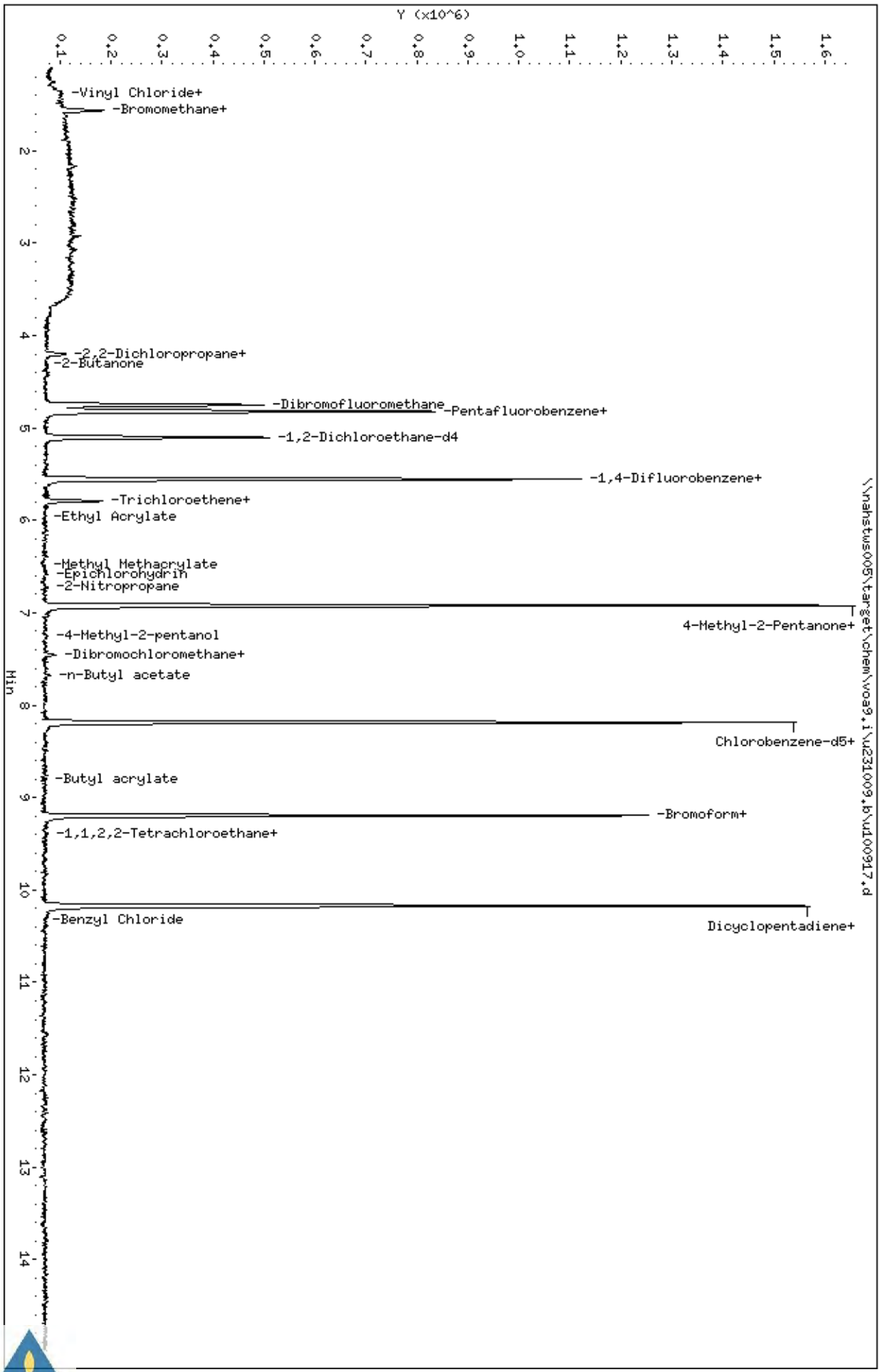
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	4.819	4.811	(1.000)	505530	50.0000	
$ 30 Dibromofluoromethane	113	4.752	4.744	(0.986)	235949	43.3420	43.34
$ 35 1,2-Dichloroethane-d4	65	5.100	5.093	(1.058)	273008	42.4879	42.48
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	801814	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	724604	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	944405	54.9169	54.91
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	301955	44.5144	44.51
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	379762	50.0000	(M)
5 Vinyl Chloride	62	1.378	1.370	(0.286)	5119	0.63004	0.63(a)
27 cis-1,2-Dichloroethene	96	4.197	4.193	(0.871)	20368	3.17820	3.17(a)
38 Trichloroethene	130	5.790	5.786	(1.043)	34443	6.22385	6.22
56 Tetrachloroethene	164	7.462	7.454	(0.912)	4247	1.12930	1.12(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\voa9.i\u231009.b\u100917.d
Date : 09-OCT-2023 20:53
Client ID: HS23100159-07
Sample Info: HS23100159-07;HS23100159-07;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100917.d Page 2

Date : 09-OCT-2023 20:53

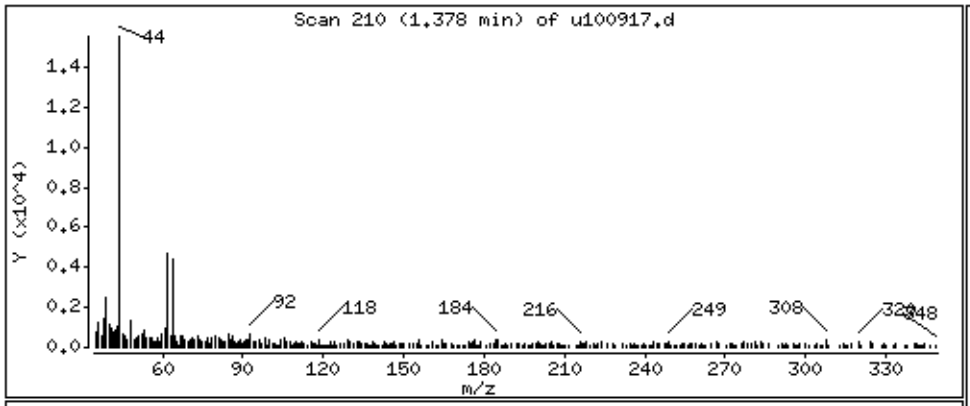
Client ID: HS23100159-07 Instrument: VOA9.i

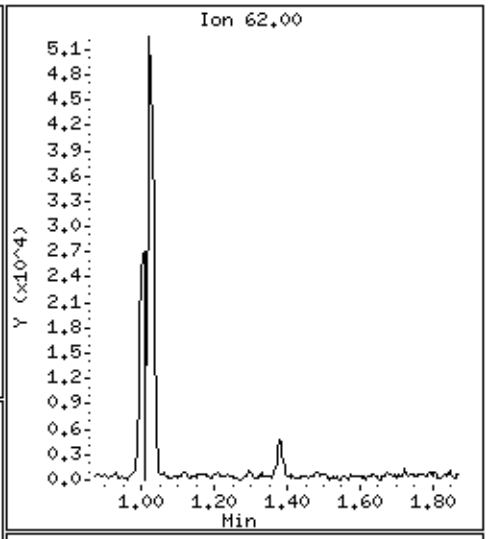
Sample Info: HS23100159-07;HS23100159-07;;;

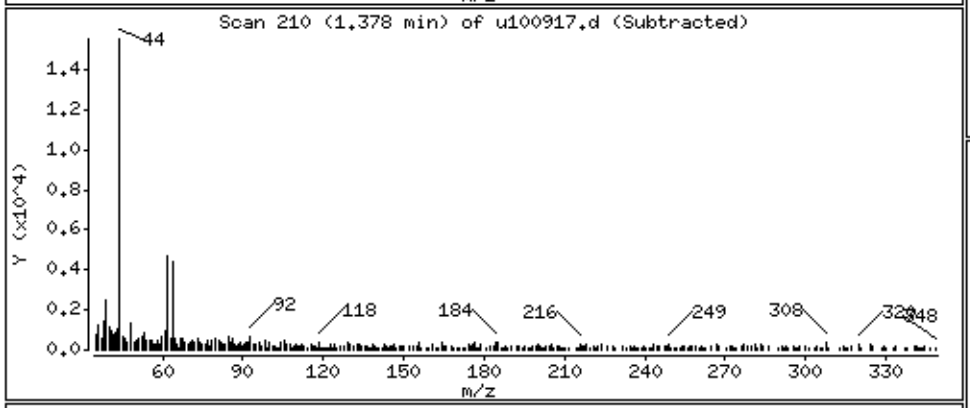
Purge Volume: 5.0 Operator: PC

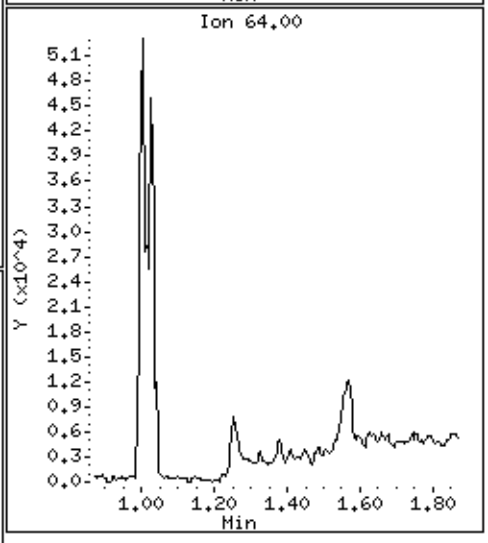
Column phase: DB624 Column diameter: 0.18

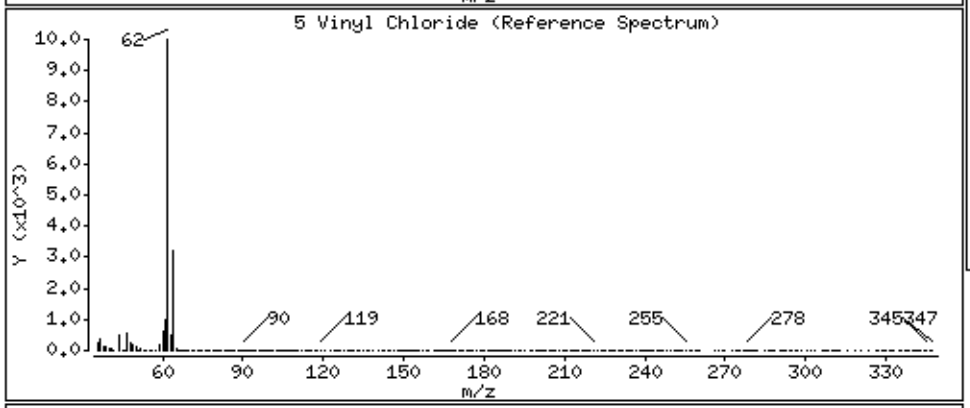
5 Vinyl Chloride Concentration: 0.63 ug/l

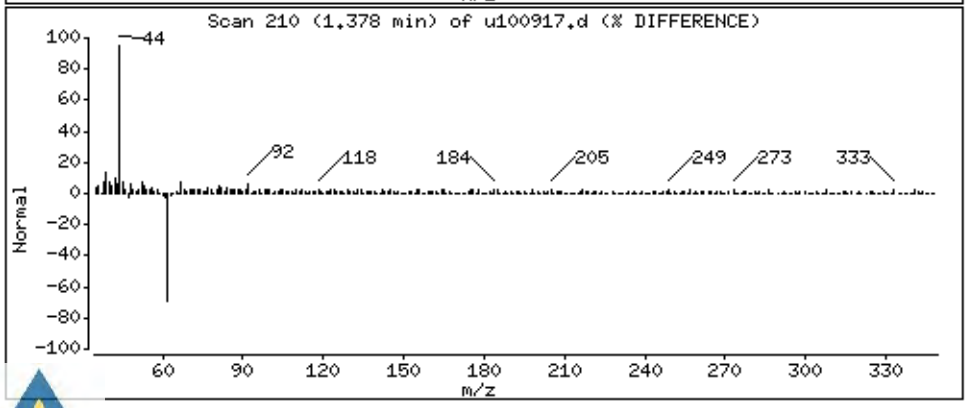












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100917.d Page 3

Date : 09-OCT-2023 20:53

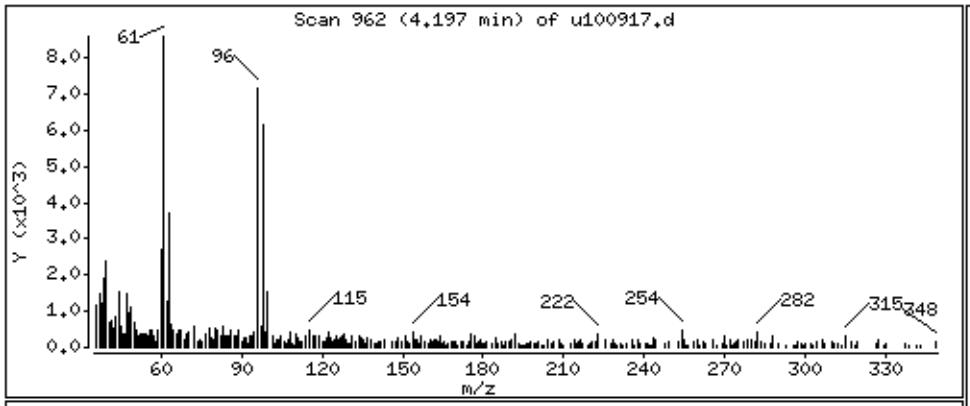
Client ID: HS23100159-07 Instrument: VOA9.i

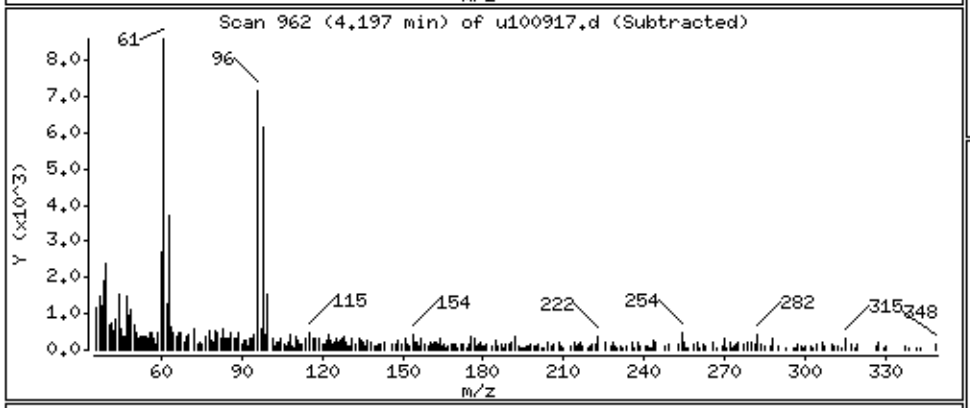
Sample Info: HS23100159-07;HS23100159-07;;;

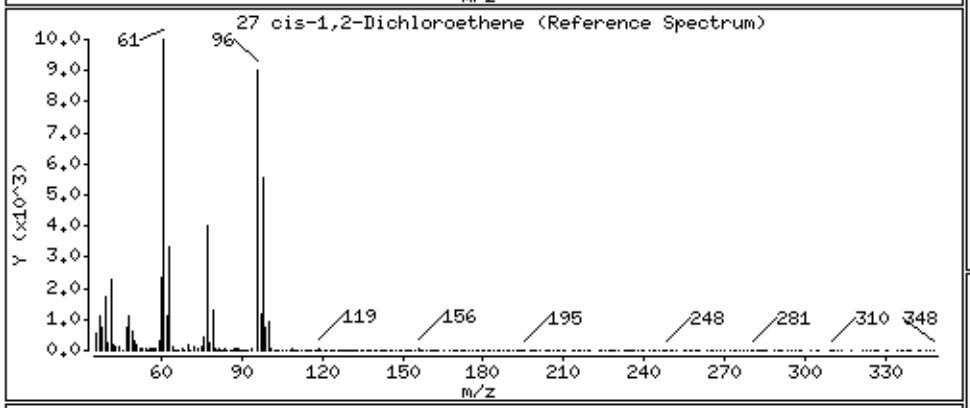
Purge Volume: 5.0 Operator: PC

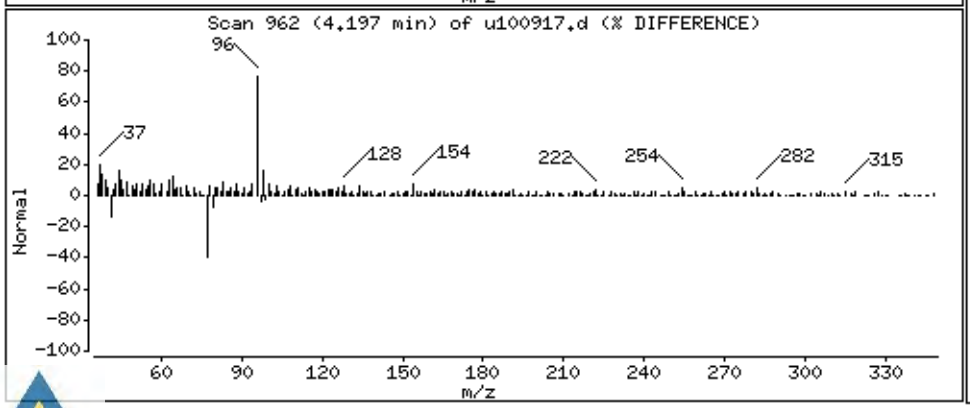
Column phase: DB624 Column diameter: 0.18

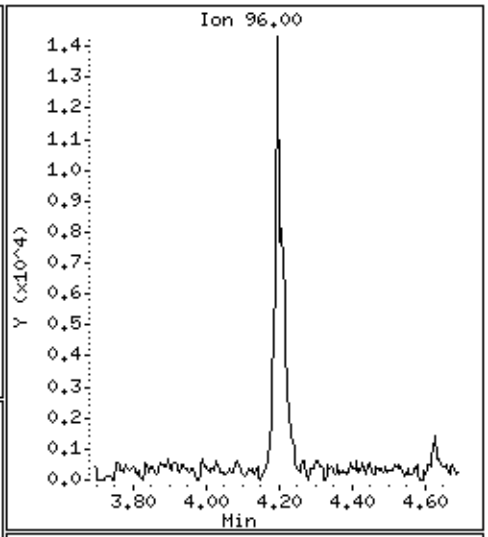
27 cis-1,2-Dichloroethene Concentration: 3.17 ug/l

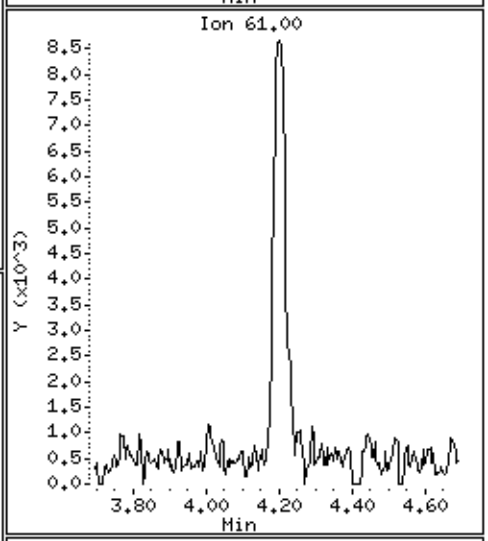


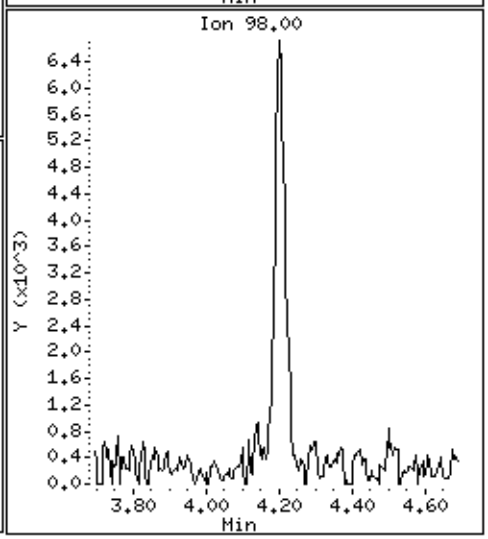












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100917.d Page 4

Date : 09-OCT-2023 20:53

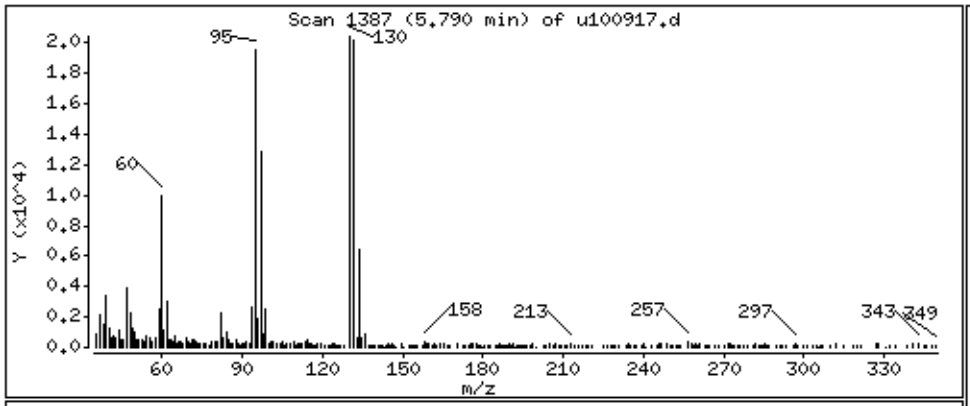
Client ID: HS23100159-07 Instrument: VOA9.i

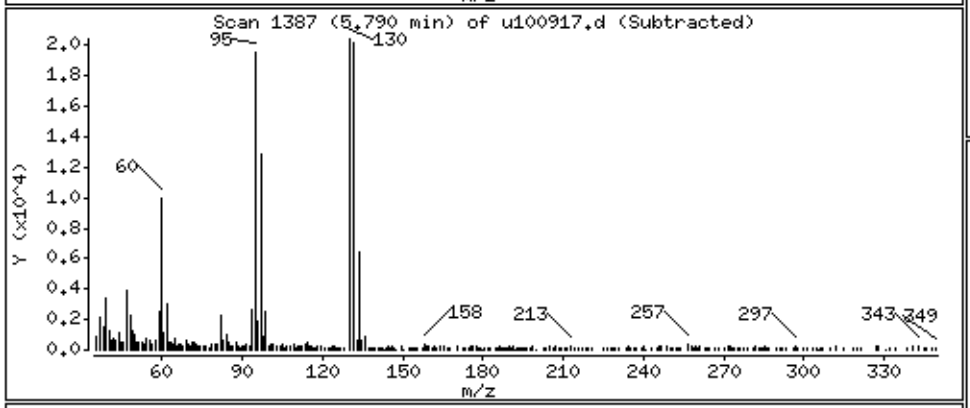
Sample Info: HS23100159-07;HS23100159-07;;;

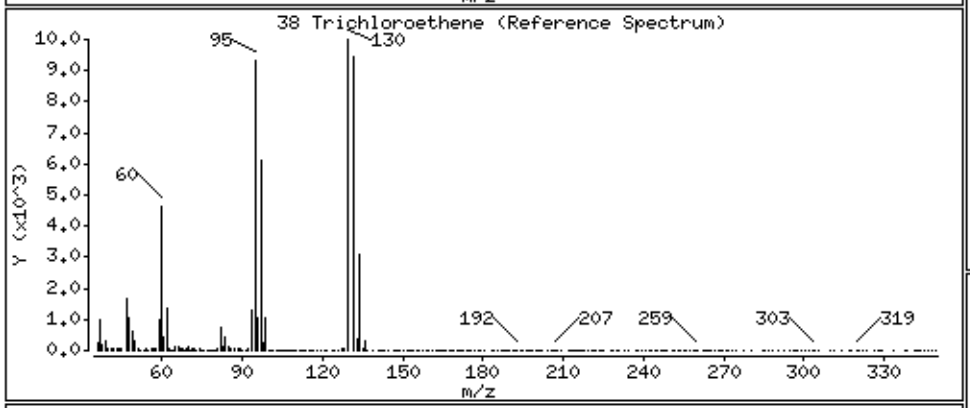
Purge Volume: 5.0 Operator: PC

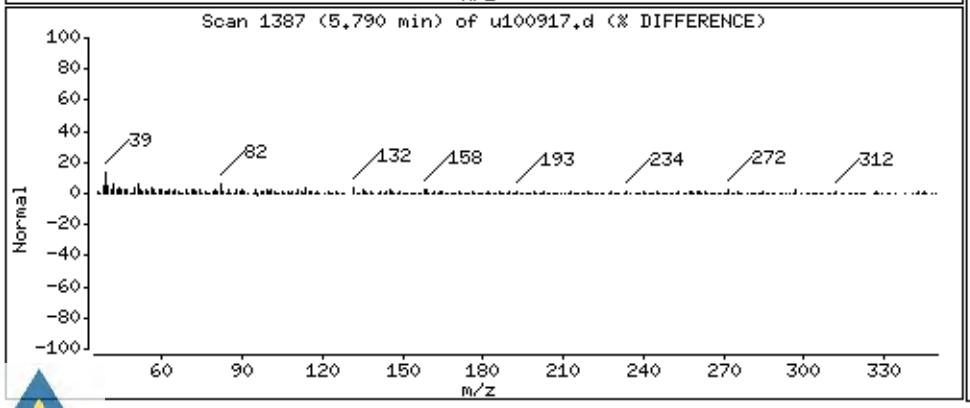
Column phase: DB624 Column diameter: 0.18

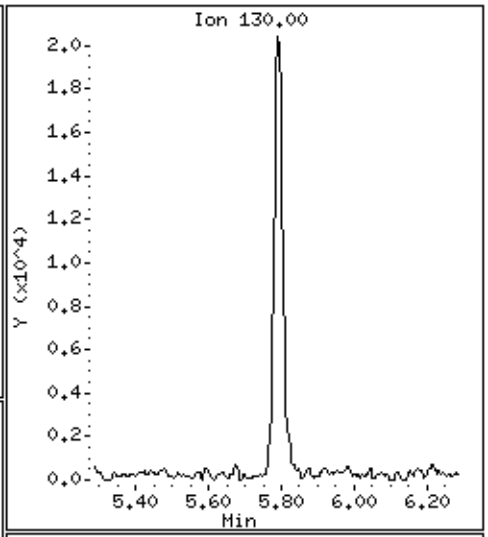
38 Trichloroethene Concentration: 6.22 ug/l

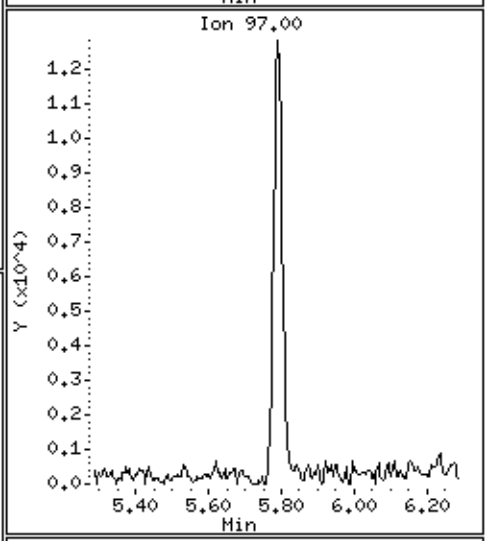


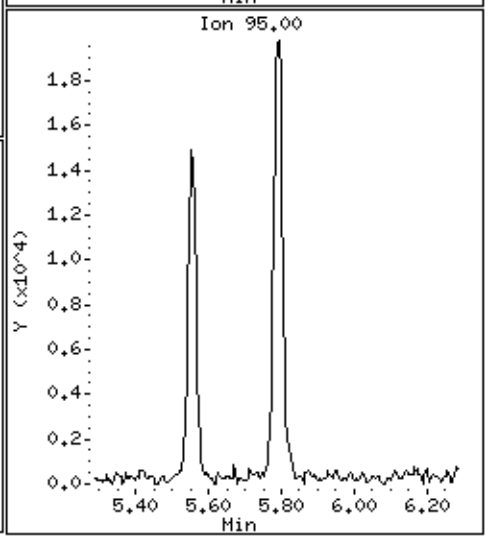












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100917.d Page 5

Date : 09-OCT-2023 20:53

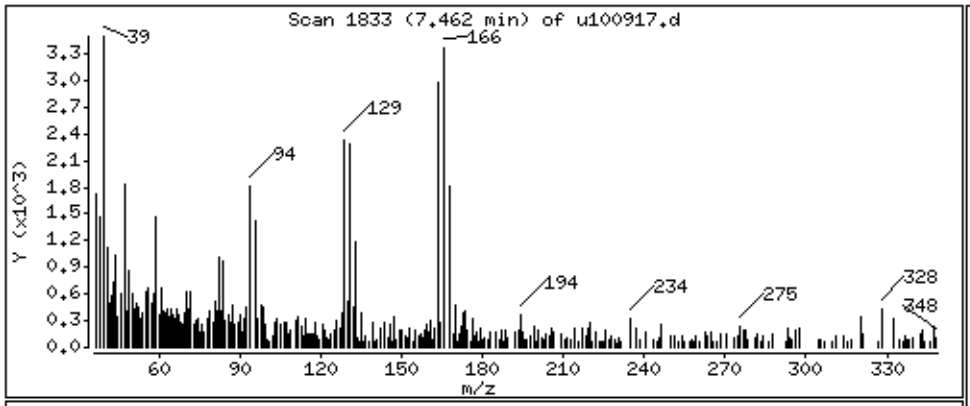
Client ID: HS23100159-07 Instrument: VOA9.i

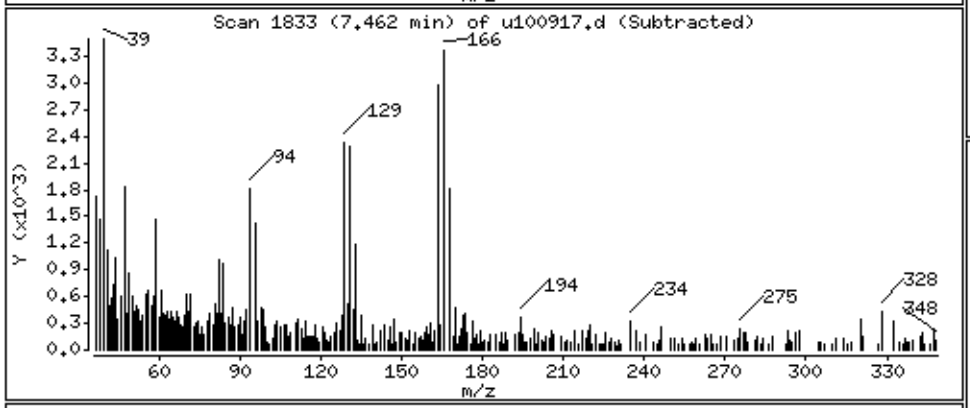
Sample Info: HS23100159-07;HS23100159-07;;;

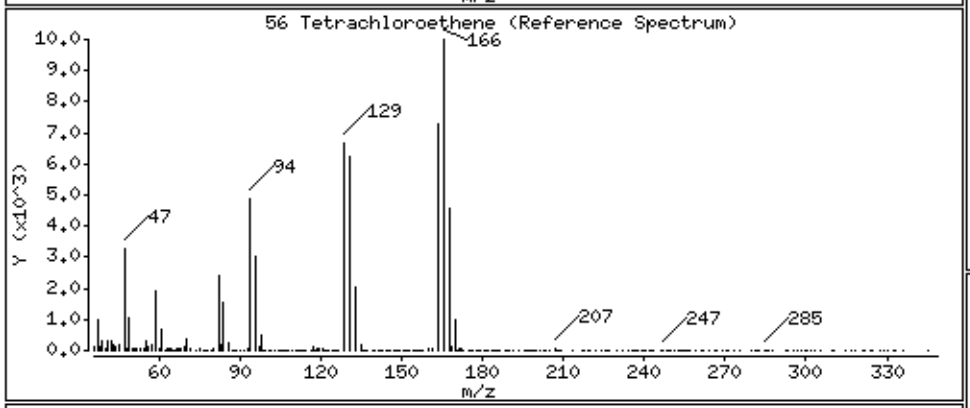
Purge Volume: 5.0 Operator: PC

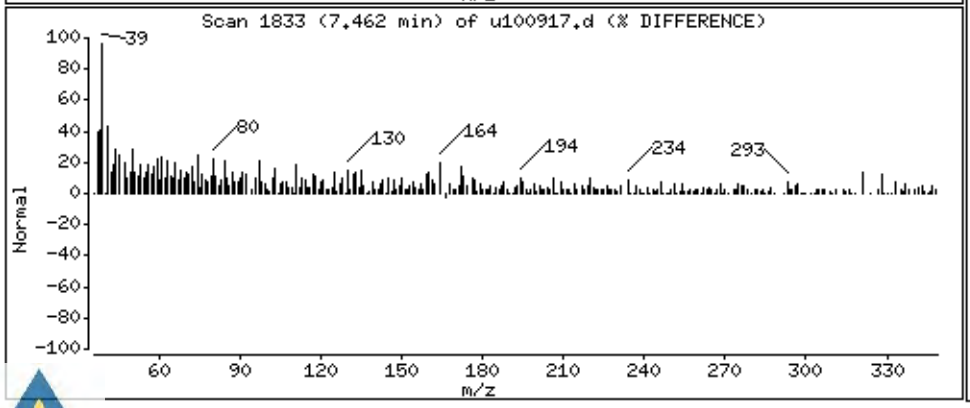
Column phase: DB624 Column diameter: 0.18

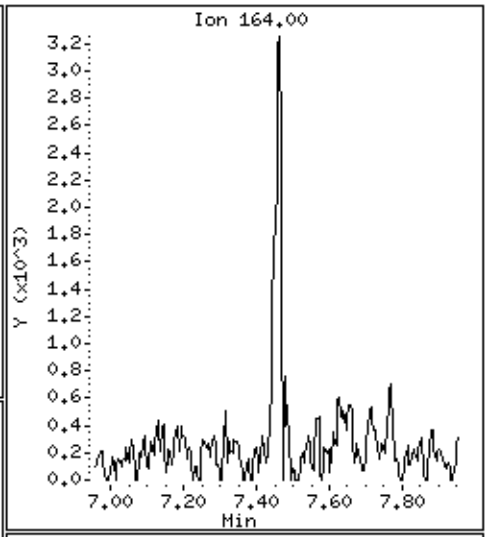
56 Tetrachloroethene Concentration: 1.12 ug/l

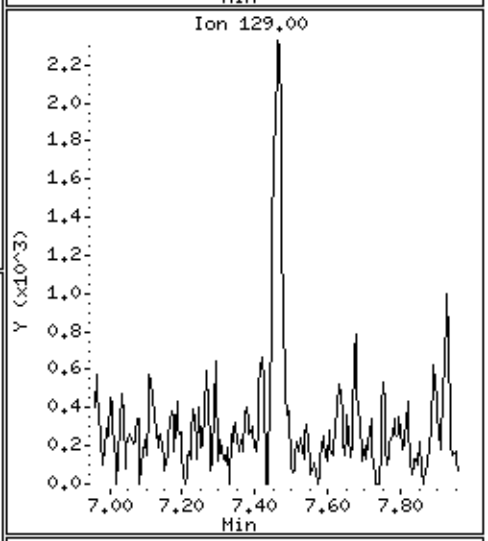


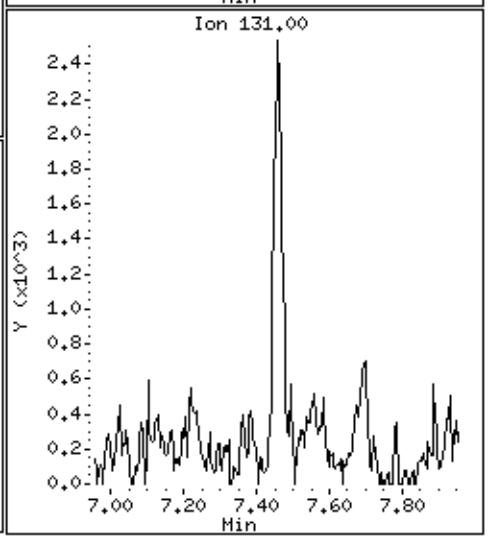










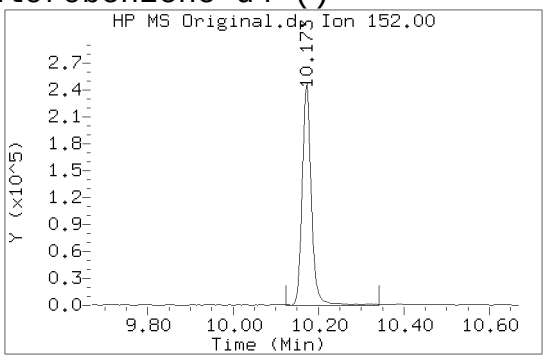


Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100917.d
Inj Date : 09-OCT-2023 20:53
InstruID : VOA9.i
LabSampID : HS23100159-07

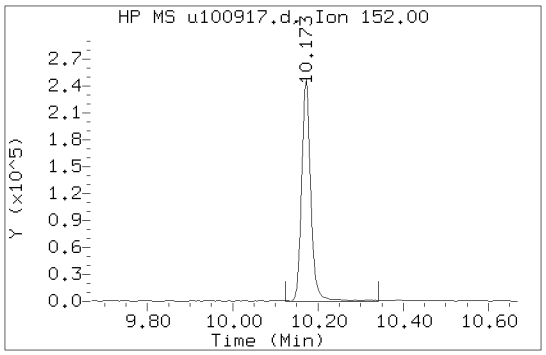
1,4-Dichlorobenzene-d4 ()

Reason Code:

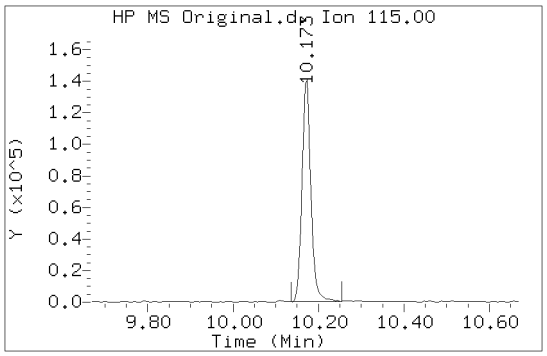
BEFORE
MASS
152
AREA
379762
HEIGHT
247015
10-Oct-2023
21:40



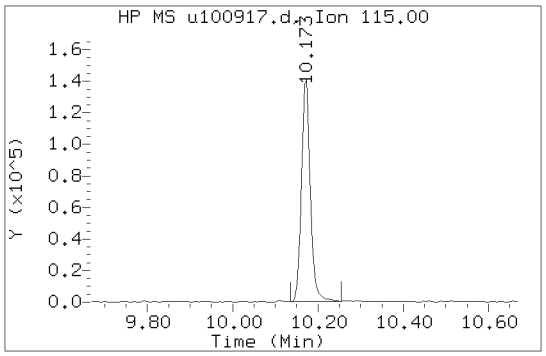
AFTER
MASS
152
AREA
379762
HEIGHT
247015
10-Oct-2023
21:40



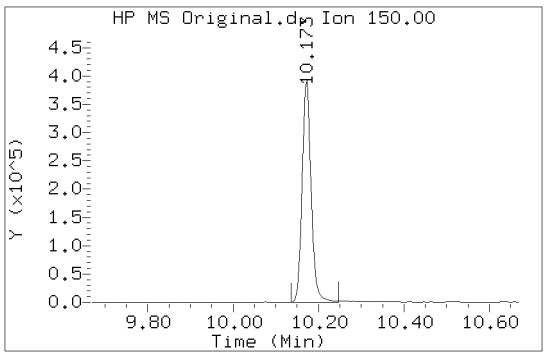
BEFORE
MASS
115
AREA
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HEIGHT
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10-Oct-2023
21:40



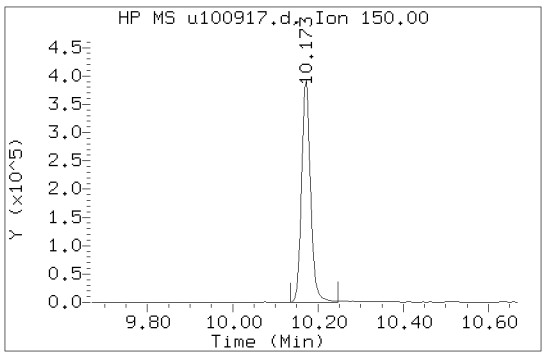
AFTER
MASS
115
AREA
209416
HEIGHT
140624
10-Oct-2023
21:40



BEFORE
MASS
150
AREA
586126
HEIGHT
391170
10-Oct-2023
21:40



AFTER
MASS
150
AREA
586126
HEIGHT
391170
10-Oct-2023
21:40



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100918.D Page 1
Report Date: 10-Oct-2023 15:46

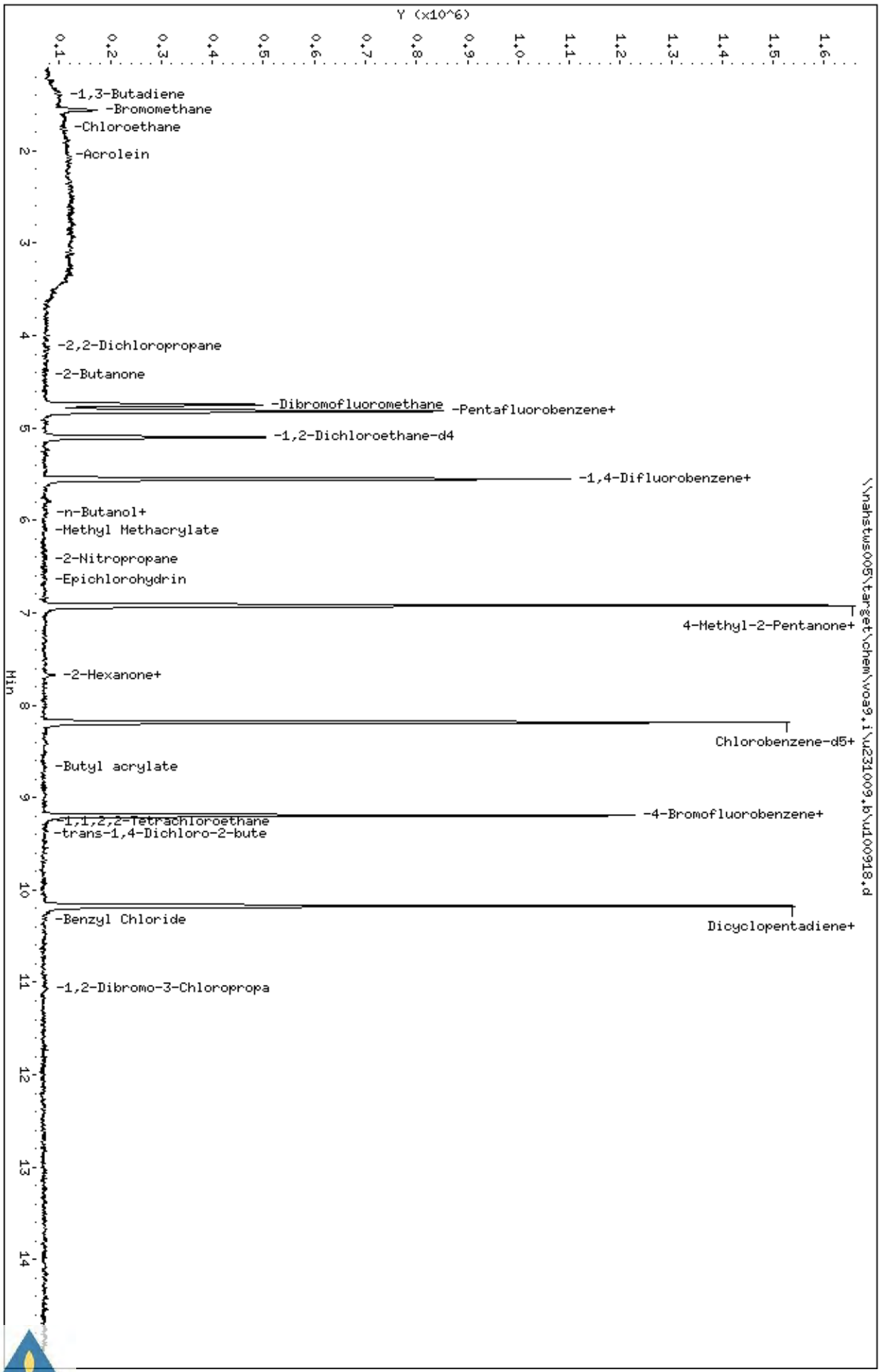
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100918.D
Lab Smp Id: HS23100159-08 Client Smp ID: HS23100159-08
Inj Date : 09-OCT-2023 21:16
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-08;HS23100159-08;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.811	(1.000)	507278	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	239076	43.7457	43.74
$ 35 1,2-Dichloroethane-d4	65	5.097	5.093	(1.058)	272042	42.1974	42.19
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	795995	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	726233	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	950231	55.1318	55.13
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	294446	43.3526	43.35
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	367227	50.0000	



Data File: \\nahstws005\target\chem\voa9,i\u231009,b\u100918,d
Date : 09-OCT-2023 21:16
Client ID: HS23100159-08
Sample Info: HS23100159-08;HS23100159-08;;;
Purge Volume: 5.0
Column phase: DB624

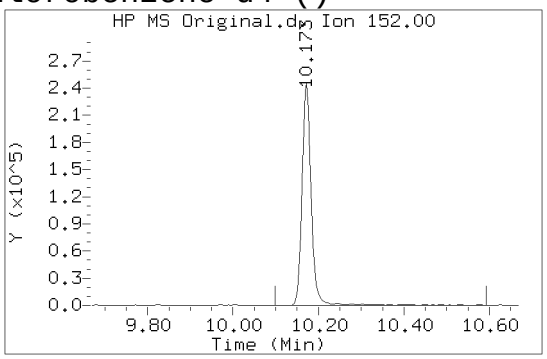
Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100918.d
Inj Date : 09-OCT-2023 21:16
InstruID : VOA9.i
LabSampID : HS23100159-08

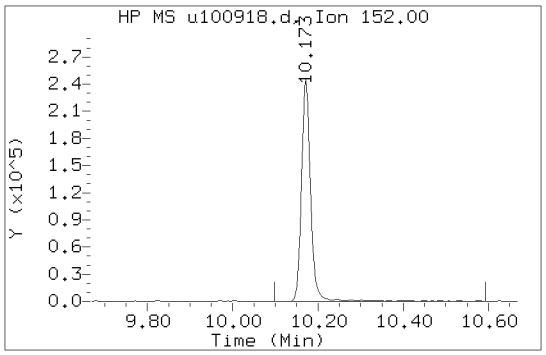
1,4-Dichlorobenzene-d4 ()

Reason Code:

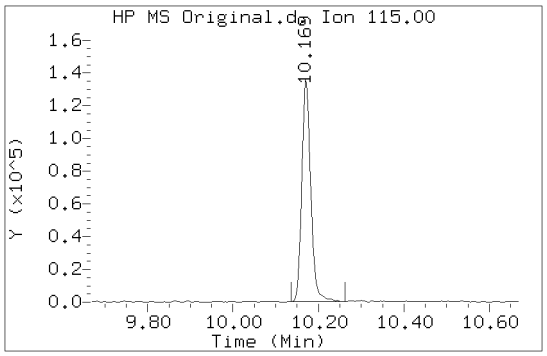
BEFORE
MASS
152
AREA
379104
HEIGHT
244864
10-Oct-2023
21:40



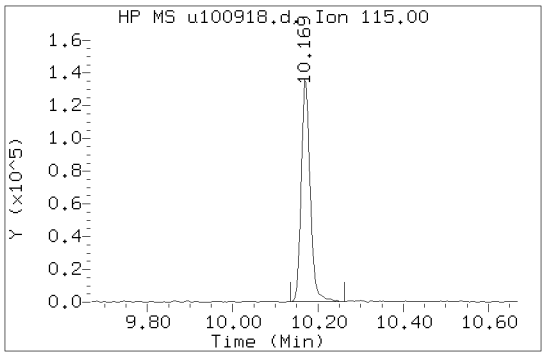
AFTER
MASS
152
AREA
379104
HEIGHT
244864
10-Oct-2023
21:40



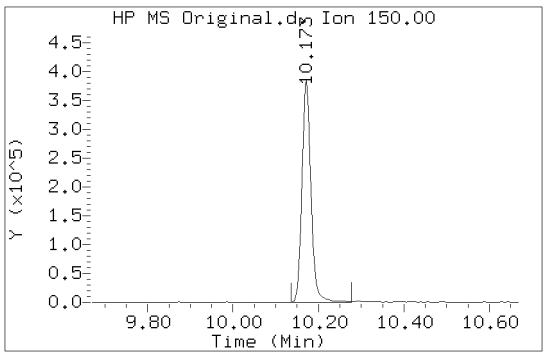
BEFORE
MASS
115
AREA
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HEIGHT
135483
10-Oct-2023
21:40



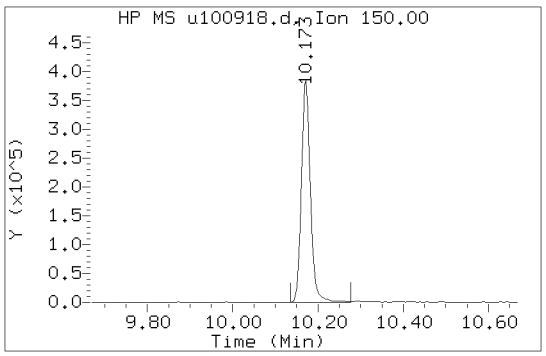
AFTER
MASS
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AREA
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HEIGHT
135483
10-Oct-2023
21:40



BEFORE
MASS
150
AREA
579047
HEIGHT
383975
10-Oct-2023
21:40



AFTER
MASS
150
AREA
579047
HEIGHT
383975
10-Oct-2023
21:40



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100919.D Page 1
Report Date: 10-Oct-2023 16:01

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100919.D
Lab Smp Id: HS23100159-09 Client Smp ID: HS23100159-09
Inj Date : 09-OCT-2023 21:38
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-09;HS23100159-09;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14

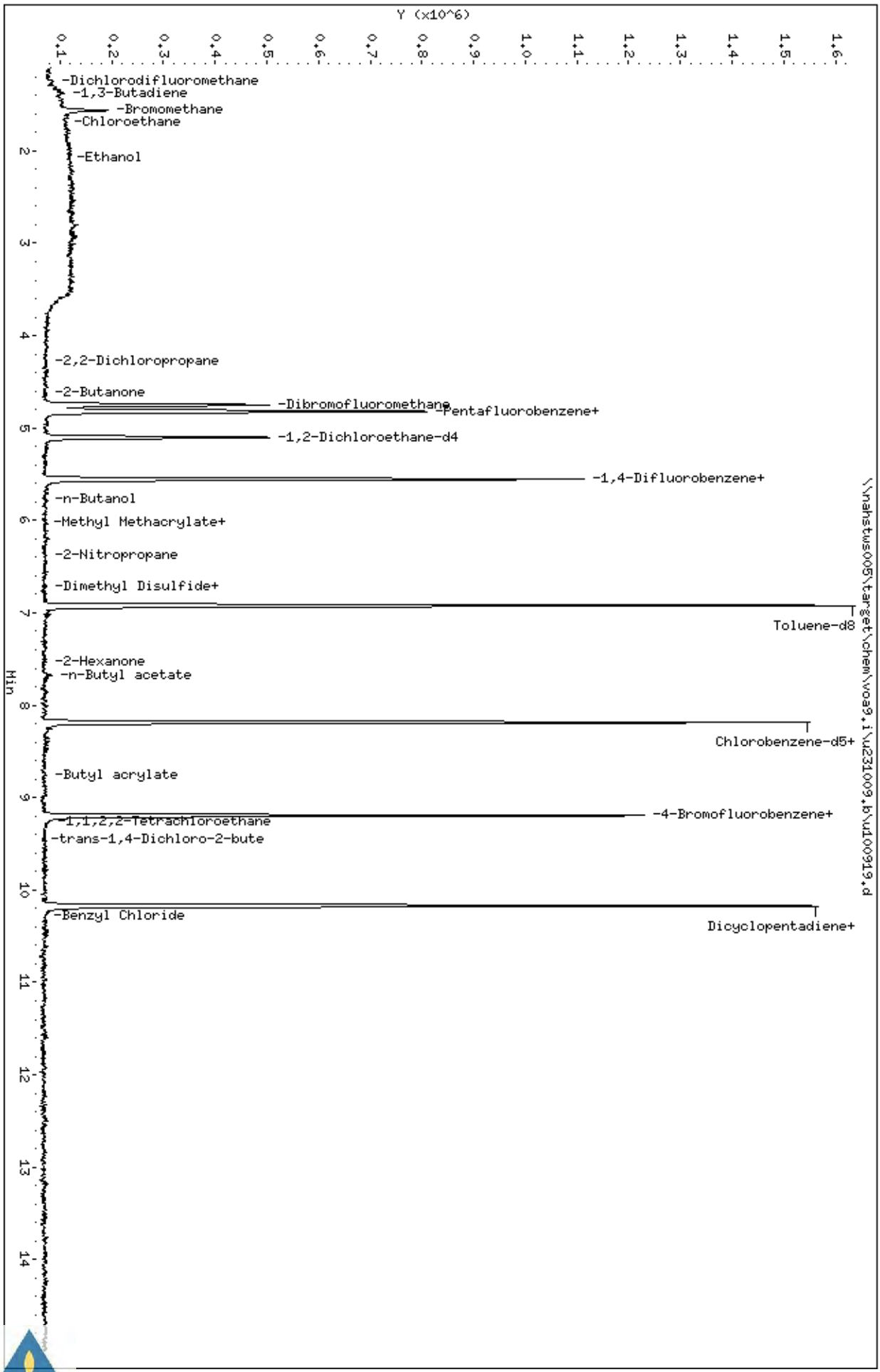
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	4.819	4.811	(1.000)	508265	50.0000		
$ 30 Dibromofluoromethane	113	4.752	4.744	(0.986)	227500	41.6413	41.64	
$ 35 1,2-Dichloroethane-d4	65	5.100	5.093	(1.058)	276590	42.8073	42.80	
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	780345	50.0000		
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	728066	50.0000		
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	945190	54.7012	54.70	
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	298756	43.8577	43.85	
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	379587	50.0000		(M)

QC Flag Legend

M - Compound response manually integrated.



Data File: \\nahstws005\target\chem\voa9,i\u231009,b\u100919,d
Date : 09-OCT-2023 21:38
Client ID: HS23100159-09
Sample Info: HS23100159-09;HS23100159-09;;;
Purge Volume: 5.0
Column phase: DB624

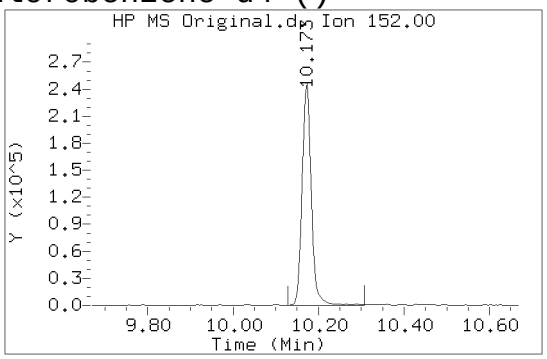
Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100919.d
Inj Date : 09-OCT-2023 21:38
InstruID : VOA9.i
LabSampID : HS23100159-09

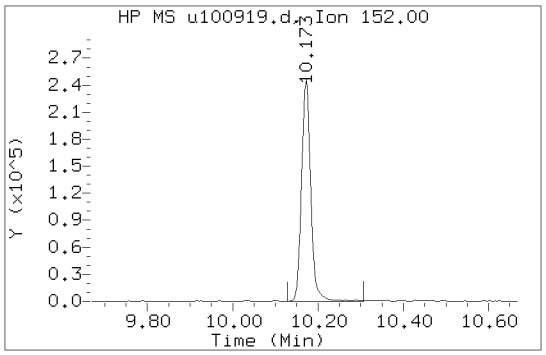
1,4-Dichlorobenzene-d4 ()

Reason Code:

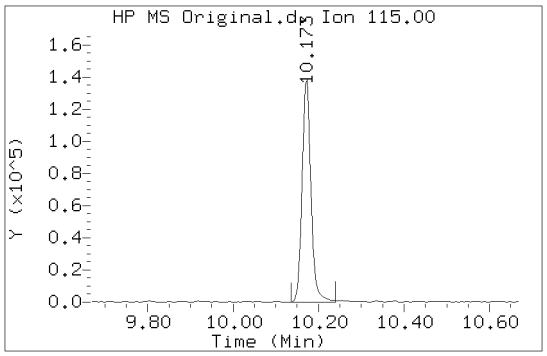
BEFORE
MASS
152
AREA
379587
HEIGHT
246004
10-Oct-2023
21:40



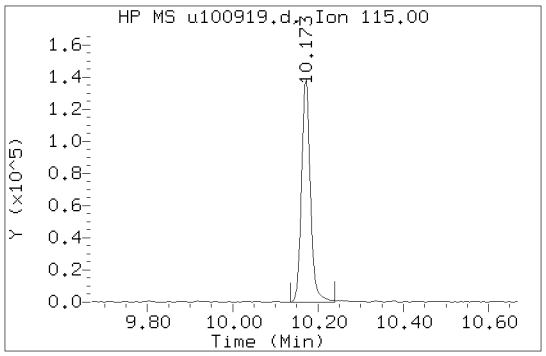
AFTER
MASS
152
AREA
379587
HEIGHT
246004
10-Oct-2023
21:40



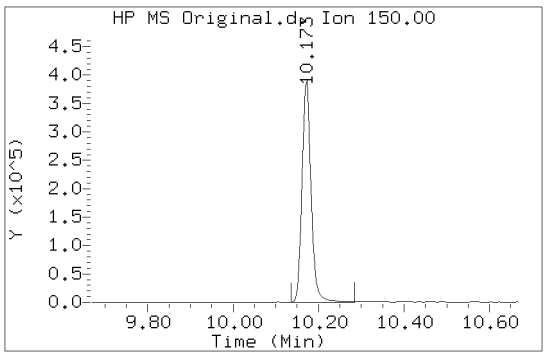
BEFORE
MASS
115
AREA
205766
HEIGHT
138240
10-Oct-2023
21:40



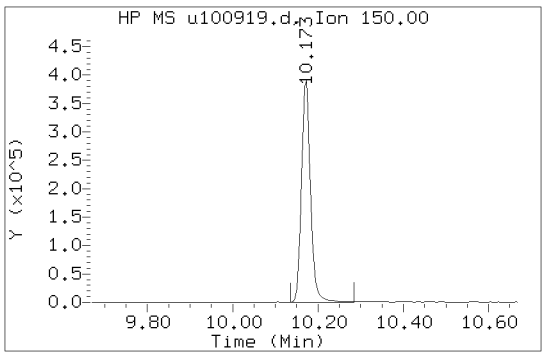
AFTER
MASS
115
AREA
205766
HEIGHT
138240
10-Oct-2023
21:40



BEFORE
MASS
150
AREA
589167
HEIGHT
389843
10-Oct-2023
21:40



AFTER
MASS
150
AREA
589167
HEIGHT
389843
10-Oct-2023
21:40



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100920.D Page 1
Report Date: 10-Oct-2023 16:03

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100920.D
Lab Smp Id: HS23100159-10 Client Smp ID: HS23100159-10
Inj Date : 09-OCT-2023 22:00
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-10;HS23100159-10;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14

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

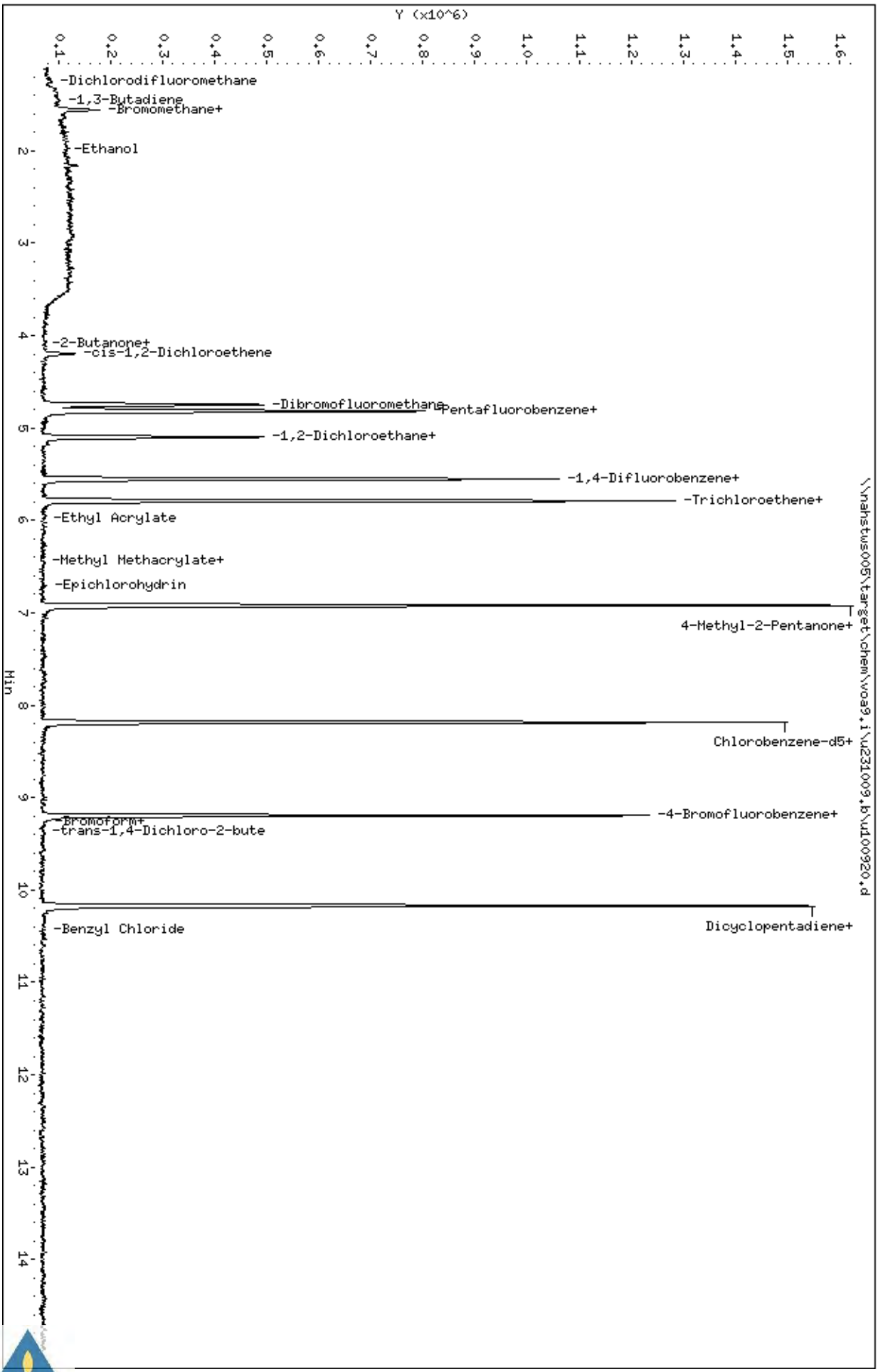
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.815	4.811	(1.000)	493524	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	225525	42.4749	42.47
$ 35 1,2-Dichloroethane-d4	65	5.096	5.093	(1.058)	275158	43.8361	43.83
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	778893	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	714883	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	939069	55.3492	55.34
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	293211	43.8382	43.83
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	372586	50.0000	(M)
27 cis-1,2-Dichloroethene	96	4.200	4.193	(0.872)	28581	4.56825	4.56(a)
33 1,2-Dichloroethane	62	5.171	5.171	(0.931)	5719	0.74241	0.74(a)
38 Trichloroethene	130	5.790	5.786	(1.043)	361731	67.2884	67.28

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\voa9.i\u231009.b\u100920.d
Date : 09-OCT-2023 22:00
Client ID: HS23100159-10
Sample Info: HS23100159-10;HS23100159-10;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100920.d Page 2

Date : 09-OCT-2023 22:00

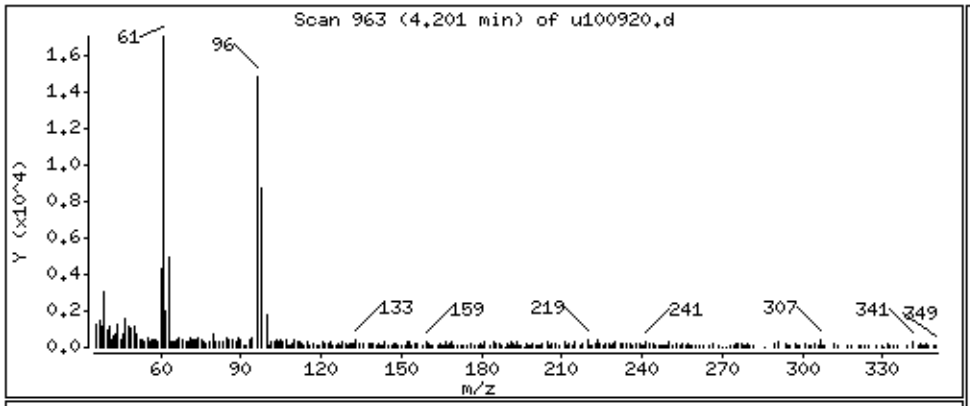
Client ID: HS23100159-10 Instrument: VOA9.i

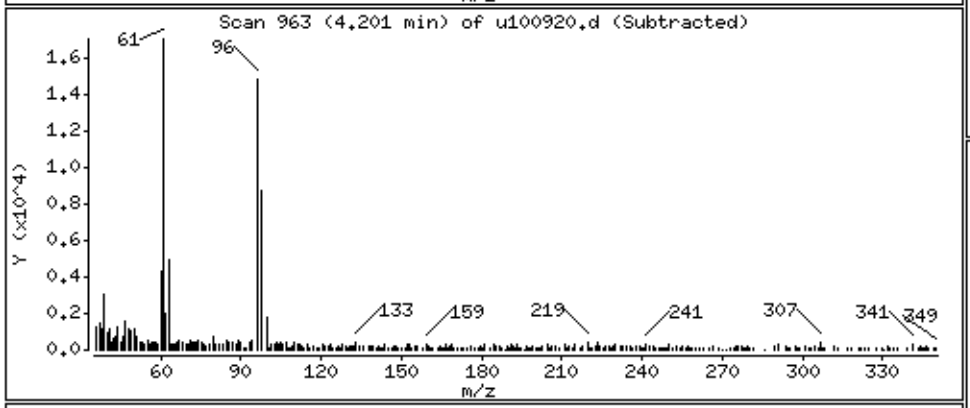
Sample Info: HS23100159-10;HS23100159-10;;;

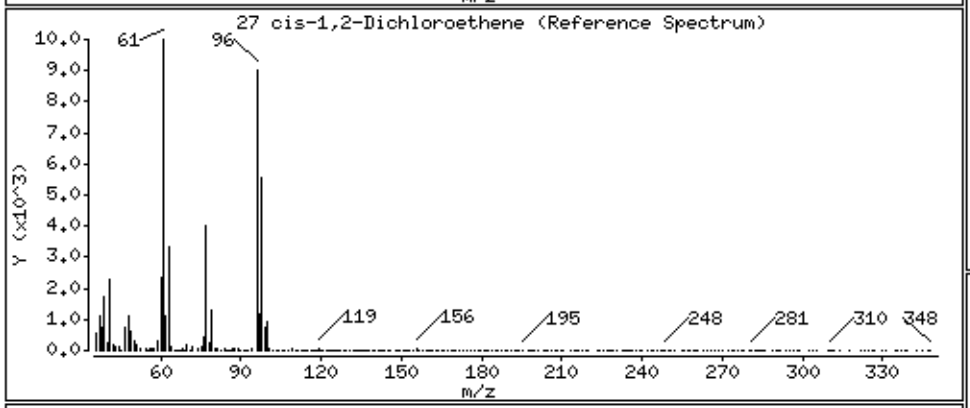
Purge Volume: 5.0 Operator: PC

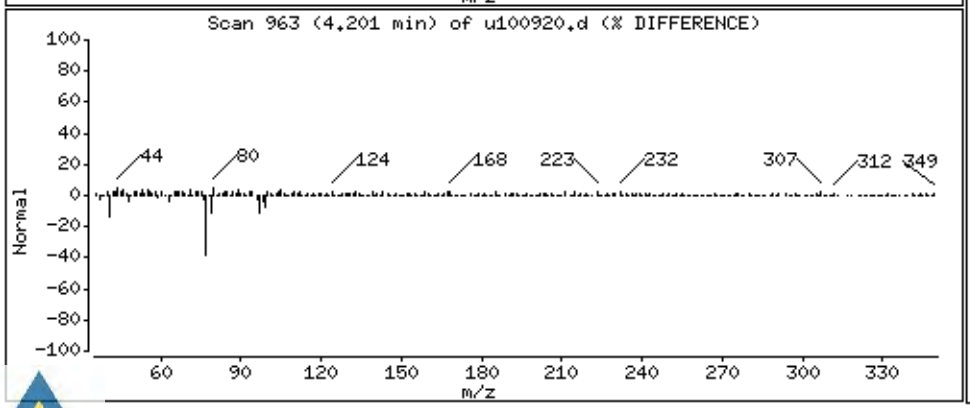
Column phase: DB624 Column diameter: 0.18

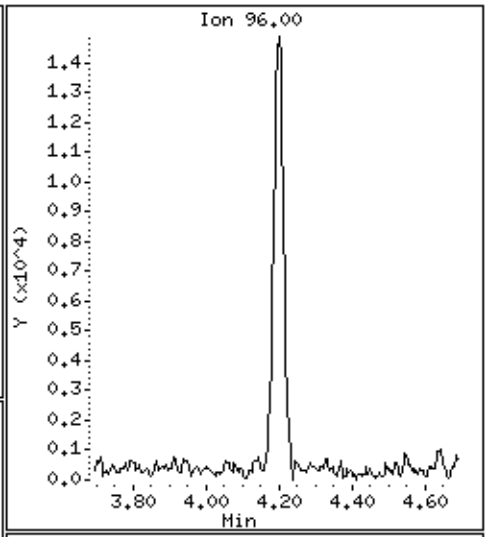
27 cis-1,2-Dichloroethene Concentration: 4.56 ug/l

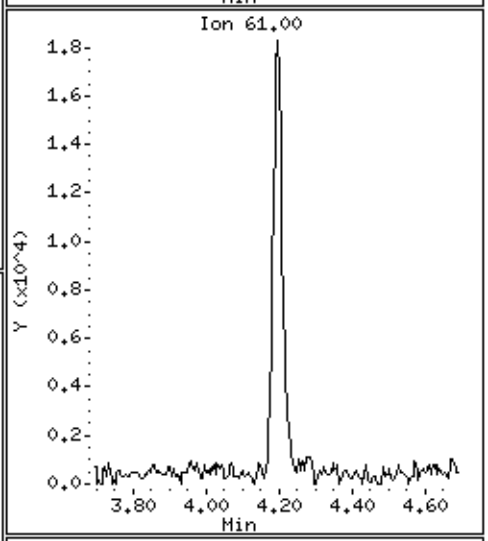


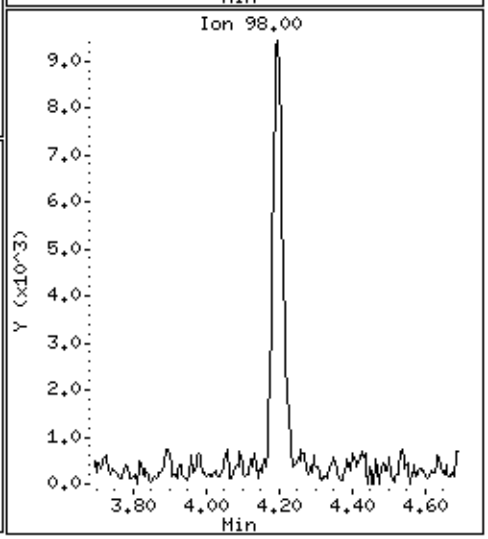












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100920.d Page 3

Date : 09-OCT-2023 22:00

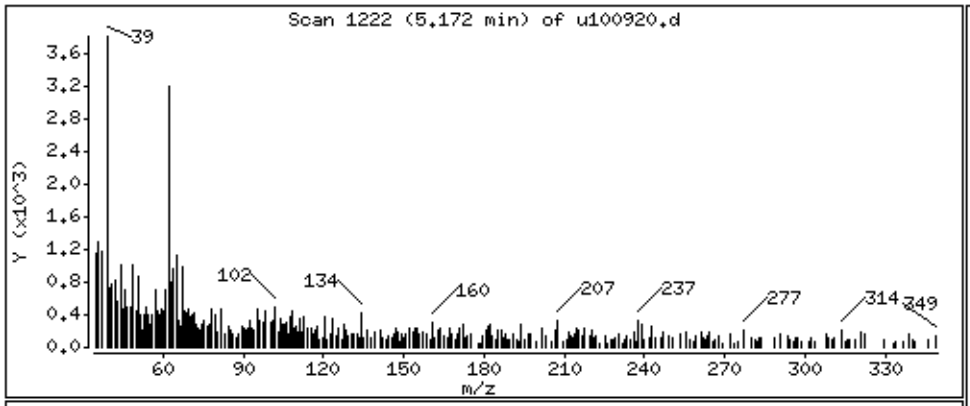
Client ID: HS23100159-10 Instrument: VOA9.i

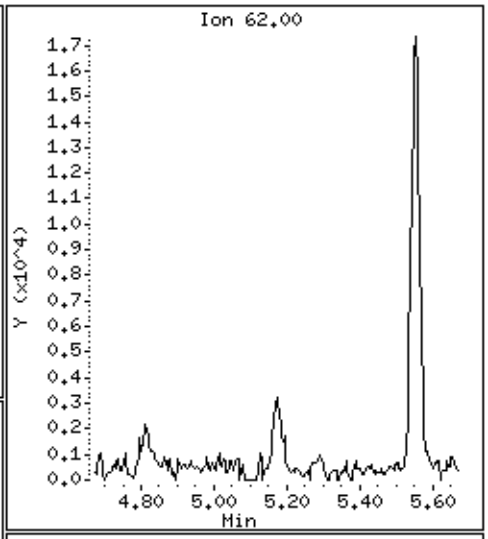
Sample Info: HS23100159-10;HS23100159-10;;;

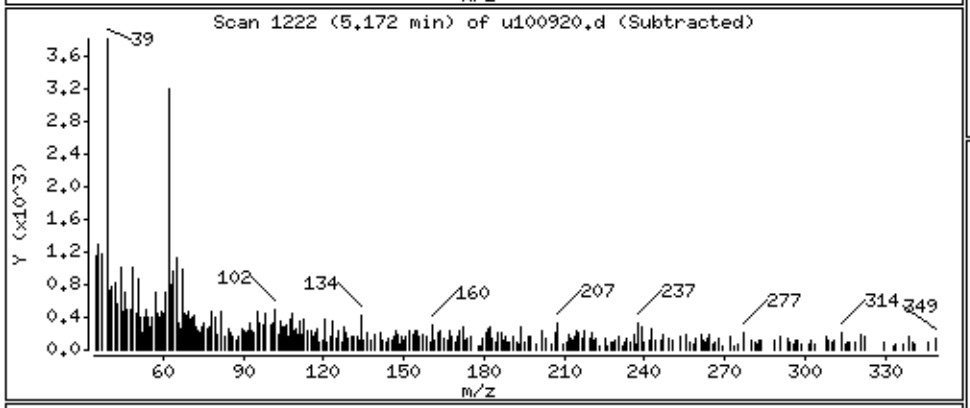
Purge Volume: 5.0 Operator: PC

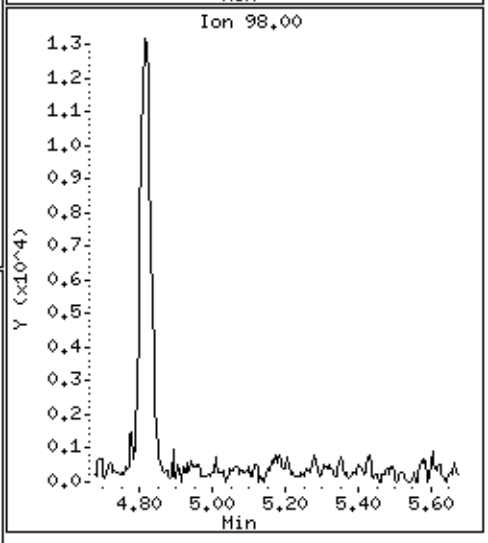
Column phase: DB624 Column diameter: 0.18

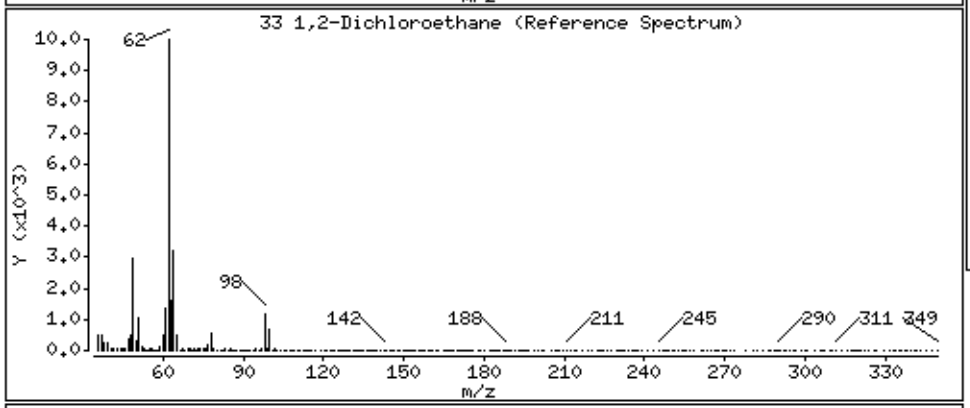
33 1,2-Dichloroethane Concentration: 0.74 ug/l

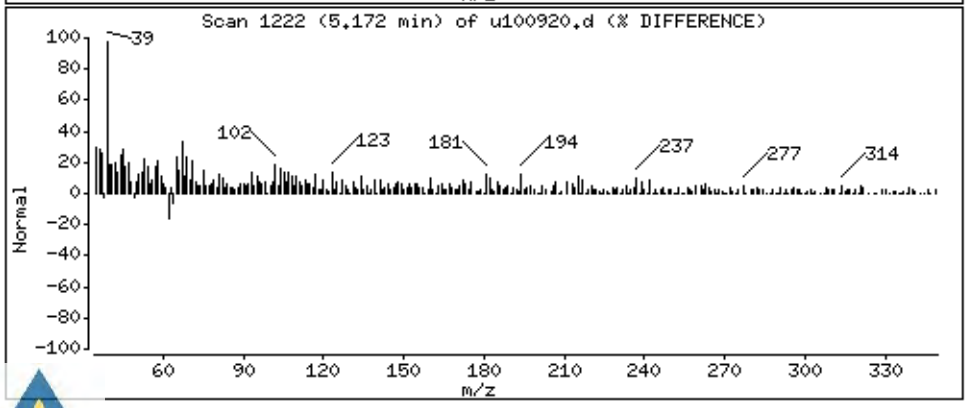












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100920.d Page 4

Date : 09-OCT-2023 22:00

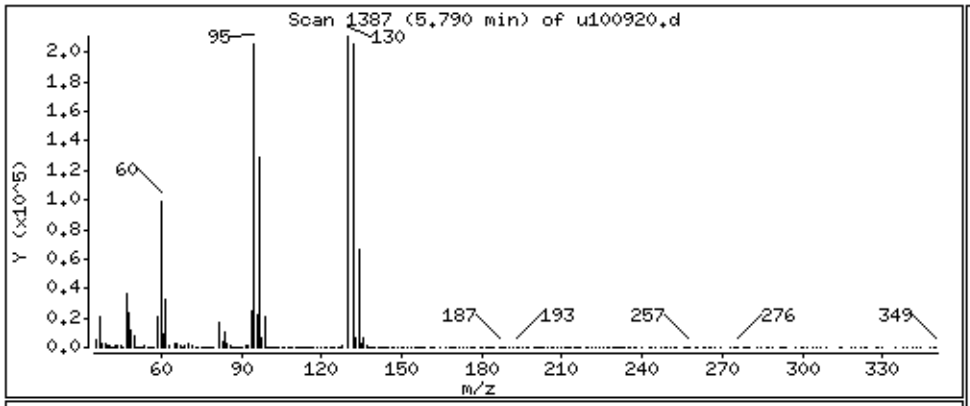
Client ID: HS23100159-10 Instrument: VOA9.i

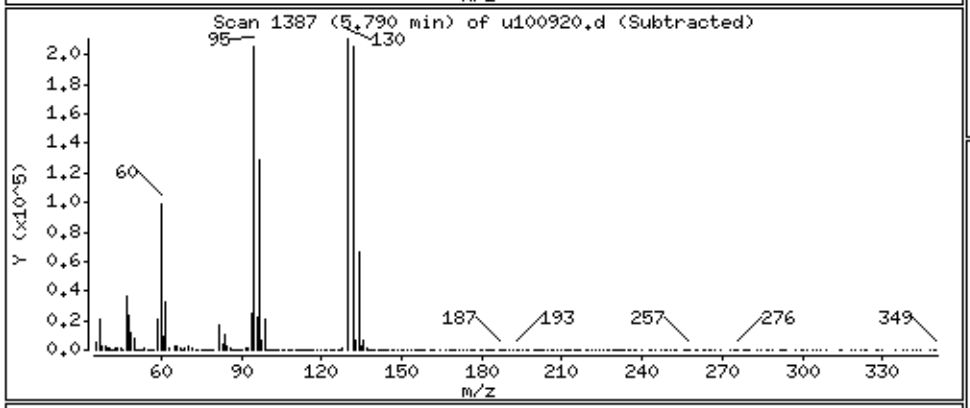
Sample Info: HS23100159-10;HS23100159-10;;;

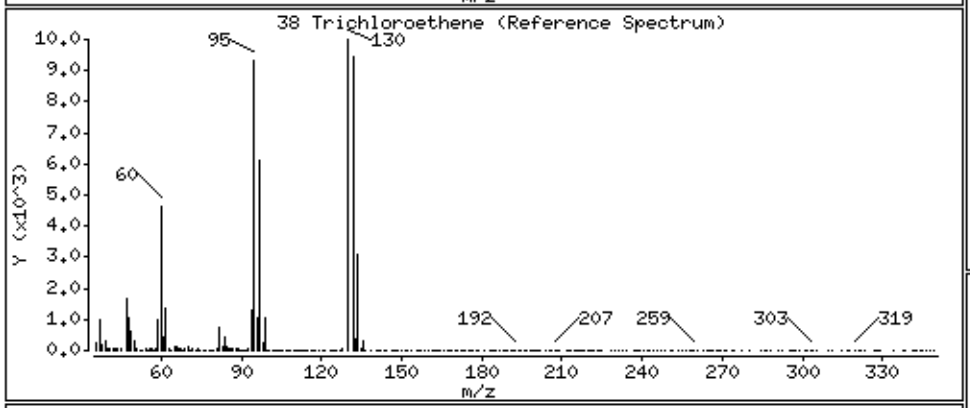
Purge Volume: 5.0 Operator: PC

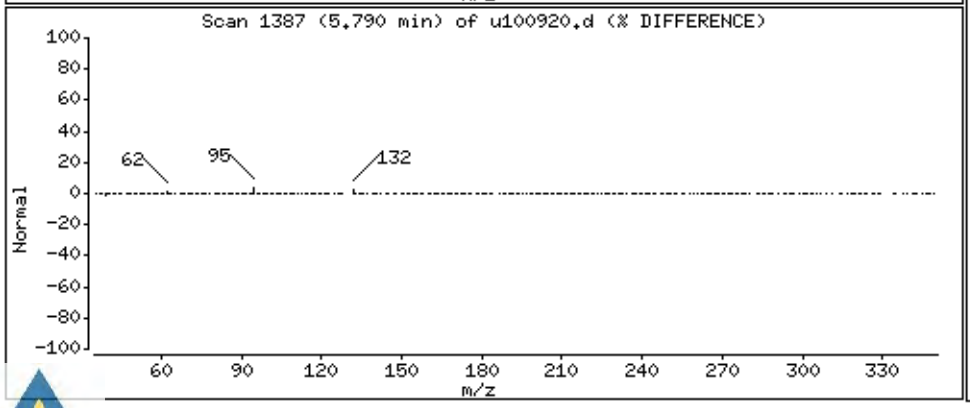
Column phase: DB624 Column diameter: 0.18

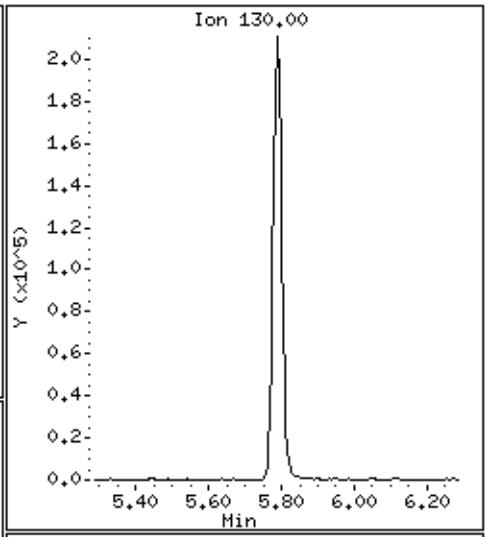
38 Trichloroethene Concentration: 67.28 ug/l

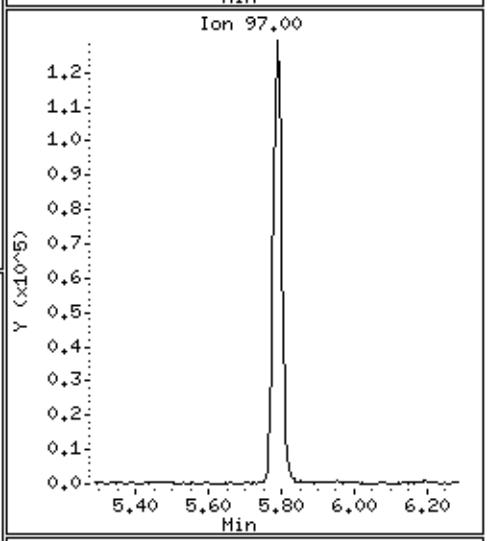


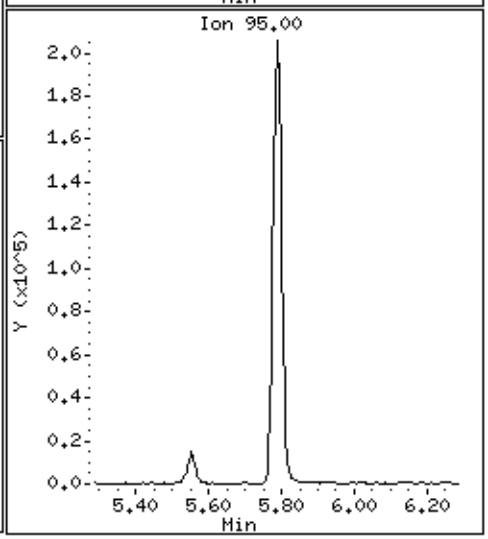










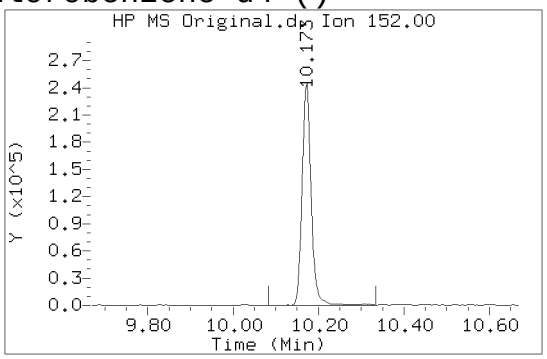


Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100920.d
Inj Date : 09-OCT-2023 22:00
InstruID : VOA9.i
LabSampID : HS23100159-10

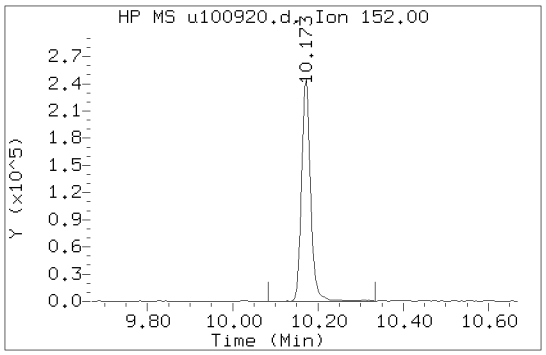
1,4-Dichlorobenzene-d4 ()

Reason Code:

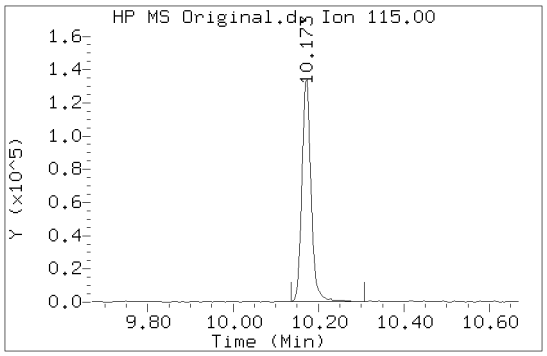
BEFORE
MASS
152
AREA
372586
HEIGHT
244544
10-Oct-2023
21:41



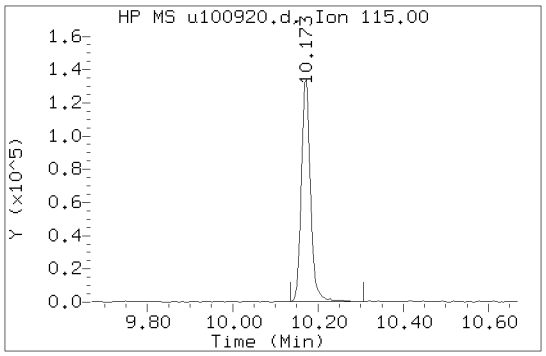
AFTER
MASS
152
AREA
372586
HEIGHT
244544
10-Oct-2023
21:41



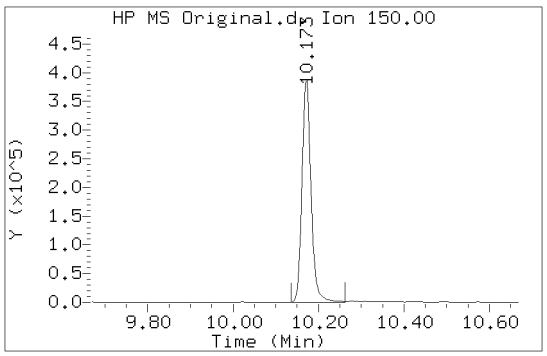
BEFORE
MASS
115
AREA
205205
HEIGHT
133546
10-Oct-2023
21:41



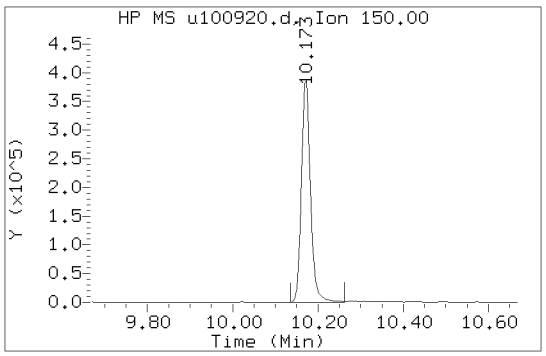
AFTER
MASS
115
AREA
205205
HEIGHT
133546
10-Oct-2023
21:41



BEFORE
MASS
150
AREA
583762
HEIGHT
385559
10-Oct-2023
21:41



AFTER
MASS
150
AREA
583762
HEIGHT
385559
10-Oct-2023
21:41



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100921.D Page 1
Report Date: 10-Oct-2023 16:04

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100921.D
Lab Smp Id: HS23100159-15 Client Smp ID: HS23100159-15
Inj Date : 09-OCT-2023 22:23
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-15;HS23100159-15;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14

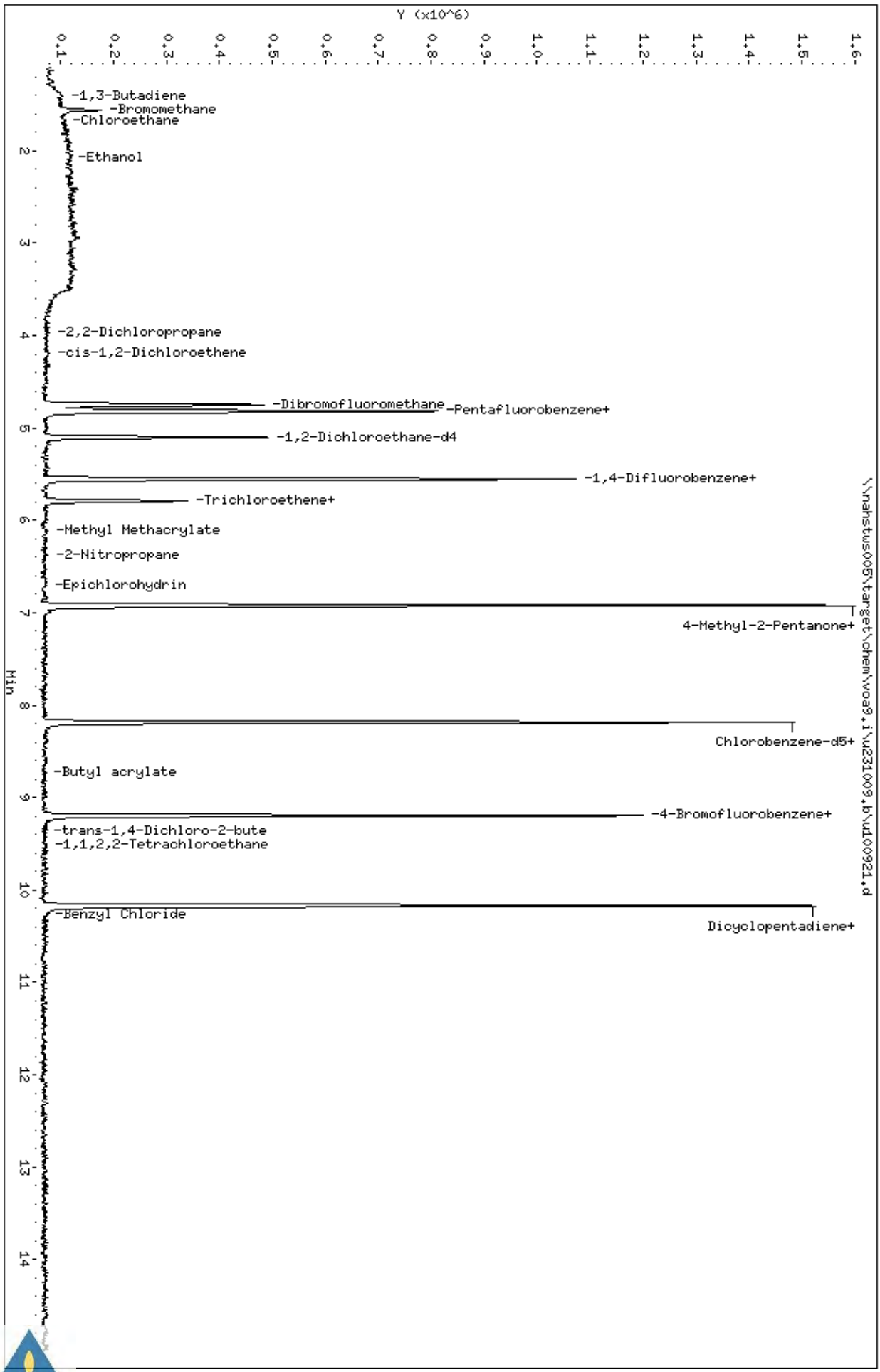
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	4.819	4.811	(1.000)	495230	50.0000	
$ 30 Dibromofluoromethane	113	4.751	4.744	(0.986)	214649	40.3767	40.37
$ 35 1,2-Dichloroethane-d4	65	5.100	5.093	(1.058)	261968	41.6341	41.63
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	767459	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	717930	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	914141	53.6513	53.65
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	288036	42.9152	42.91
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	373728	50.0000	(M)
27 cis-1,2-Dichloroethene	96	4.193	4.193	(0.870)	4365	0.69528	0.69(a)
38 Trichloroethene	130	5.790	5.786	(1.043)	78671	14.8522	14.85

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\voa9,i\u231009,b\u100921,d
Date : 09-OCT-2023 22:23
Client ID: HS23100159-15
Sample Info: HS23100159-15;HS23100159-15;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100921.d Page 2

Date : 09-OCT-2023 22:23

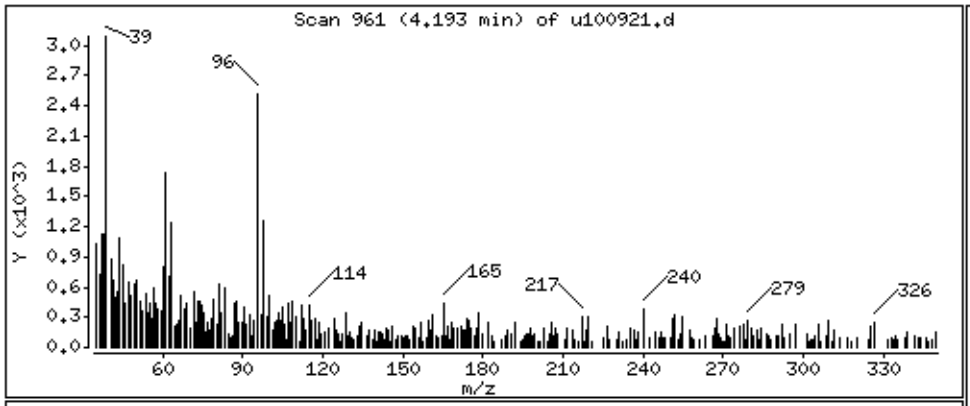
Client ID: HS23100159-15 Instrument: VOA9.i

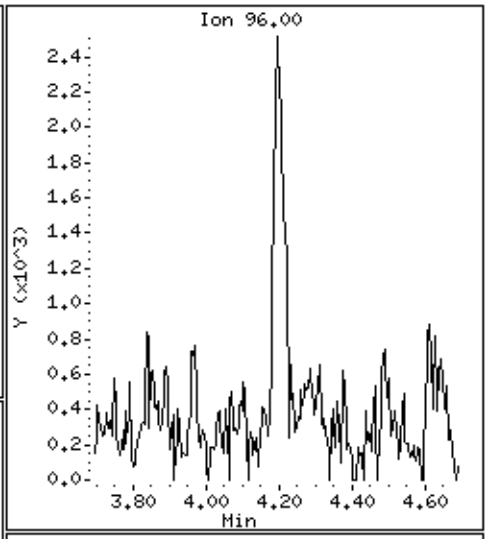
Sample Info: HS23100159-15;HS23100159-15;;;

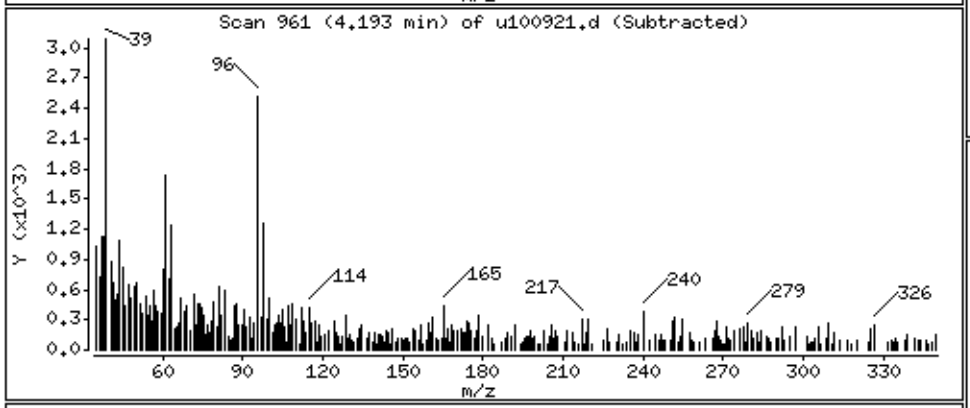
Purge Volume: 5.0 Operator: PC

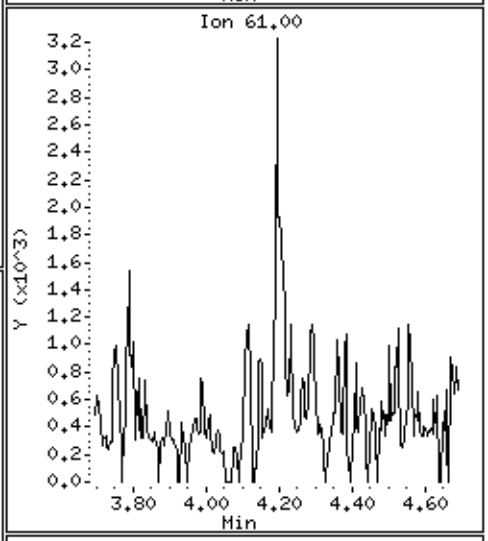
Column phase: DB624 Column diameter: 0.18

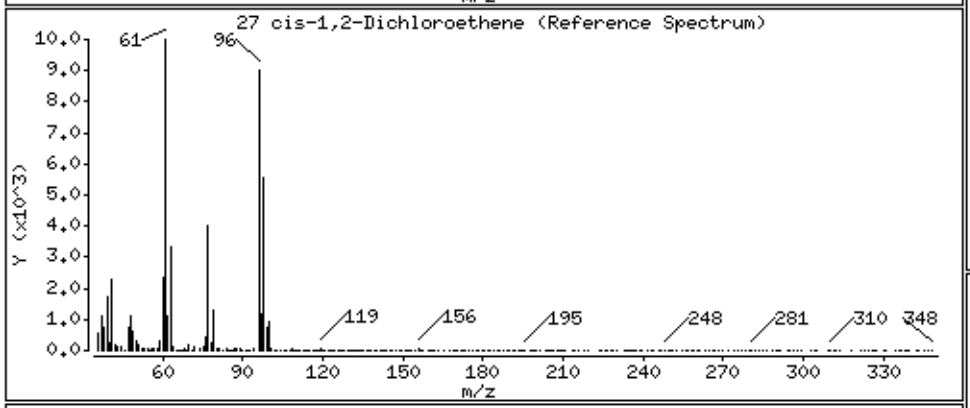
27 cis-1,2-Dichloroethene Concentration: 0.69 ug/l

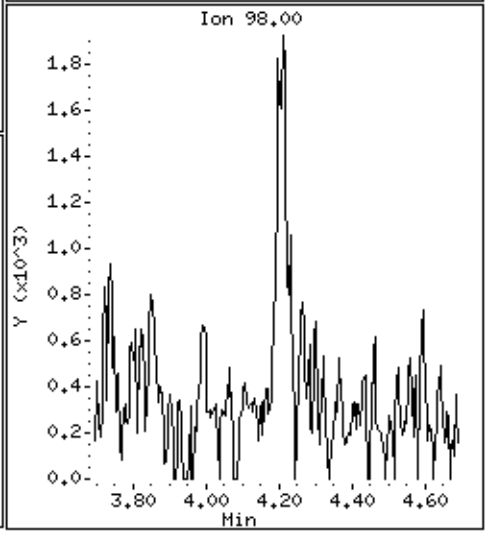


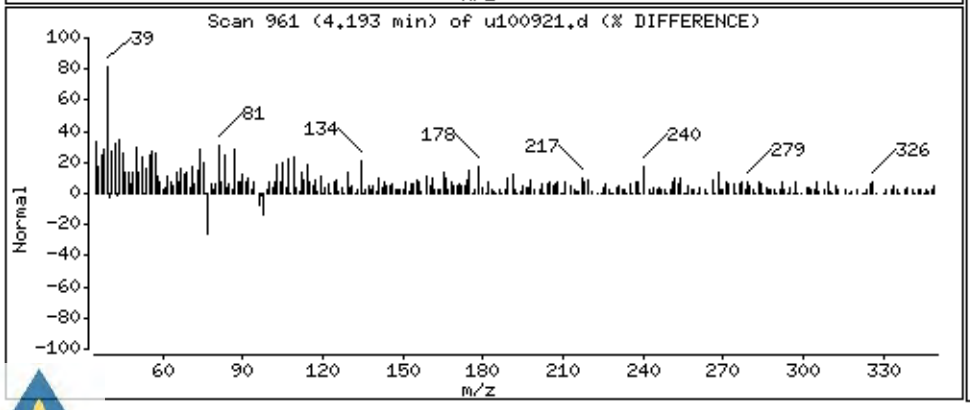












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100921.d Page 3

Date : 09-OCT-2023 22:23

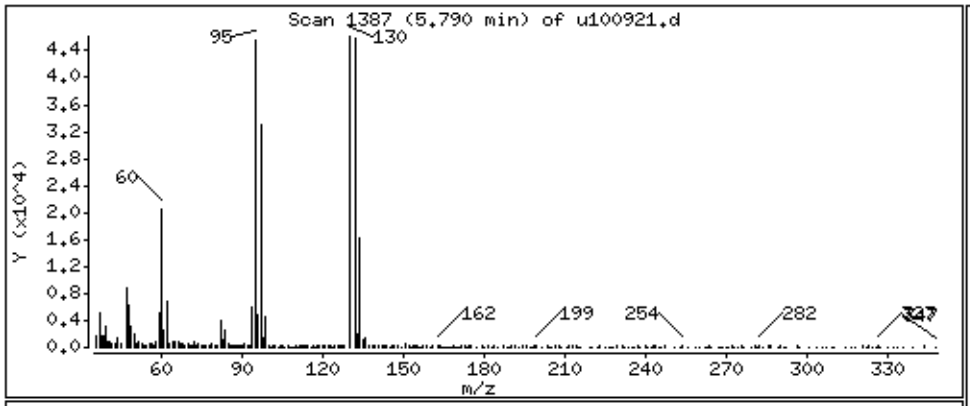
Client ID: HS23100159-15 Instrument: VOA9.i

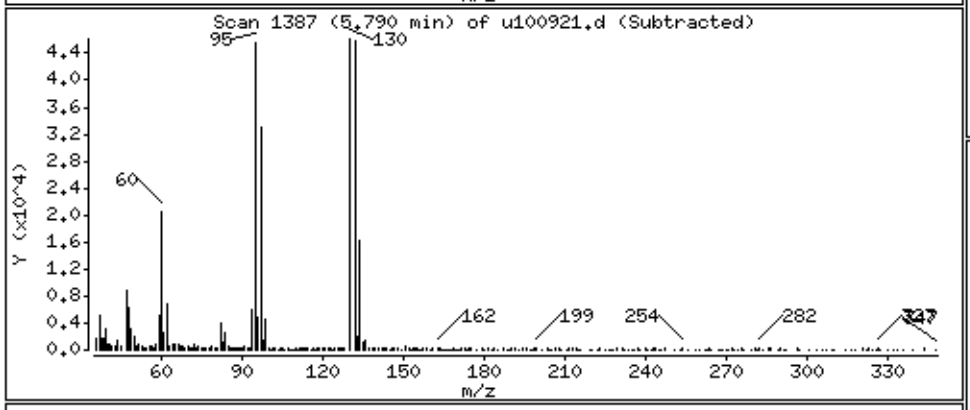
Sample Info: HS23100159-15;HS23100159-15;;;

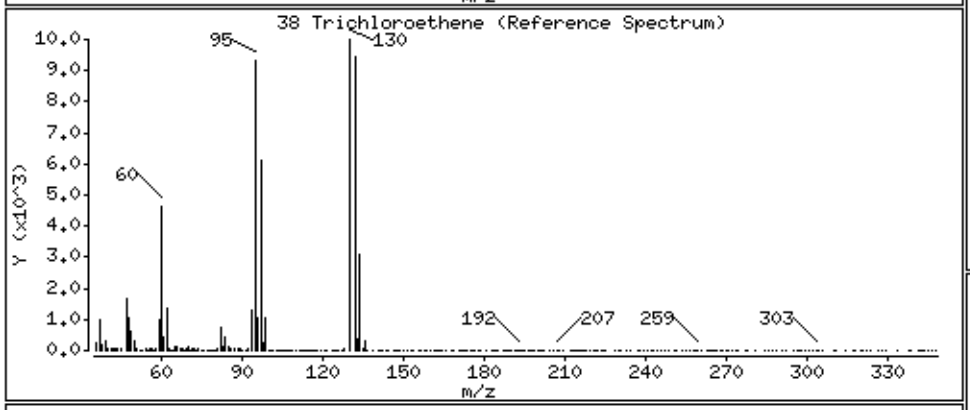
Purge Volume: 5.0 Operator: PC

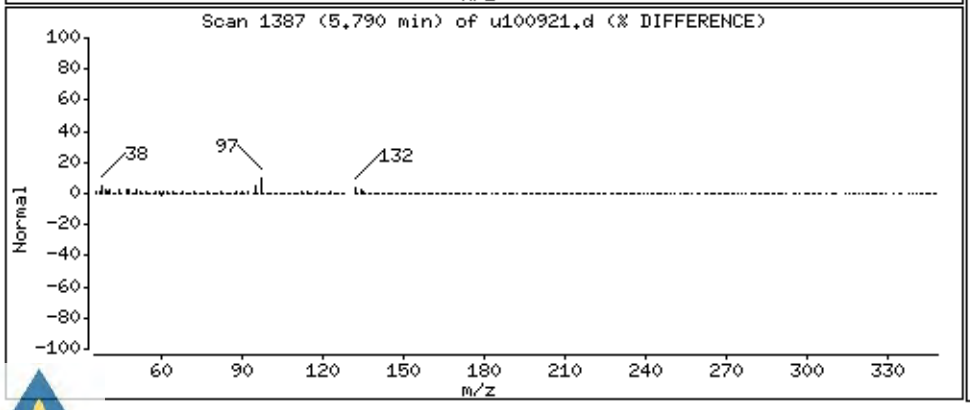
Column phase: DB624 Column diameter: 0.18

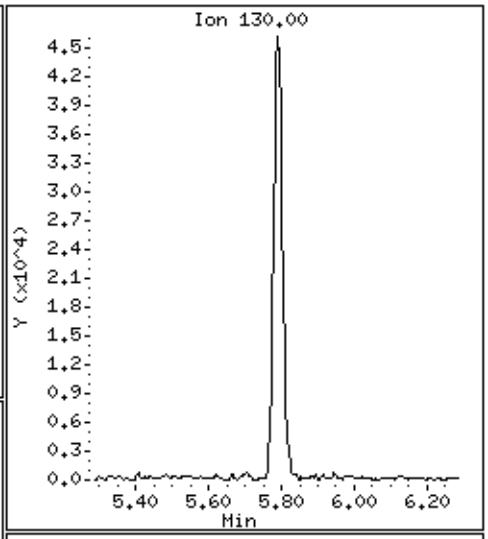
38 Trichloroethene Concentration: 14.85 ug/l

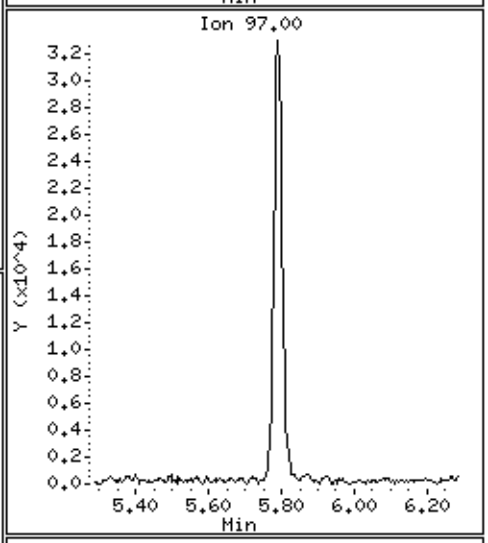


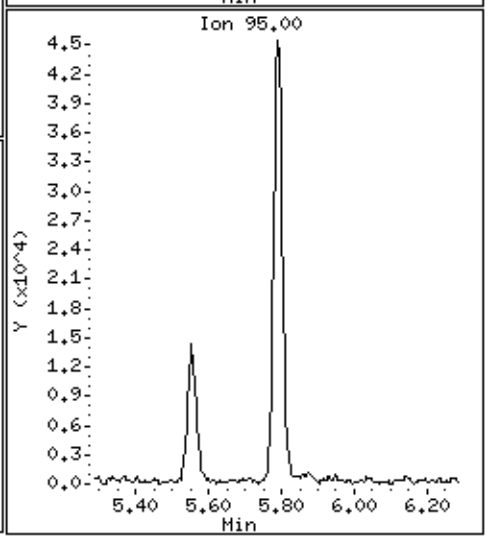










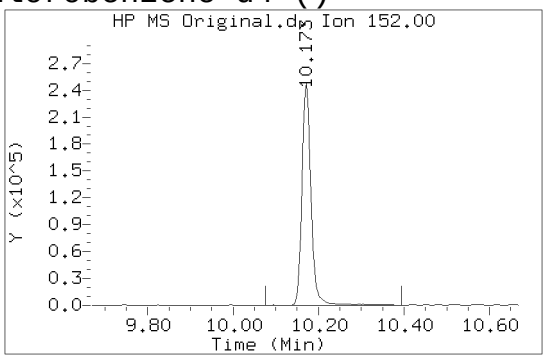


Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100921.d
Inj Date : 09-OCT-2023 22:23
InstruID : VOA9.i
LabSampID : HS23100159-15

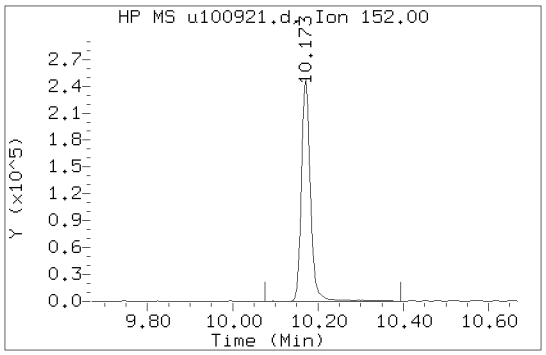
1,4-Dichlorobenzene-d4 ()

Reason Code:

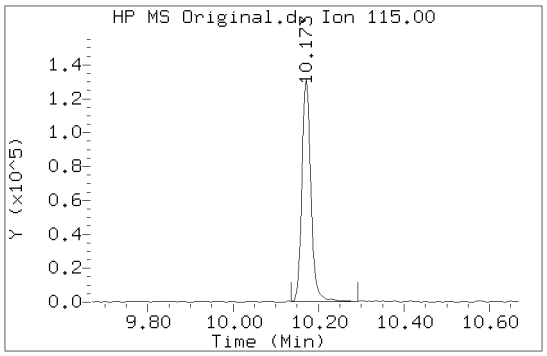
BEFORE
MASS
152
AREA
373728
HEIGHT
247488
10-Oct-2023
21:41



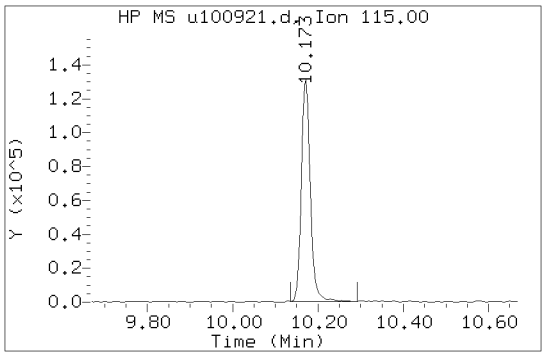
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10-Oct-2023
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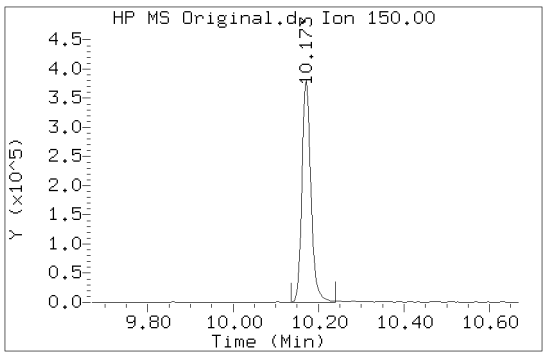
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MASS
115
AREA
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HEIGHT
130660
10-Oct-2023
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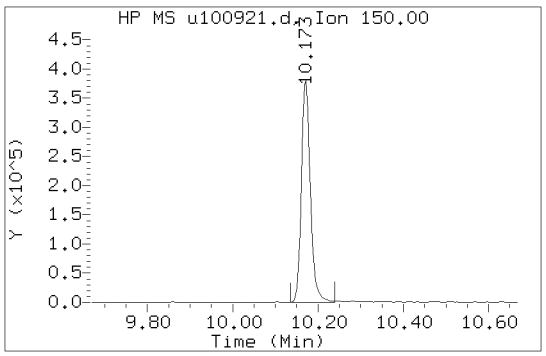
AFTER
MASS
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AREA
194500
HEIGHT
130660
10-Oct-2023
21:41



BEFORE
MASS
150
AREA
565511
HEIGHT
379876
10-Oct-2023
21:41



AFTER
MASS
150
AREA
565511
HEIGHT
379876
10-Oct-2023
21:41



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100922.D Page 1
Report Date: 10-Oct-2023 16:05

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100922.D
Lab Smp Id: HS23100159-06 Client Smp ID: HS23100159-06
Inj Date : 09-OCT-2023 22:45
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-06;HS23100159-06;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 20
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

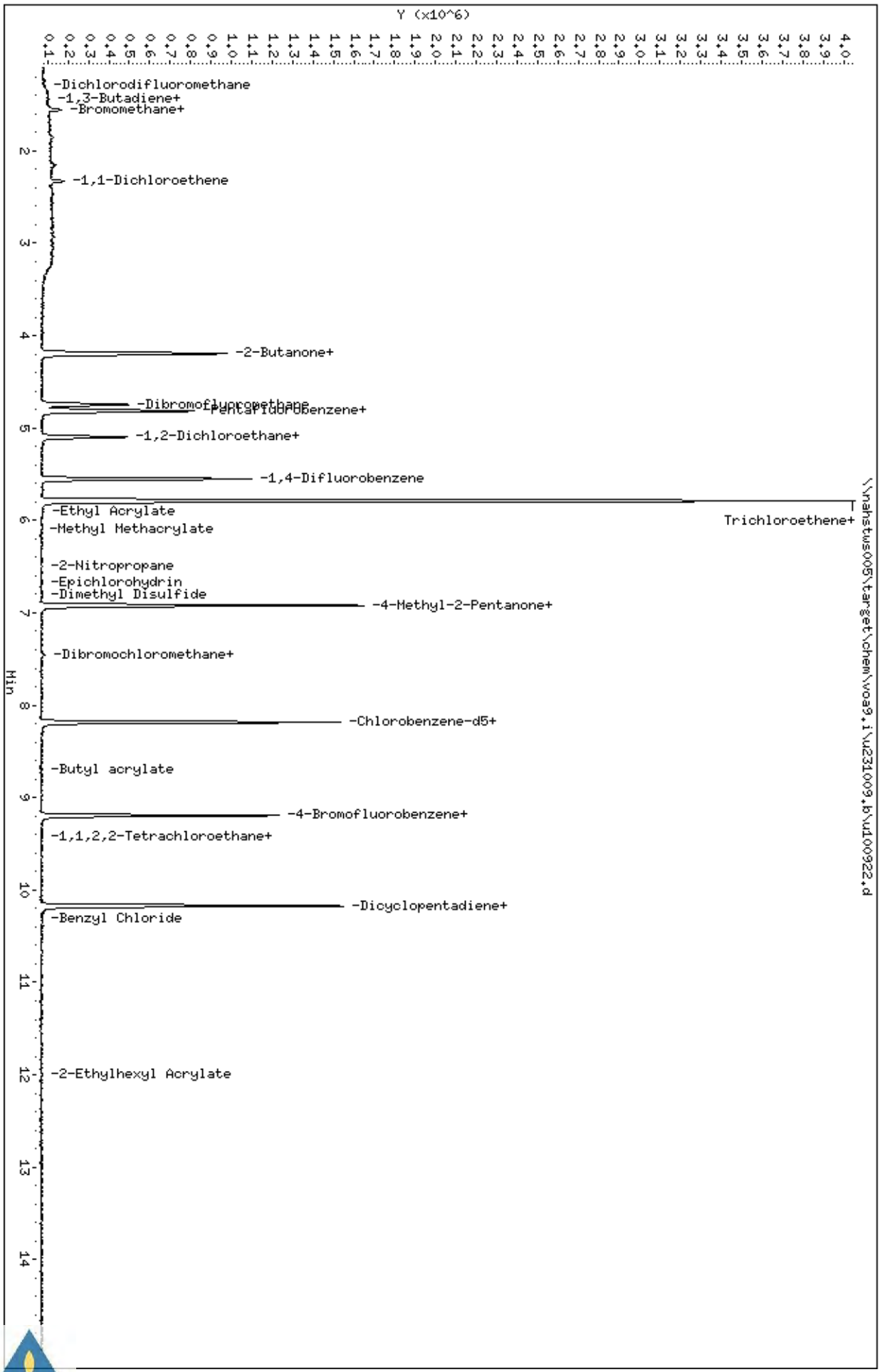
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.815	4.811	(1.000)	514303	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	238061	43.0000	43.00
$ 35 1,2-Dichloroethane-d4	65	5.096	5.093	(1.058)	272537	41.7061	41.70
* 36 1,4-Difluorobenzene	114	5.550	5.550	(1.000)	796248	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	725667	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	950074	55.1657	55.16
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	296813	43.7215	43.72
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	379532	50.0000	(M)
11 1,1-Dichloroethene	96	2.330	2.330	(0.484)	26574	2.58813	2.58(a)
27 cis-1,2-Dichloroethene	96	4.193	4.193	(0.871)	446949	68.5519	68.55
33 1,2-Dichloroethane	62	5.179	5.171	(0.933)	7336	0.93156	0.93(a)
38 Trichloroethene	130	5.786	5.786	(1.043)	1152005	209.623	209.62(A)
56 Tetrachloroethene	164	7.454	7.454	(0.911)	3338	0.88630	0.88(a)

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.

M - Compound response manually integrated.



Data File: \\nahstws005\target\chem\voa9,i\u231009,b\u100922,d
Date : 09-OCT-2023 22:45
Client ID: HS23100159-06
Sample Info: HS23100159-06;HS23100159-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100922.d Page 2

Date : 09-OCT-2023 22:45

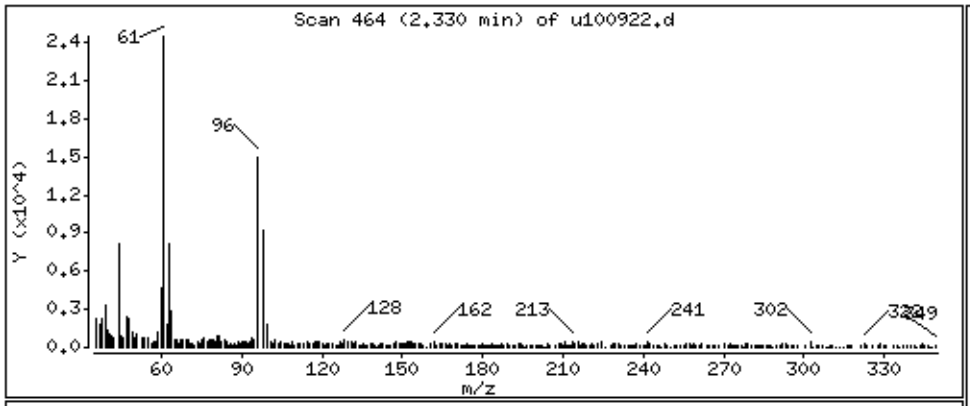
Client ID: HS23100159-06 Instrument: VOA9.i

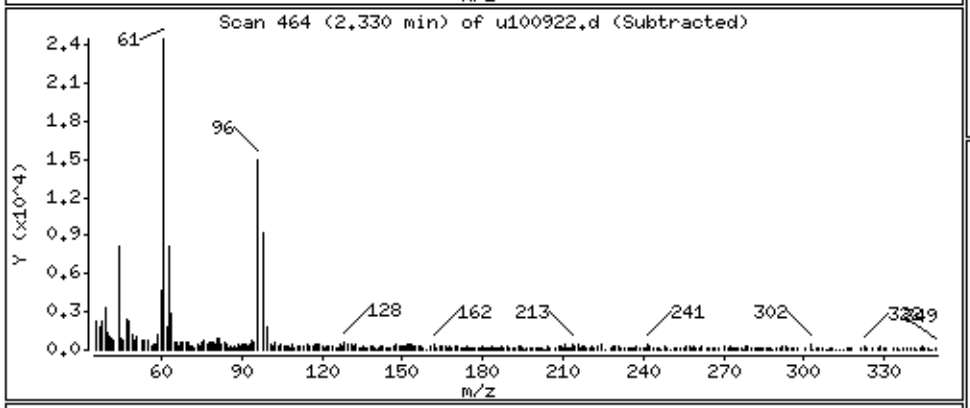
Sample Info: HS23100159-06;HS23100159-06;;;

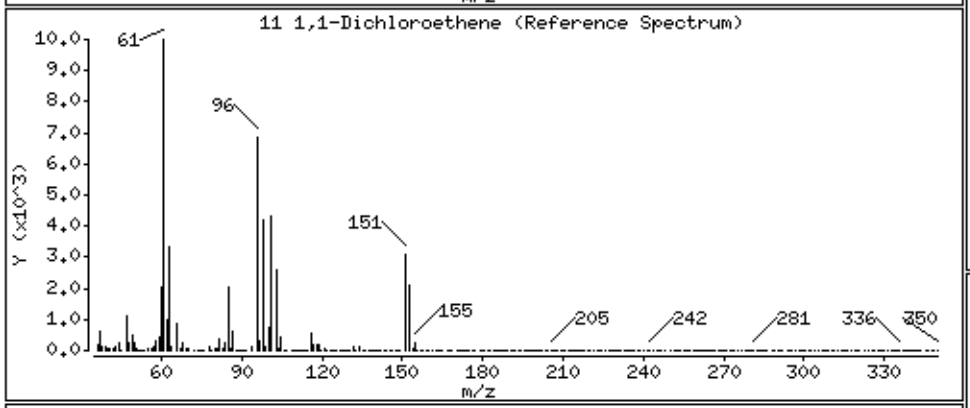
Purge Volume: 5.0 Operator: PC

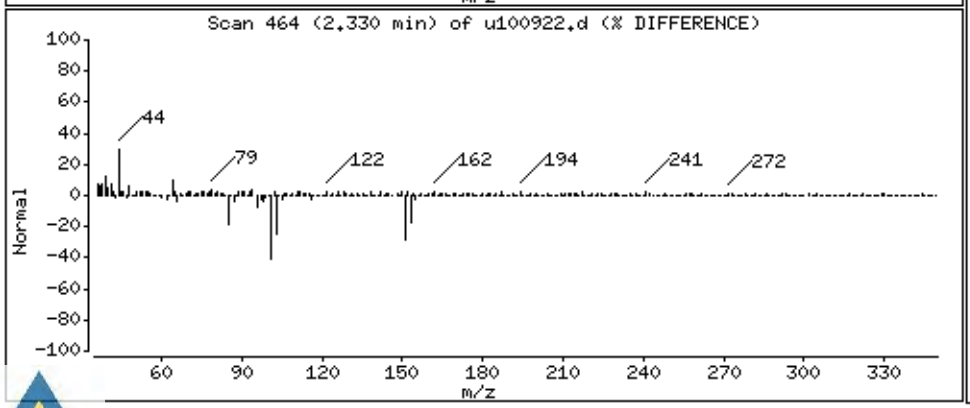
Column phase: DB624 Column diameter: 0.18

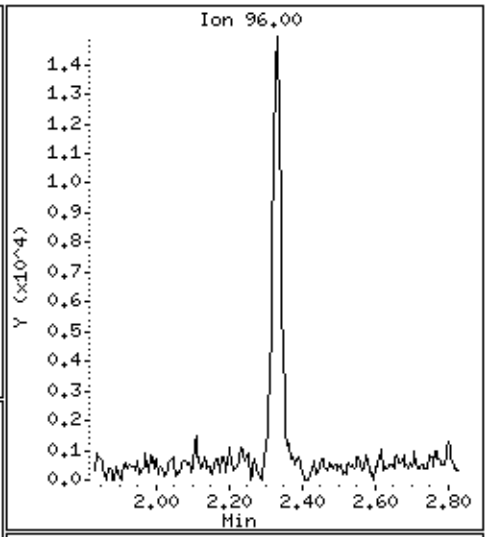
11 1,1-Dichloroethene Concentration: 2.58 ug/l

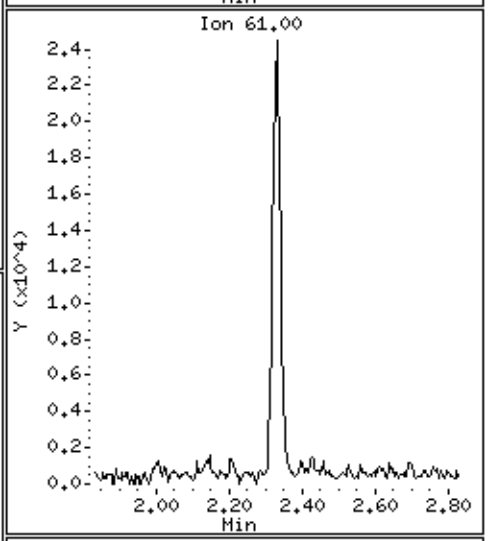


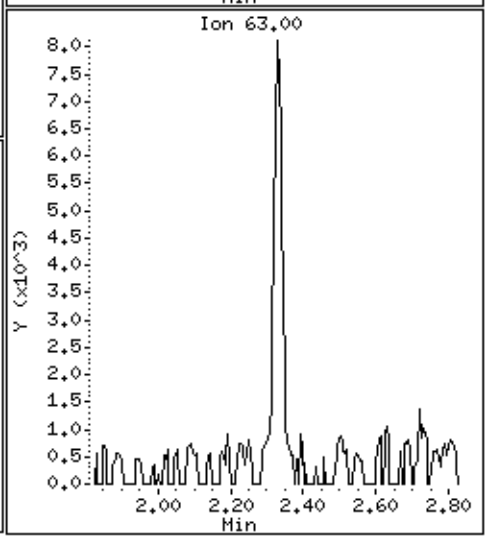












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100922.d Page 3

Date : 09-OCT-2023 22:45

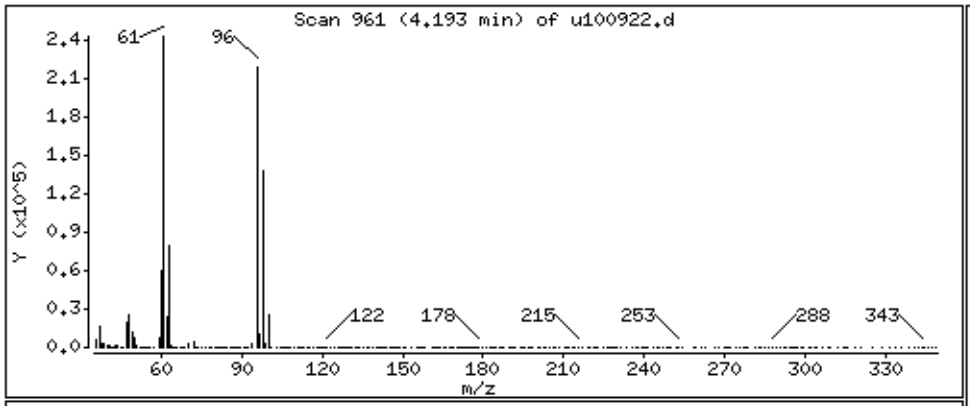
Client ID: HS23100159-06 Instrument: VOA9.i

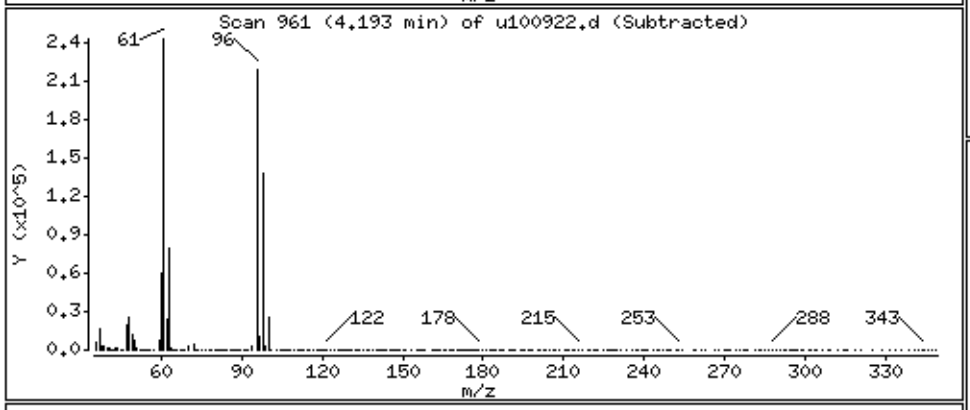
Sample Info: HS23100159-06;HS23100159-06;;;

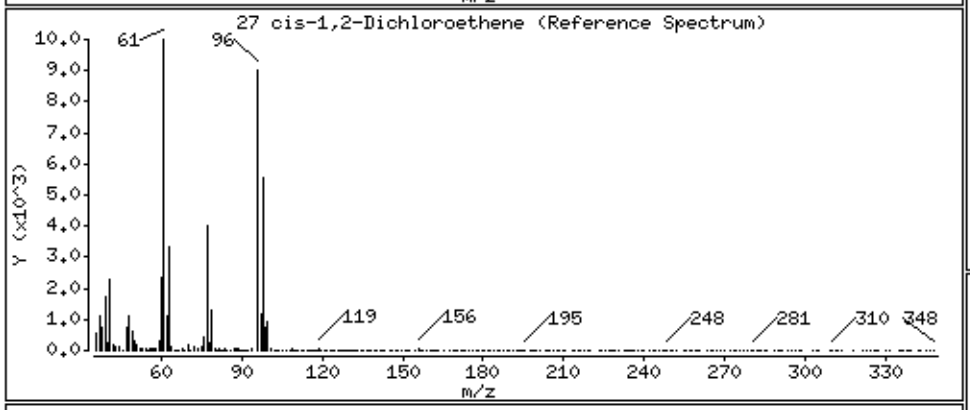
Purge Volume: 5.0 Operator: PC

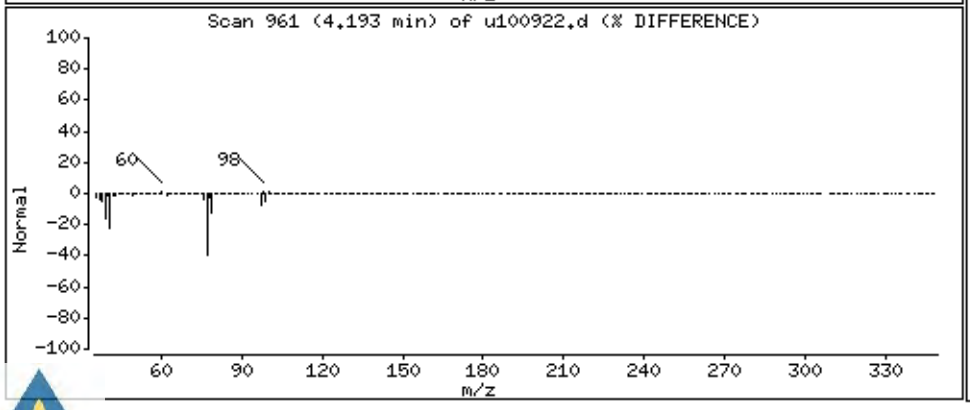
Column phase: DB624 Column diameter: 0.18

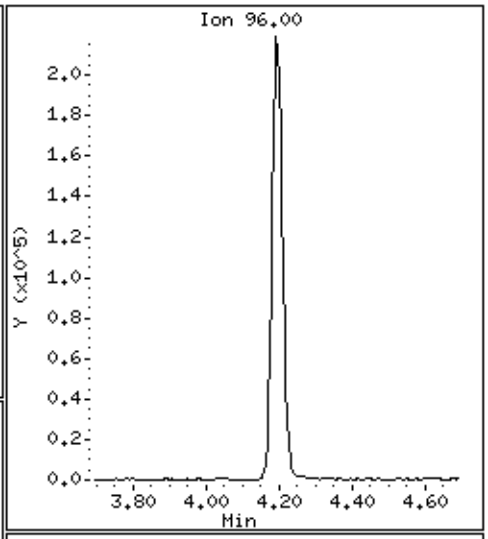
27 cis-1,2-Dichloroethene Concentration: 68.55 ug/l

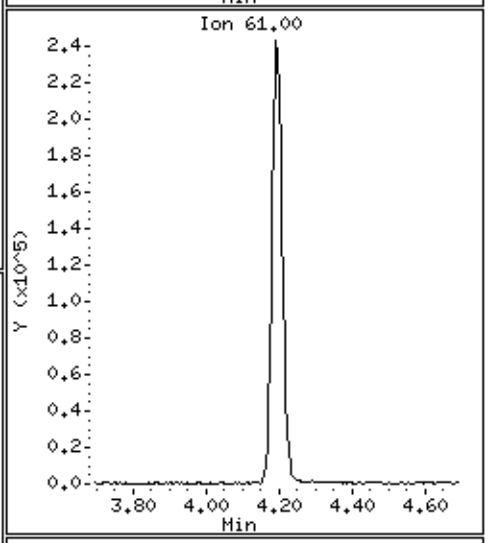


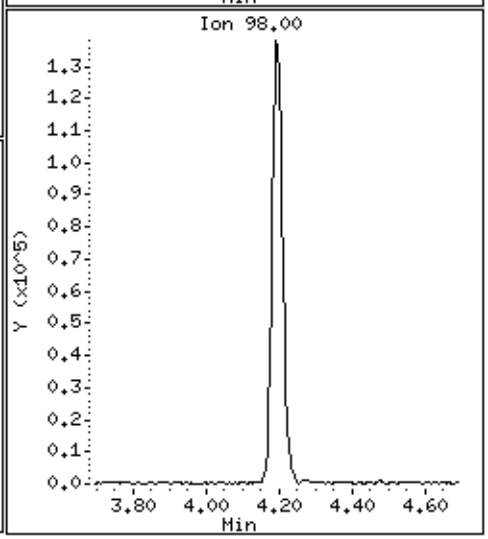












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100922.d Page 4

Date : 09-OCT-2023 22:45

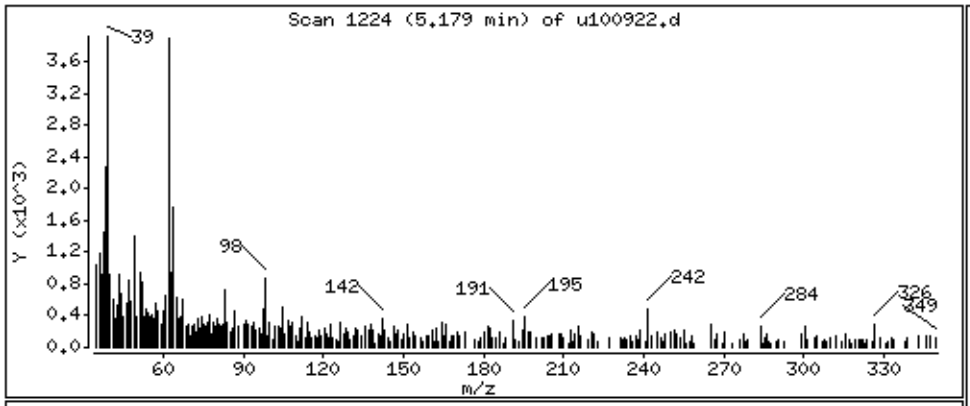
Client ID: HS23100159-06 Instrument: VOA9.i

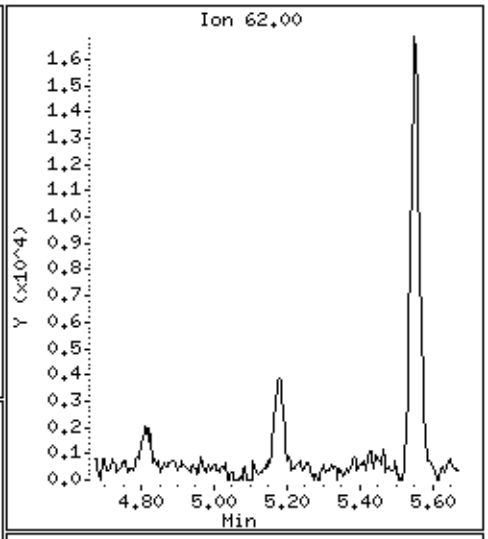
Sample Info: HS23100159-06;HS23100159-06;;;

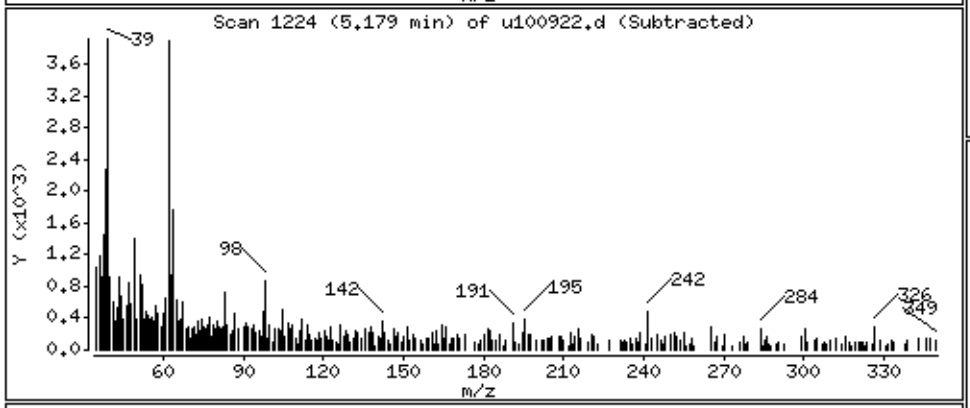
Purge Volume: 5.0 Operator: PC

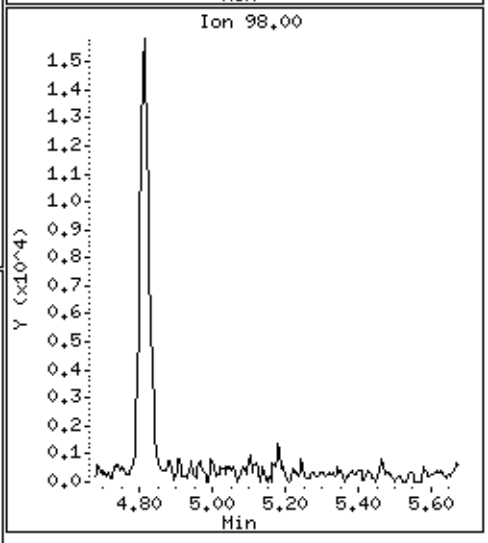
Column phase: DB624 Column diameter: 0.18

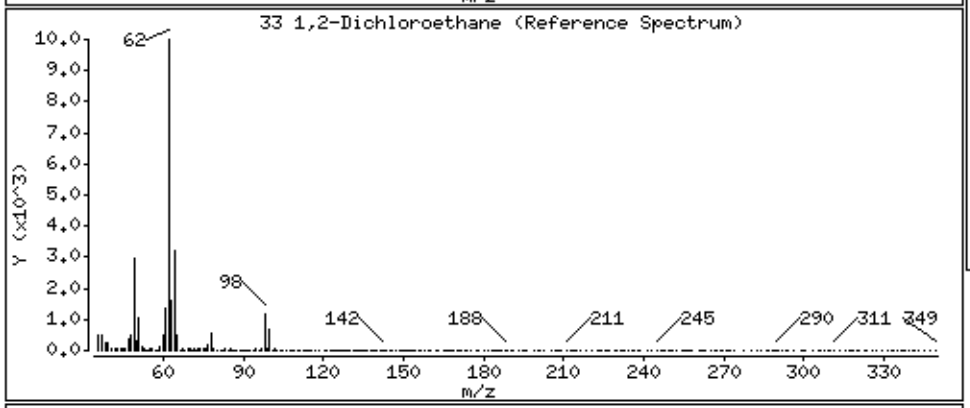
33 1,2-Dichloroethane Concentration: 0.93 ug/l

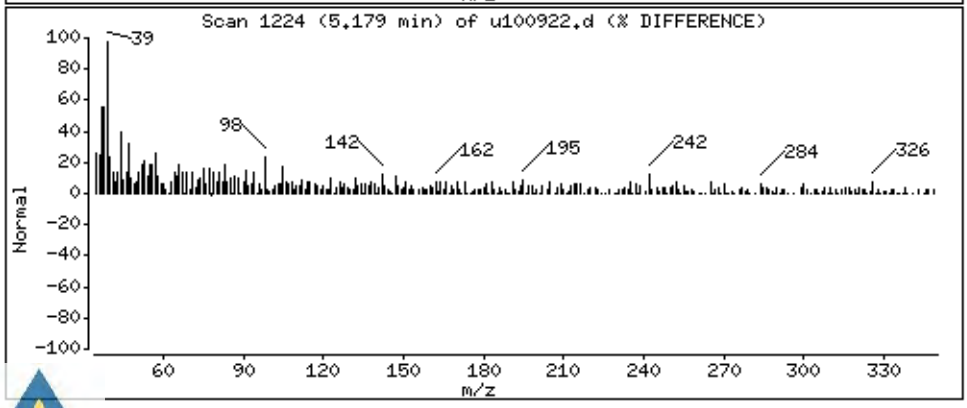












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100922.d Page 5

Date : 09-OCT-2023 22:45

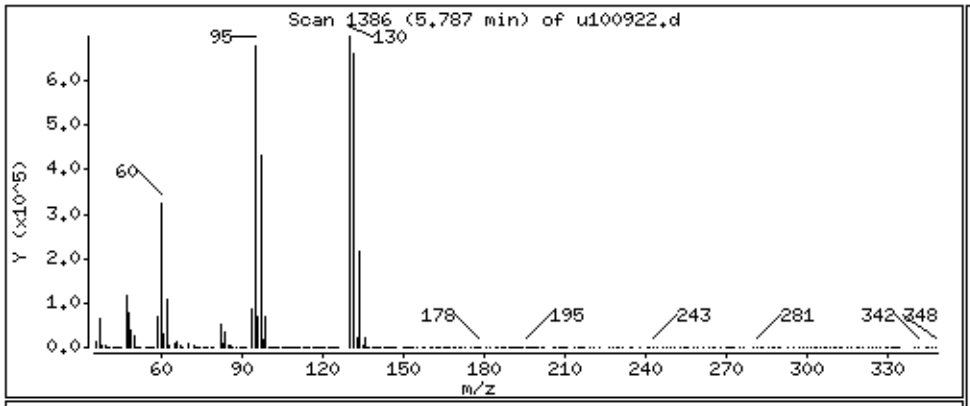
Client ID: HS23100159-06 Instrument: VOA9.i

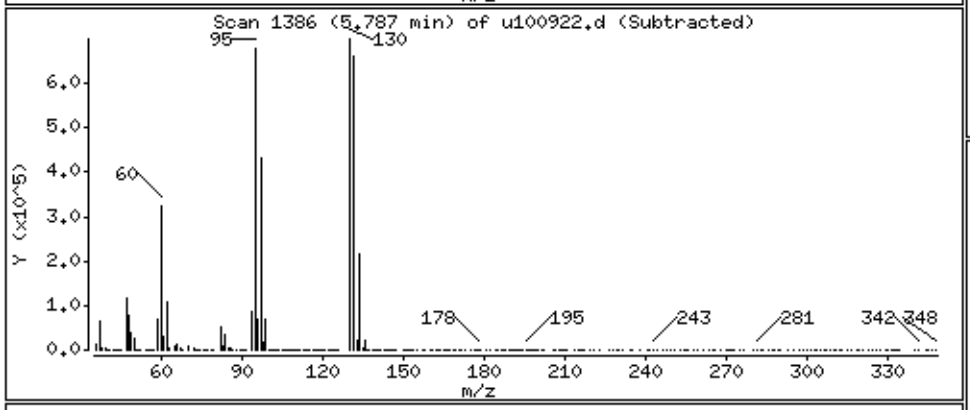
Sample Info: HS23100159-06;HS23100159-06;;;

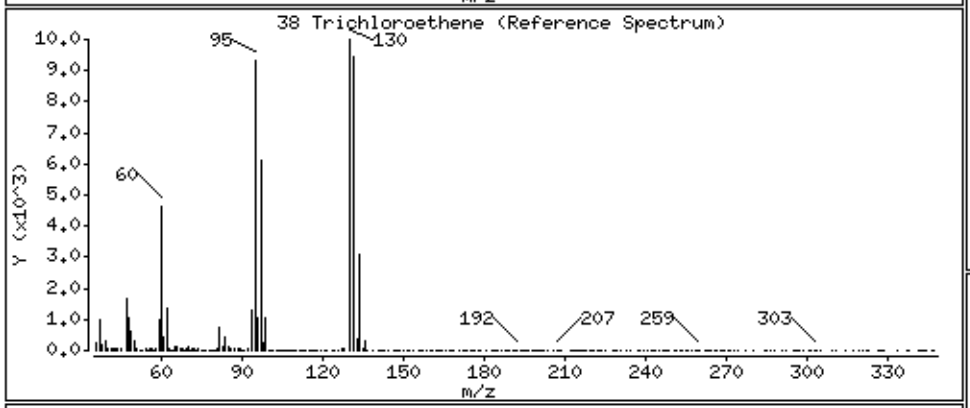
Purge Volume: 5.0 Operator: PC

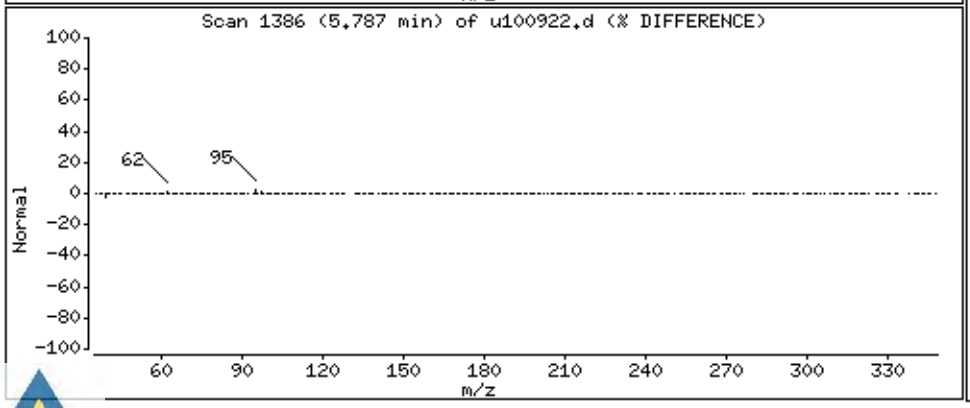
Column phase: DB624 Column diameter: 0.18

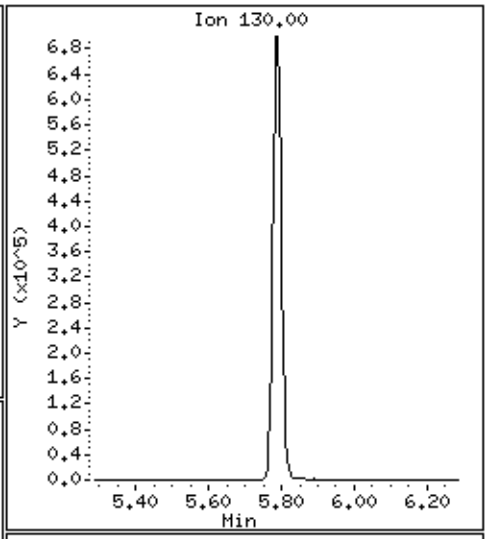
38 Trichloroethene Concentration: 209.62 ug/l

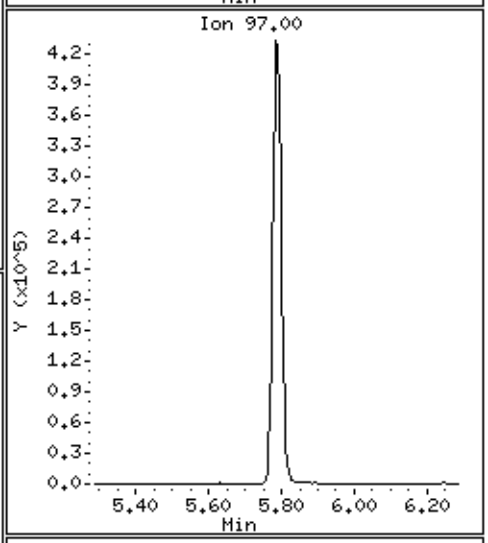


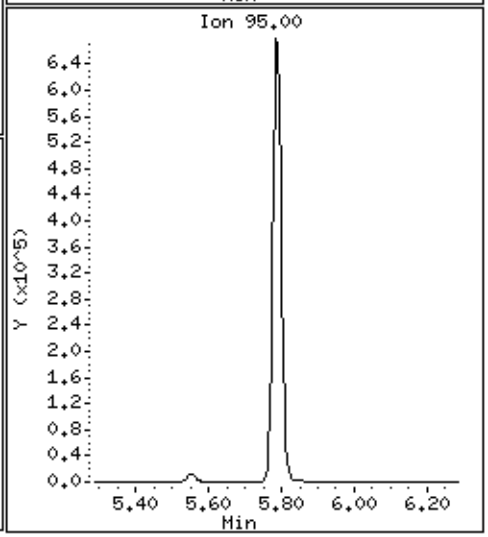












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100922.d Page 6

Date : 09-OCT-2023 22:45

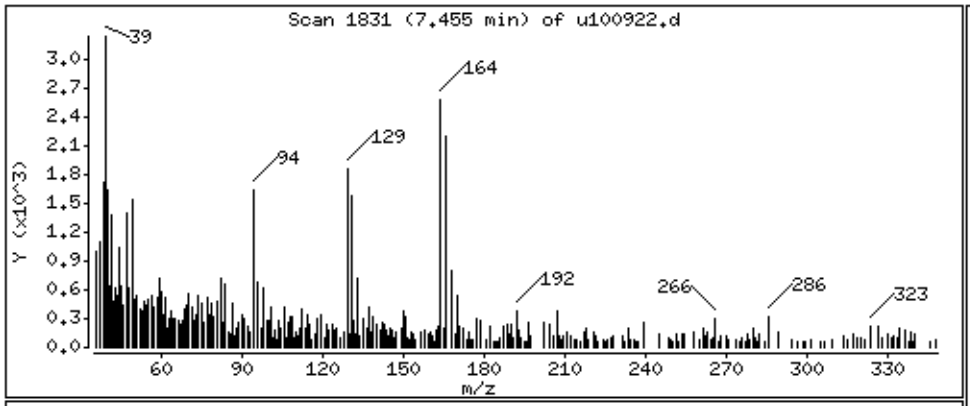
Client ID: HS23100159-06 Instrument: VOA9.i

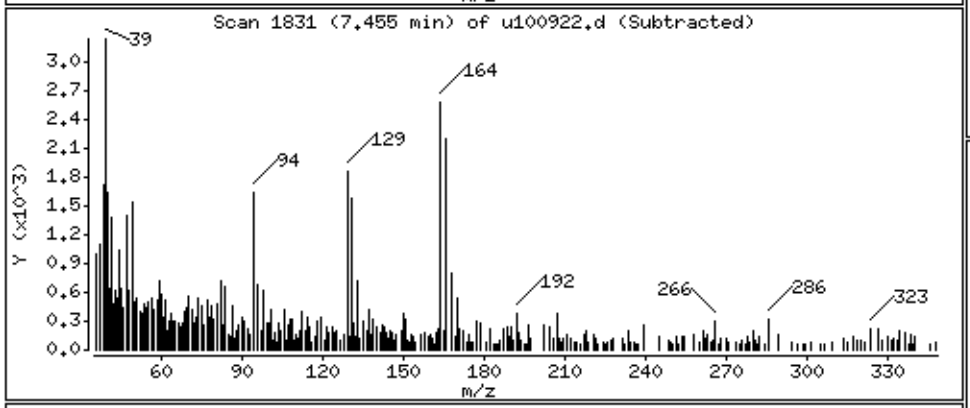
Sample Info: HS23100159-06;HS23100159-06;;;

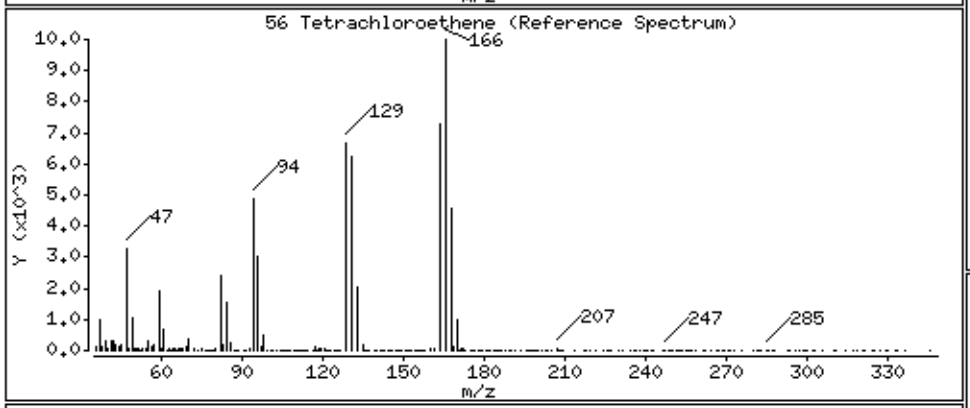
Purge Volume: 5.0 Operator: PC

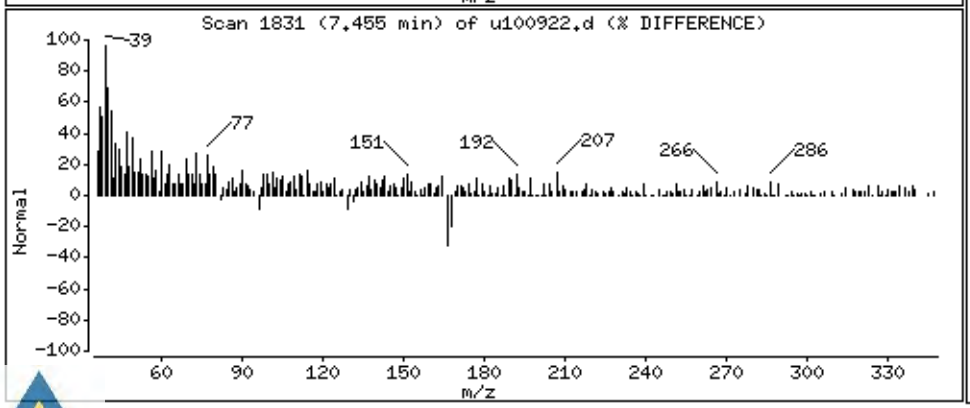
Column phase: DB624 Column diameter: 0.18

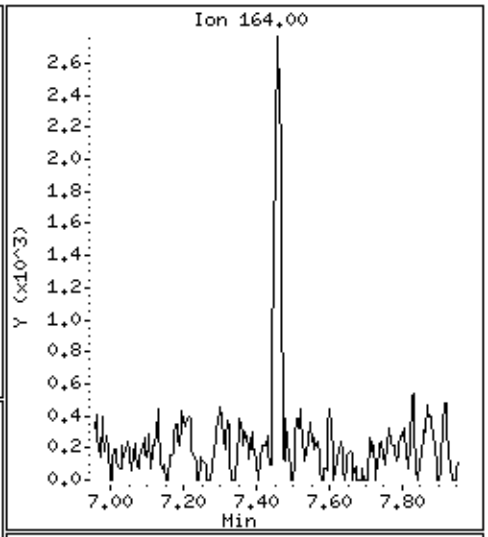
56 Tetrachloroethene Concentration: 0.88 ug/l

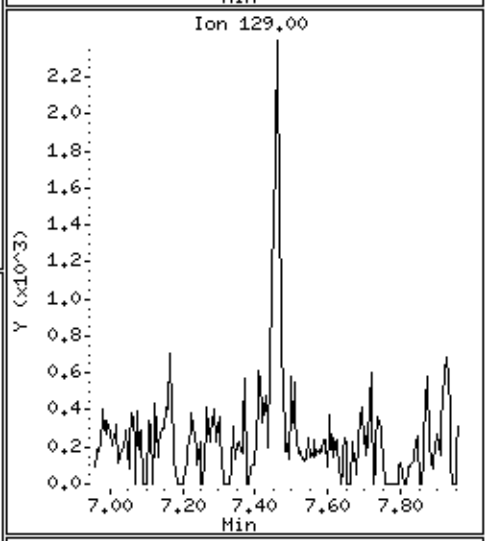


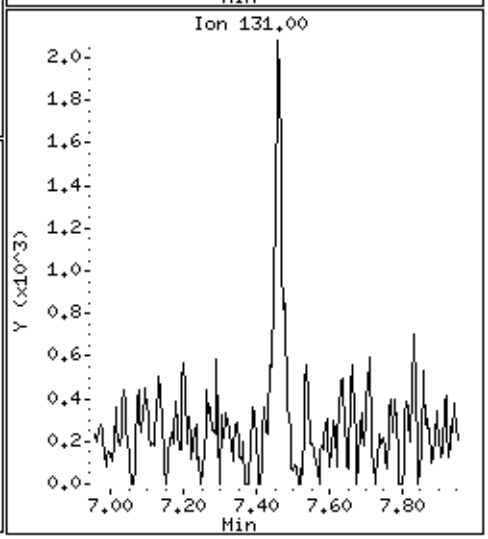










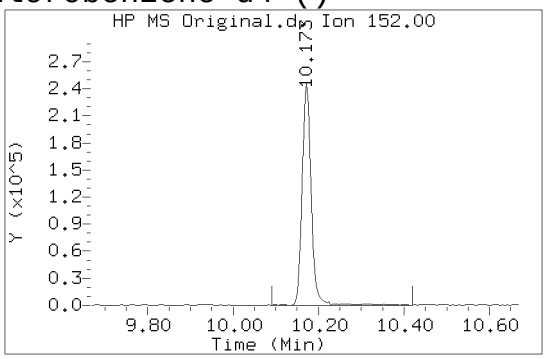


Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100922.d
Inj Date : 09-OCT-2023 22:45
InstruID : VOA9.i
LabSampID : HS23100159-06

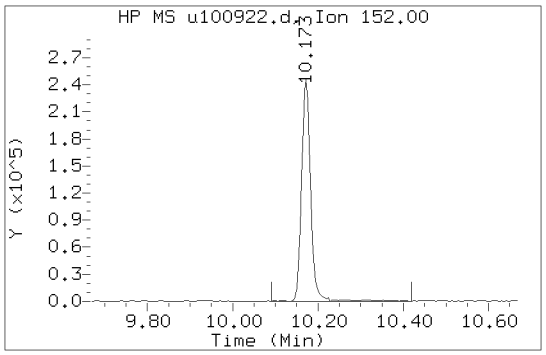
1,4-Dichlorobenzene-d4 ()

Reason Code:

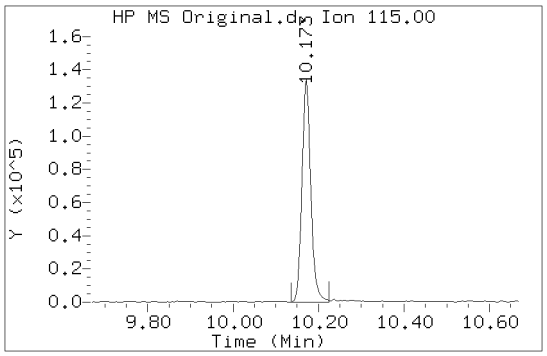
BEFORE
MASS
152
AREA
379532
HEIGHT
245765
10-Oct-2023
21:41



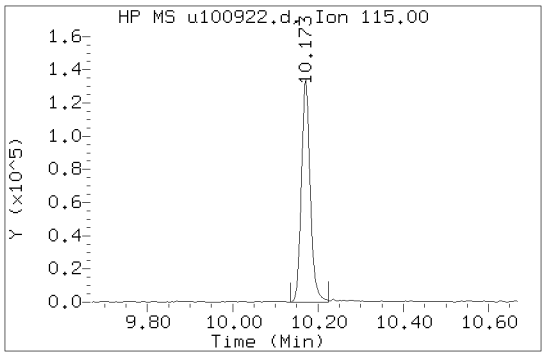
AFTER
MASS
152
AREA
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HEIGHT
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10-Oct-2023
21:41



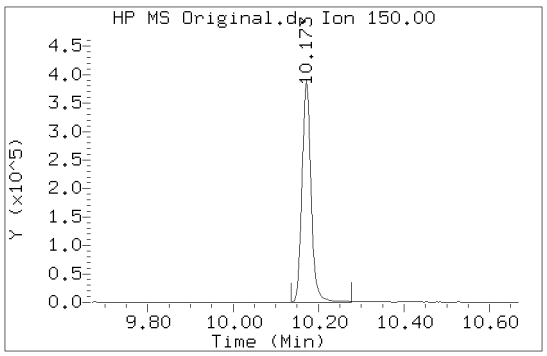
BEFORE
MASS
115
AREA
197867
HEIGHT
133744
10-Oct-2023
21:41



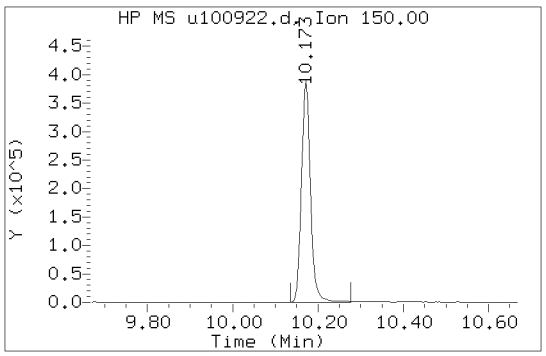
AFTER
MASS
115
AREA
197867
HEIGHT
133744
10-Oct-2023
21:41



BEFORE
MASS
150
AREA
589091
HEIGHT
389146
10-Oct-2023
21:41



AFTER
MASS
150
AREA
589091
HEIGHT
389146
10-Oct-2023
21:41



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100924.D Page 1
Report Date: 10-Oct-2023 15:46

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100924.D
Lab Smp Id: HS23100159-11 Client Smp ID: HS23100159-11
Inj Date : 09-OCT-2023 23:30
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-11;HS23100159-11;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 22
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.819	4.811	(1.000)	502783	50.0000	
$ 30 Dibromofluoromethane	113	4.751	4.744	(0.986)	231140	42.7195	42.71
$ 35 1,2-Dichloroethane-d4	65	5.100	5.093	(1.058)	267245	41.8309	41.83
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	785665	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	752800	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	966325	54.0869	54.08
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	314534	44.6279	44.62
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	385135	50.0000	
5 Vinyl Chloride	62	1.378	1.370	(0.286)	25680	3.17795	3.17
11 1,1-Dichloroethene	96	2.337	2.330	(0.485)	180067	17.9391	17.93
20 trans-1,2-Dichloroethene	96	3.061	3.053	(0.635)	36415	2.91013	2.91(a)
27 cis-1,2-Dichloroethene	96	4.200	4.193	(0.872)	2157783	338.538	338.53(A)
33 1,2-Dichloroethane	62	5.179	5.171	(0.933)	326664	42.0401	42.04
38 Trichloroethene	130	5.797	5.786	(1.044)	30504780	5625.52	5625.51(AM)
56 Tetrachloroethene	164	7.458	7.454	(0.911)	48302	12.3627	12.36

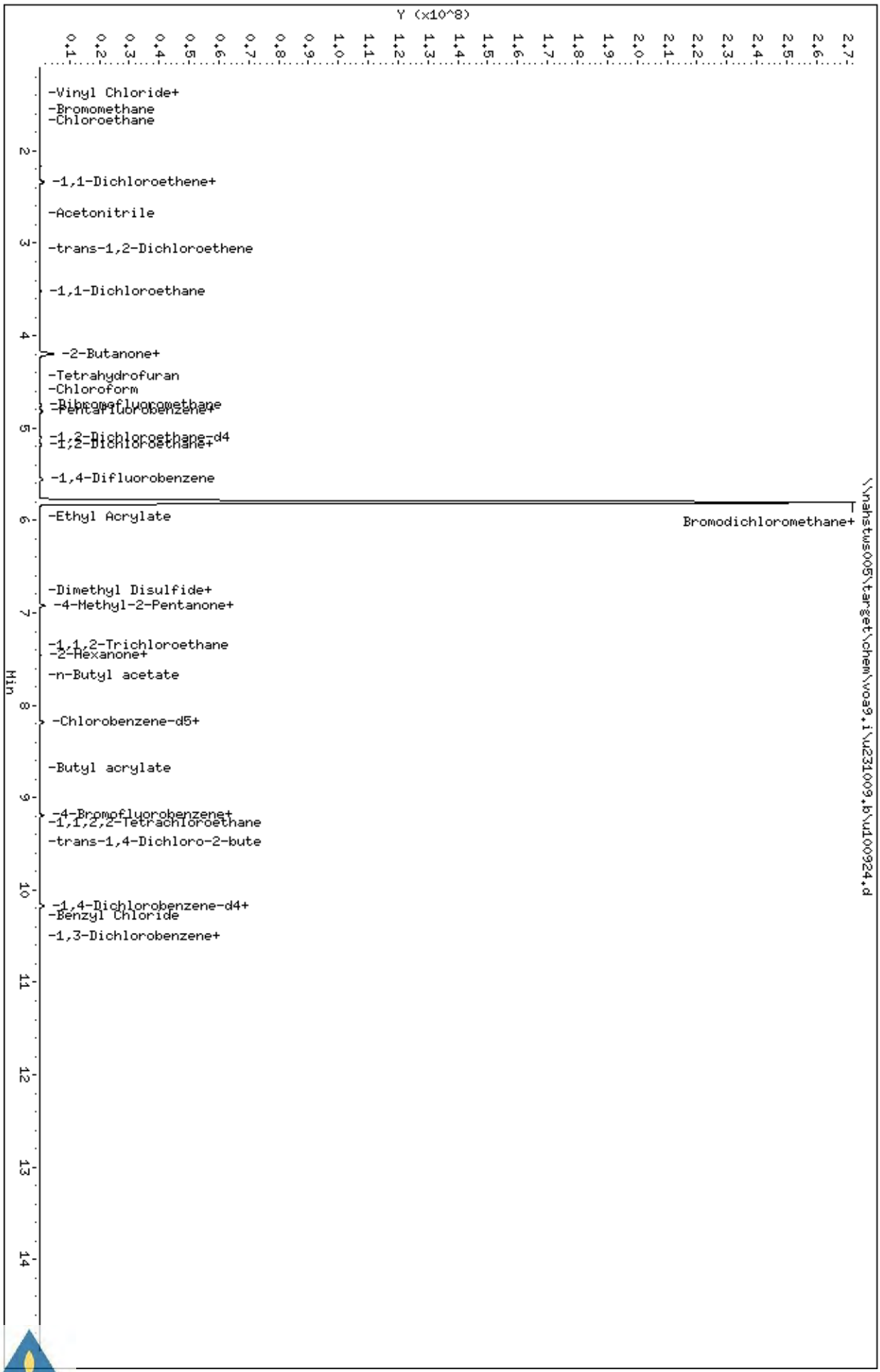
QC Flag Legend

a - Target compound detected but, quantitated amount

Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

QC Flag Legend

M - Compound response manually integrated.



Data File: \\nahstws005\target\chem\voa9,i\u231009,b\u100924,d
Date : 09-OCT-2023 23:30
Client ID: HS23100159-11
Sample Info: HS23100159-11;HS23100159-11;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100924.d Page 2

Date : 09-OCT-2023 23:30

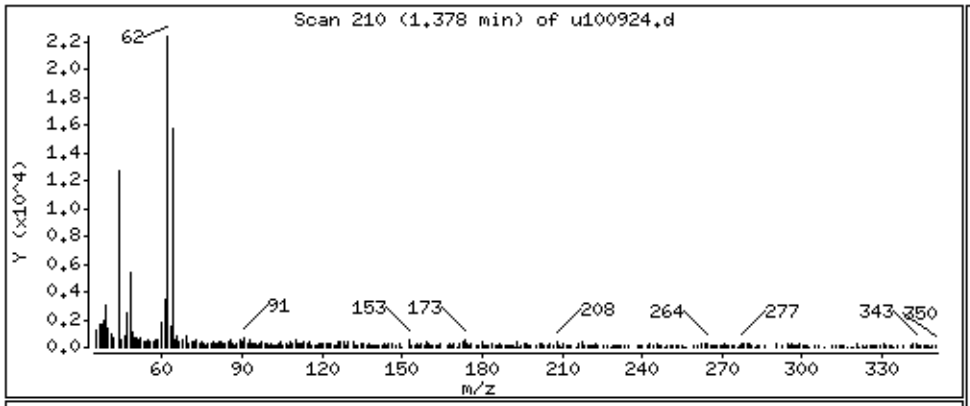
Client ID: HS23100159-11 Instrument: VOA9.i

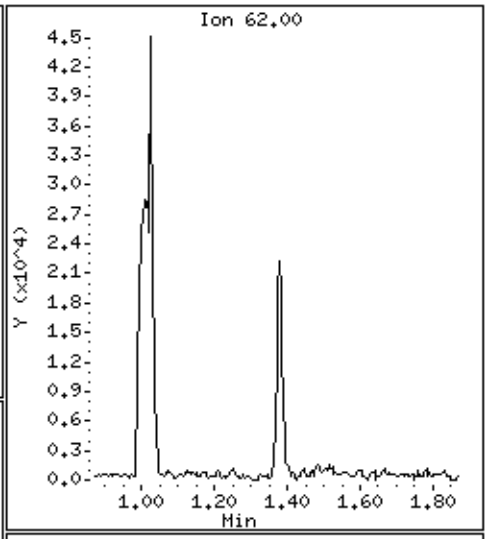
Sample Info: HS23100159-11;HS23100159-11;;;

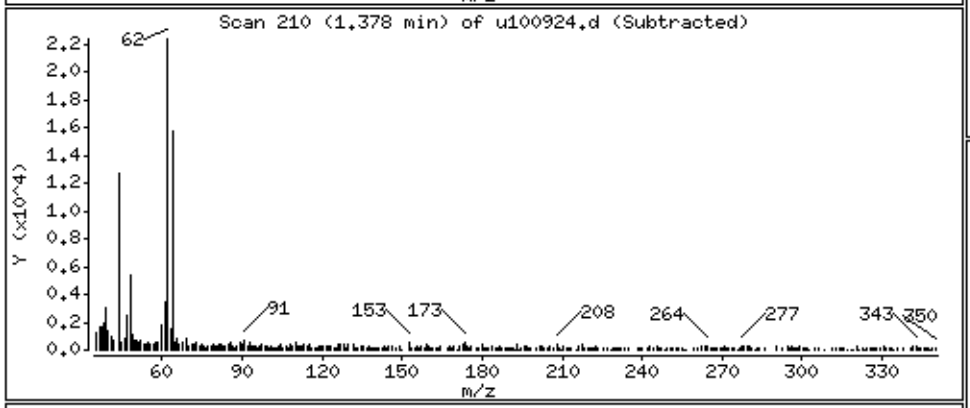
Purge Volume: 5.0 Operator: PC

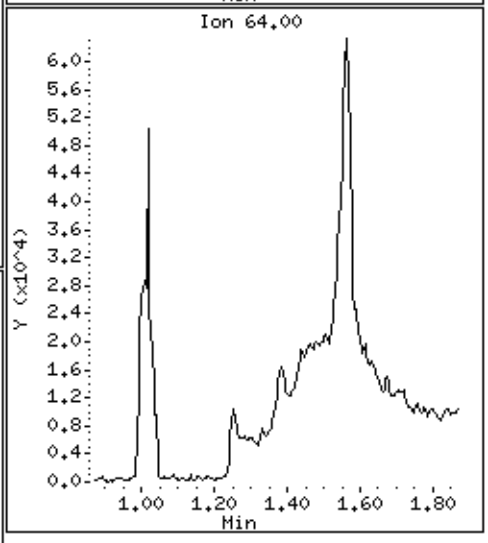
Column phase: DB624 Column diameter: 0.18

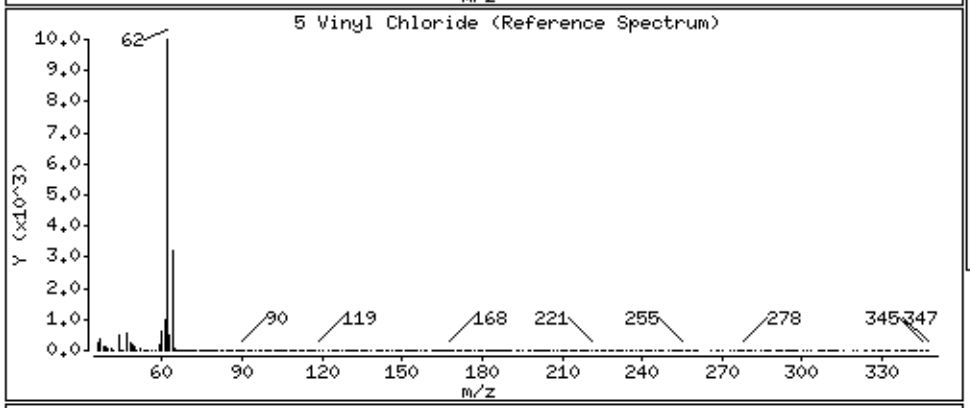
5 Vinyl Chloride Concentration: 3.17 ug/l

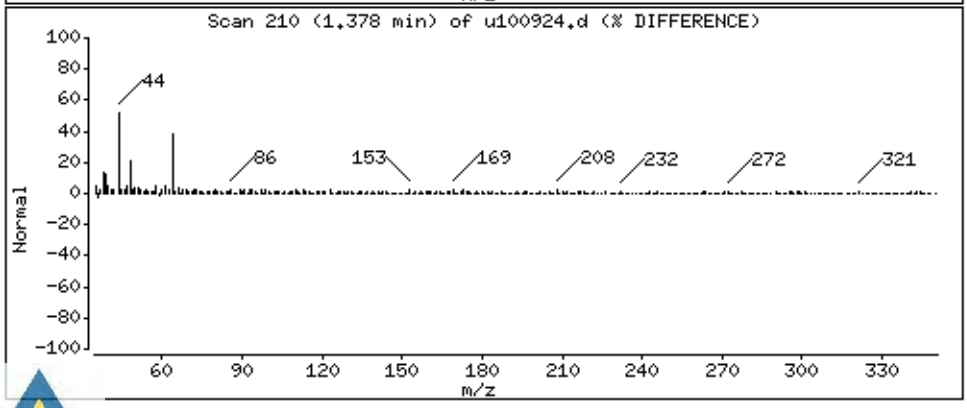












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100924.d Page 3

Date : 09-OCT-2023 23:30

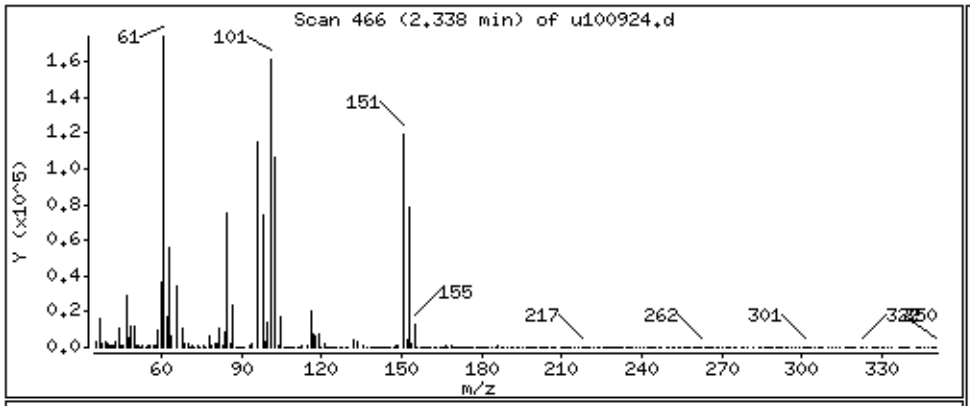
Client ID: HS23100159-11 Instrument: VOA9.i

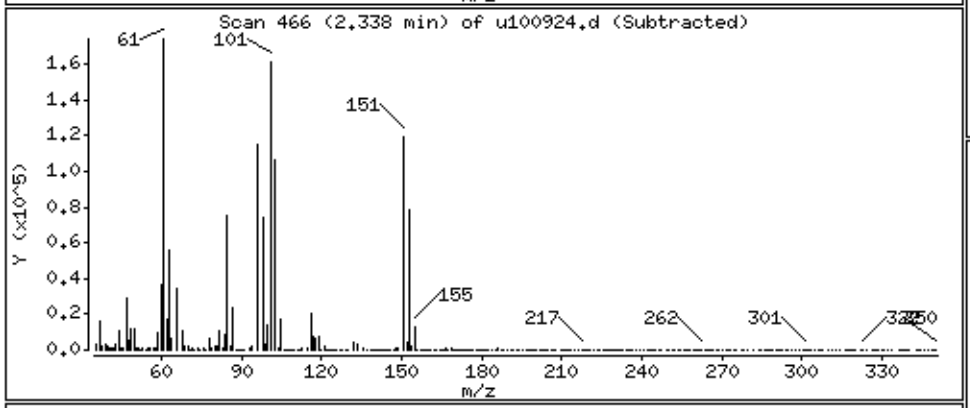
Sample Info: HS23100159-11;HS23100159-11;;;

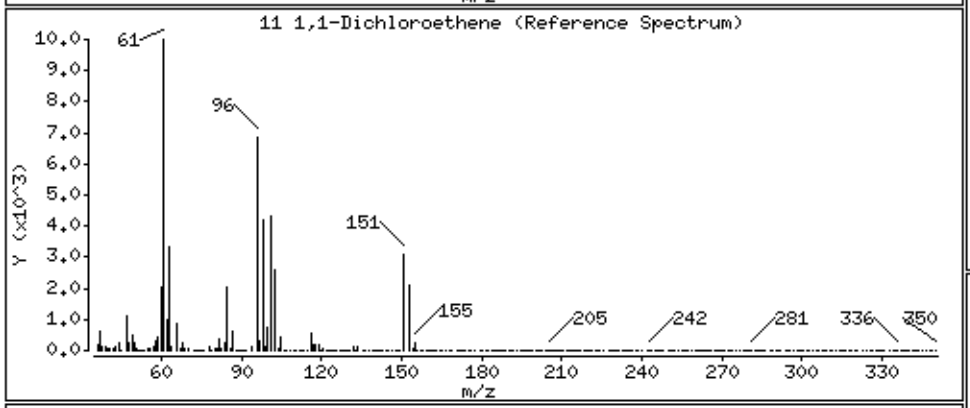
Purge Volume: 5.0 Operator: PC

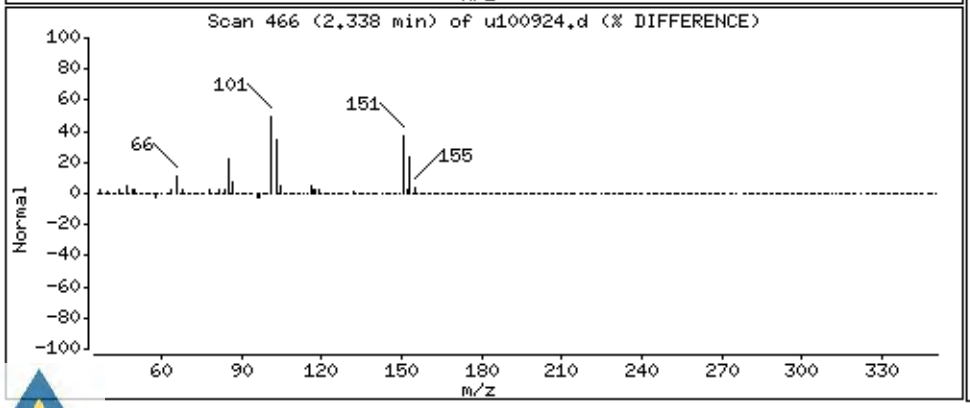
Column phase: DB624 Column diameter: 0.18

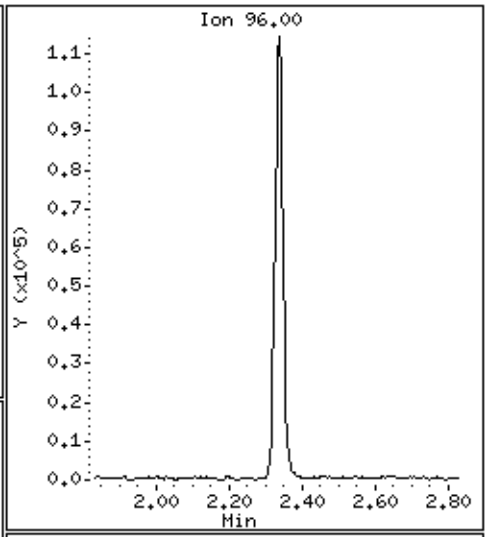
11 1,1-Dichloroethene Concentration: 17.93 ug/l

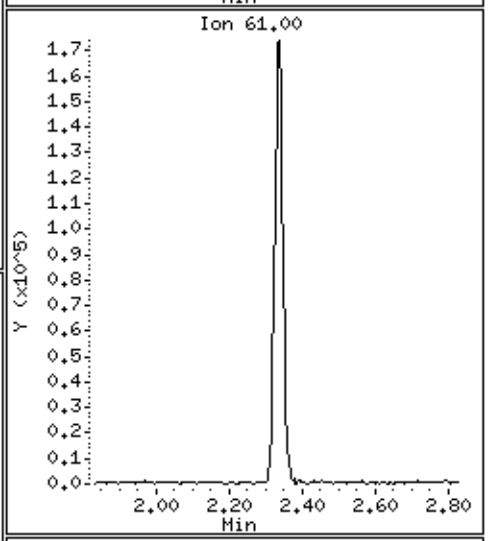


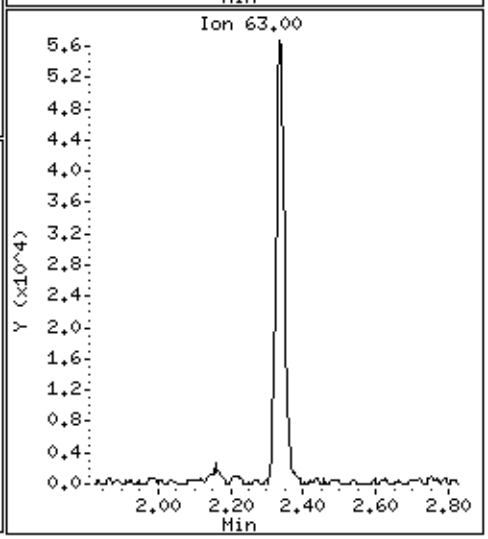












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100924.d Page 4

Date : 09-OCT-2023 23:30

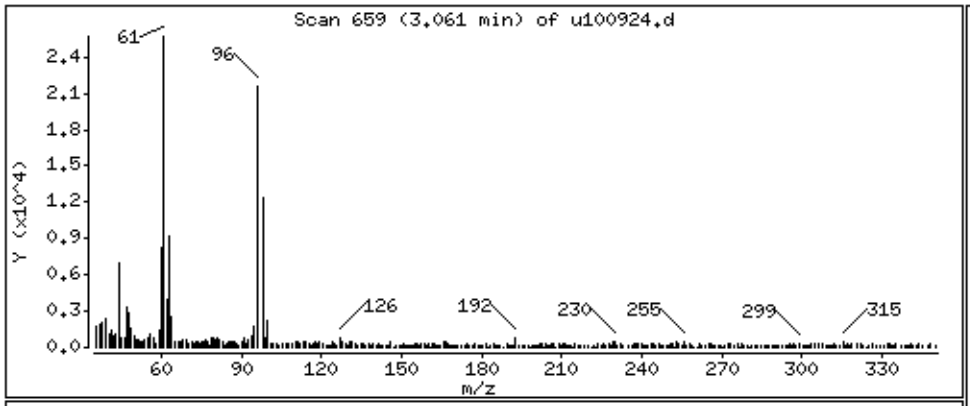
Client ID: HS23100159-11 Instrument: VOA9.i

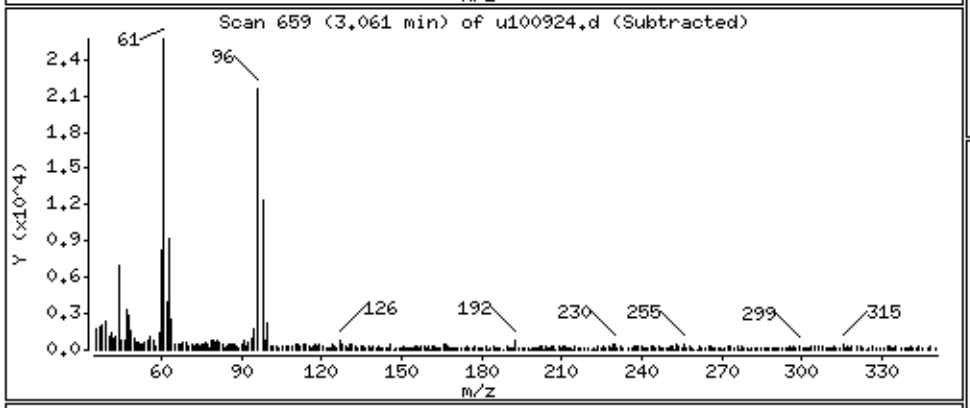
Sample Info: HS23100159-11;HS23100159-11;;;

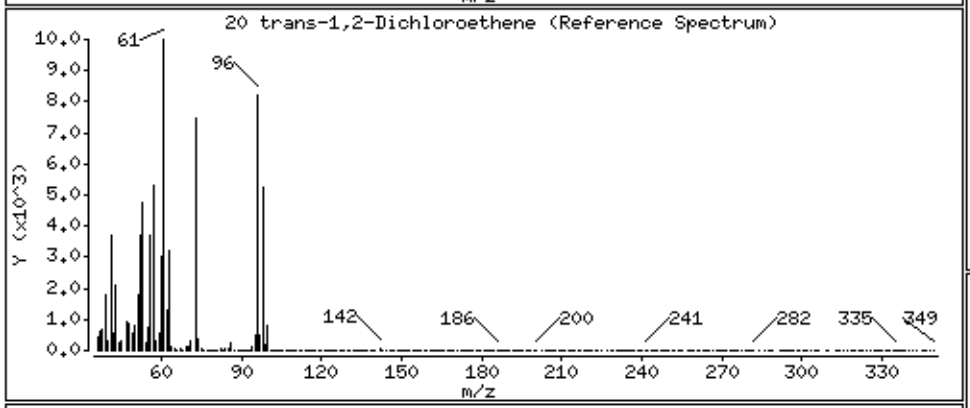
Purge Volume: 5.0 Operator: PC

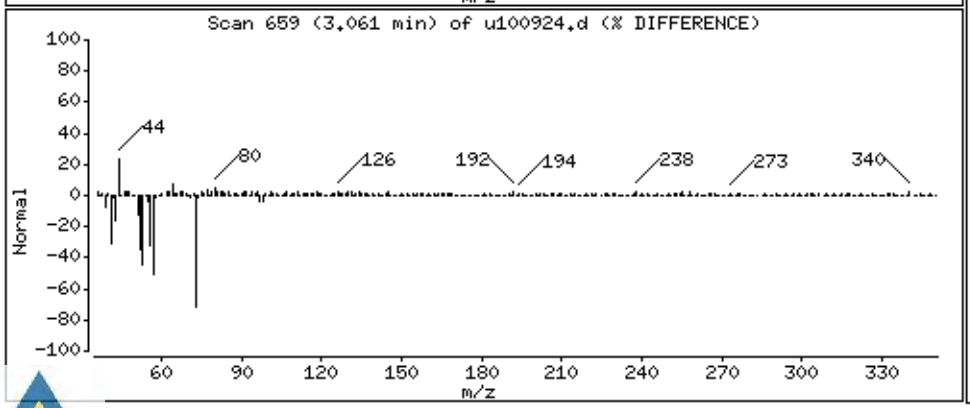
Column phase: DB624 Column diameter: 0.18

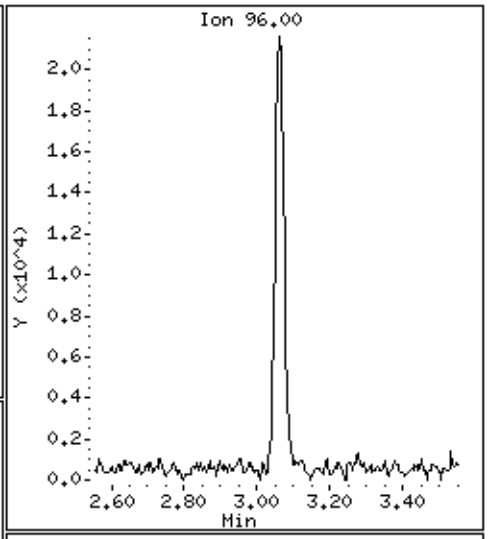
20 trans-1,2-Dichloroethene Concentration: 2.91 ug/l

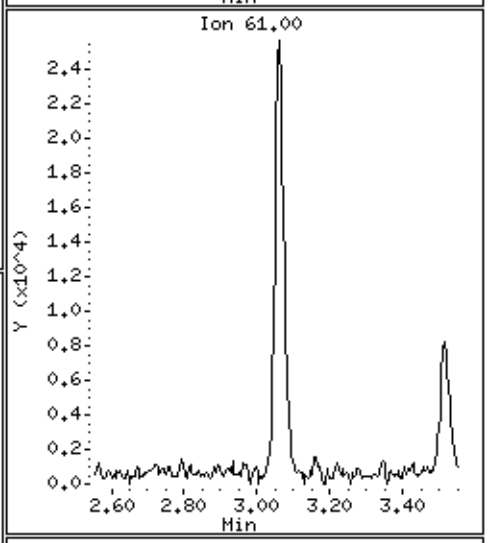


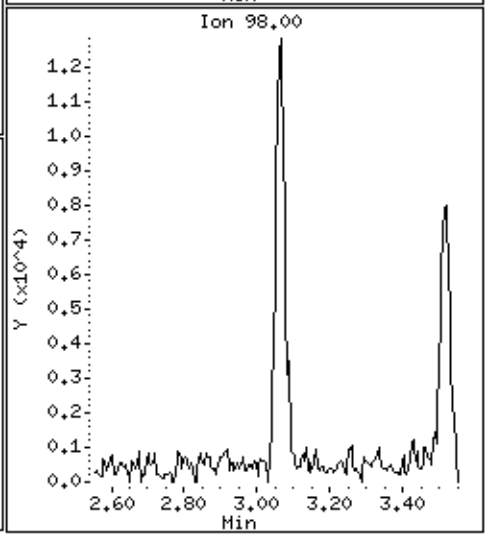












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100924.d Page 5

Date : 09-OCT-2023 23:30

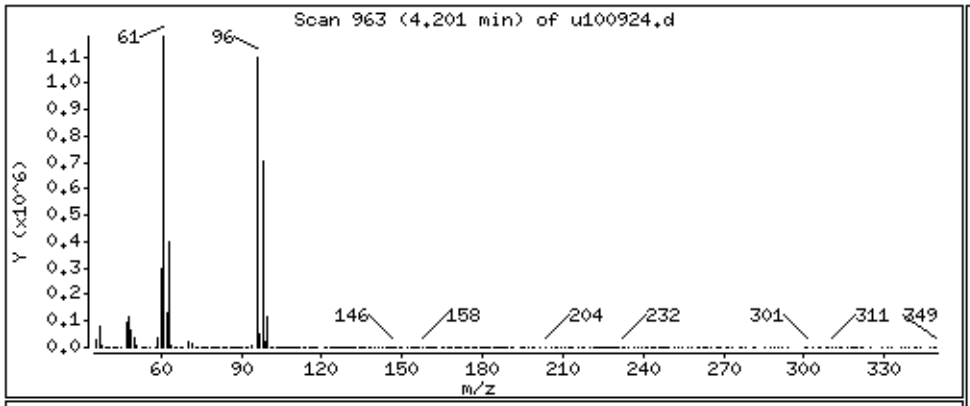
Client ID: HS23100159-11 Instrument: VOA9.i

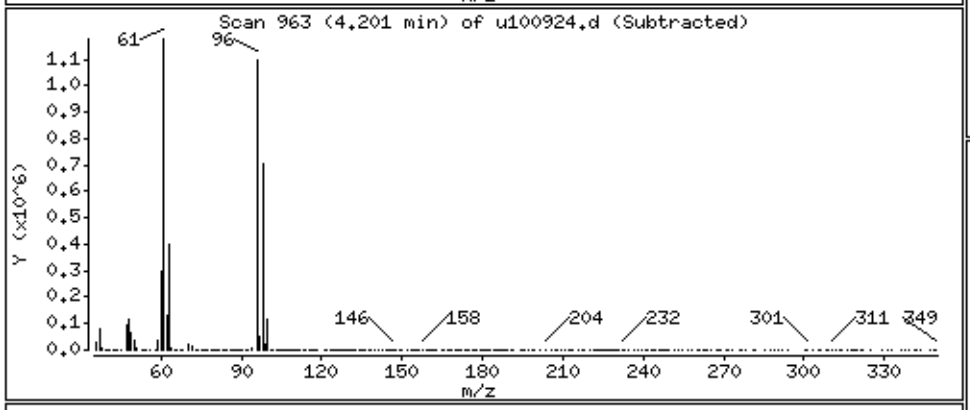
Sample Info: HS23100159-11;HS23100159-11;;;

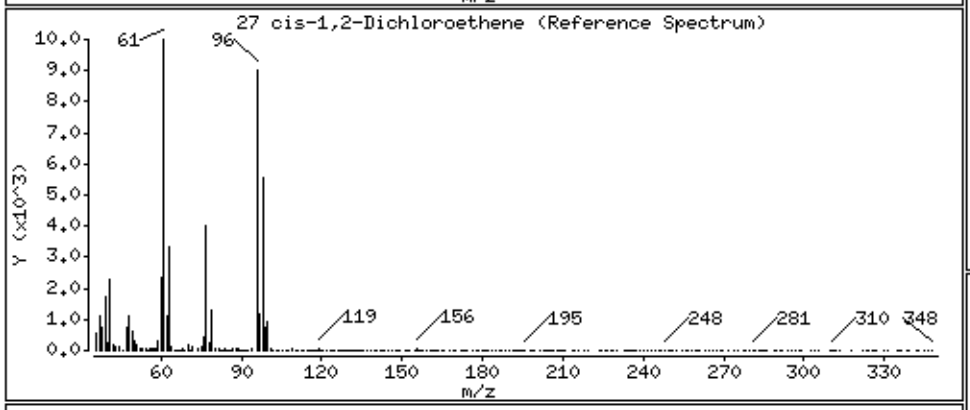
Purge Volume: 5.0 Operator: PC

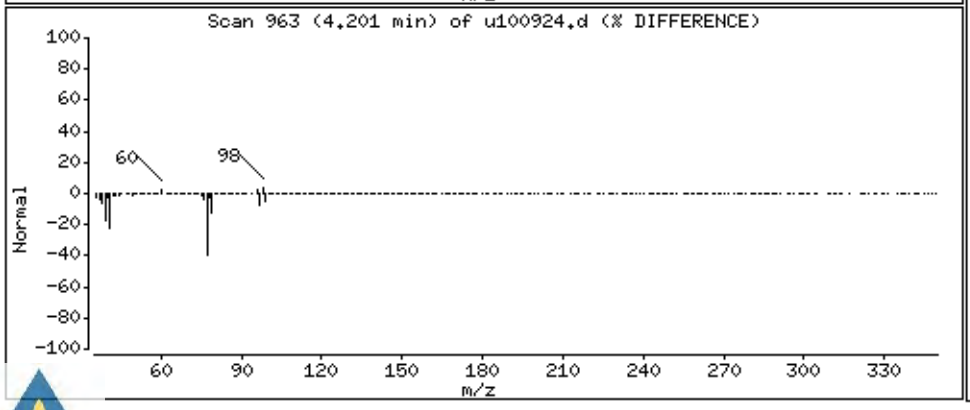
Column phase: DB624 Column diameter: 0.18

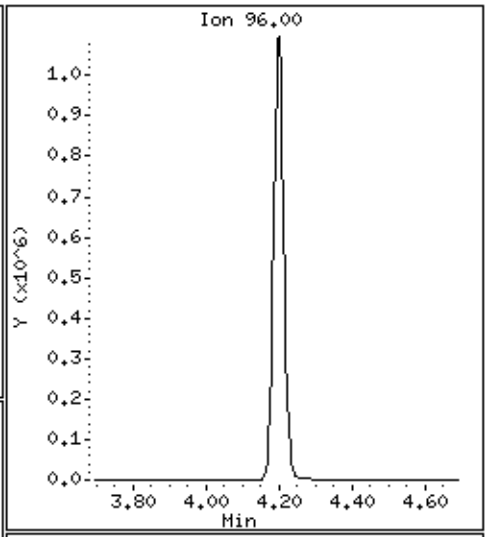
27 cis-1,2-Dichloroethene Concentration: 338.53 ug/l

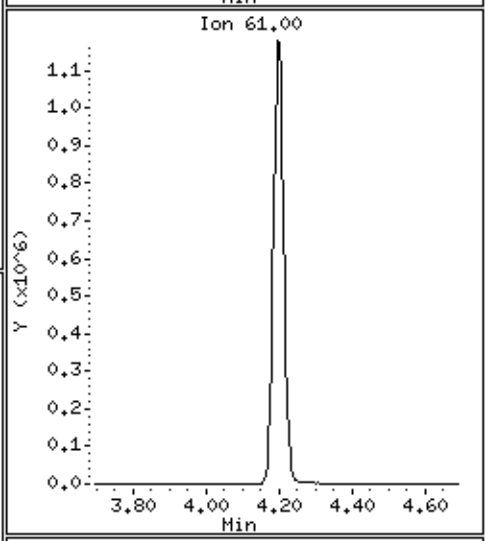


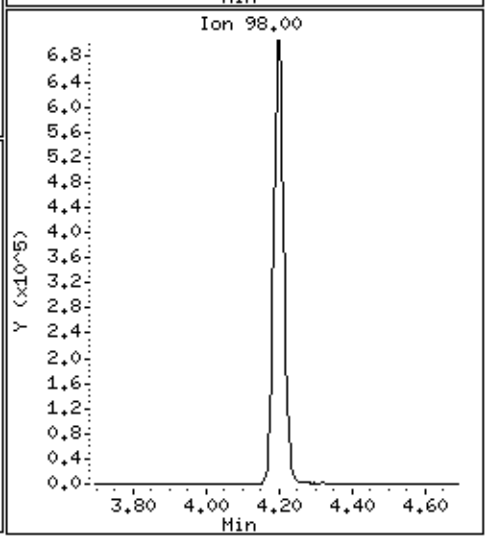












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100924.d Page 6

Date : 09-OCT-2023 23:30

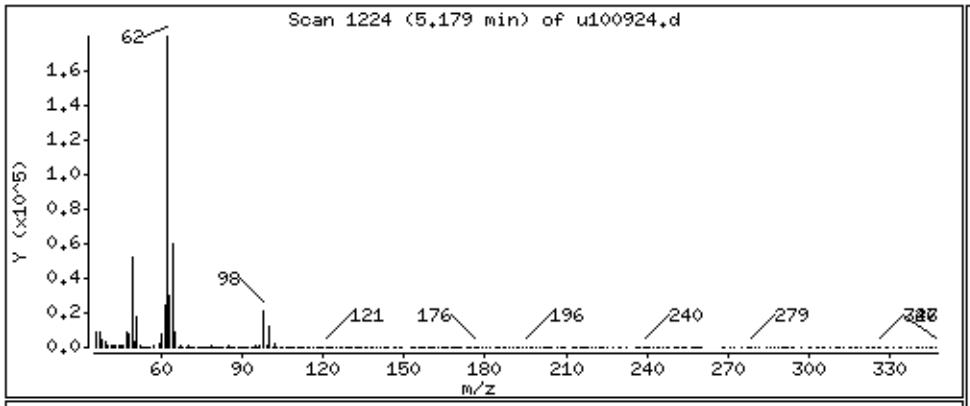
Client ID: HS23100159-11 Instrument: VOA9.i

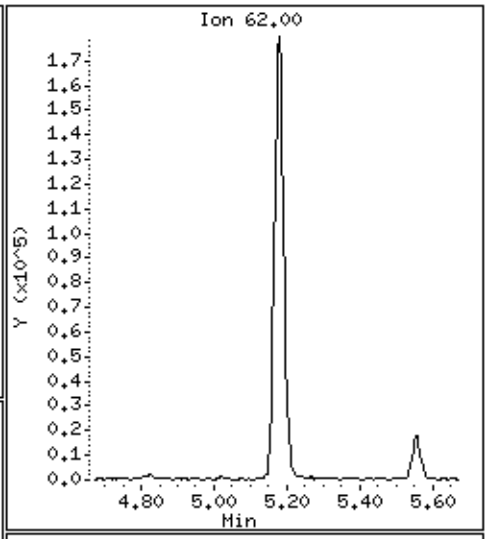
Sample Info: HS23100159-11;HS23100159-11;;;

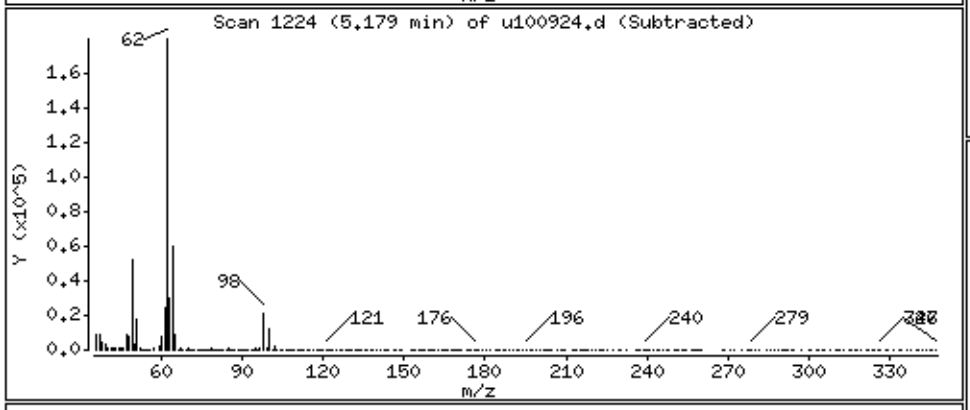
Purge Volume: 5.0 Operator: PC

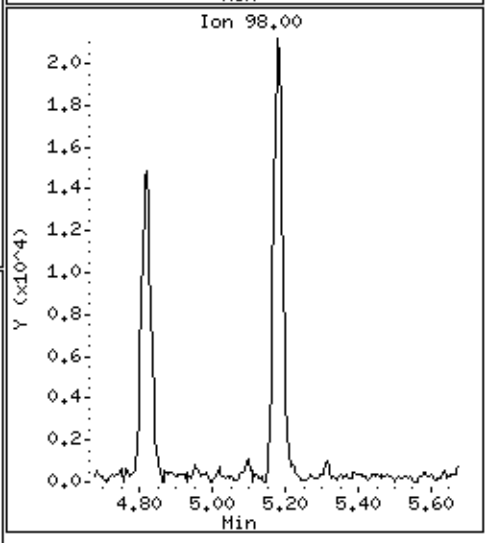
Column phase: DB624 Column diameter: 0.18

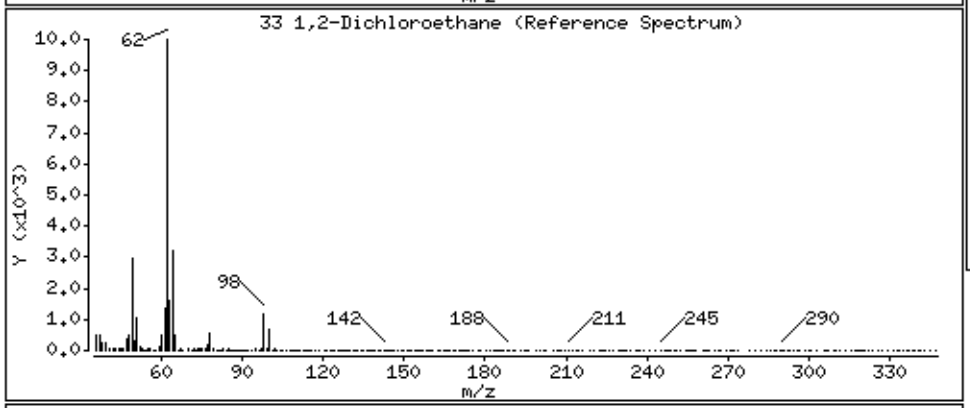
33 1,2-Dichloroethane Concentration: 42.04 ug/l

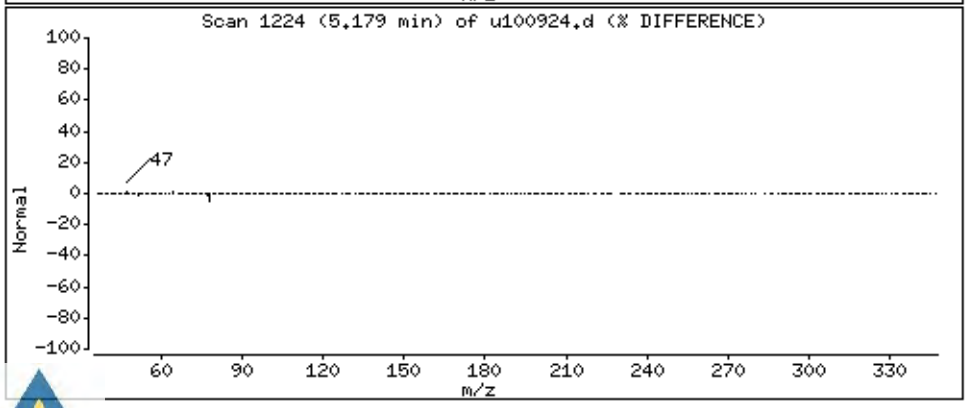












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100924.d Page 7

Date : 09-OCT-2023 23:30

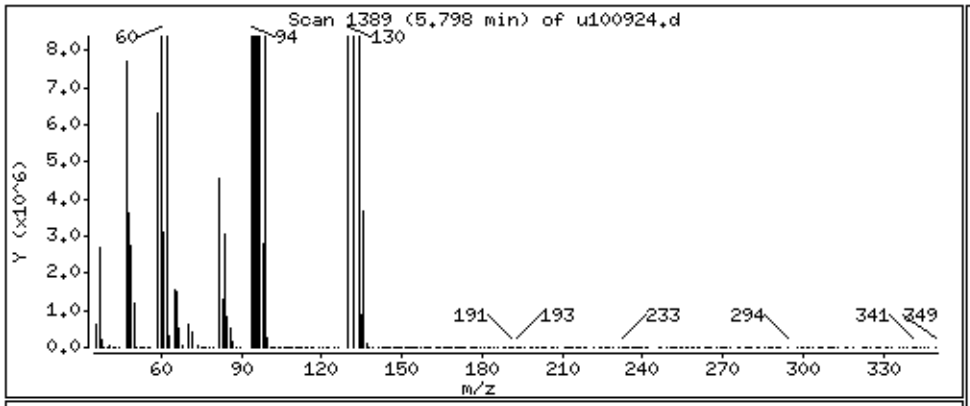
Client ID: HS23100159-11 Instrument: VOA9.i

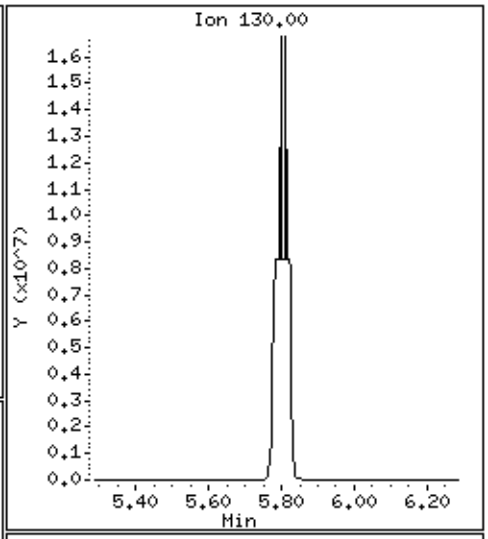
Sample Info: HS23100159-11;HS23100159-11;;;

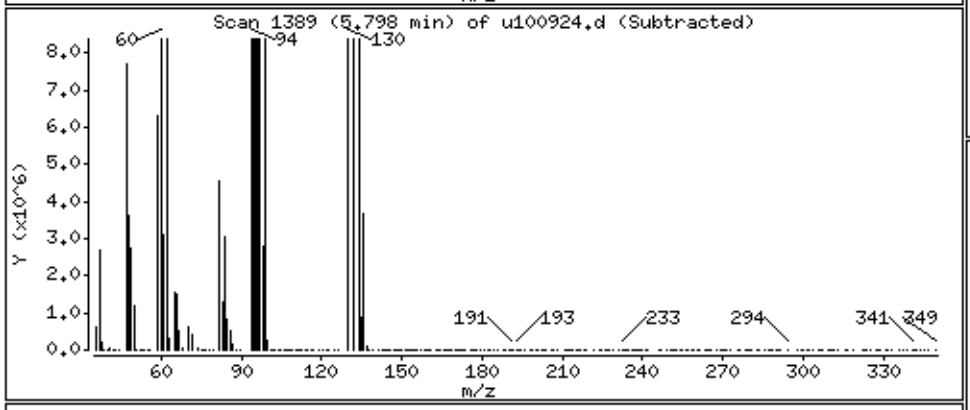
Purge Volume: 5.0 Operator: PC

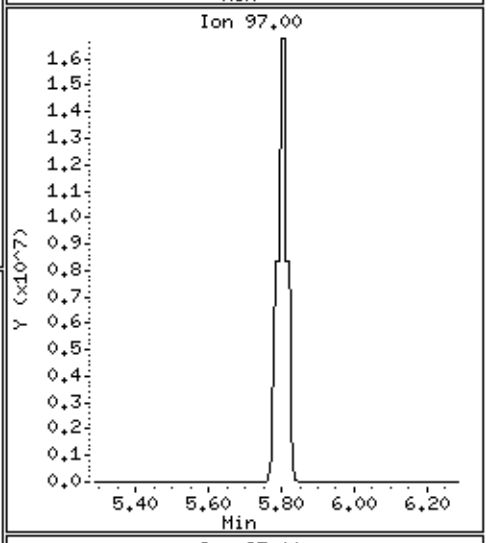
Column phase: DB624 Column diameter: 0.18

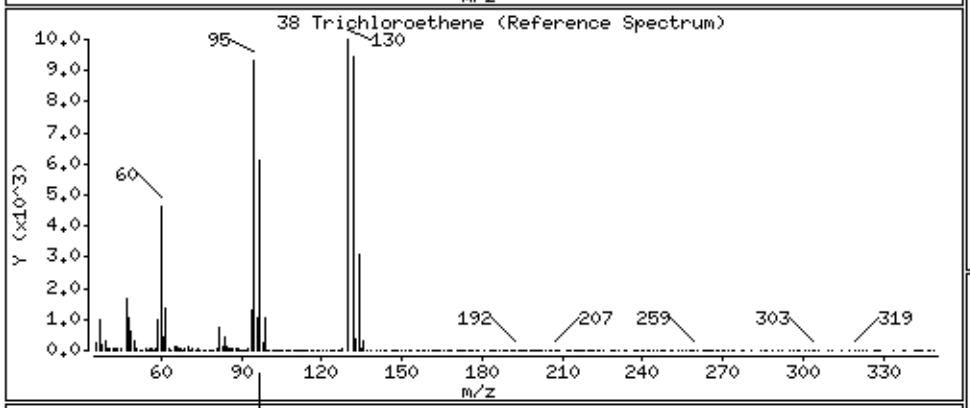
38 Trichloroethene Concentration: 5625.51 ug/l

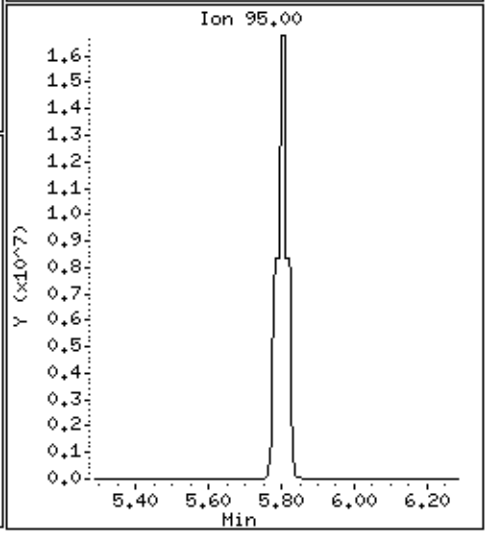


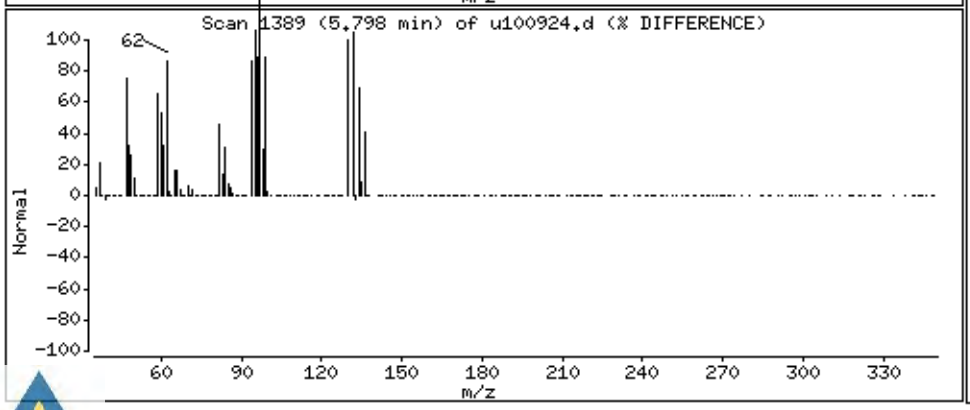












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100924.d Page 8

Date : 09-OCT-2023 23:30

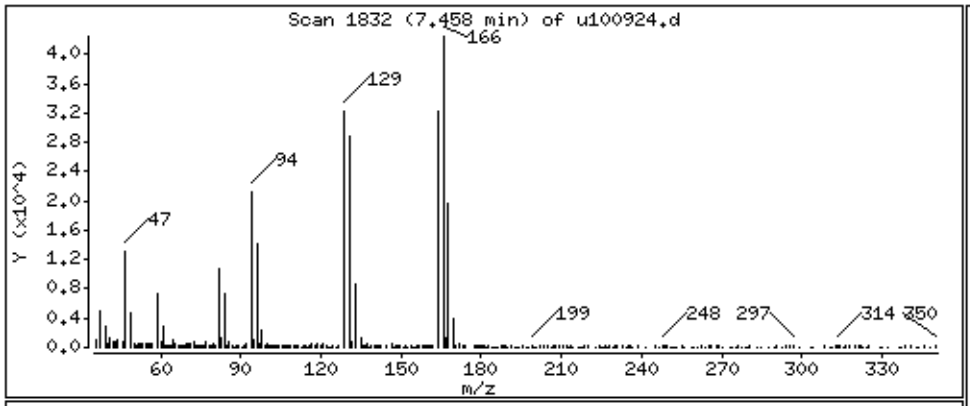
Client ID: HS23100159-11 Instrument: VOA9.i

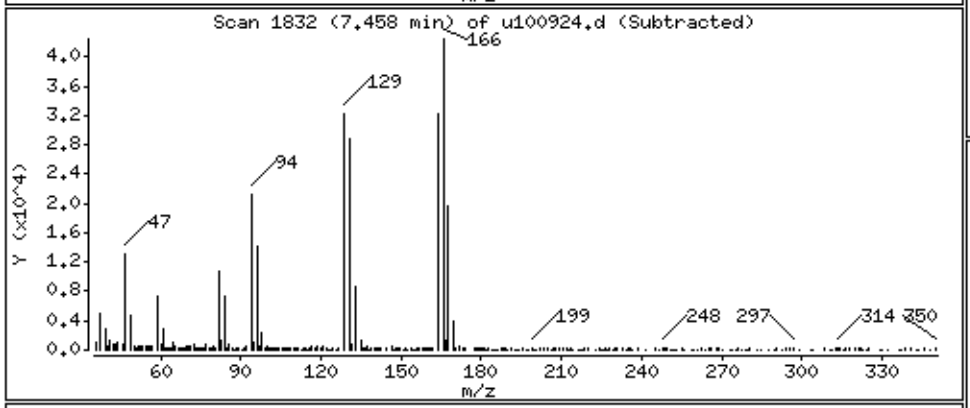
Sample Info: HS23100159-11;HS23100159-11;;;

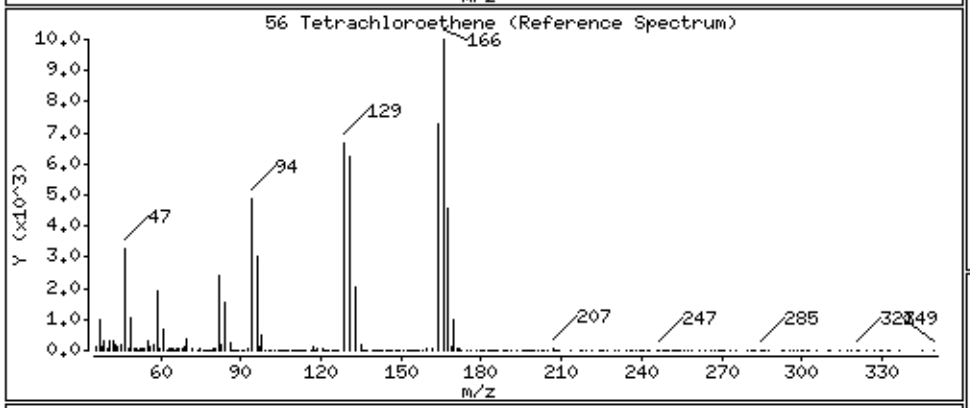
Purge Volume: 5.0 Operator: PC

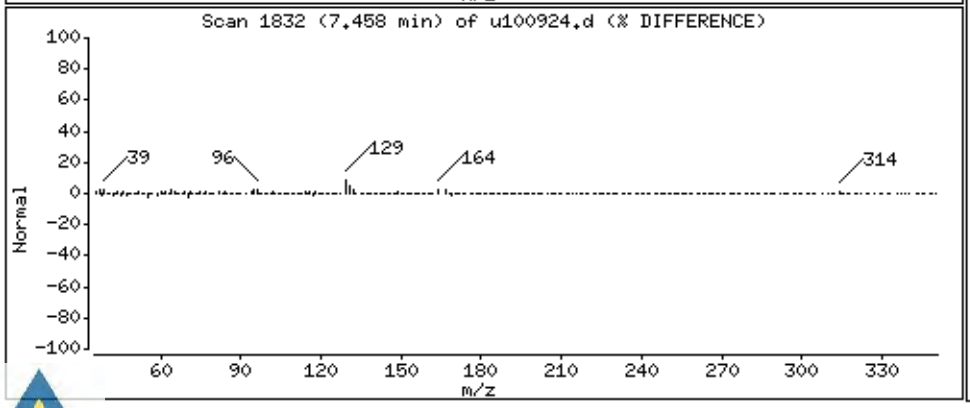
Column phase: DB624 Column diameter: 0.18

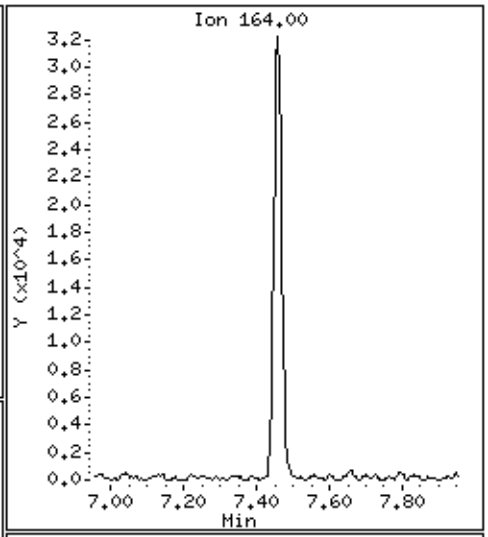
56 Tetrachloroethene Concentration: 12.36 ug/l

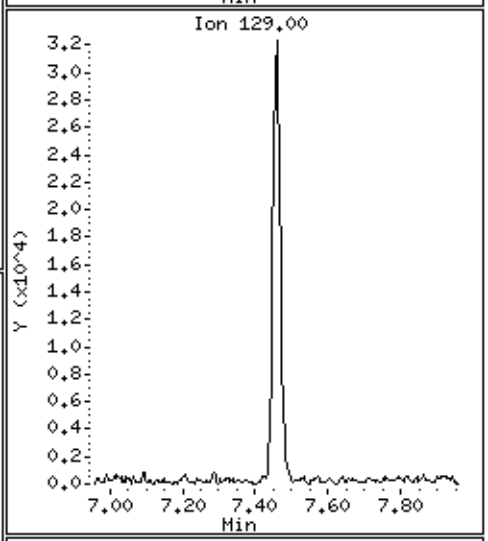


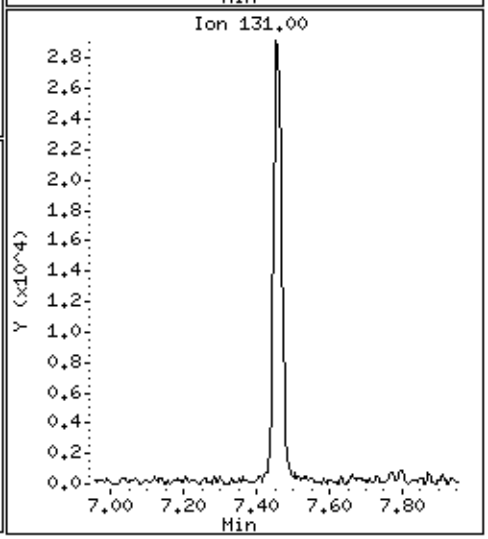










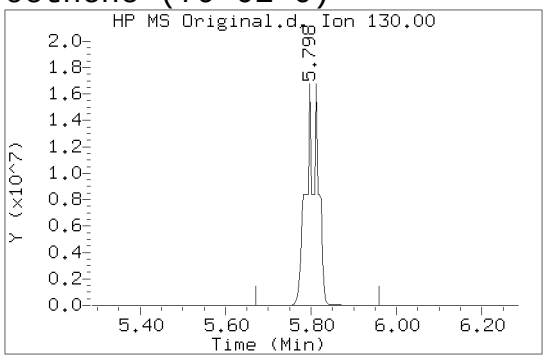


Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100924.d
Inj Date : 09-OCT-2023 23:30
InstruID : VOA9.i
LabSampID : HS23100159-11

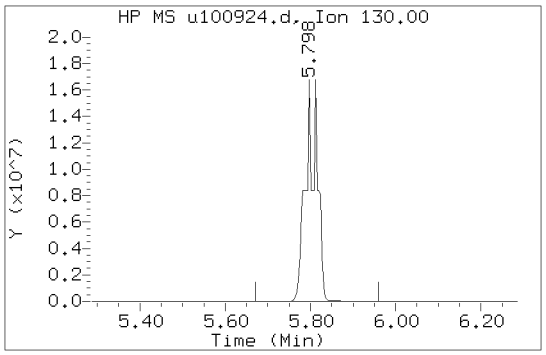
Trichloroethene (79-01-6)

Reason Code:

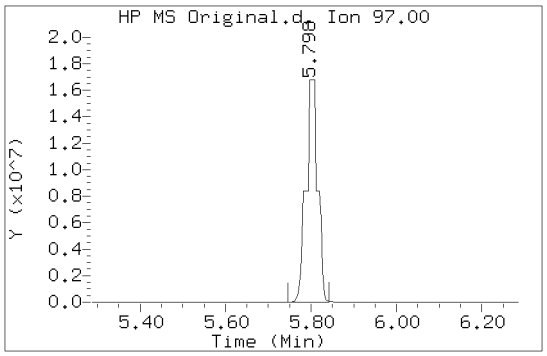
BEFORE
MASS
130
AREA
30504780
HEIGHT
16772953
10-Oct-2023
21:41



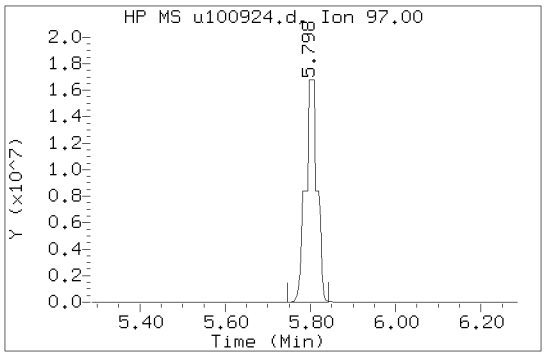
AFTER
MASS
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HEIGHT
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10-Oct-2023
21:41



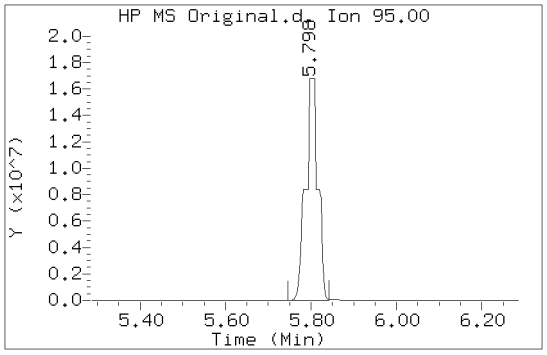
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MASS
97
AREA
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HEIGHT
16775200
10-Oct-2023
21:41



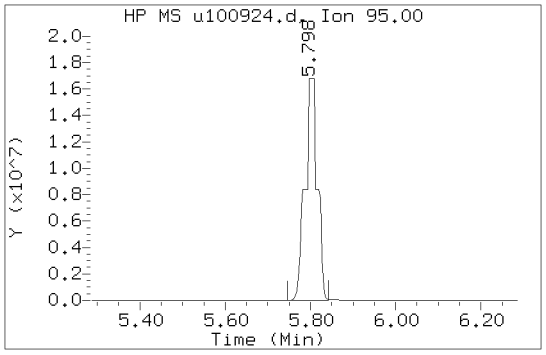
AFTER
MASS
97
AREA
32454236
HEIGHT
16775200
10-Oct-2023
21:41



BEFORE
MASS
95
AREA
34093318
HEIGHT
16774968
10-Oct-2023
21:41



AFTER
MASS
95
AREA
34093318
HEIGHT
16774968
10-Oct-2023
21:41



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100925.D Page 1
Report Date: 10-Oct-2023 15:46

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100925.D
Lab Smp Id: HS23100159-12 Client Smp ID: HS23100159-12
Inj Date : 09-OCT-2023 23:52
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-12;HS23100159-12;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 23
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.811	(1.000)	516123	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	232024	41.8150	41.81
$ 35 1,2-Dichloroethane-d4	65	5.097	5.093	(1.058)	271245	41.3684	41.36
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	800661	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	752778	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	966384	54.0918	54.09
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	303184	43.0752	43.07
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	384601	50.0000	
5 Vinyl Chloride	62	1.374	1.370	(0.285)	26387	3.18104	3.18
11 1,1-Dichloroethene	96	2.330	2.330	(0.484)	185565	18.0090	18.00
20 trans-1,2-Dichloroethene	96	3.057	3.053	(0.635)	35705	2.77964	2.77(a)
27 cis-1,2-Dichloroethene	96	4.193	4.193	(0.871)	2192711	335.126	335.12(A)
33 1,2-Dichloroethane	62	5.175	5.171	(0.932)	336567	42.5034	42.50
38 Trichloroethene	130	5.794	5.786	(1.043)	32360309	5855.93	5855.93(AM)
56 Tetrachloroethene	164	7.458	7.454	(0.911)	53077	13.5853	13.58

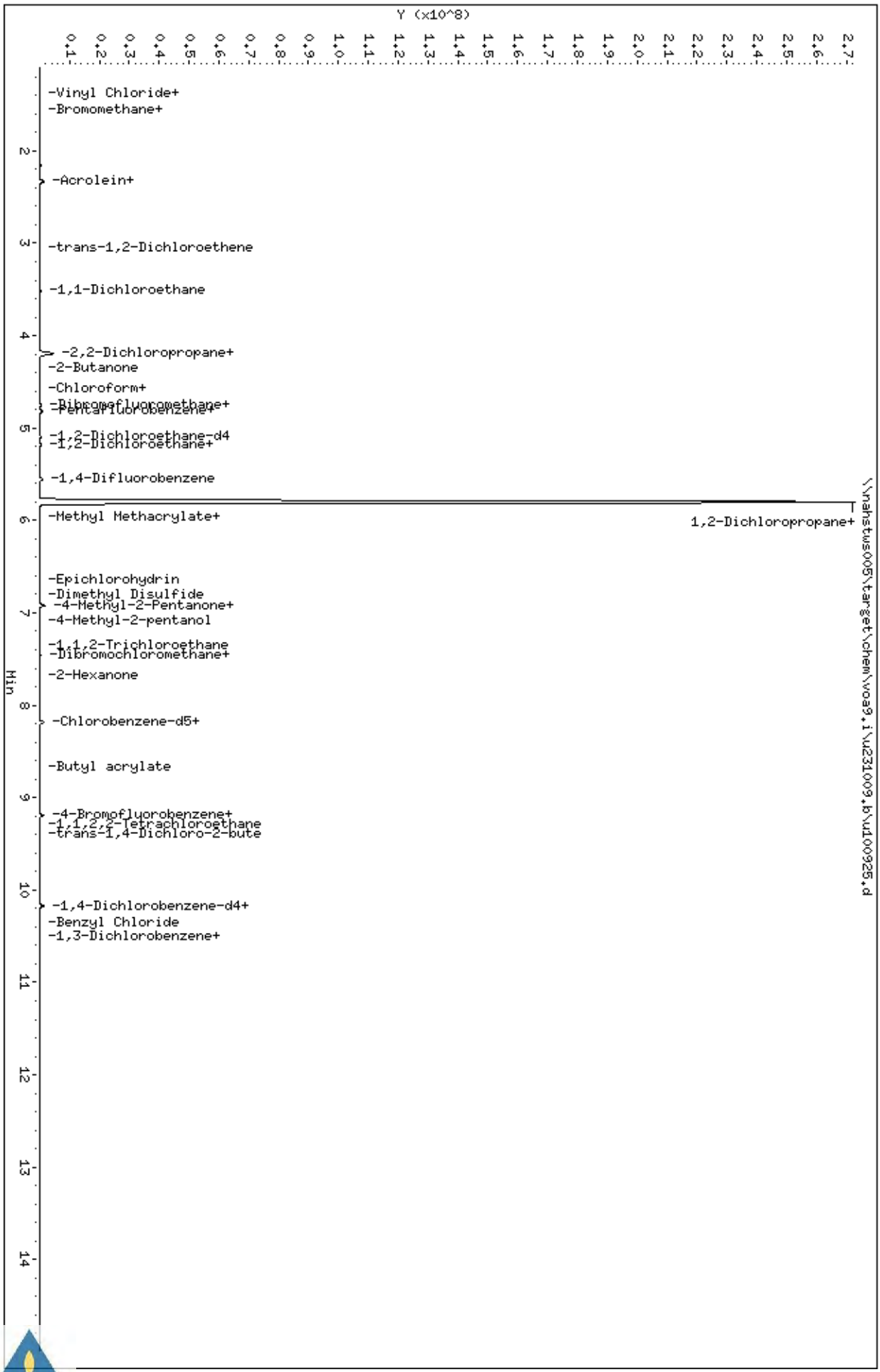
QC Flag Legend

a - Target compound detected but, quantitated amount

Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

QC Flag Legend

M - Compound response manually integrated.



Data File: \\nahstws005\target\chem\voa9,i\u231009,b\u100925,d
Date : 09-OCT-2023 23:52
Client ID: HS23100159-12
Sample Info: HS23100159-12;HS23100159-12;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100925.d Page 2

Date : 09-OCT-2023 23:52

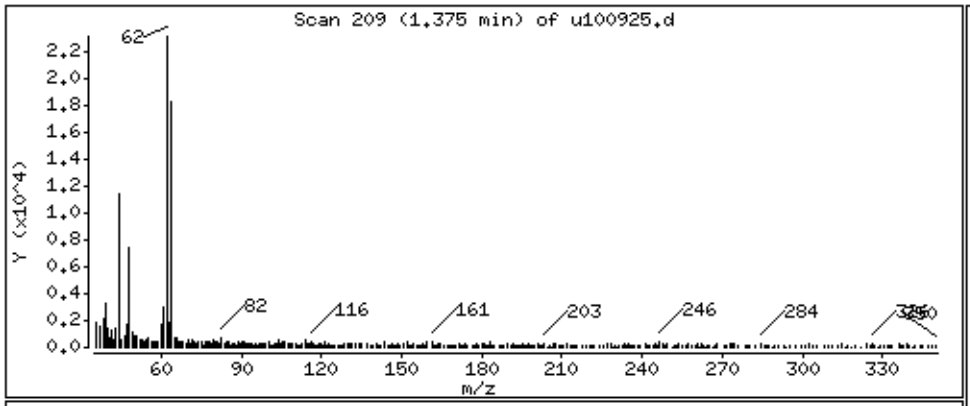
Client ID: HS23100159-12 Instrument: VOA9.i

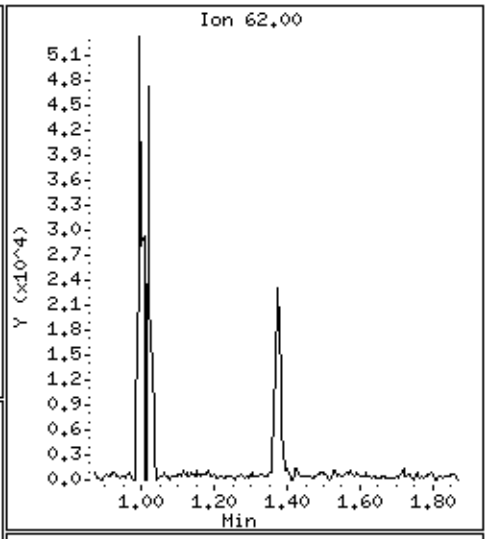
Sample Info: HS23100159-12;HS23100159-12;;;

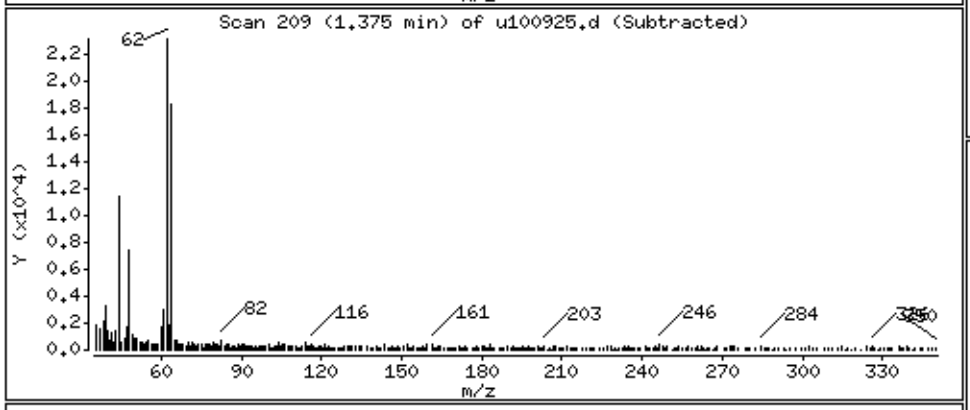
Purge Volume: 5.0 Operator: PC

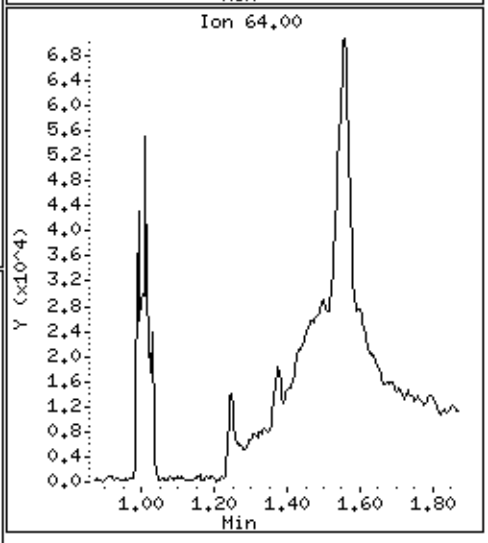
Column phase: DB624 Column diameter: 0.18

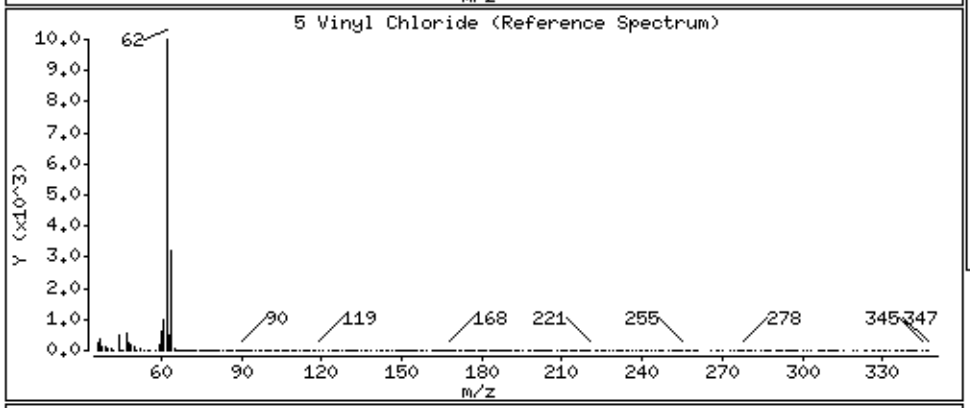
5 Vinyl Chloride Concentration: 3.18 ug/l

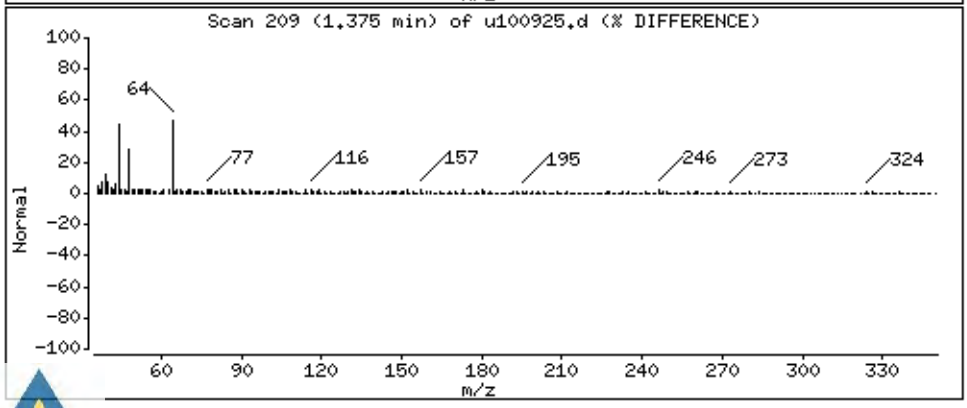












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100925.d Page 3

Date : 09-OCT-2023 23:52

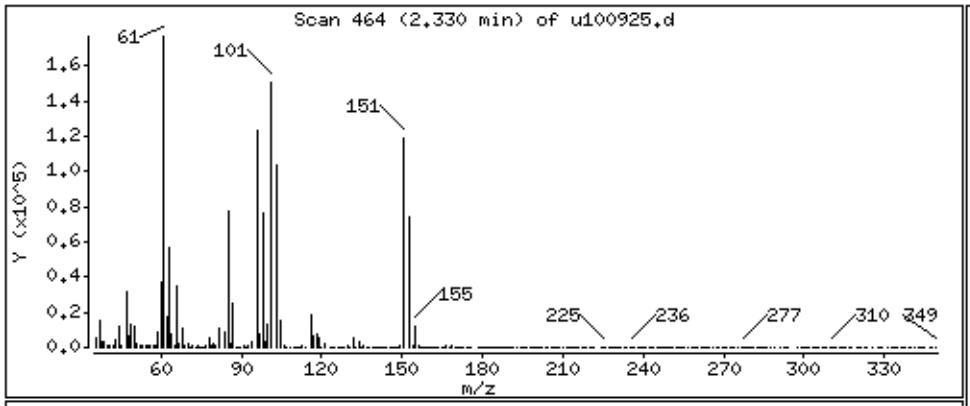
Client ID: HS23100159-12 Instrument: VOA9.i

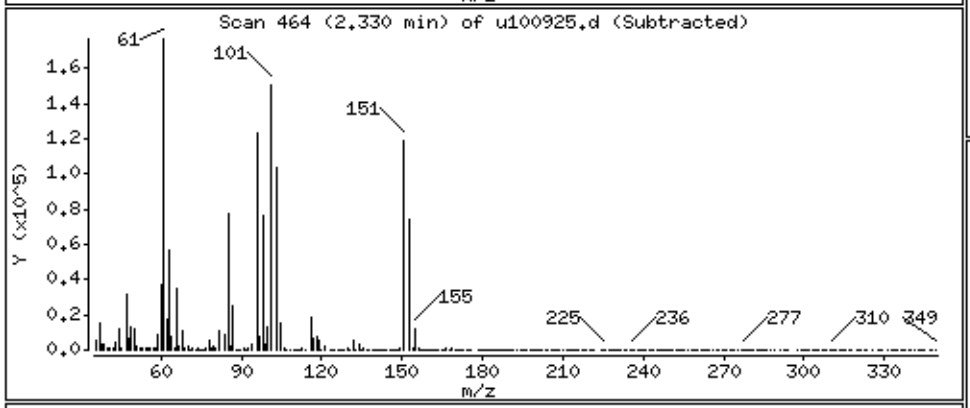
Sample Info: HS23100159-12;HS23100159-12;;;

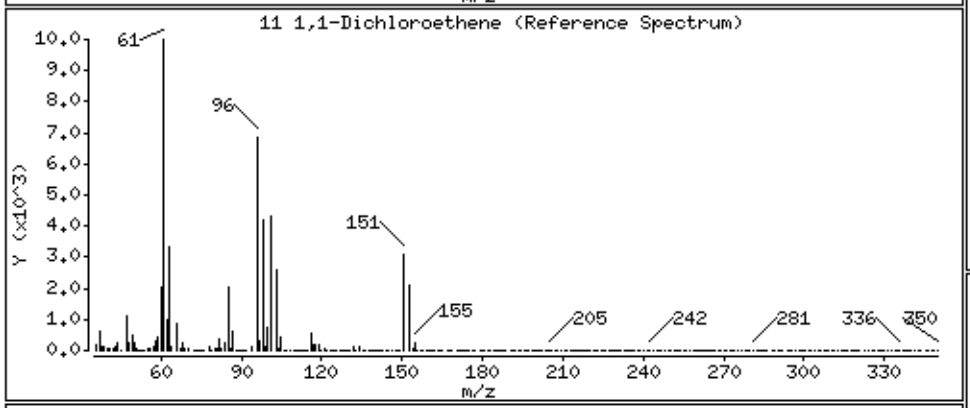
Purge Volume: 5.0 Operator: PC

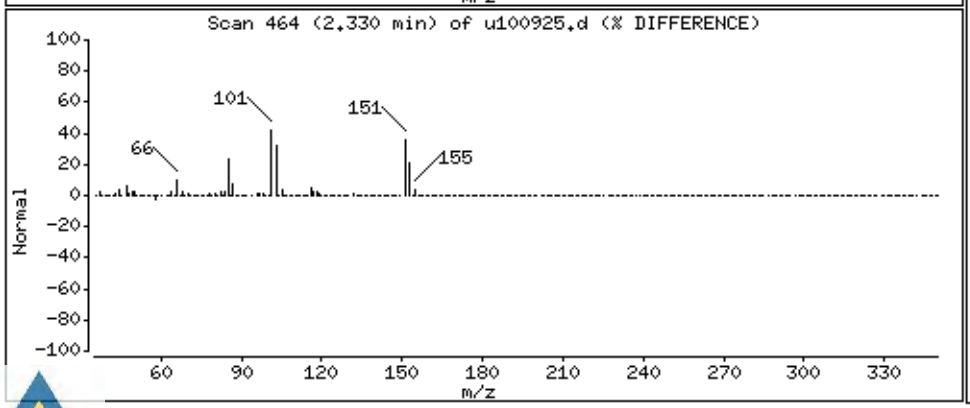
Column phase: DB624 Column diameter: 0.18

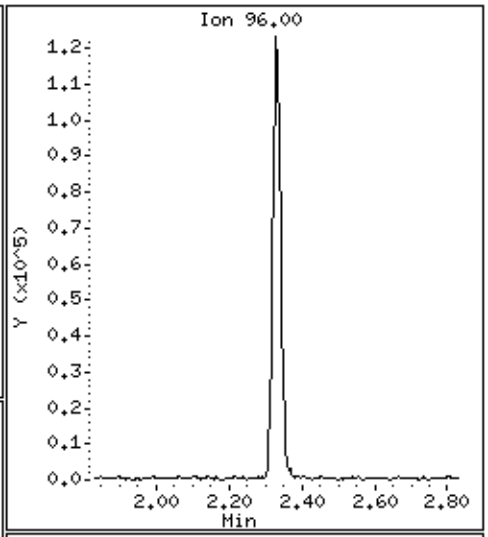
11 1,1-Dichloroethene Concentration: 18.00 ug/l

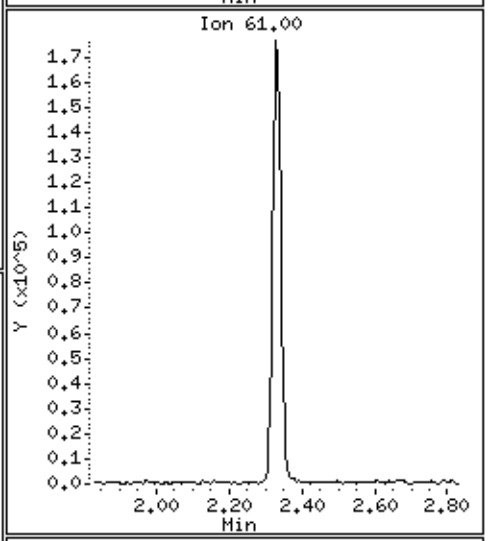


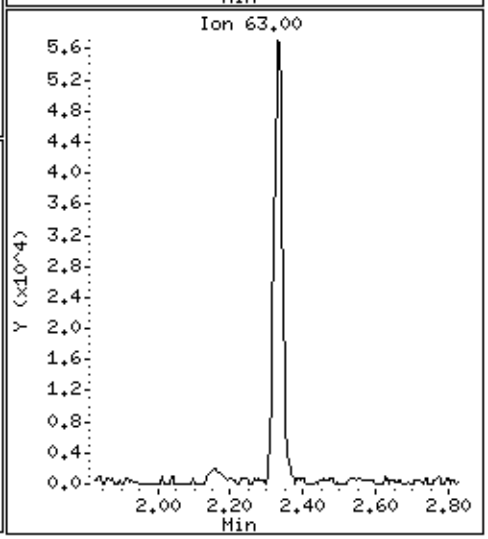












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100925.d Page 4

Date : 09-OCT-2023 23:52

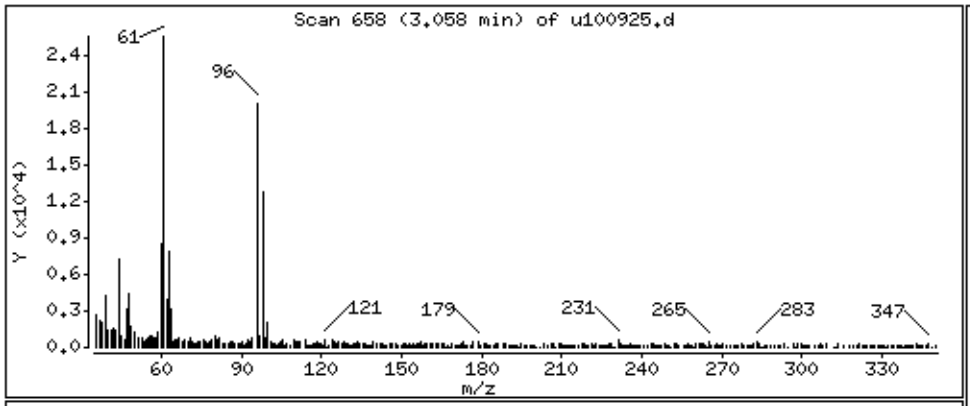
Client ID: HS23100159-12 Instrument: VOA9.i

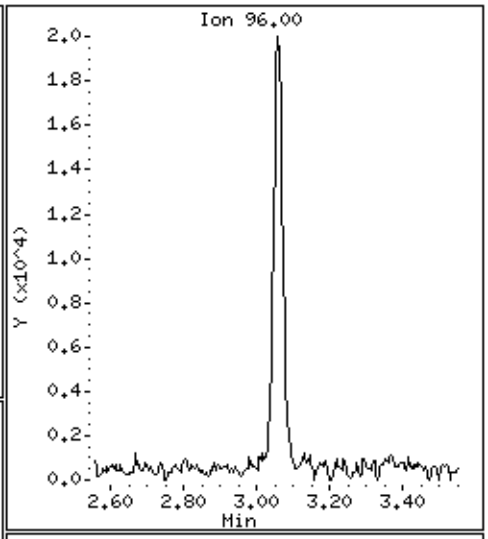
Sample Info: HS23100159-12;HS23100159-12;;;

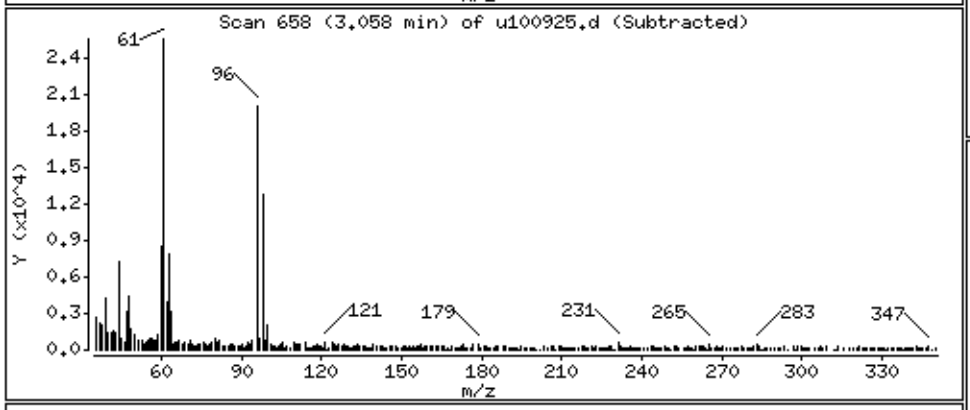
Purge Volume: 5.0 Operator: PC

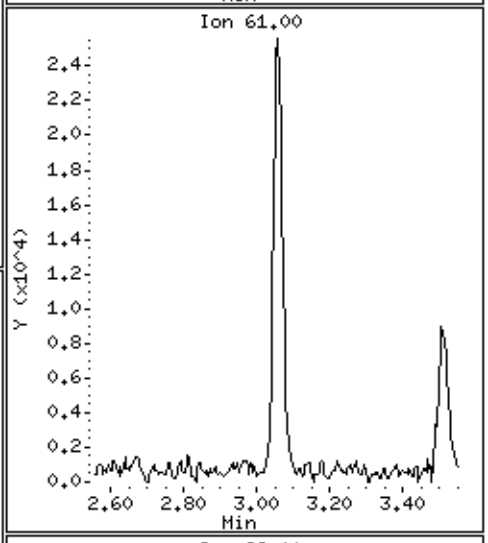
Column phase: DB624 Column diameter: 0.18

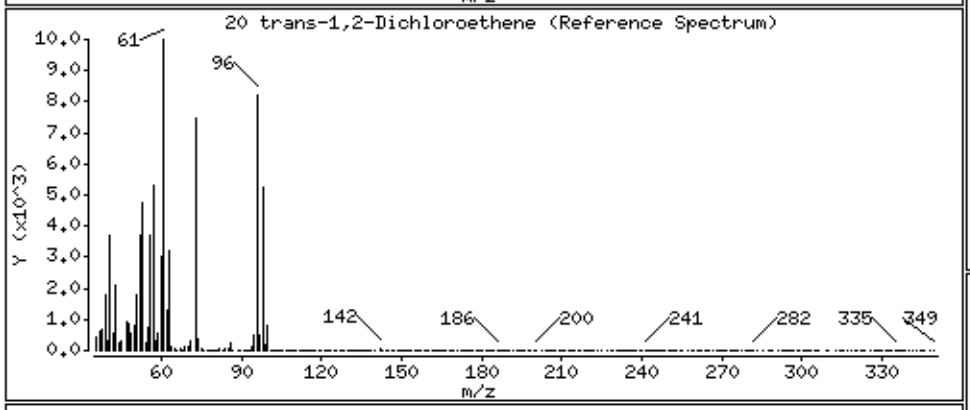
20 trans-1,2-Dichloroethene Concentration: 2.77 ug/l

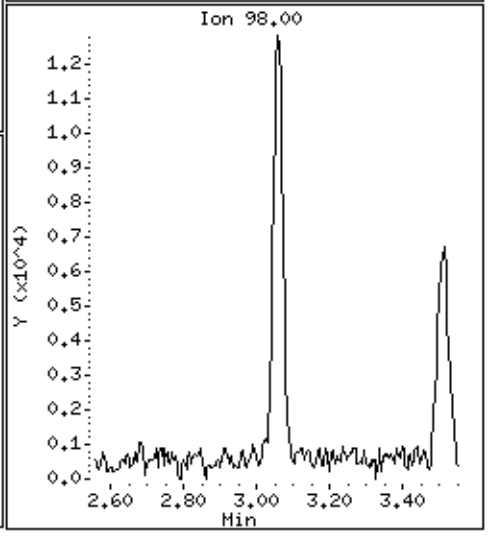


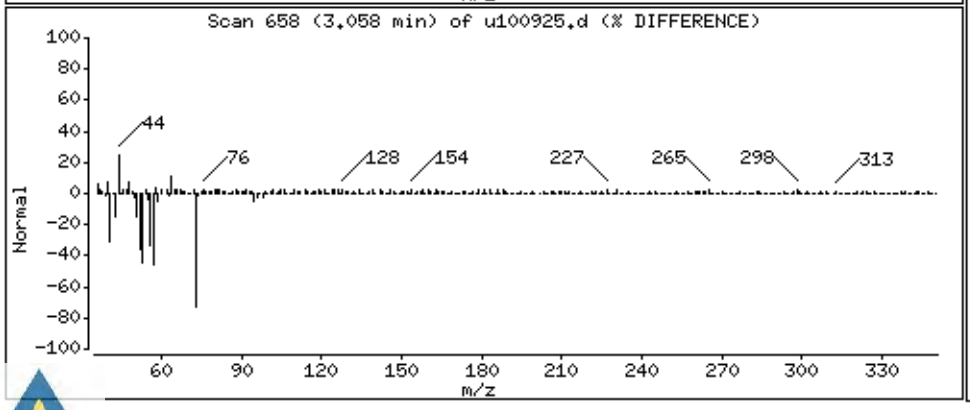












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100925.d Page 5

Date : 09-OCT-2023 23:52

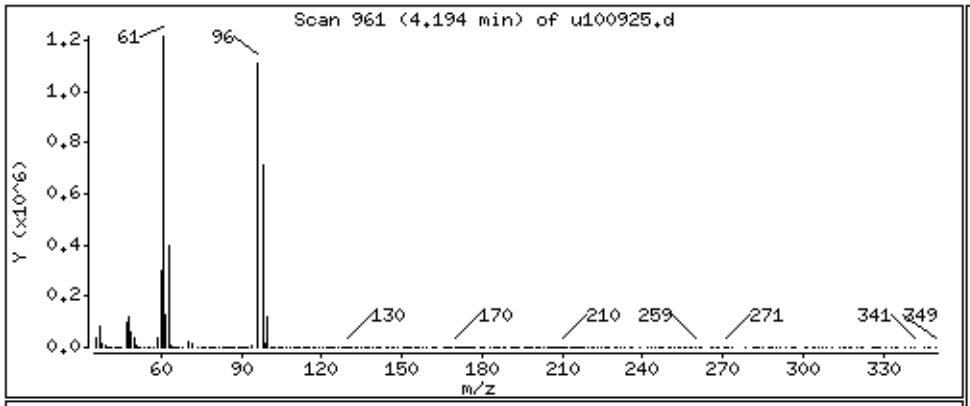
Client ID: HS23100159-12 Instrument: VOA9.i

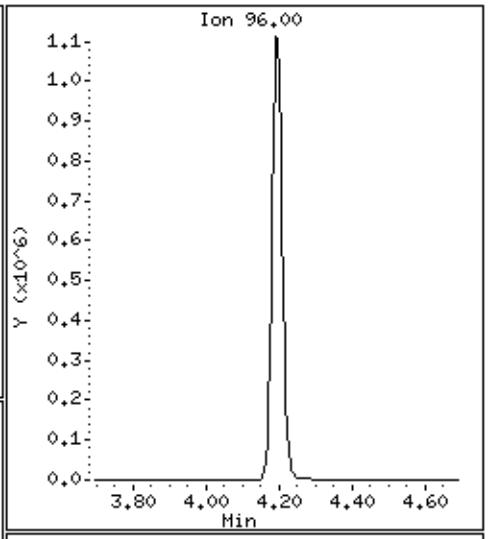
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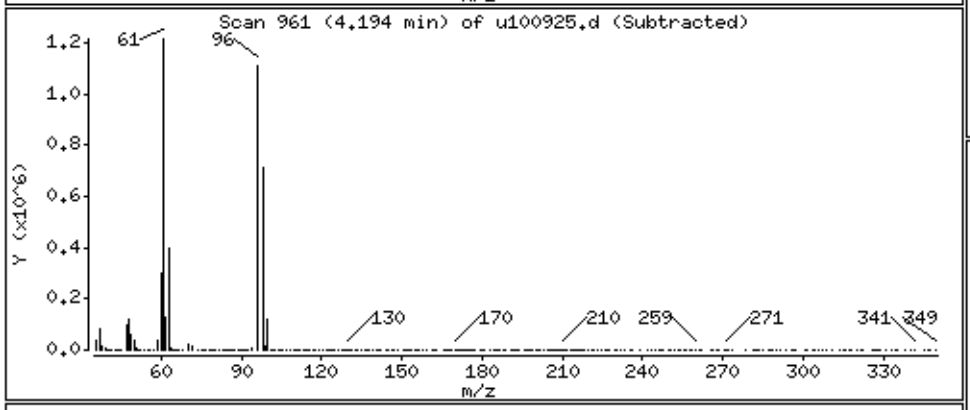
Purge Volume: 5.0 Operator: PC

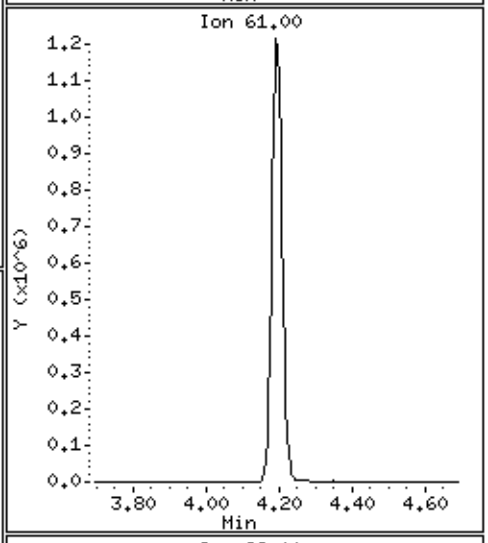
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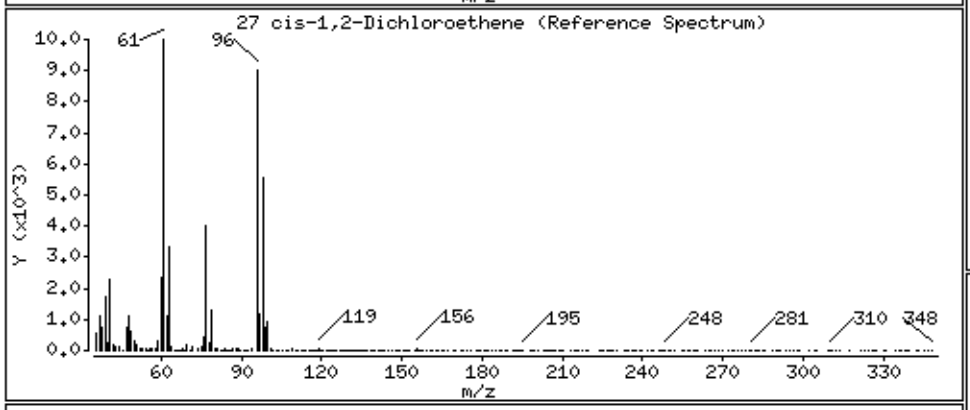
27 cis-1,2-Dichloroethene Concentration: 335.12 ug/l

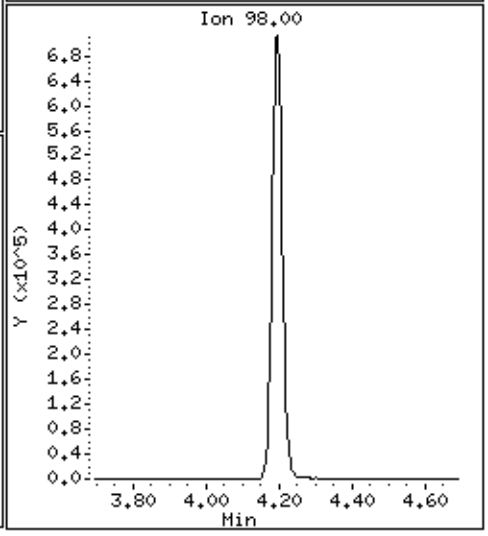


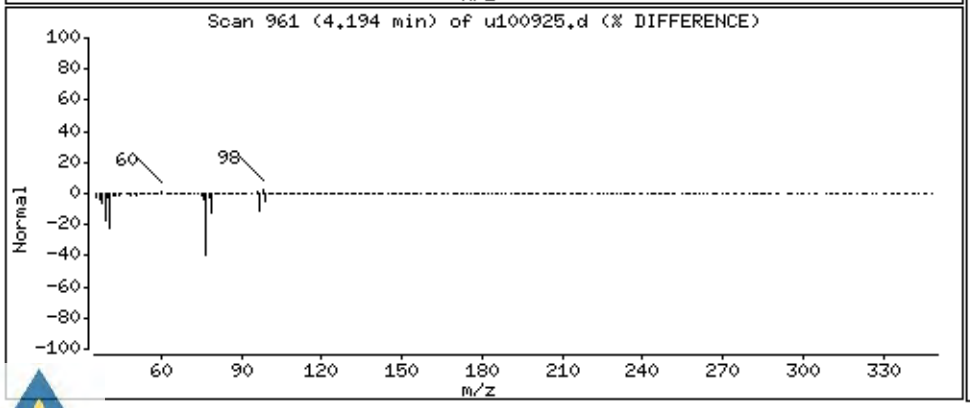












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100925.d Page 6

Date : 09-OCT-2023 23:52

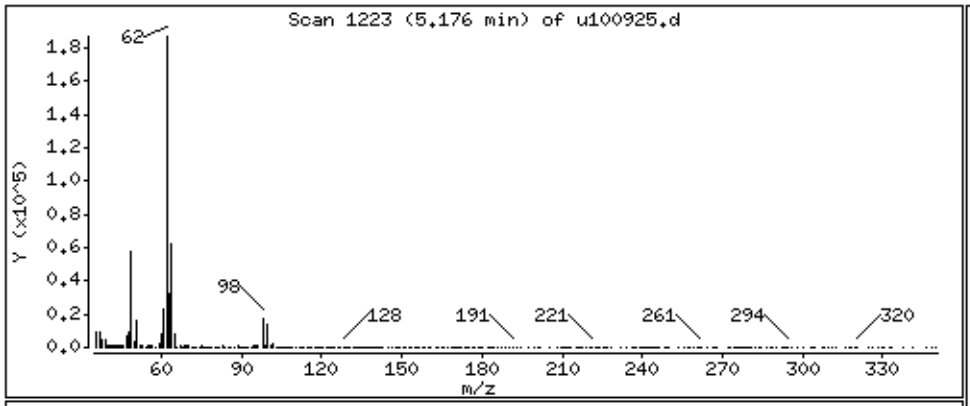
Client ID: HS23100159-12 Instrument: VOA9.i

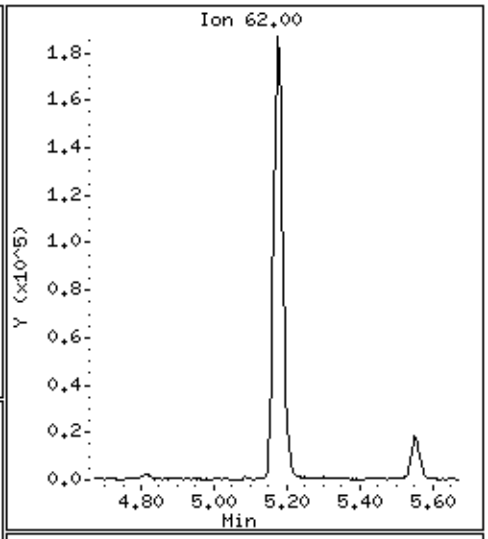
Sample Info: HS23100159-12;HS23100159-12;;;

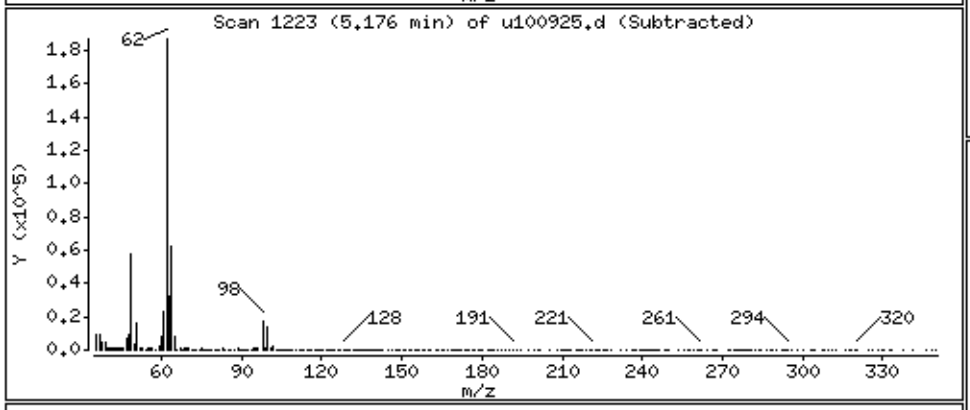
Purge Volume: 5.0 Operator: PC

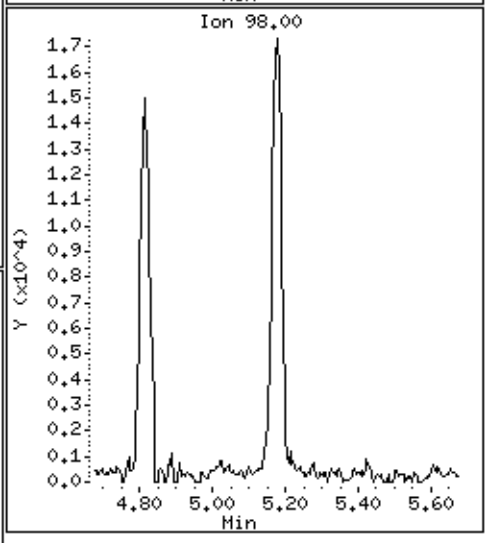
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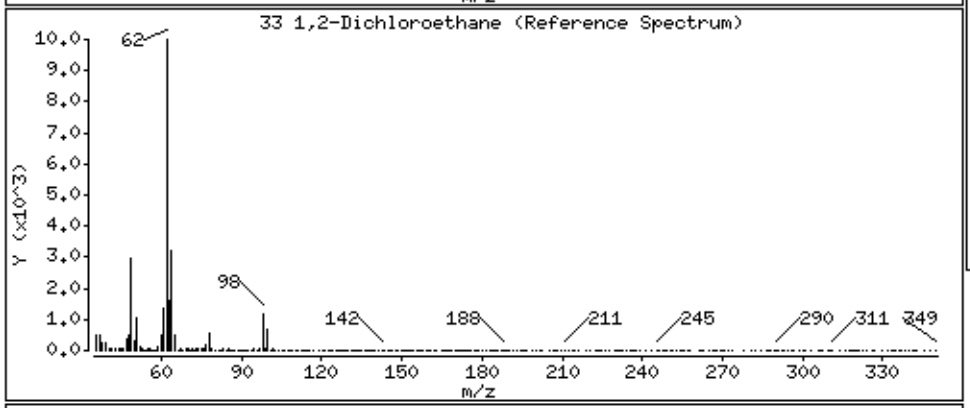
33 1,2-Dichloroethane Concentration: 42.50 ug/l

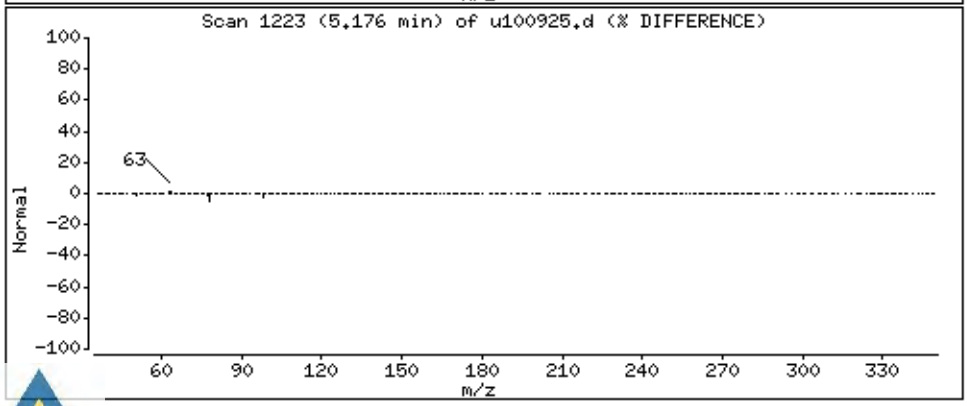












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100925.d Page 7

Date : 09-OCT-2023 23:52

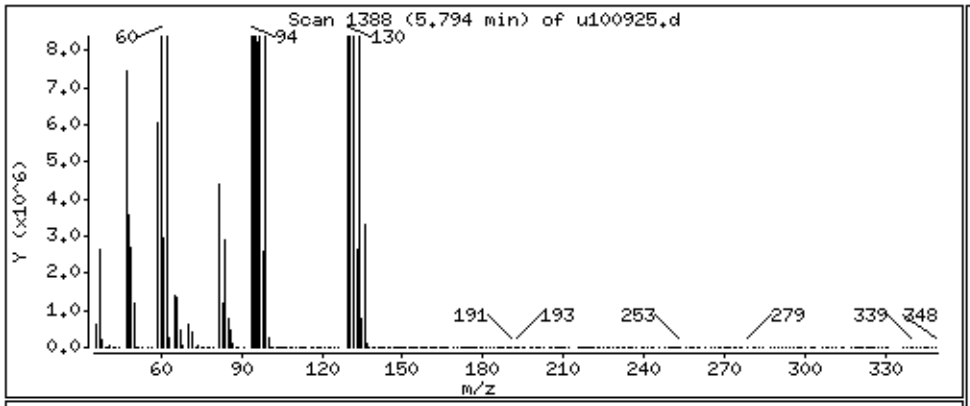
Client ID: HS23100159-12 Instrument: VOA9.i

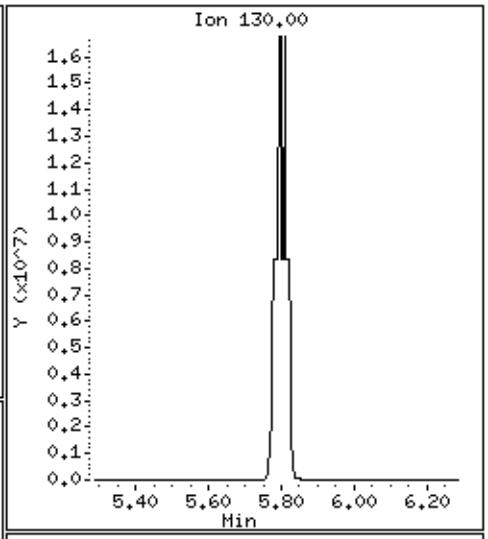
Sample Info: HS23100159-12;HS23100159-12;;;

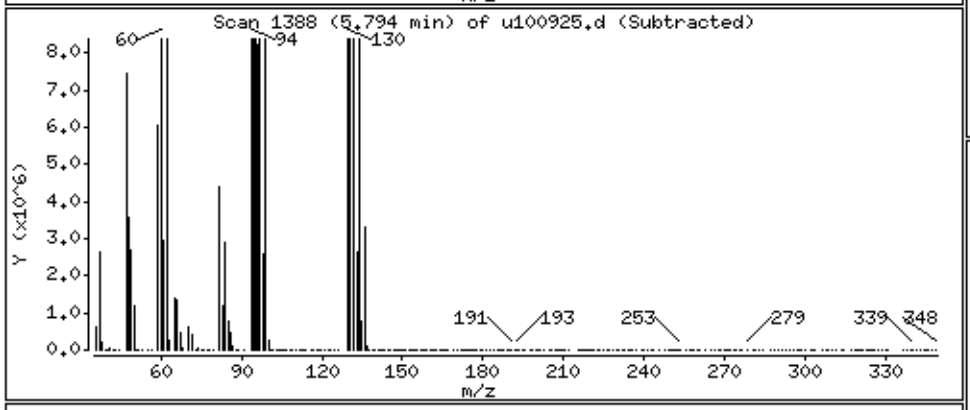
Purge Volume: 5.0 Operator: PC

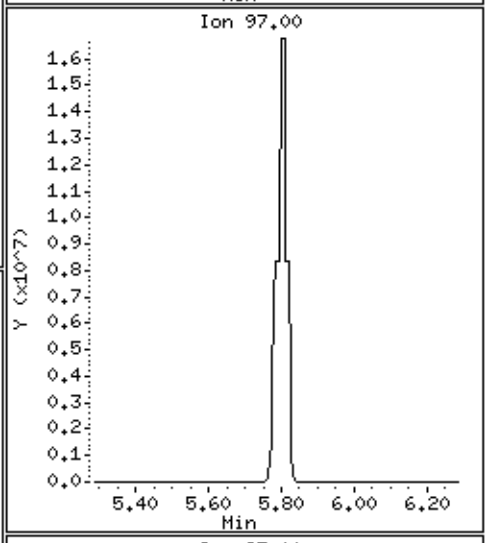
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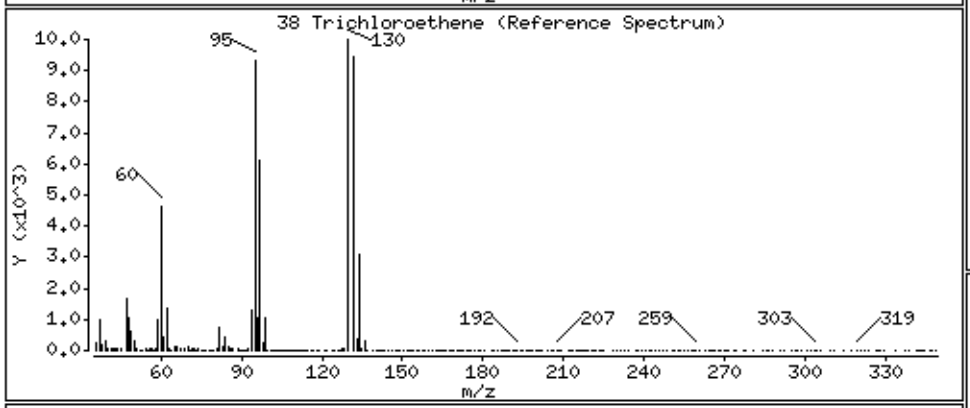
38 Trichloroethene Concentration: 5855.93 ug/l

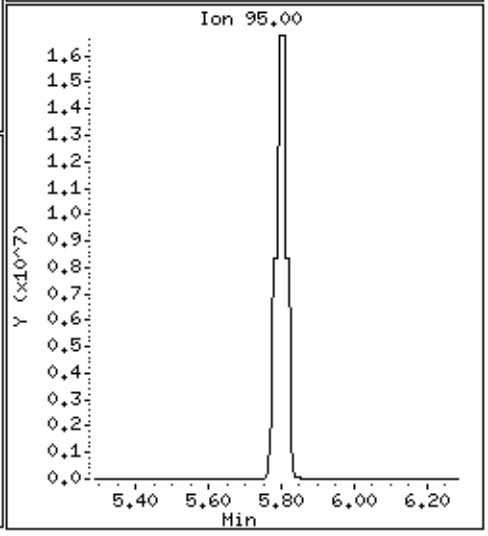


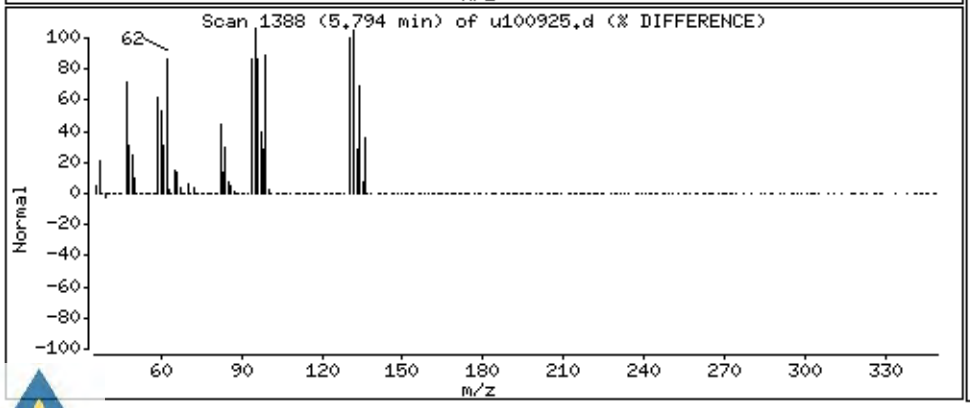












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100925.d Page 8

Date : 09-OCT-2023 23:52

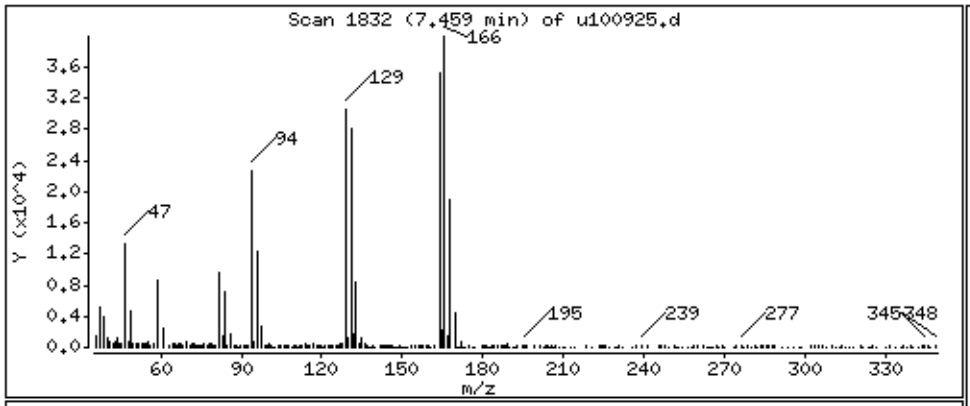
Client ID: HS23100159-12 Instrument: VOA9.i

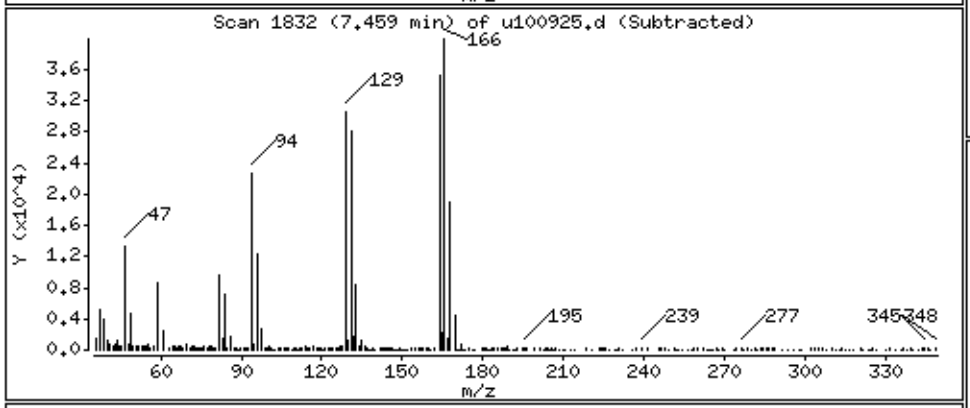
Sample Info: HS23100159-12;HS23100159-12;;;

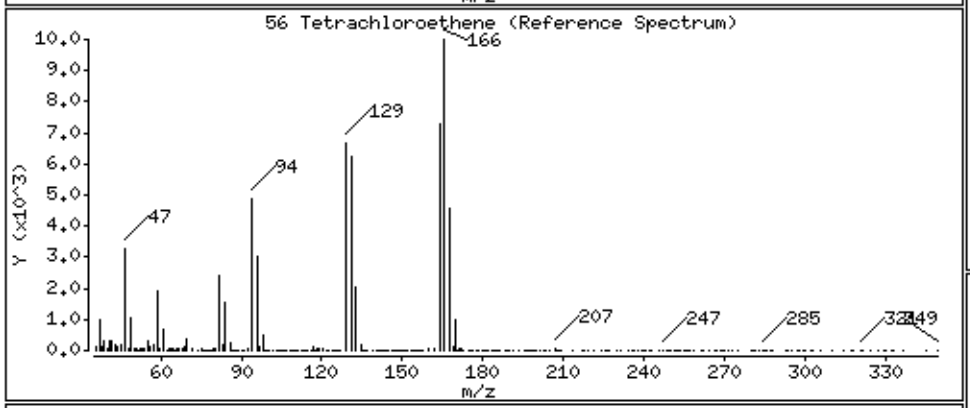
Purge Volume: 5.0 Operator: PC

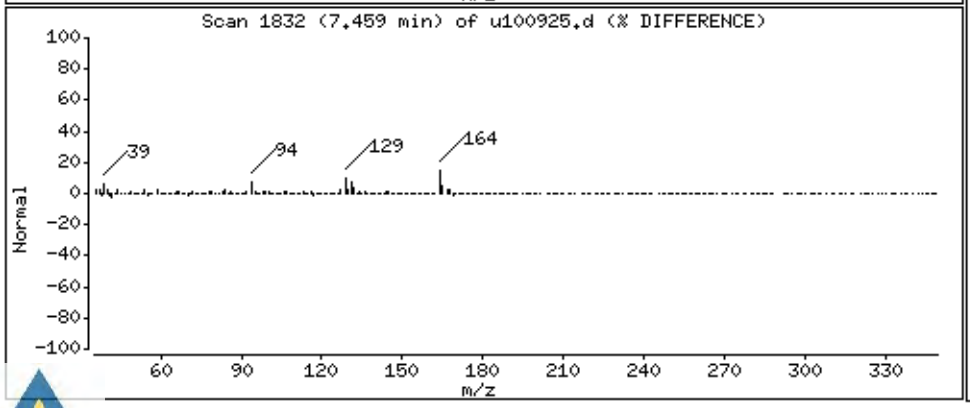
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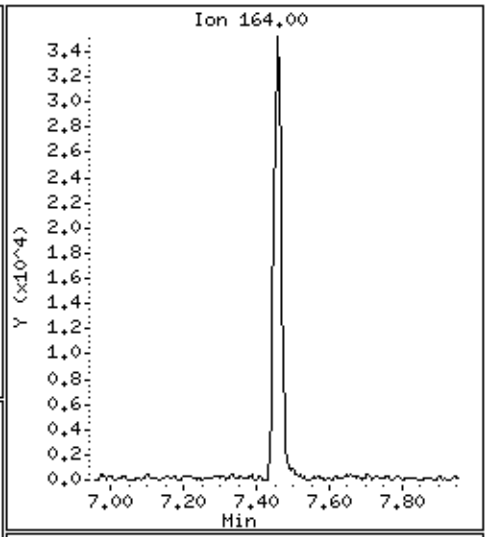
56 Tetrachloroethene Concentration: 13.58 ug/l

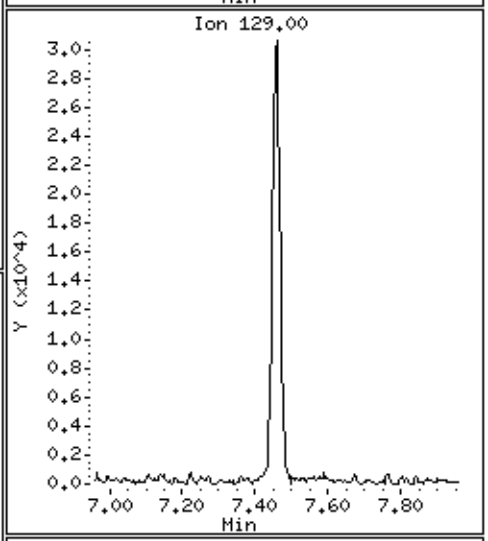


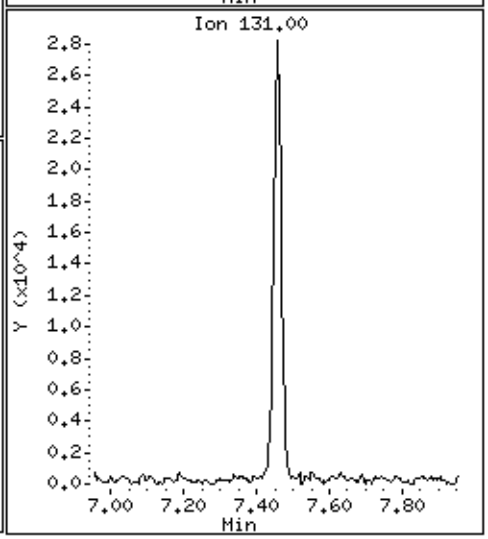










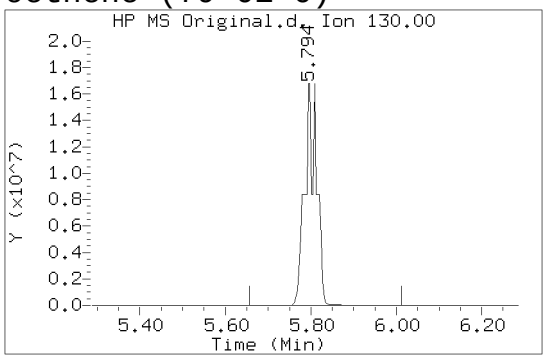


Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100925.d
Inj Date : 09-OCT-2023 23:52
InstruID : VOA9.i
LabSampID : HS23100159-12

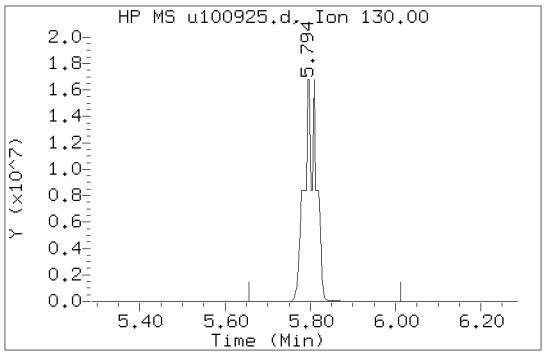
Trichloroethene (79-01-6)

Reason Code:

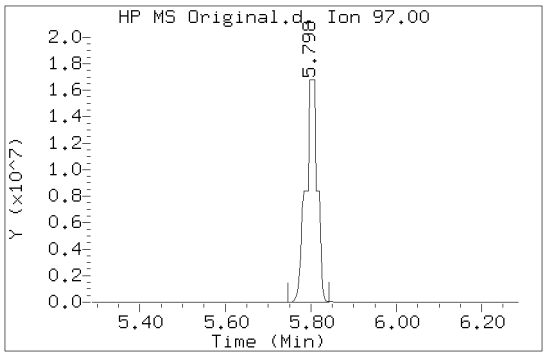
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MASS
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AREA
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HEIGHT
16773899
10-Oct-2023
21:41



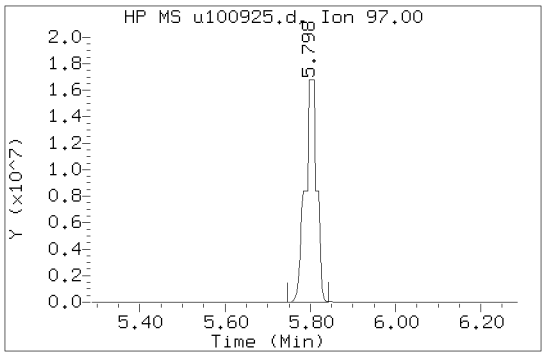
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10-Oct-2023
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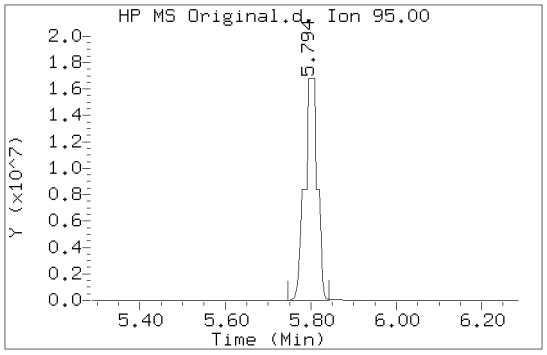
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10-Oct-2023
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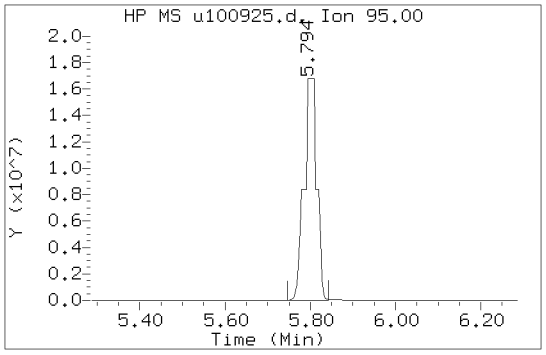
AFTER
MASS
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HEIGHT
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10-Oct-2023
21:41



BEFORE
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AREA
35898003
HEIGHT
16774199
10-Oct-2023
21:41



AFTER
MASS
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AREA
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HEIGHT
16774199
10-Oct-2023
21:41



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100927.D Page 1
Report Date: 10-Oct-2023 16:09

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100927.D
Lab Smp Id: HS23100159-13 Client Smp ID: HS23100159-13
Inj Date : 10-OCT-2023 00:37
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-13;HS23100159-13;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 25
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

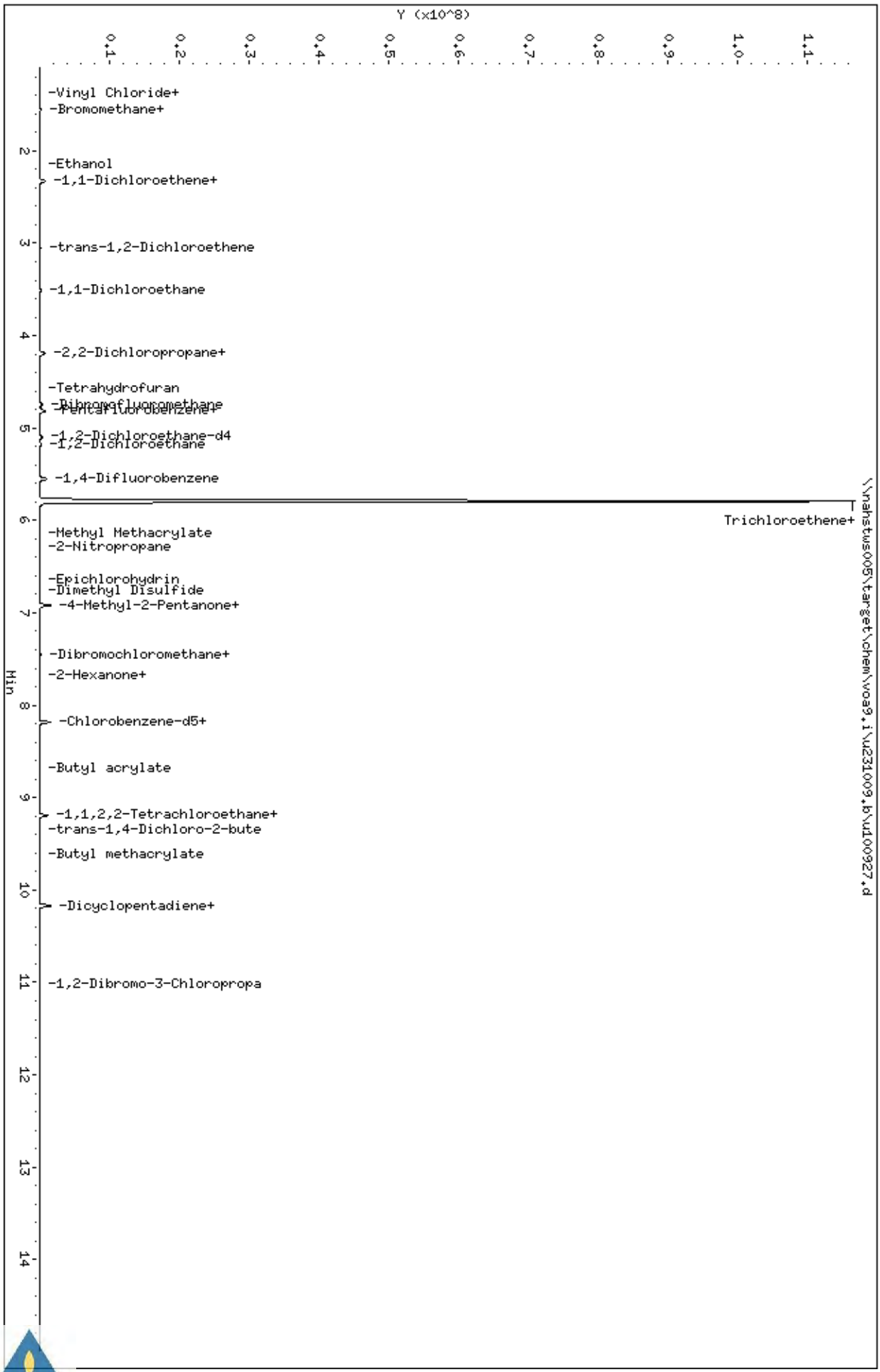
Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.815	4.811	(1.000)	508807	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	241030	43.9603	43.96
$ 35 1,2-Dichloroethane-d4	65	5.096	5.093	(1.058)	274495	42.4450	42.44
* 36 1,4-Difluorobenzene	114	5.550	5.550	(1.000)	806315	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	725319	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	934479	54.2862	54.28
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	308320	45.3752	45.37
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	379540	50.0000	(M)
5 Vinyl Chloride	62	1.370	1.370	(0.285)	15110	1.84775	1.84(a)
11 1,1-Dichloroethene	96	2.326	2.330	(0.483)	234554	23.0907	23.09
20 trans-1,2-Dichloroethene	96	3.057	3.053	(0.635)	17932	1.41608	1.41(a)
27 cis-1,2-Dichloroethene	96	4.193	4.193	(0.871)	378811	58.7286	58.72
33 1,2-Dichloroethane	62	5.175	5.171	(0.932)	156611	19.6389	19.63
38 Trichloroethene	130	5.782	5.786	(1.042)	18112217	3254.61	3254.60(A)
56 Tetrachloroethene	164	7.458	7.454	(0.911)	20827	5.53257	5.53

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.
M - Compound response manually integrated.



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100927.d
Date : 10-OCT-2023 00:37
Client ID: HS23100159-13
Sample Info: HS23100159-13;HS23100159-13;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100927.d Page 2

Date : 10-OCT-2023 00:37

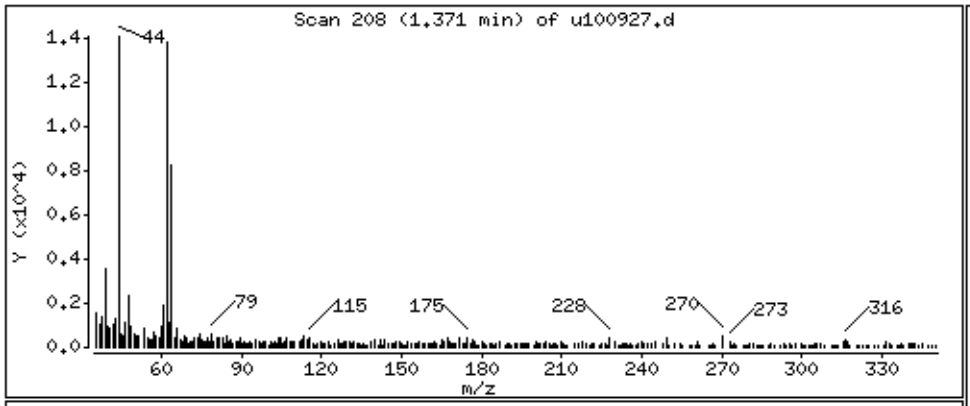
Client ID: HS23100159-13 Instrument: VOA9.i

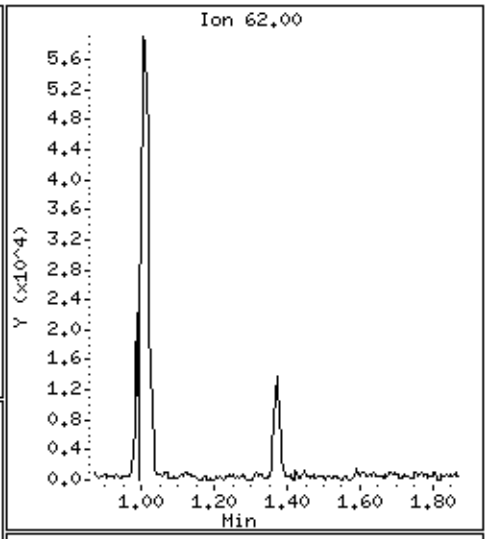
Sample Info: HS23100159-13;HS23100159-13;;;

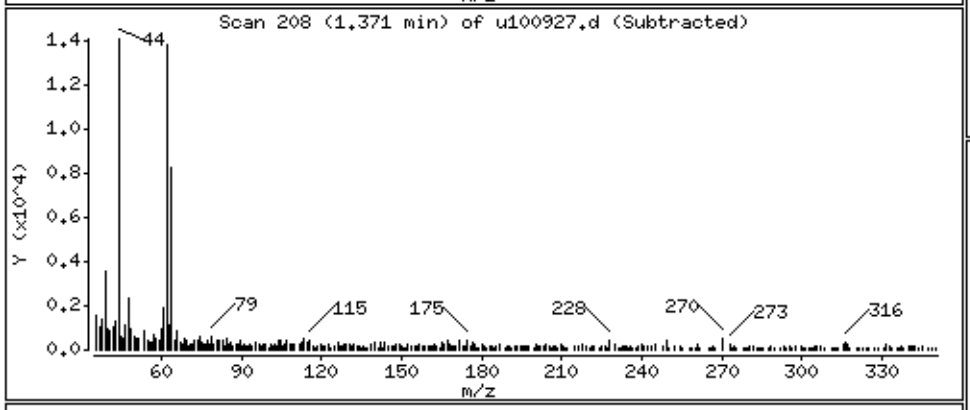
Purge Volume: 5.0 Operator: PC

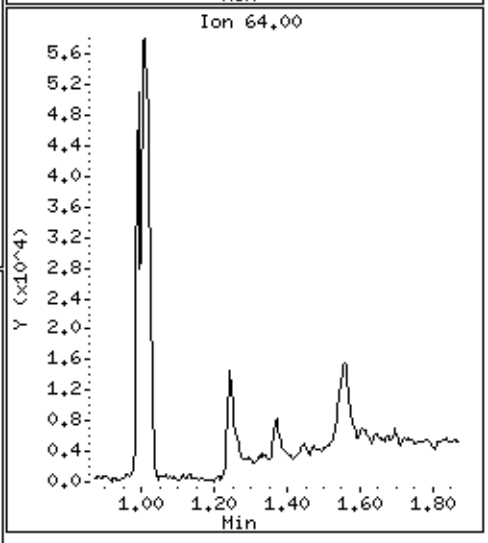
Column phase: DB624 Column diameter: 0.18

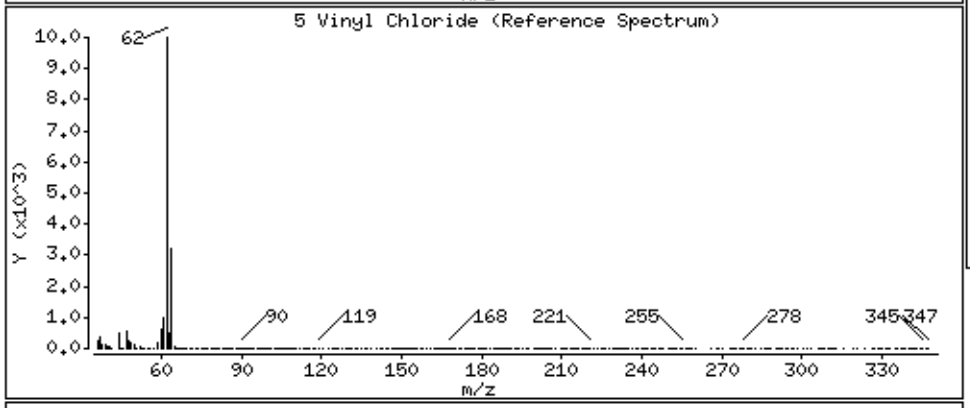
5 Vinyl Chloride Concentration: 1.84 ug/l

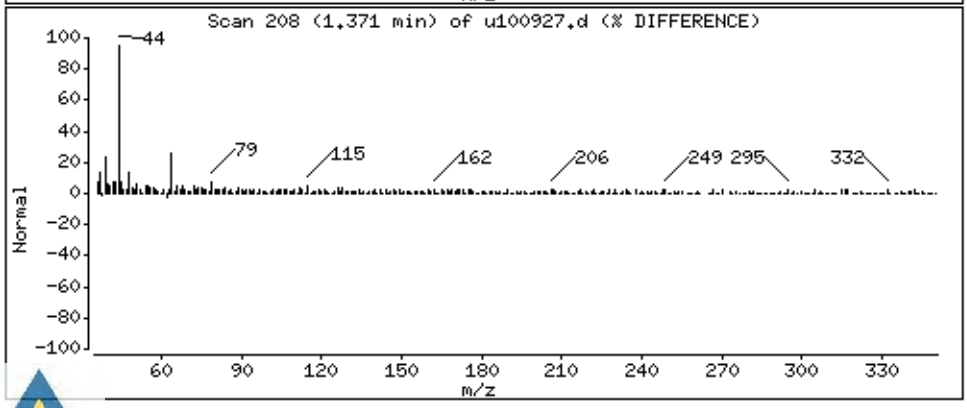












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100927.d Page 3

Date : 10-OCT-2023 00:37

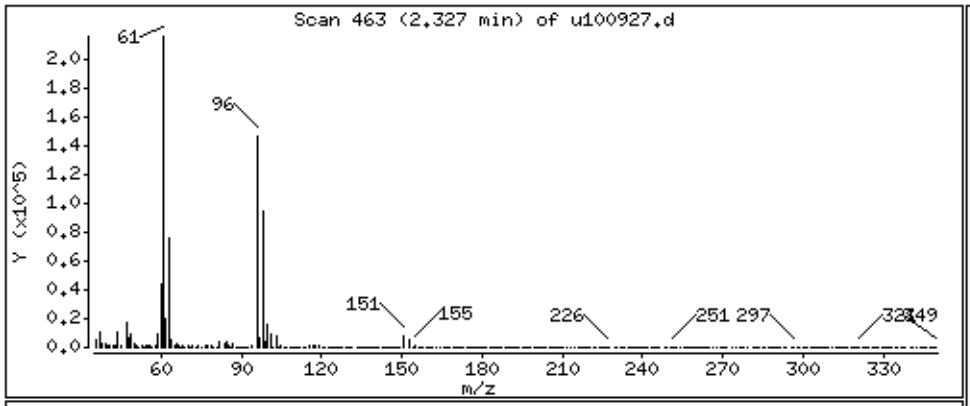
Client ID: HS23100159-13 Instrument: VOA9.i

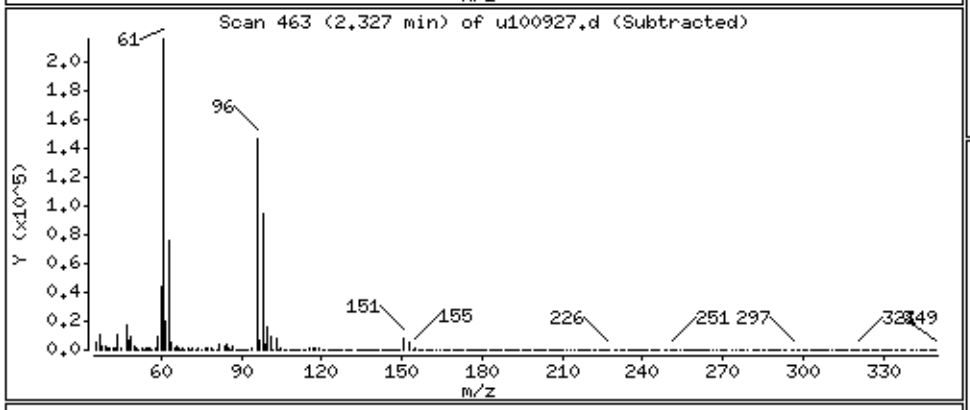
Sample Info: HS23100159-13;HS23100159-13;;;

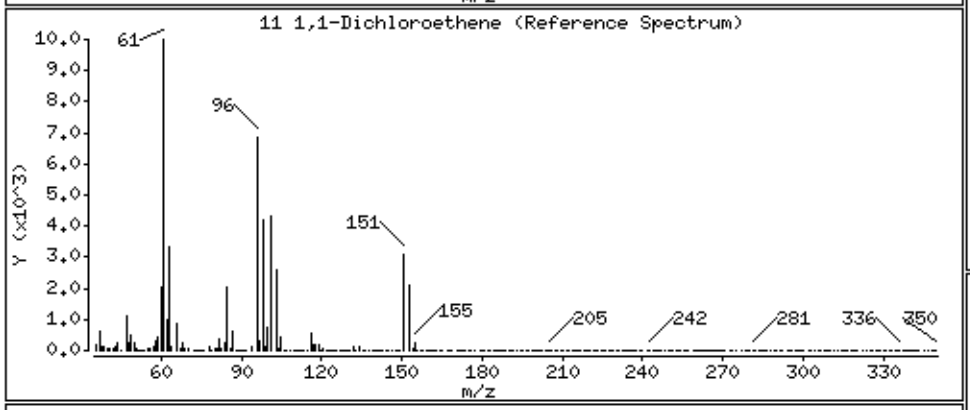
Purge Volume: 5.0 Operator: PC

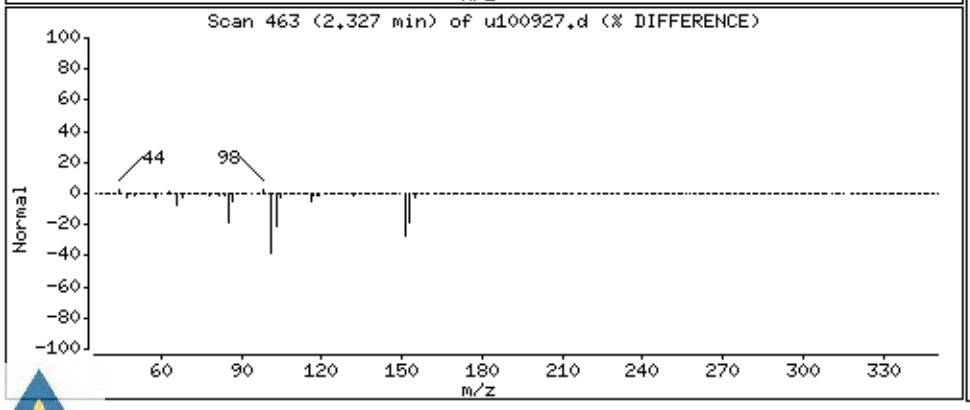
Column phase: DB624 Column diameter: 0.18

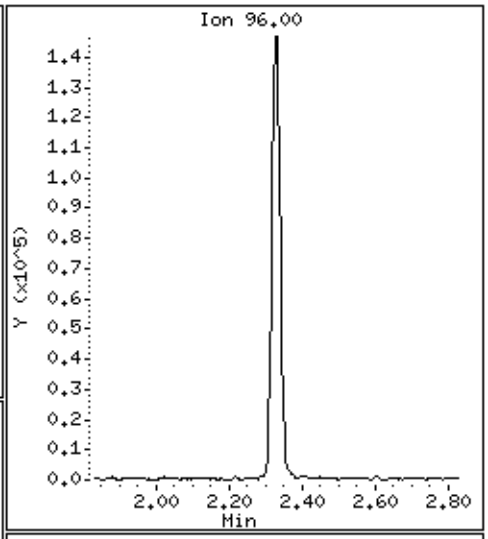
11 1,1-Dichloroethene Concentration: 23.09 ug/l

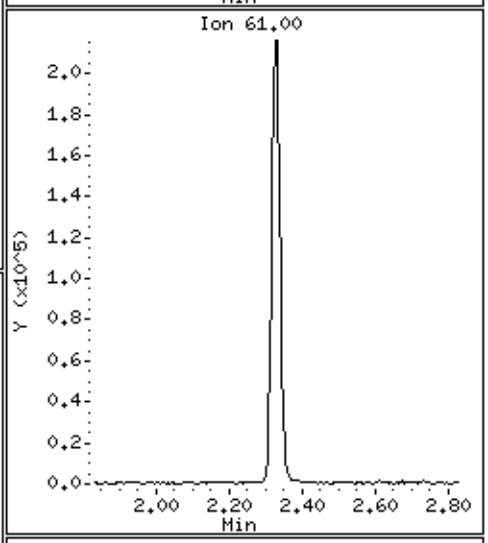


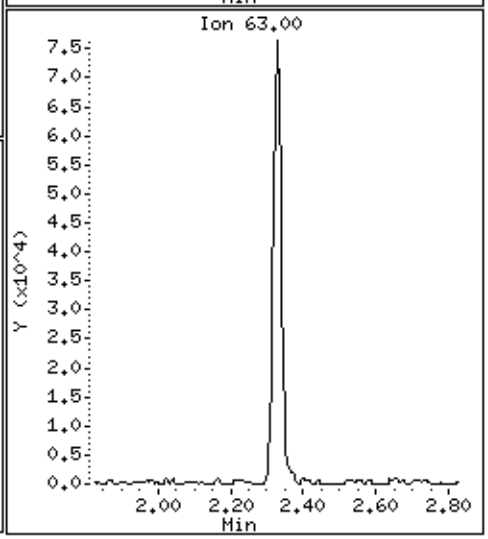












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100927.d Page 4

Date : 10-OCT-2023 00:37

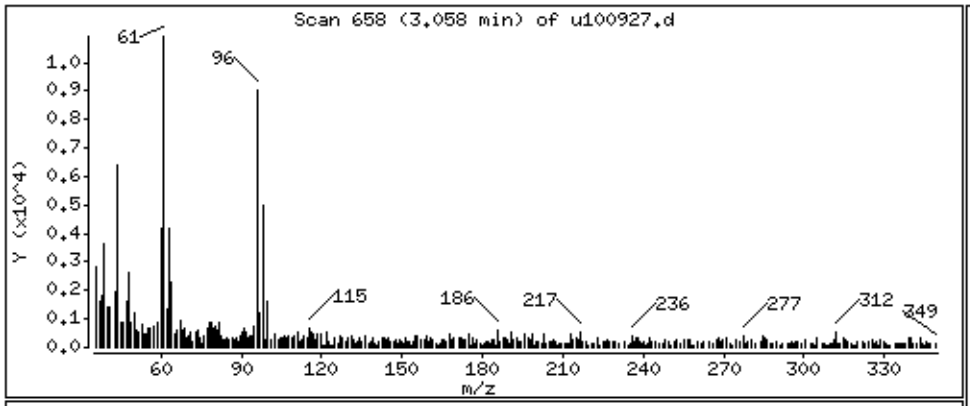
Client ID: HS23100159-13 Instrument: VOA9.i

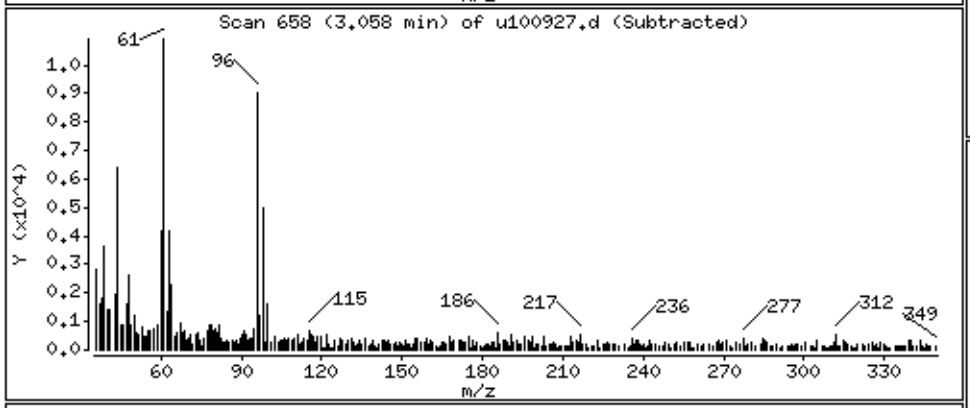
Sample Info: HS23100159-13;HS23100159-13;;;

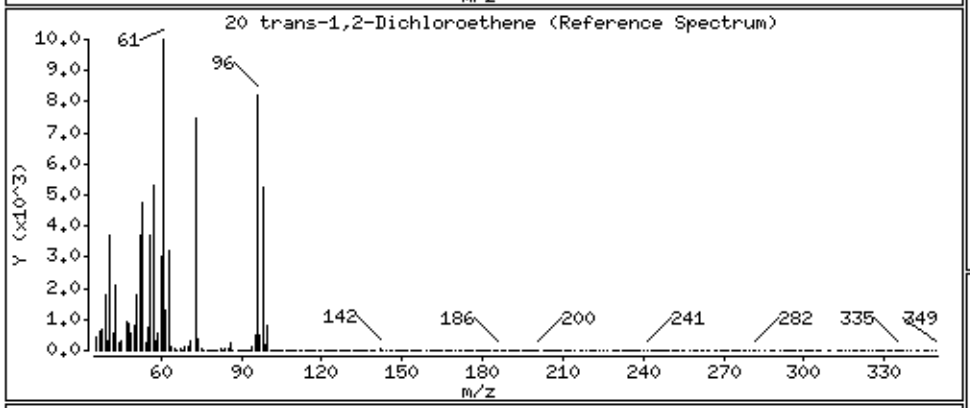
Purge Volume: 5.0 Operator: PC

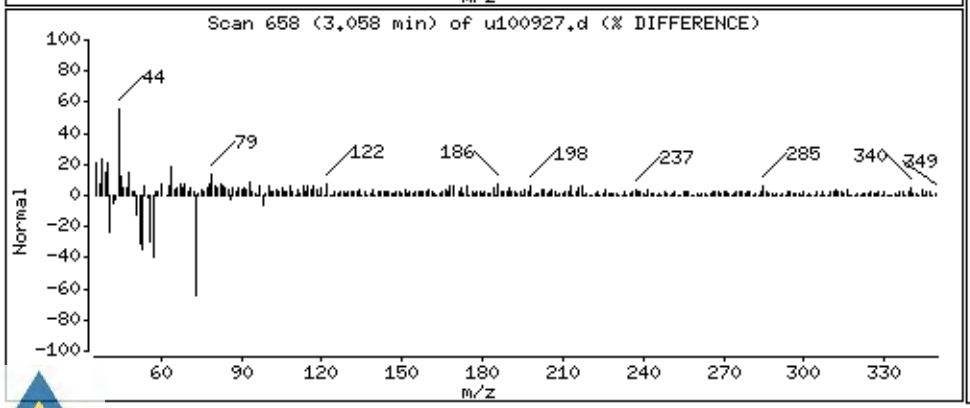
Column phase: DB624 Column diameter: 0.18

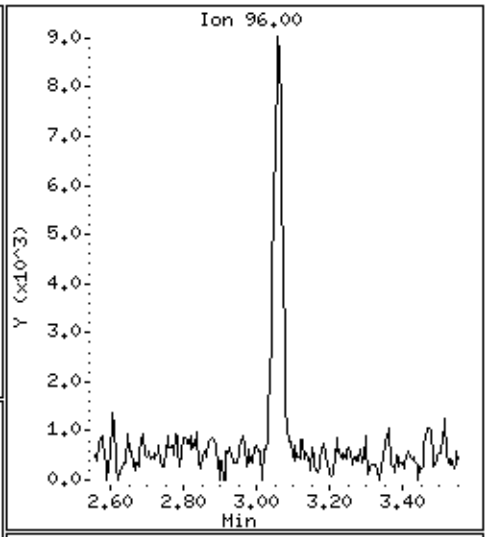
20 trans-1,2-Dichloroethene Concentration: 1.41 ug/l

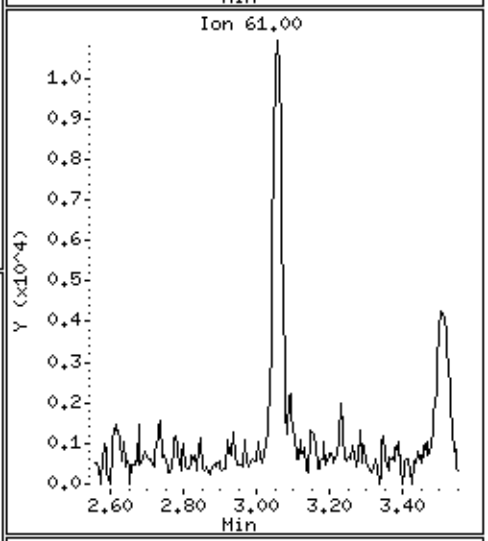


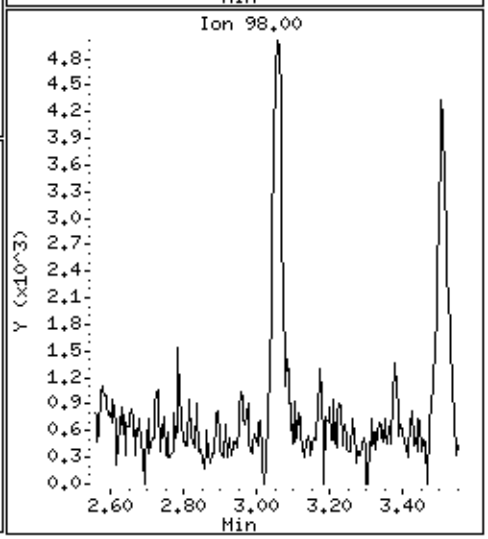












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100927.d Page 5

Date : 10-OCT-2023 00:37

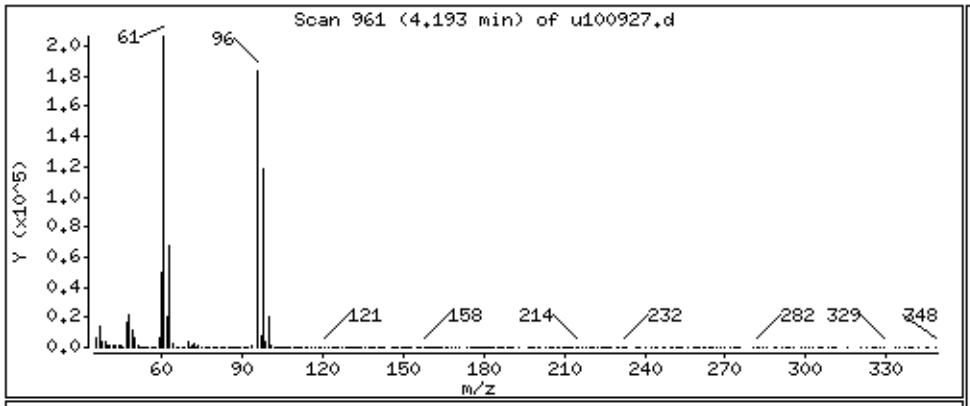
Client ID: HS23100159-13 Instrument: VOA9.i

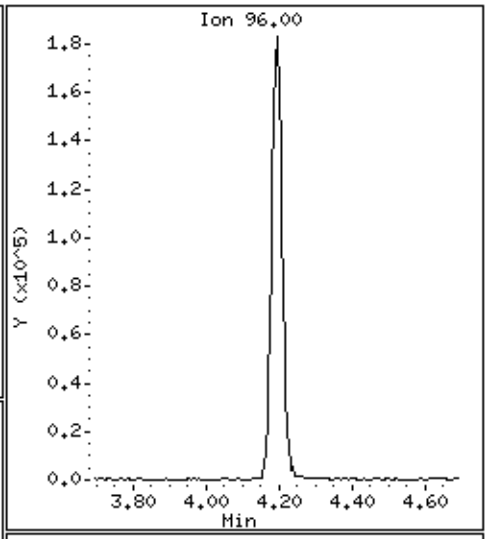
Sample Info: HS23100159-13;HS23100159-13;;;

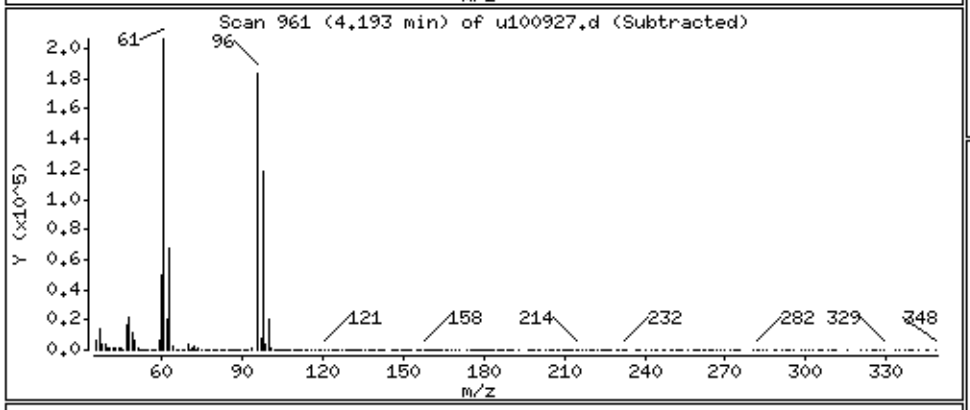
Purge Volume: 5.0 Operator: PC

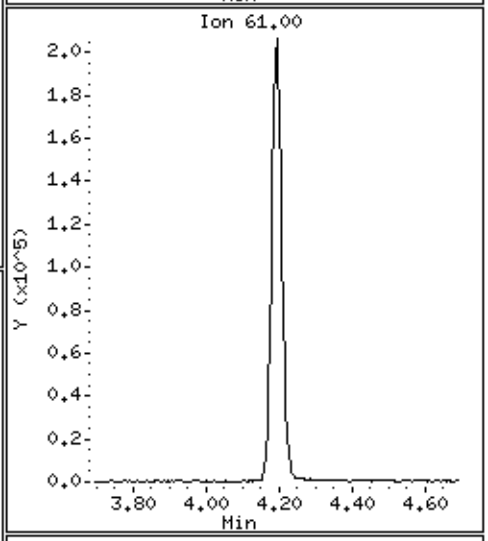
Column phase: DB624 Column diameter: 0.18

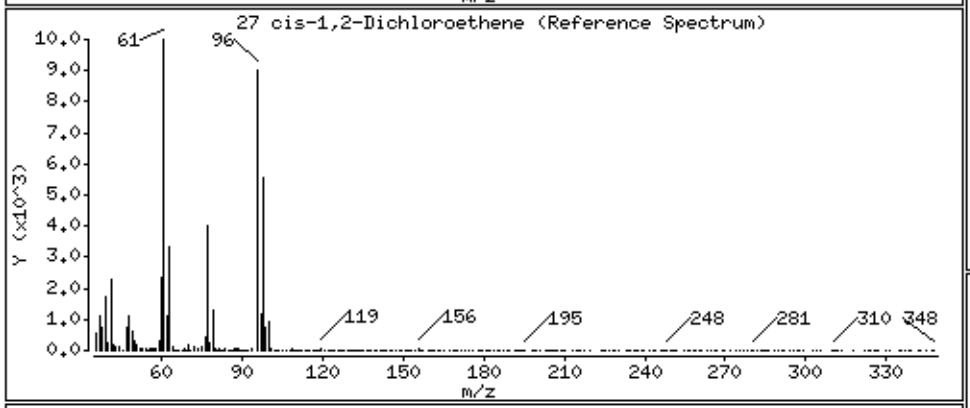
27 cis-1,2-Dichloroethene Concentration: 58.72 ug/l

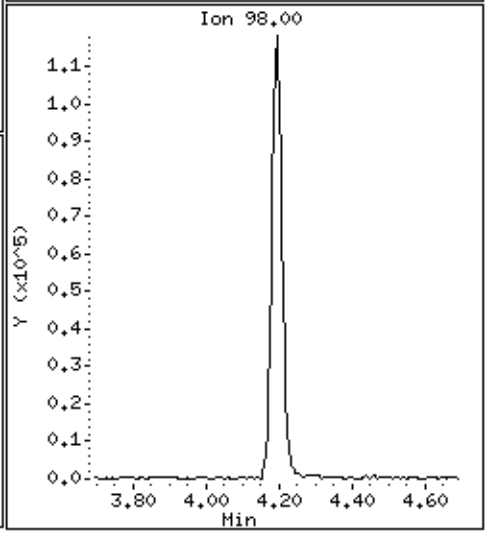


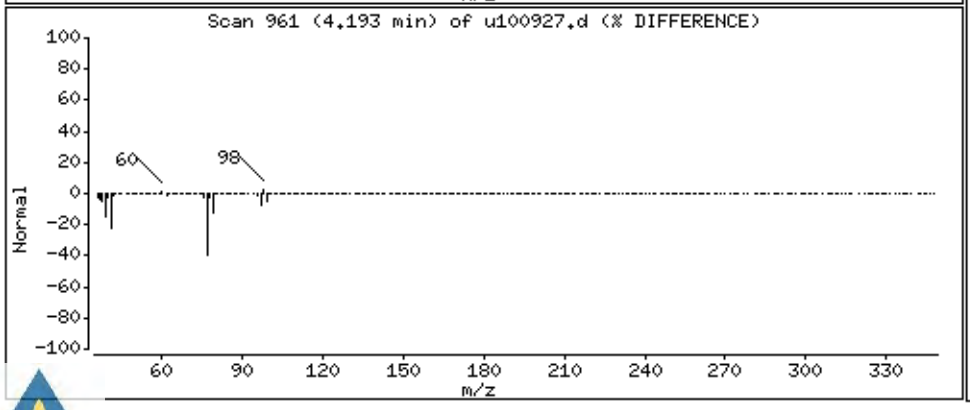












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100927.d Page 6

Date : 10-OCT-2023 00:37

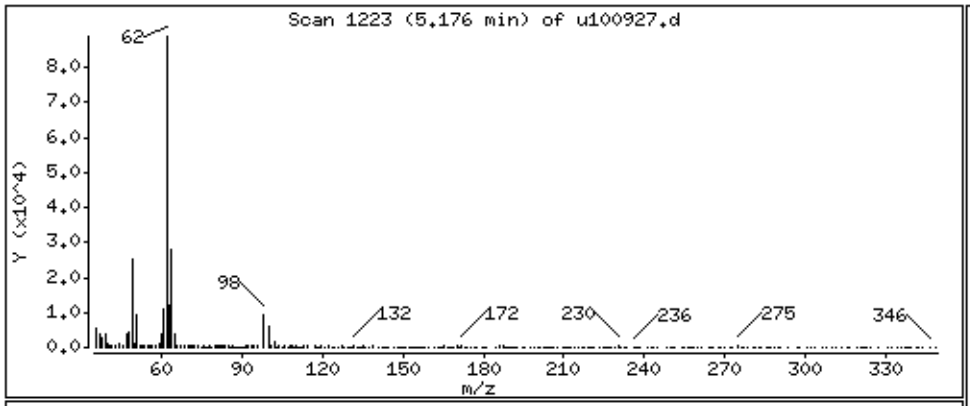
Client ID: HS23100159-13 Instrument: VOA9.i

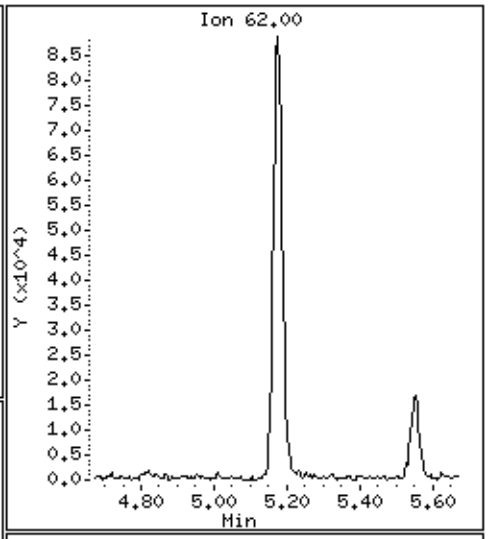
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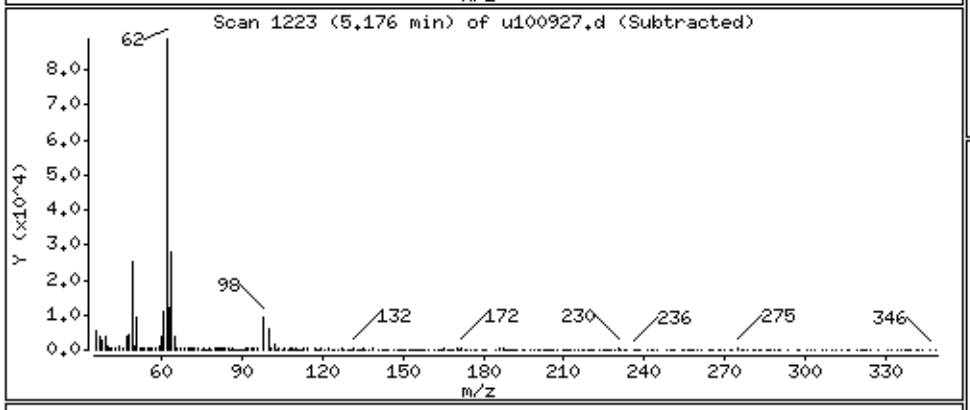
Purge Volume: 5.0 Operator: PC

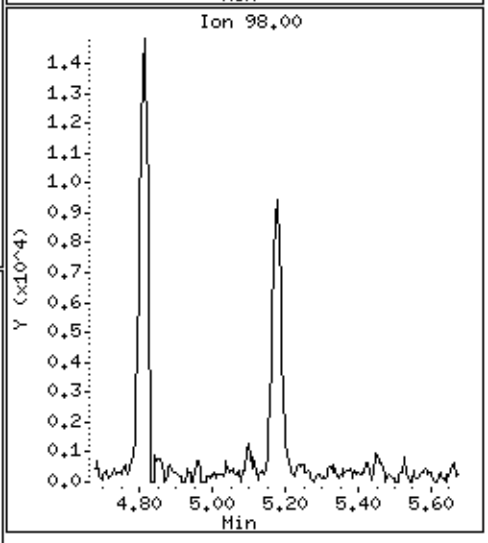
Column phase: DB624 Column diameter: 0.18

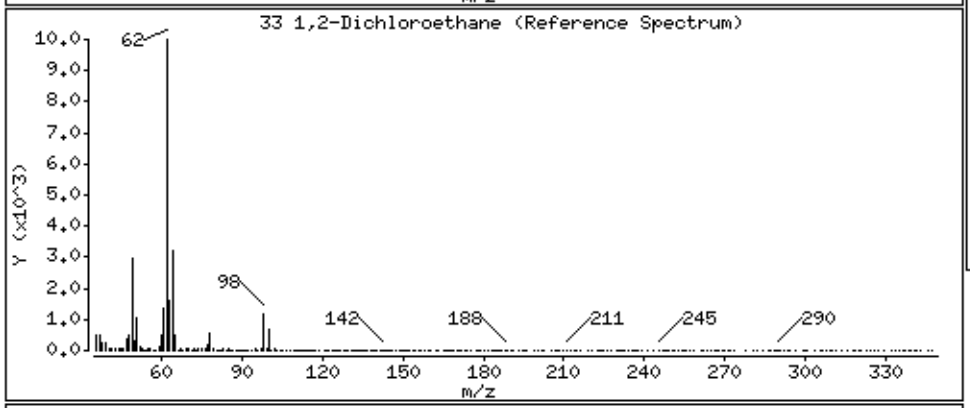
33 1,2-Dichloroethane Concentration: 19.63 ug/l

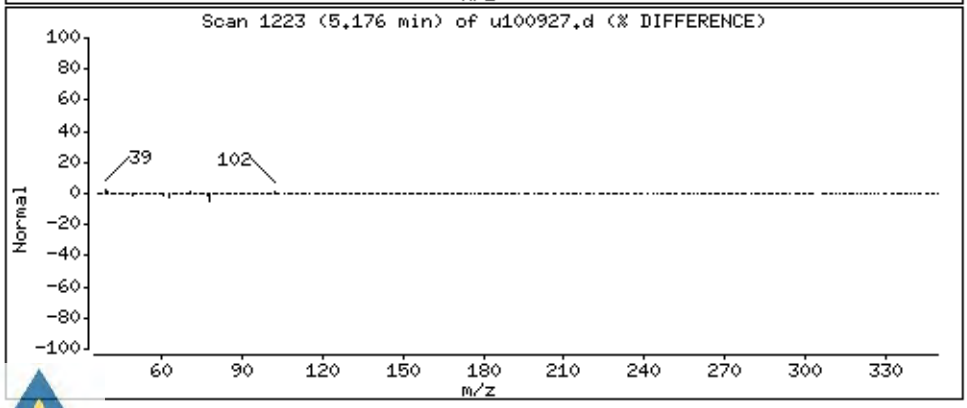












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100927.d Page 7

Date : 10-OCT-2023 00:37

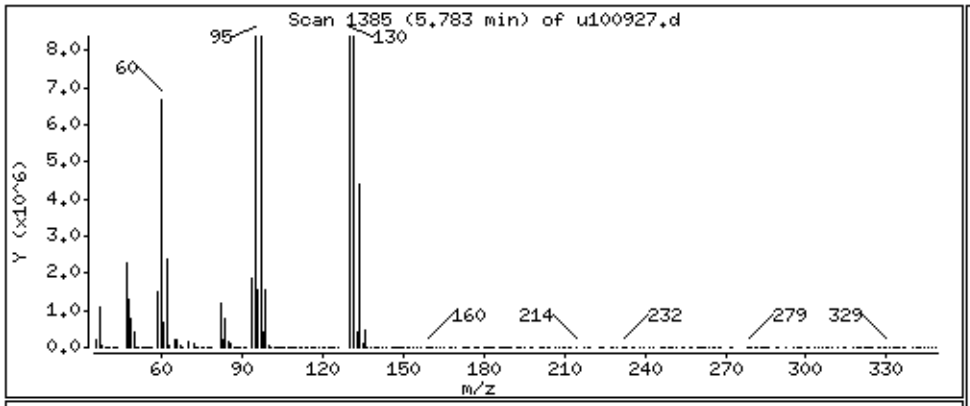
Client ID: HS23100159-13 Instrument: VOA9.i

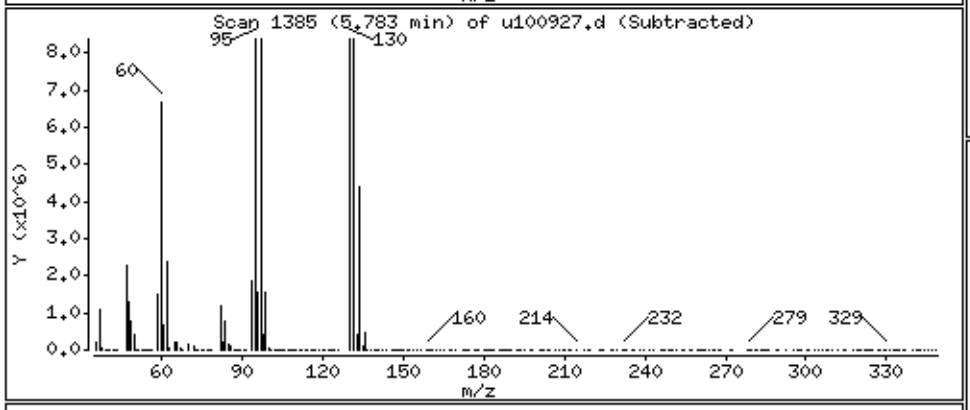
Sample Info: HS23100159-13;HS23100159-13;;;

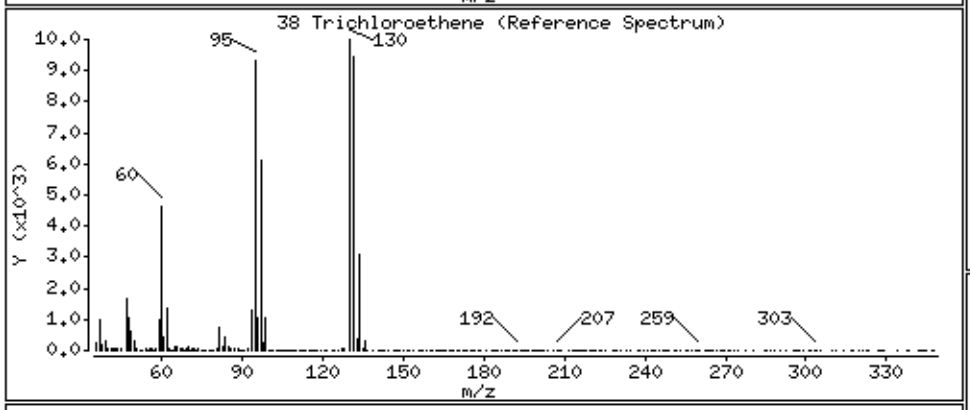
Purge Volume: 5.0 Operator: PC

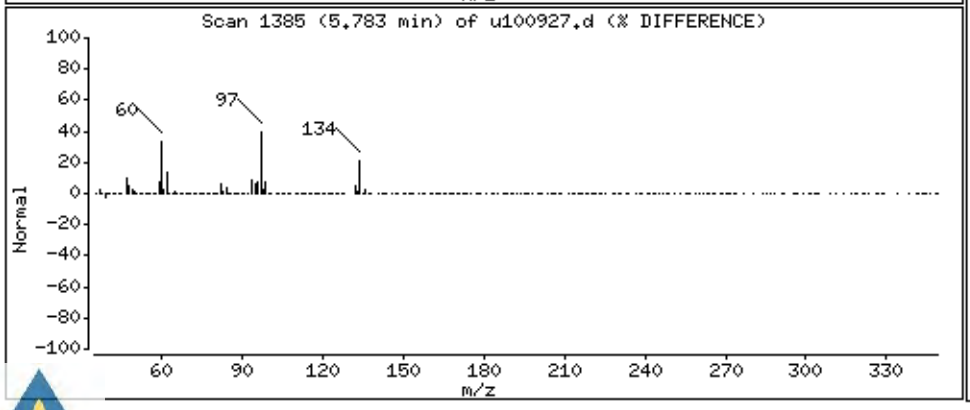
Column phase: DB624 Column diameter: 0.18

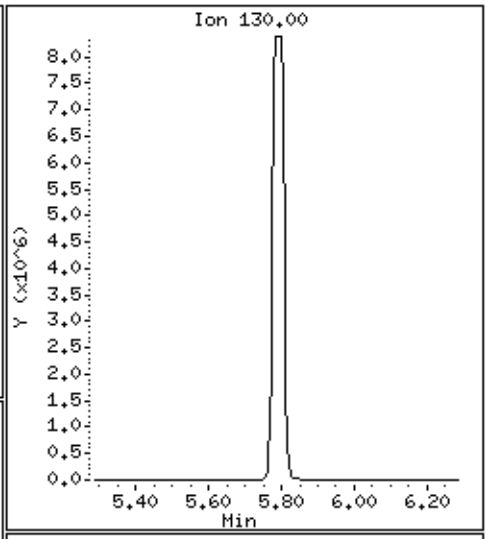
38 Trichloroethene Concentration: 3254.60 ug/l

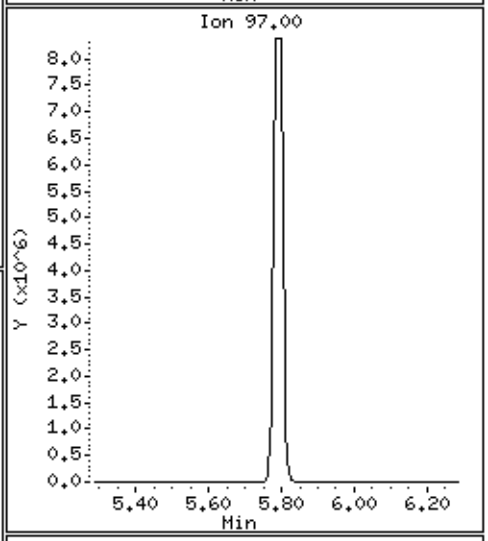


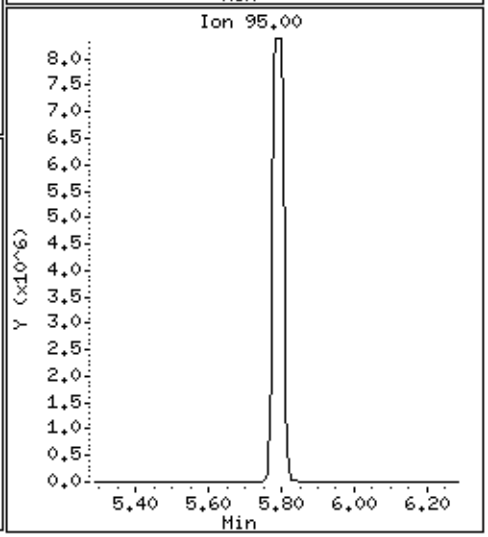












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100927.d Page 8

Date : 10-OCT-2023 00:37

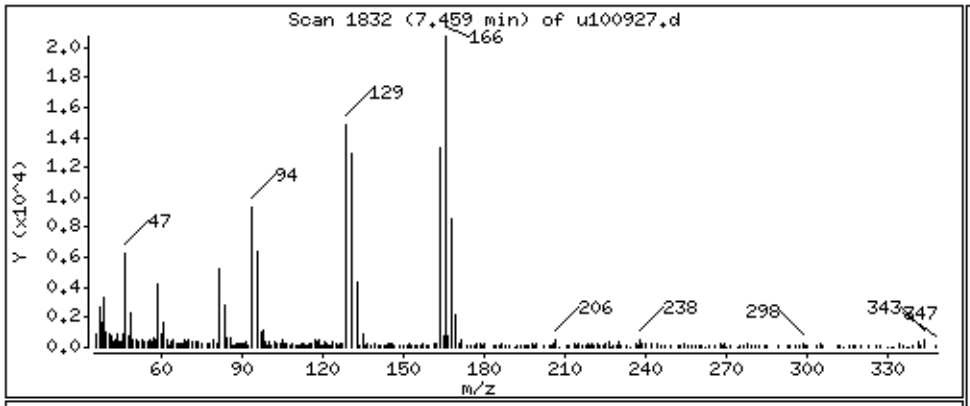
Client ID: HS23100159-13 Instrument: VOA9.i

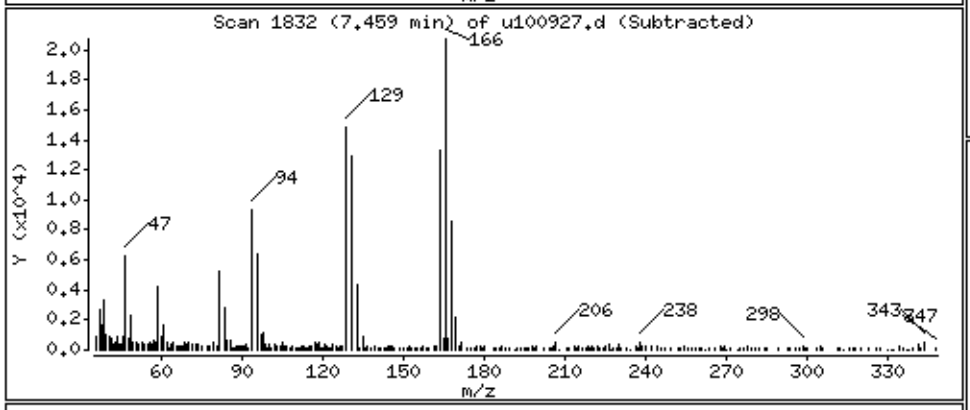
Sample Info: HS23100159-13;HS23100159-13;;;

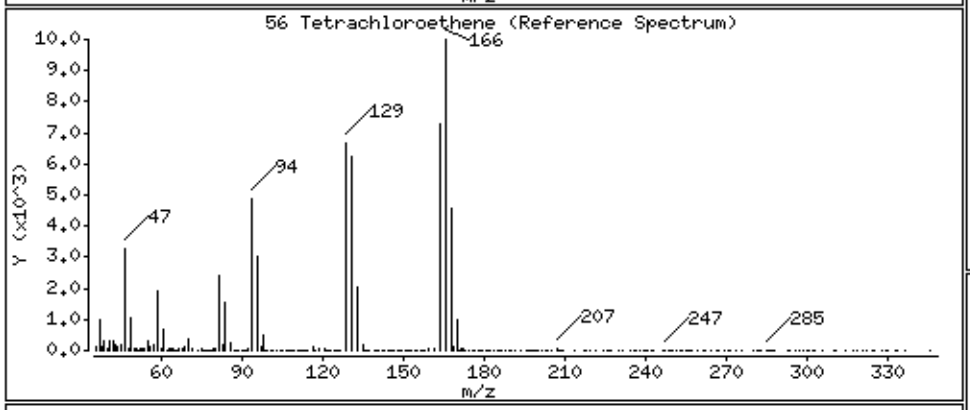
Purge Volume: 5.0 Operator: PC

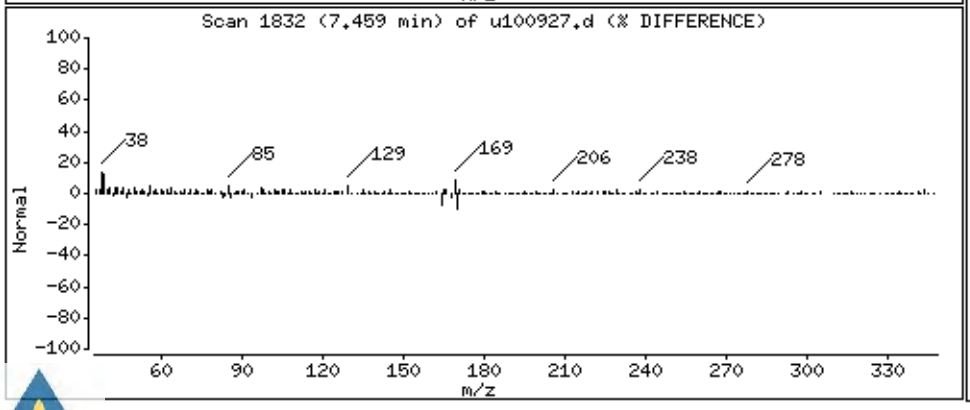
Column phase: DB624 Column diameter: 0.18

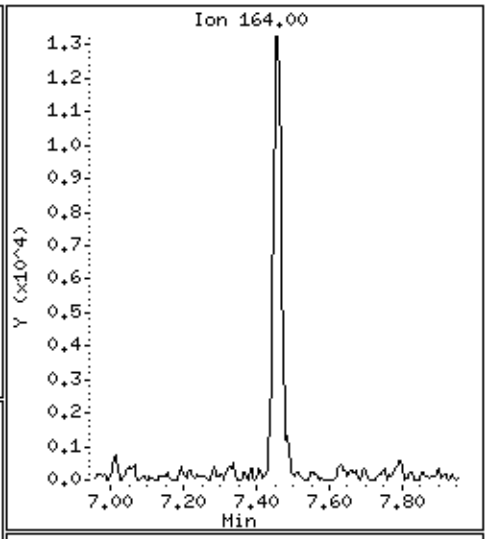
56 Tetrachloroethene Concentration: 5.53 ug/l

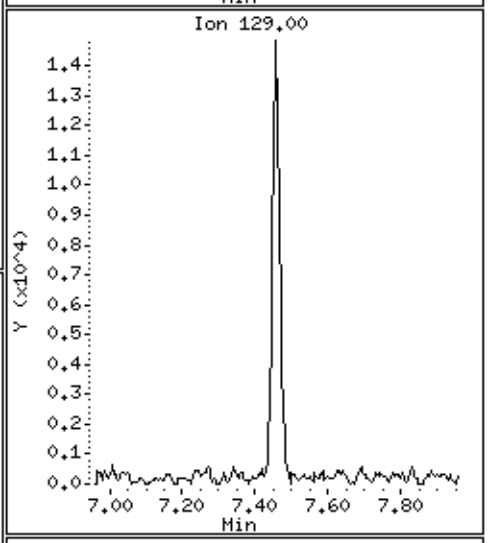


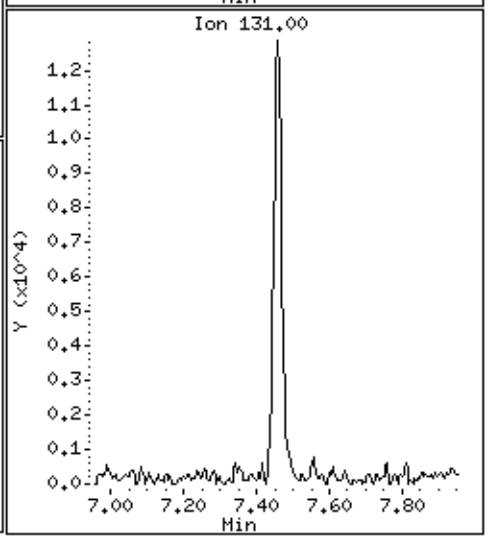










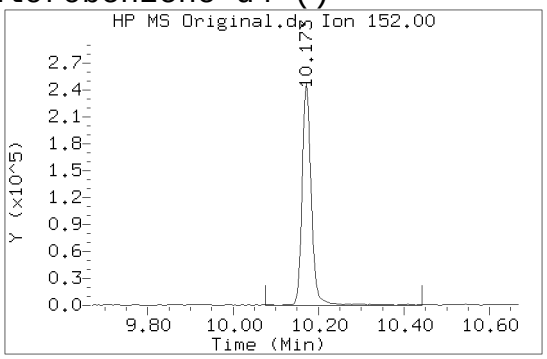


Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100927.d
Inj Date : 10-OCT-2023 00:37
InstruID : VOA9.i
LabSampID : HS23100159-13

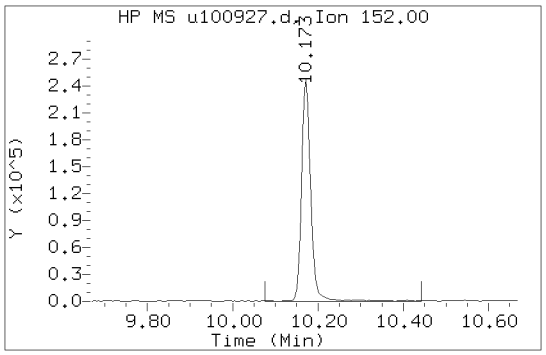
1,4-Dichlorobenzene-d4 ()

Reason Code:

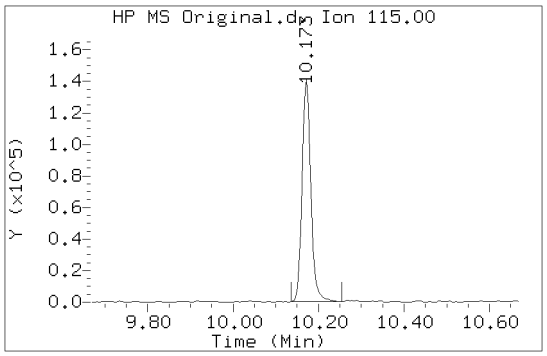
BEFORE
MASS
152
AREA
379540
HEIGHT
247097
10-Oct-2023
21:41



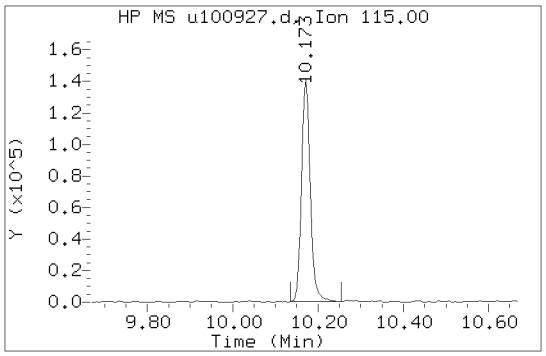
AFTER
MASS
152
AREA
379540
HEIGHT
247097
10-Oct-2023
21:41



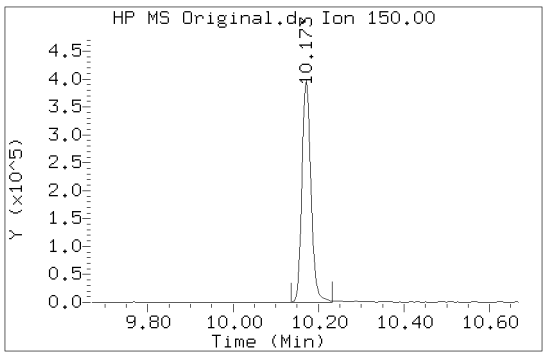
BEFORE
MASS
115
AREA
203729
HEIGHT
140482
10-Oct-2023
21:41



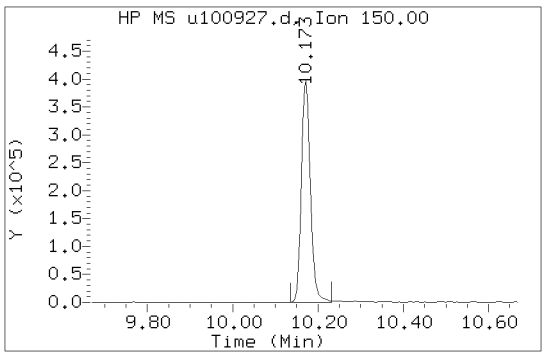
AFTER
MASS
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AREA
203729
HEIGHT
140482
10-Oct-2023
21:41



BEFORE
MASS
150
AREA
596352
HEIGHT
397056
10-Oct-2023
21:41



AFTER
MASS
150
AREA
596352
HEIGHT
397056
10-Oct-2023
21:41



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100928.D Page 1
Report Date: 10-Oct-2023 15:46

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100928.D
Lab Smp Id: HS23100159-14 Client Smp ID: HS23100159-14
Inj Date : 10-OCT-2023 00:59
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-14;HS23100159-14;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 26
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.811	(1.000)	510636	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	232858	42.3902	42.39
$ 35 1,2-Dichloroethane-d4	65	5.096	5.093	(1.058)	276986	42.6722	42.67
* 36 1,4-Difluorobenzene	114	5.554	5.550	(1.000)	793473	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	733490	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	932644	53.5760	53.57
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	297640	43.3880	43.38
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	383194	50.0000	
5 Vinyl Chloride	62	1.374	1.370	(0.285)	17234	2.09994	2.09(a)
11 1,1-Dichloroethene	96	2.330	2.330	(0.484)	232202	22.7773	22.77
20 trans-1,2-Dichloroethene	96	3.053	3.053	(0.634)	16552	1.30242	1.30(a)
27 cis-1,2-Dichloroethene	96	4.197	4.193	(0.872)	376566	58.1715	58.17
33 1,2-Dichloroethane	62	5.175	5.171	(0.932)	151657	19.3255	19.32
38 Trichloroethene	130	5.782	5.786	(1.041)	17758708	3242.73	3242.73(A)
56 Tetrachloroethene	164	7.458	7.454	(0.911)	20017	5.25817	5.25

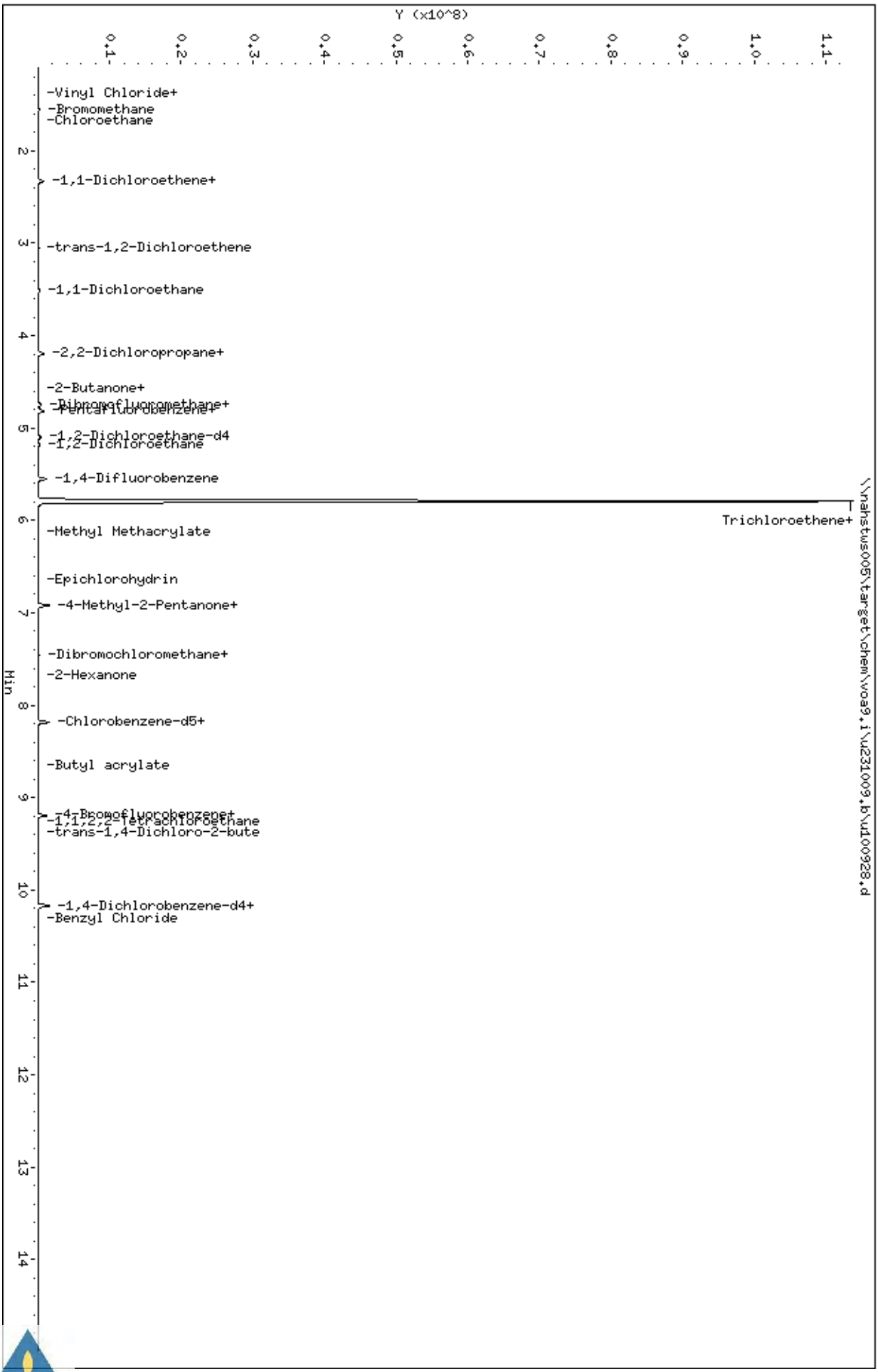
QC Flag Legend

a - Target compound detected but, quantitated amount

Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100928.d
Date : 10-OCT-2023 00:59
Client ID: HS23100159-14
Sample Info: HS23100159-14;HS23100159-14;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100928.d Page 2

Date : 10-OCT-2023 00:59

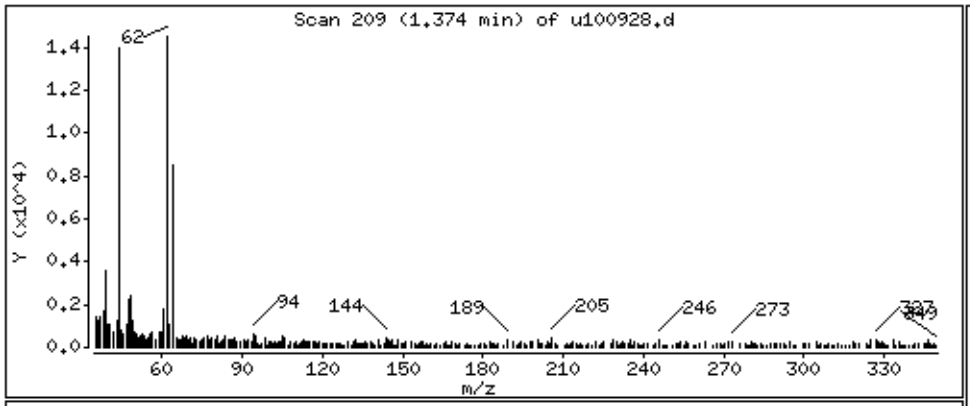
Client ID: HS23100159-14 Instrument: VOA9.i

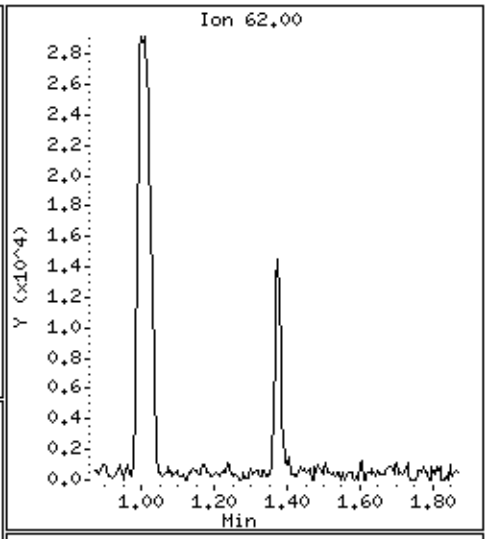
Sample Info: HS23100159-14;HS23100159-14;;;

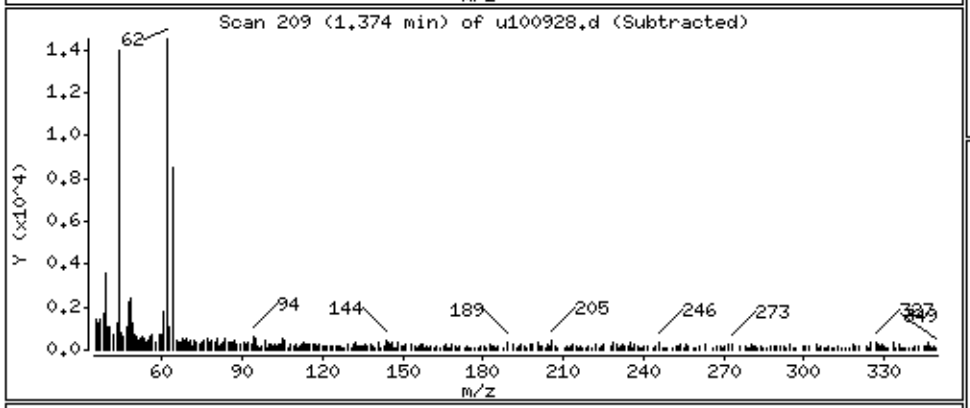
Purge Volume: 5.0 Operator: PC

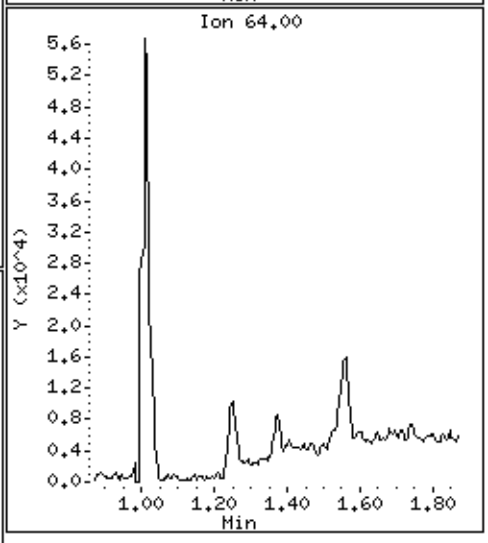
Column phase: DB624 Column diameter: 0.18

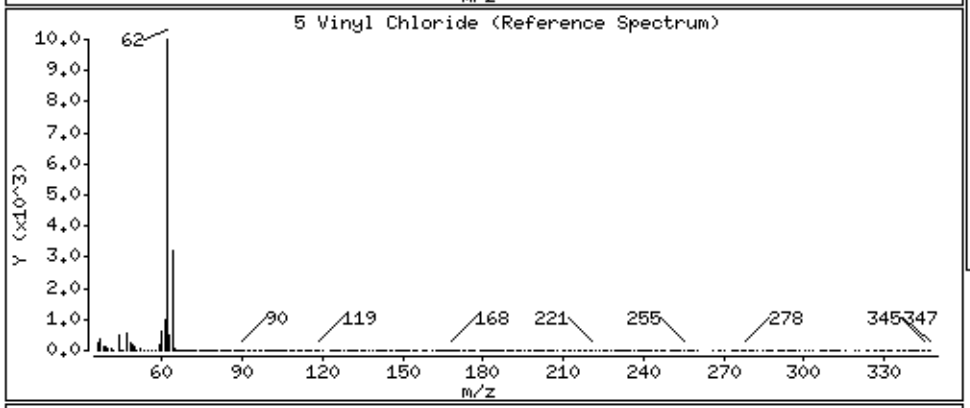
5 Vinyl Chloride Concentration: 2.09 ug/l

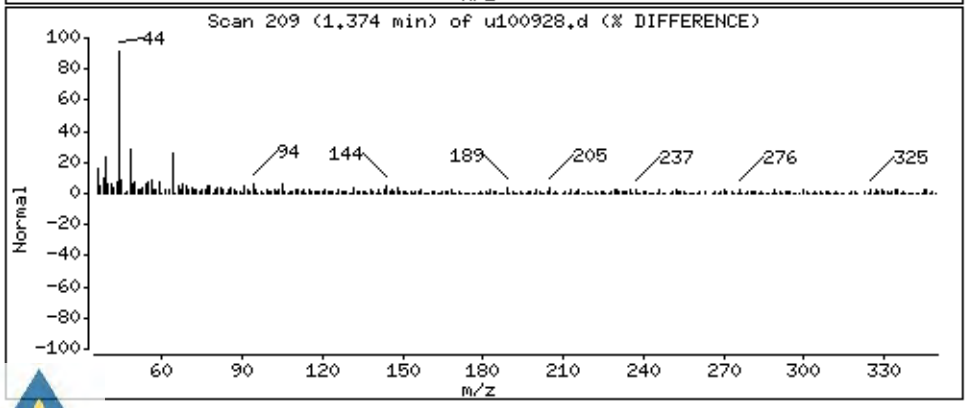












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100928.d Page 3

Date : 10-OCT-2023 00:59

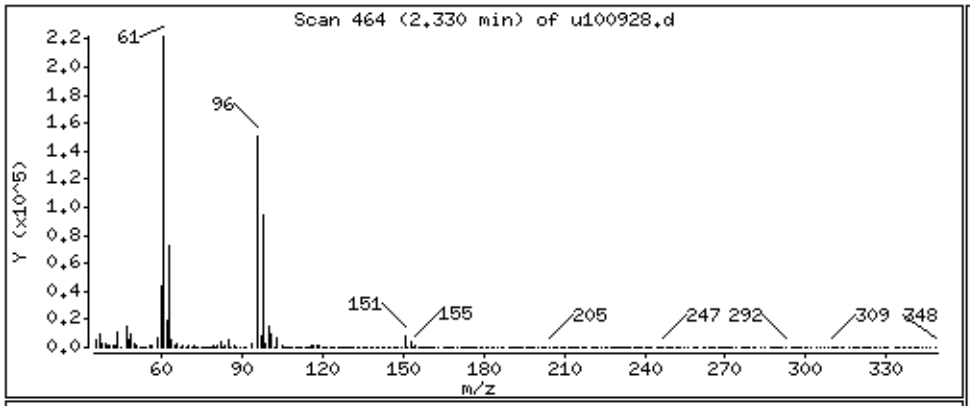
Client ID: HS23100159-14 Instrument: VOA9.i

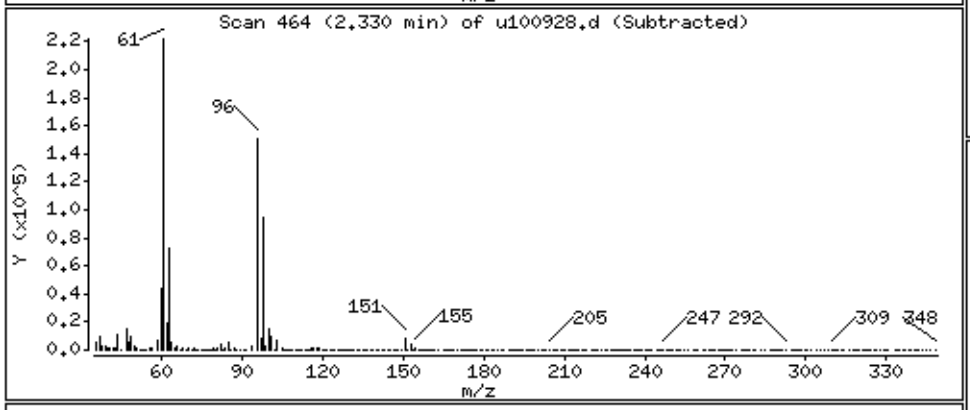
Sample Info: HS23100159-14;HS23100159-14;;;

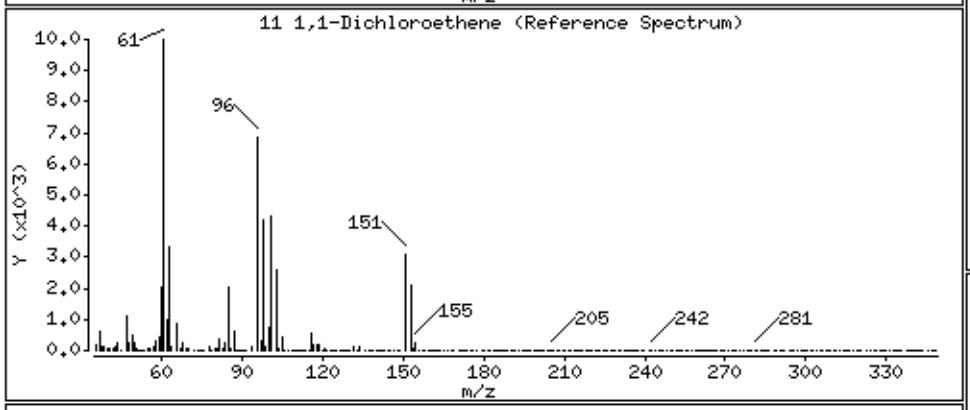
Purge Volume: 5.0 Operator: PC

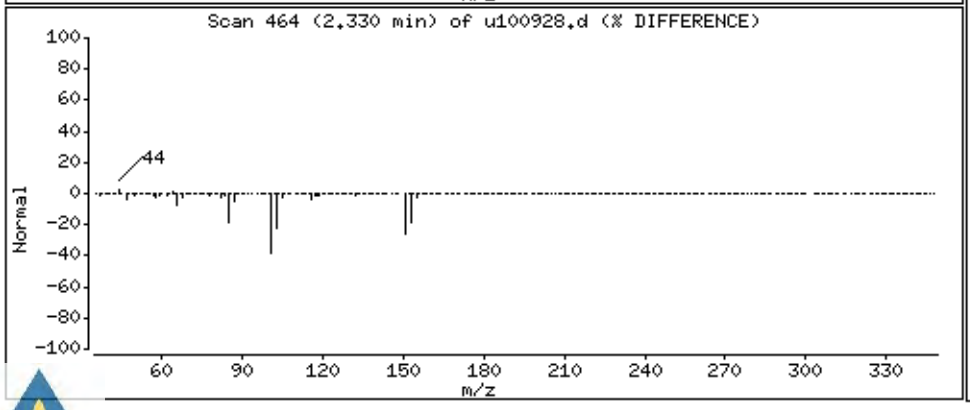
Column phase: DB624 Column diameter: 0.18

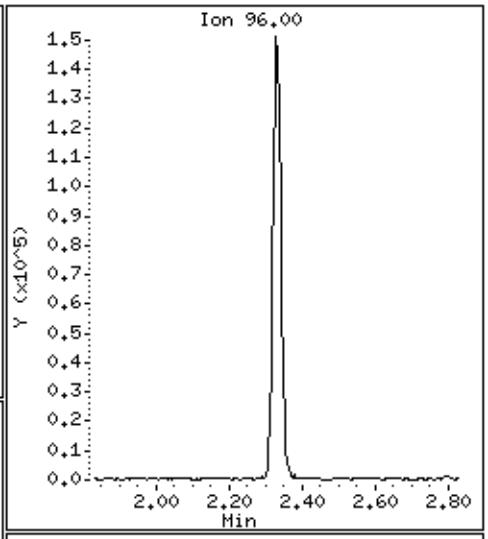
11 1,1-Dichloroethene Concentration: 22.77 ug/l

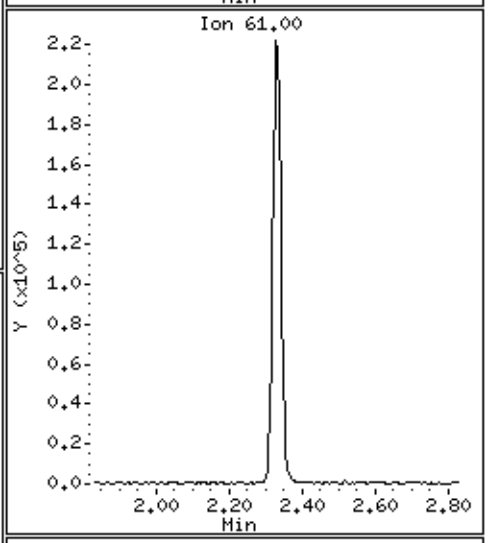


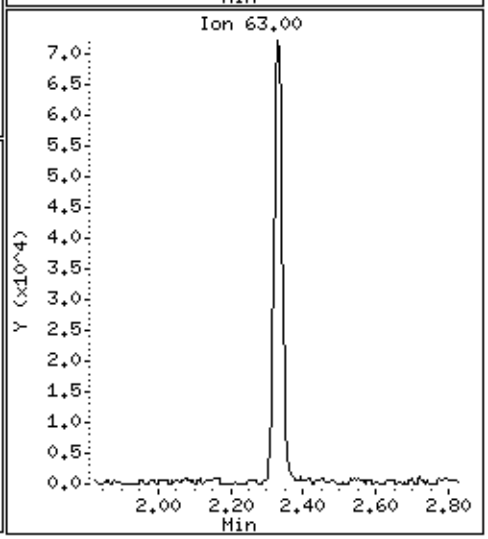












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100928.d Page 4

Date : 10-OCT-2023 00:59

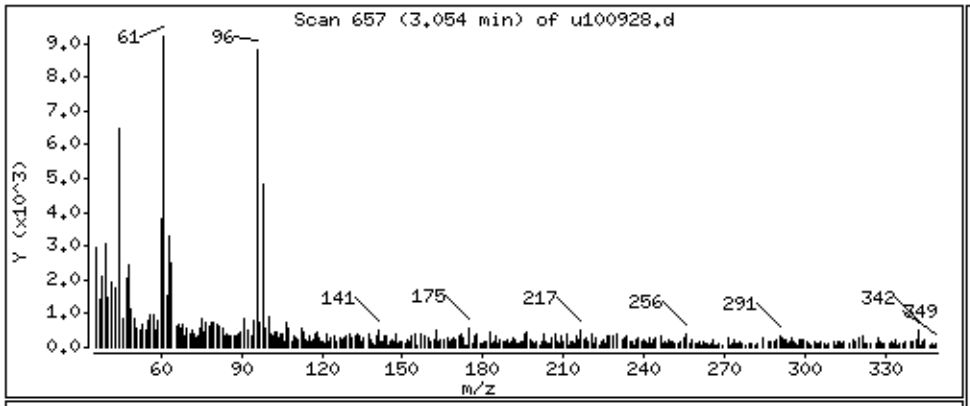
Client ID: HS23100159-14 Instrument: VOA9.i

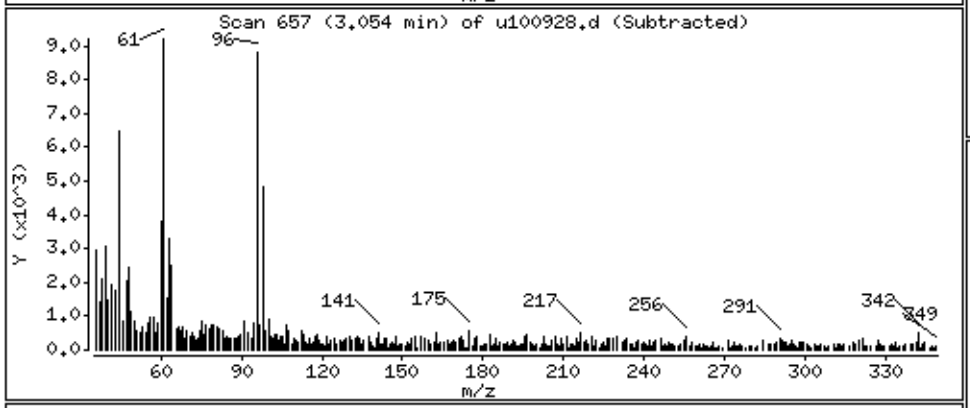
Sample Info: HS23100159-14;HS23100159-14;;;

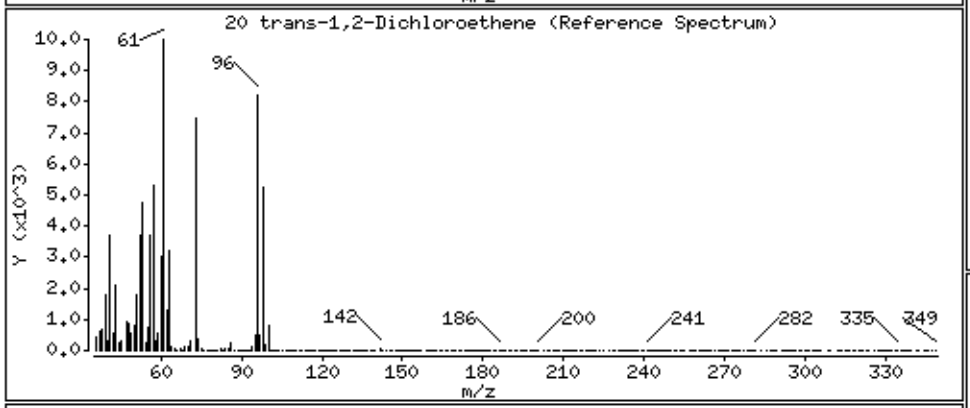
Purge Volume: 5.0 Operator: PC

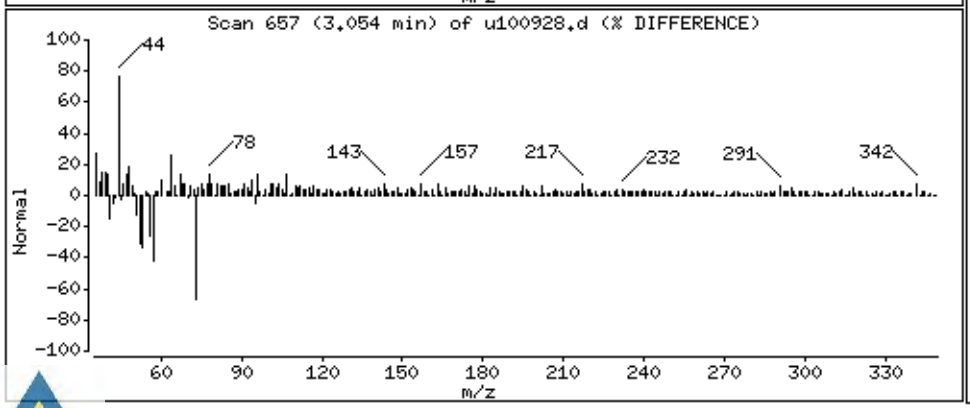
Column phase: DB624 Column diameter: 0.18

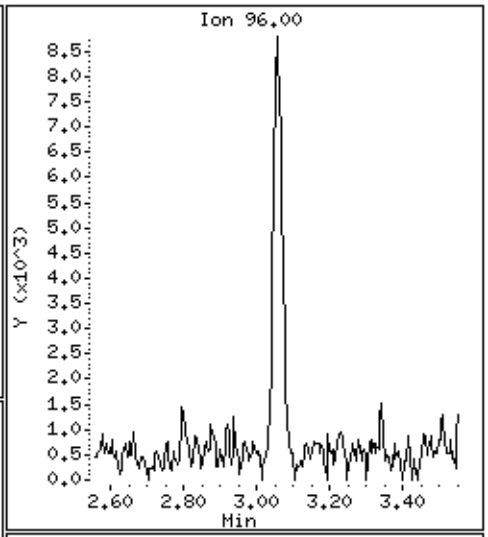
20 trans-1,2-Dichloroethene Concentration: 1.30 ug/l

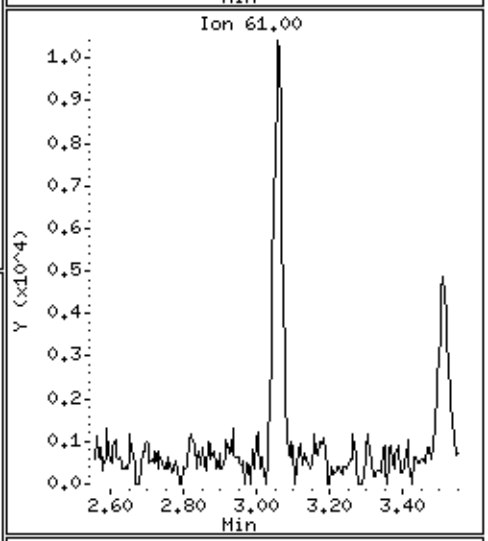


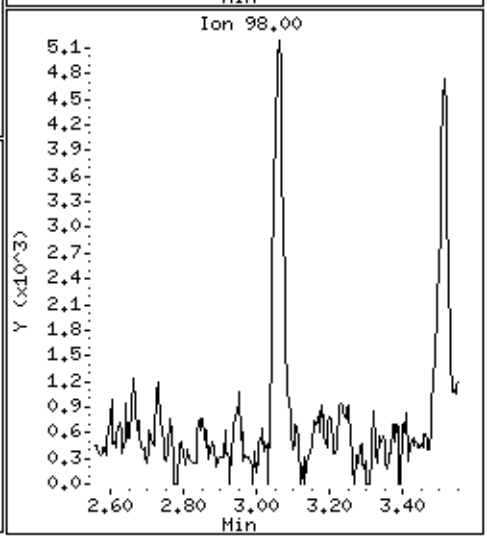












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100928.d Page 5

Date : 10-OCT-2023 00:59

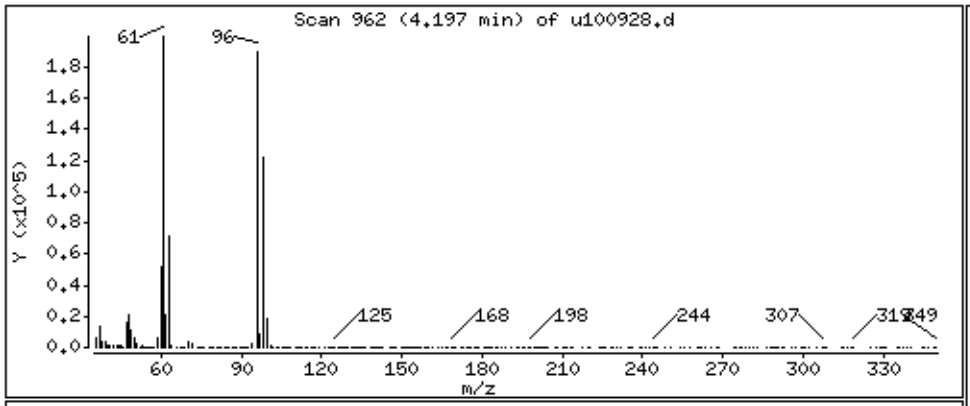
Client ID: HS23100159-14 Instrument: VOA9.i

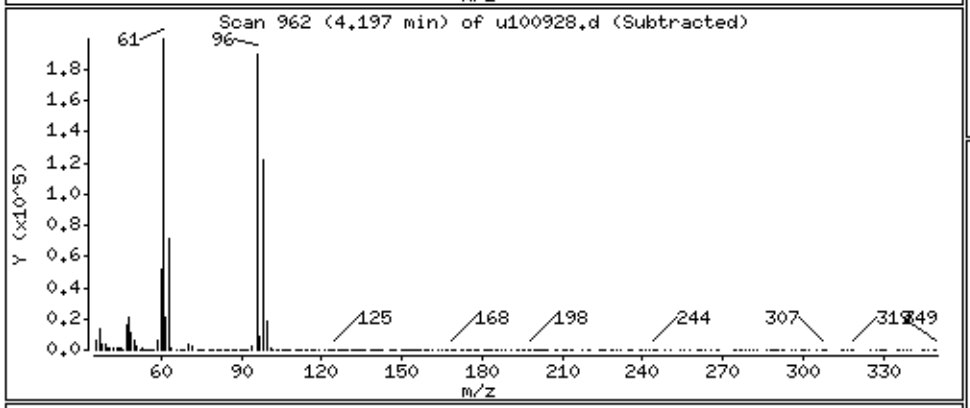
Sample Info: HS23100159-14;HS23100159-14;;;

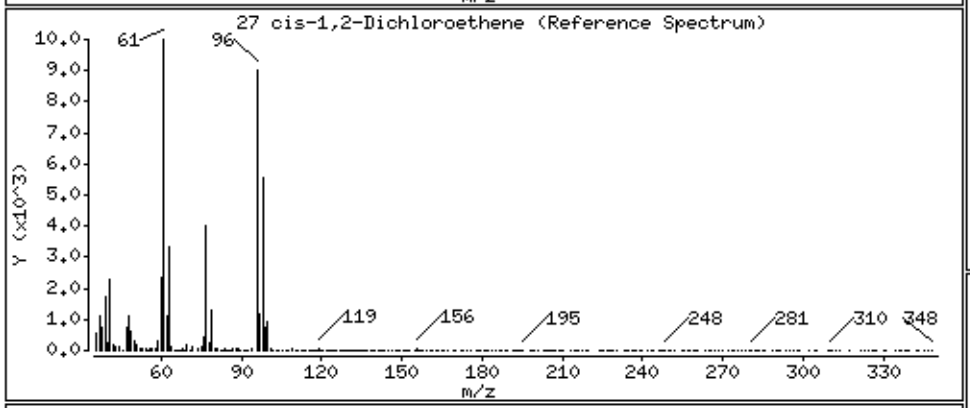
Purge Volume: 5.0 Operator: PC

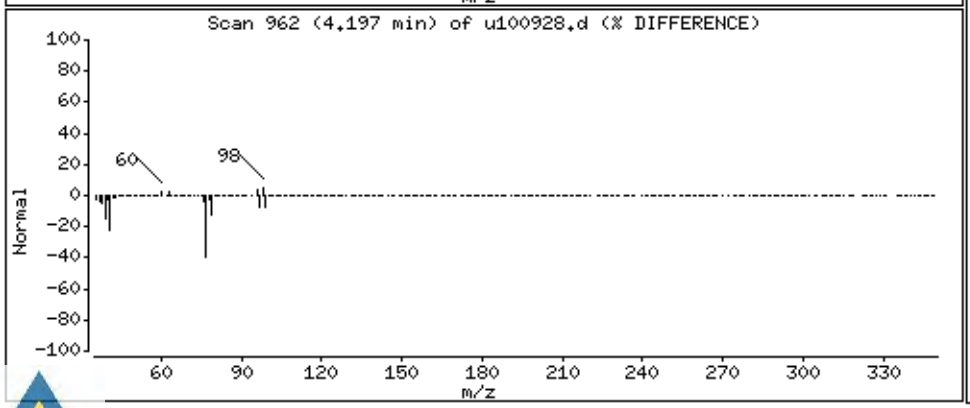
Column phase: DB624 Column diameter: 0.18

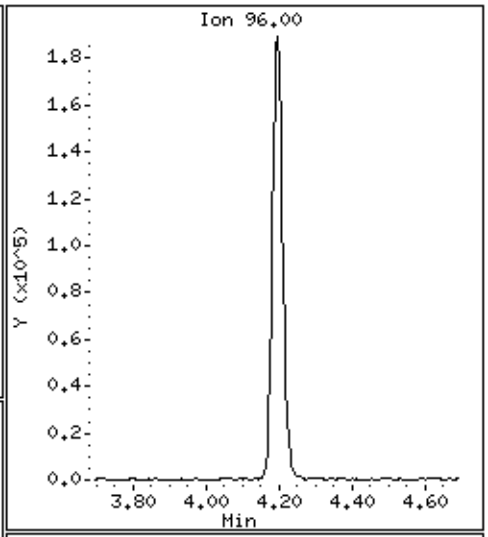
27 cis-1,2-Dichloroethene Concentration: 58.17 ug/l

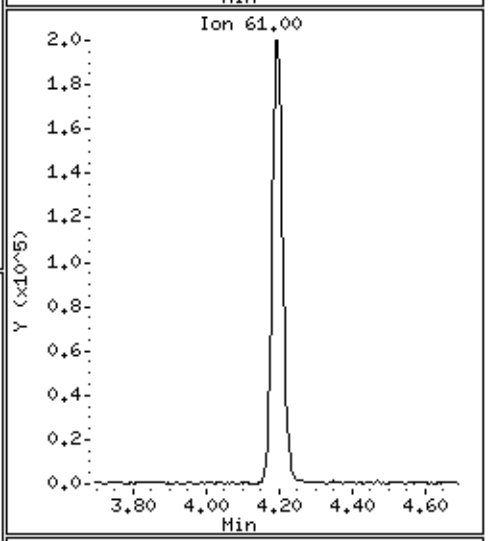


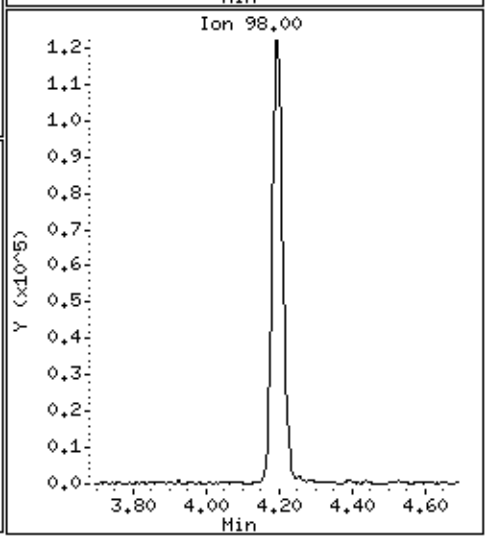












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100928.d Page 6

Date : 10-OCT-2023 00:59

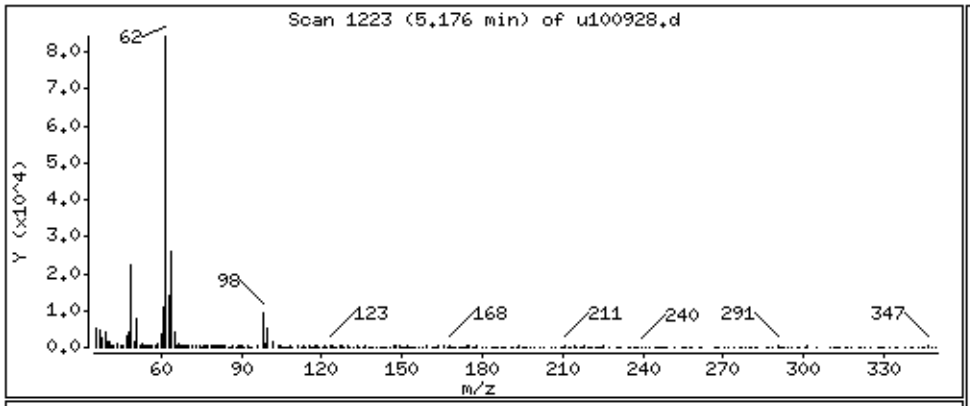
Client ID: HS23100159-14 Instrument: VOA9.i

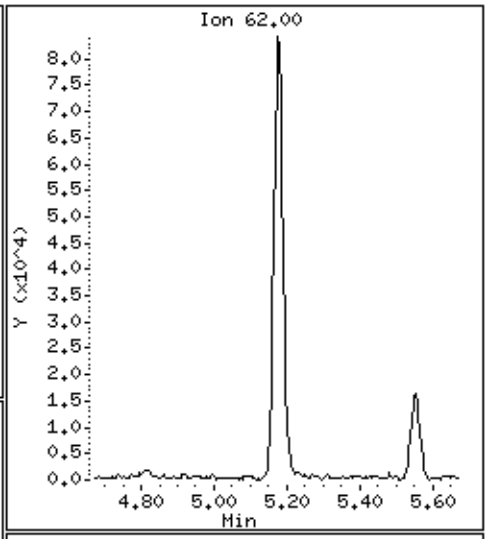
Sample Info: HS23100159-14;HS23100159-14;;;

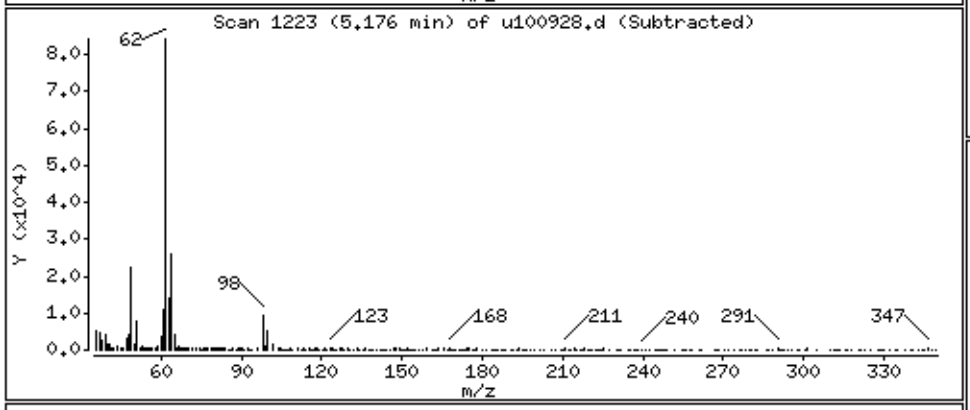
Purge Volume: 5.0 Operator: PC

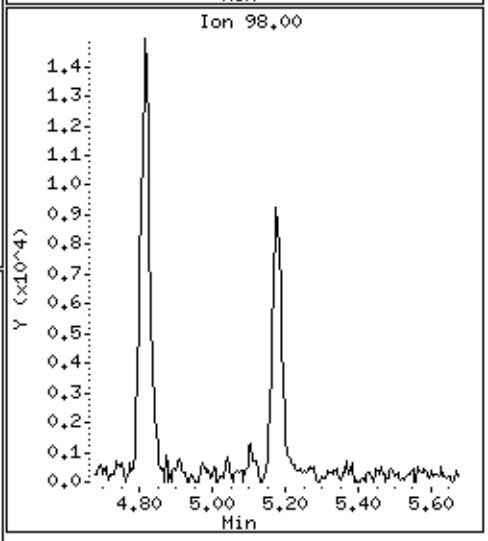
Column phase: DB624 Column diameter: 0.18

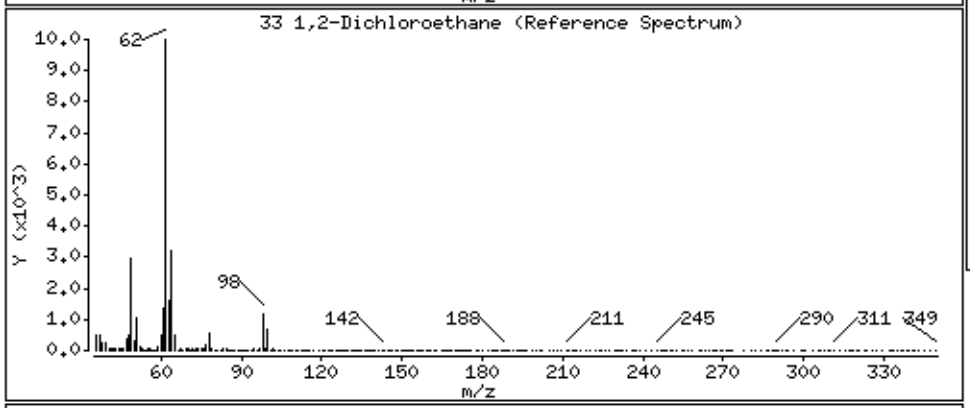
33 1,2-Dichloroethane Concentration: 19.32 ug/l

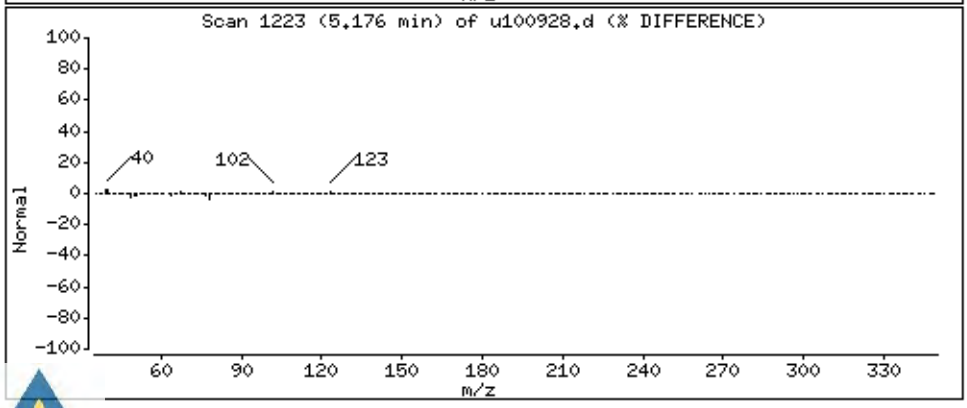












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100928.d Page 7

Date : 10-OCT-2023 00:59

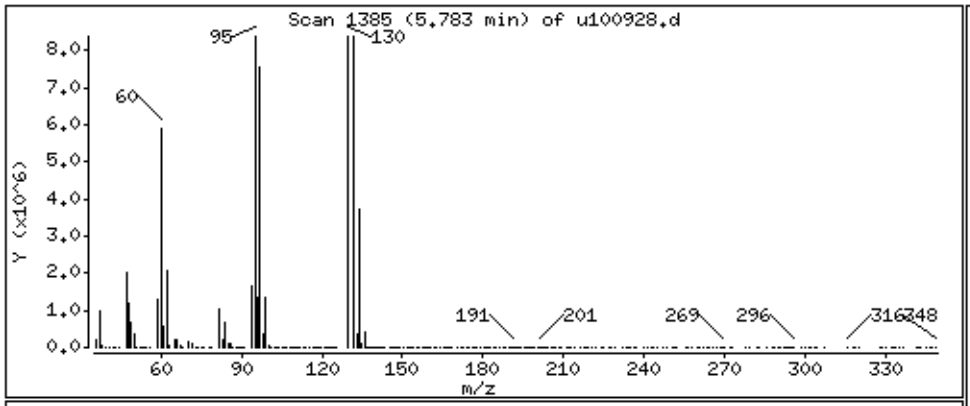
Client ID: HS23100159-14 Instrument: VOA9.i

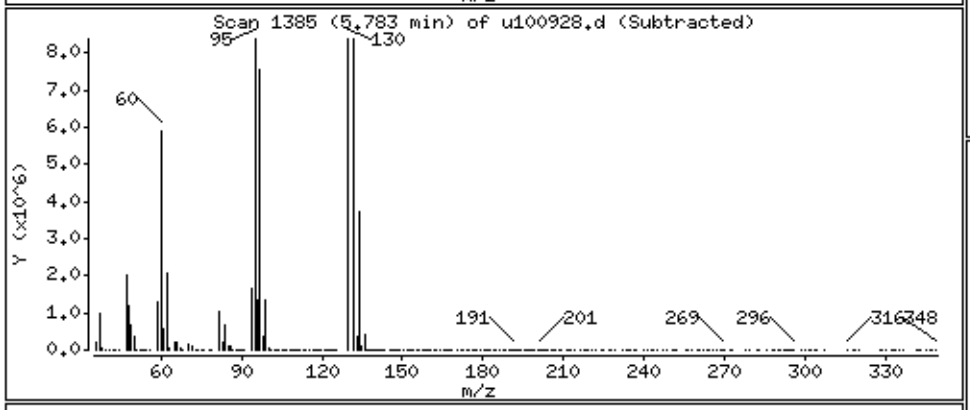
Sample Info: HS23100159-14;HS23100159-14;;;

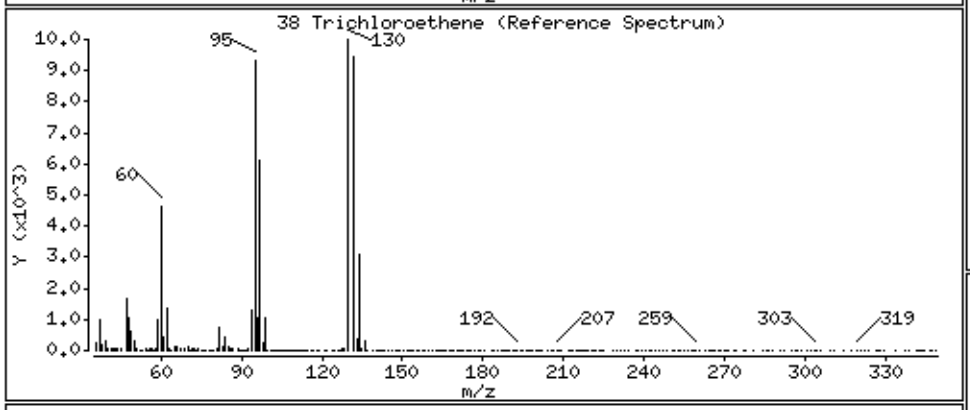
Purge Volume: 5.0 Operator: PC

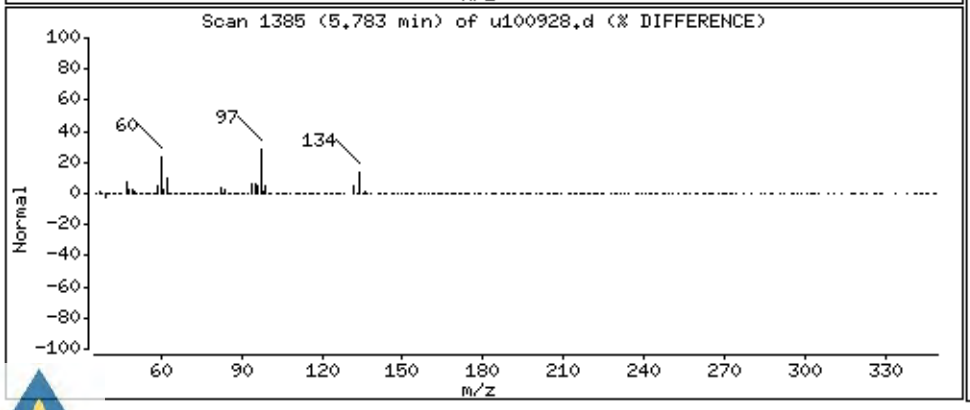
Column phase: DB624 Column diameter: 0.18

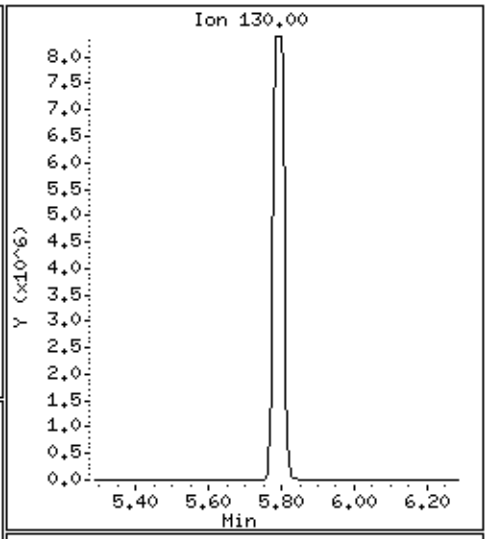
38 Trichloroethene Concentration: 3242.73 ug/l

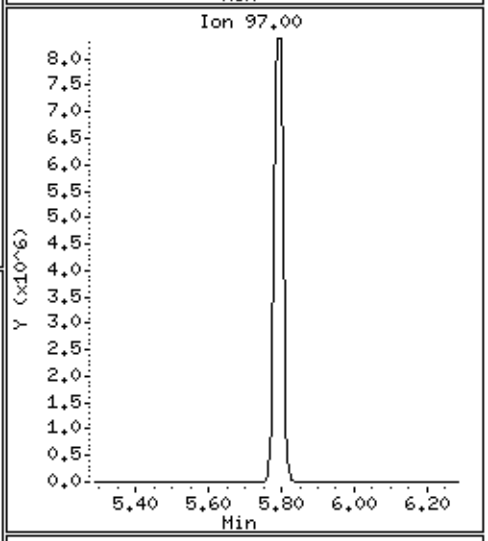


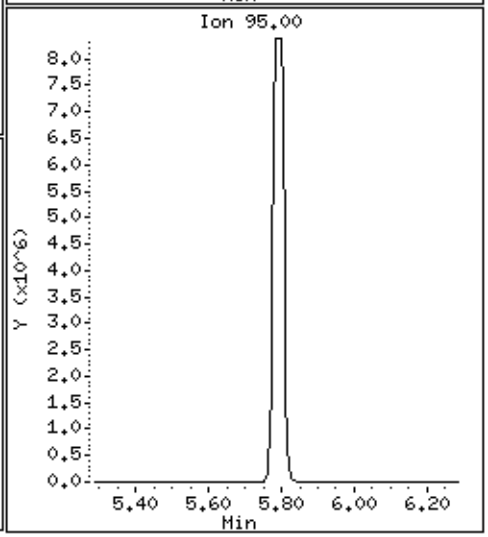












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100928.d Page 8

Date : 10-OCT-2023 00:59

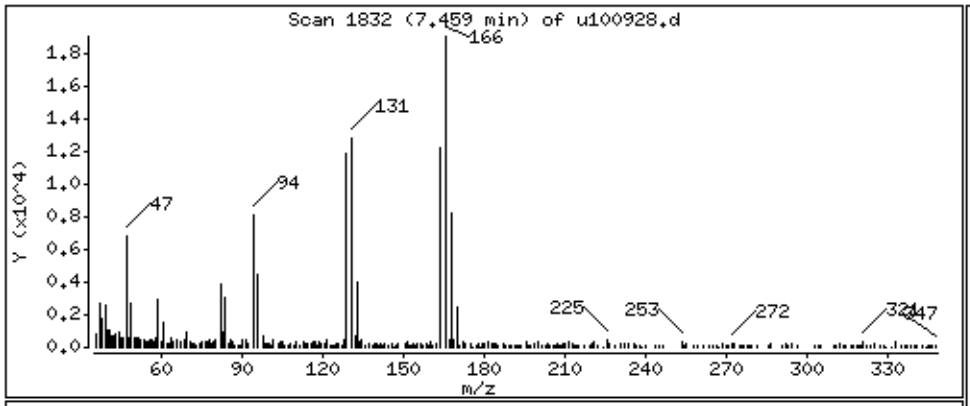
Client ID: HS23100159-14 Instrument: VOA9.i

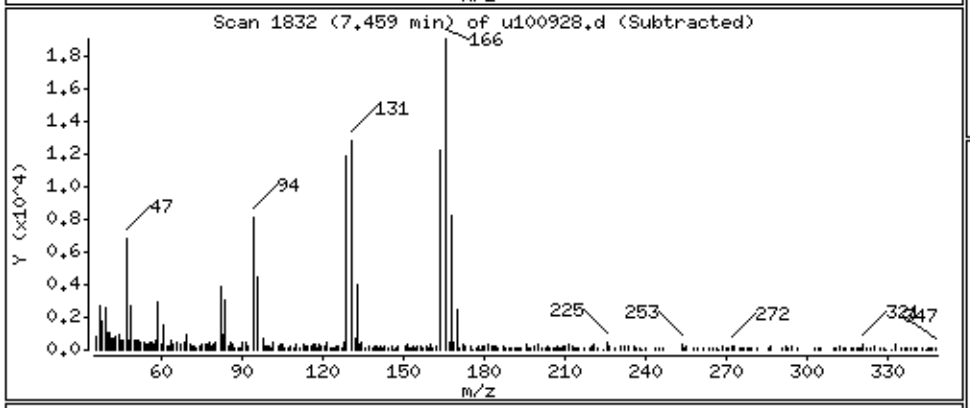
Sample Info: HS23100159-14;HS23100159-14;;;

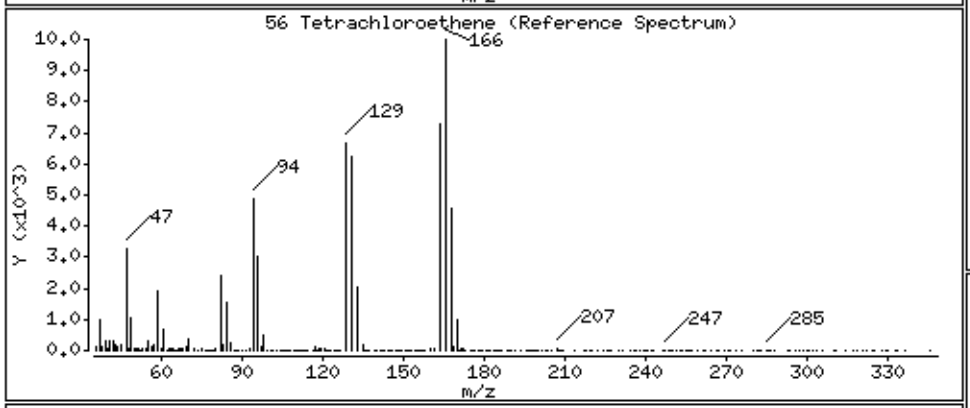
Purge Volume: 5.0 Operator: PC

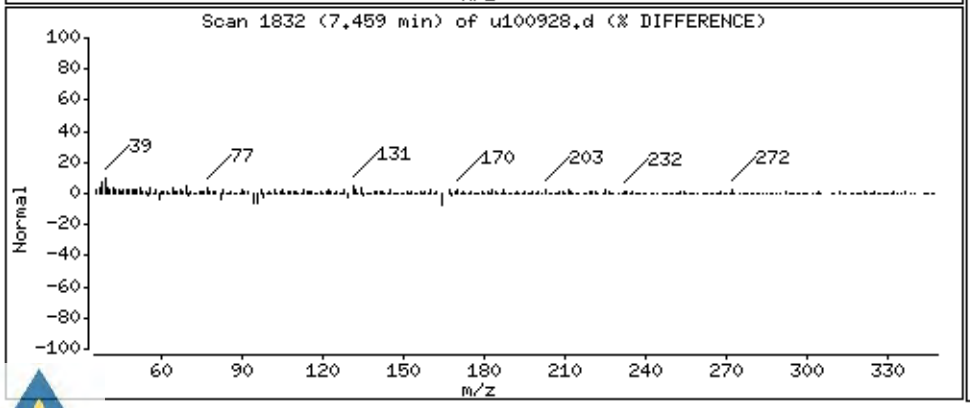
Column phase: DB624 Column diameter: 0.18

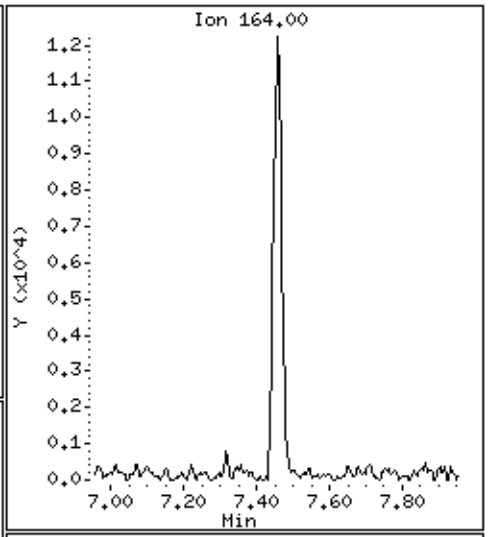
56 Tetrachloroethene Concentration: 5.25 ug/l

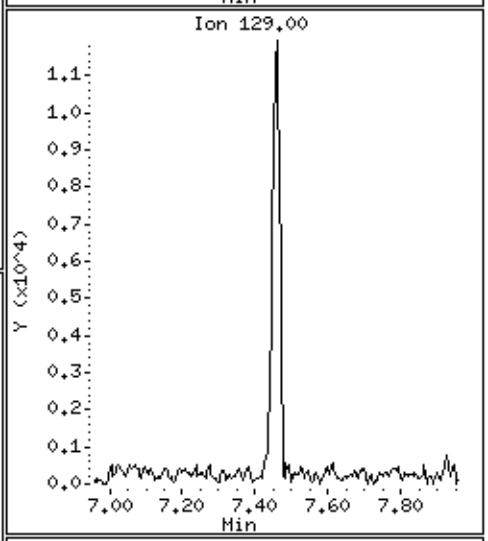


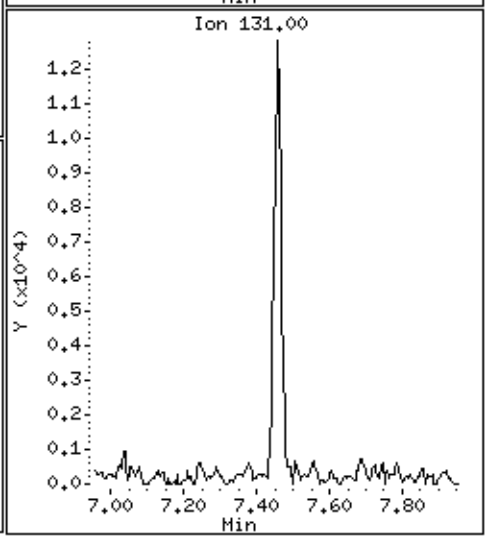












Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100928.d
Inj Date : 10-OCT-2023 00:59
InstruID : VOA9.i
LabSampID : HS23100159-14

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100930.D Page 1
Report Date: 10-Oct-2023 16:11

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100930.D
Lab Smp Id: HS23100159-16 Client Smp ID: HS23100159-16
Inj Date : 10-OCT-2023 01:44
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-16;HS23100159-16;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231009.b\8260C.m
Meth Date : 10-Oct-2023 15:45 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 28
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14

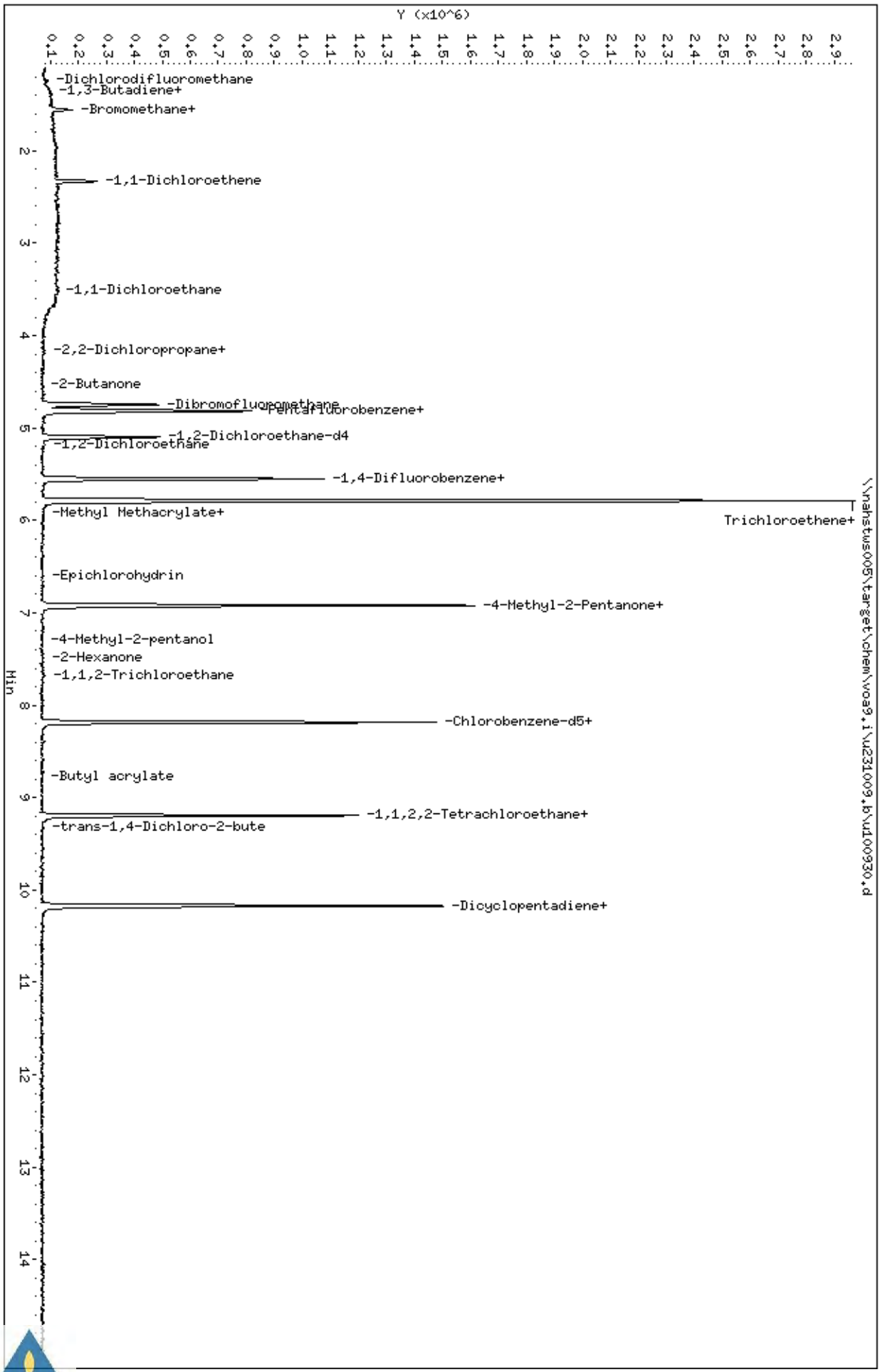
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

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	4.811	(1.000)	488425	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.744	(0.986)	228112	43.3686	43.36
$ 35 1,2-Dichloroethane-d4	65	5.096	5.093	(1.058)	269129	43.3337	43.33
* 36 1,4-Difluorobenzene	114	5.550	5.550	(1.000)	764681	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	704770	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	929762	55.5870	55.58
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	284907	43.2301	43.23
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	368736	50.0000	(M)
11 1,1-Dichloroethene	96	2.330	2.330	(0.484)	48952	5.02019	5.02
27 cis-1,2-Dichloroethene	96	4.197	4.193	(0.872)	4788	0.77328	0.77(a)
33 1,2-Dichloroethane	62	5.183	5.171	(0.934)	8834	1.16809	1.16(a)
38 Trichloroethene	130	5.786	5.786	(1.043)	845767	160.252	160.25

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\voa9,i\u231009,b\u100930,d
Date : 10-OCT-2023 01:44
Client ID: HS23100159-16
Sample Info: HS23100159-16;HS23100159-16;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100930.d Page 2

Date : 10-OCT-2023 01:44

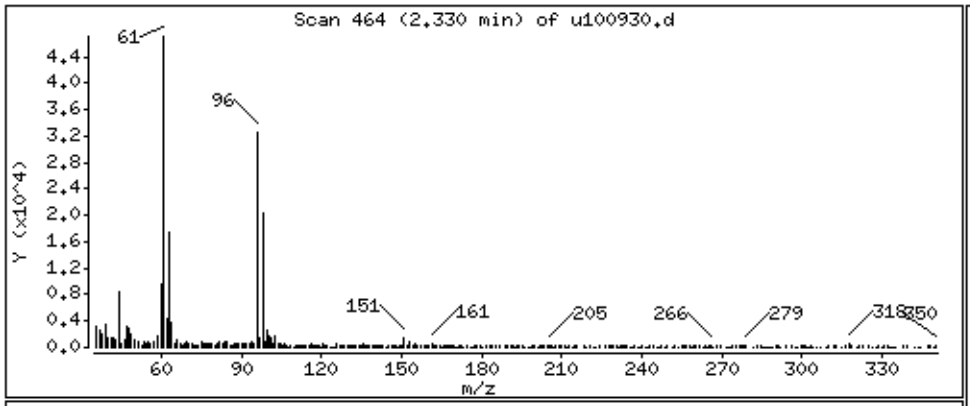
Client ID: HS23100159-16 Instrument: VOA9.i

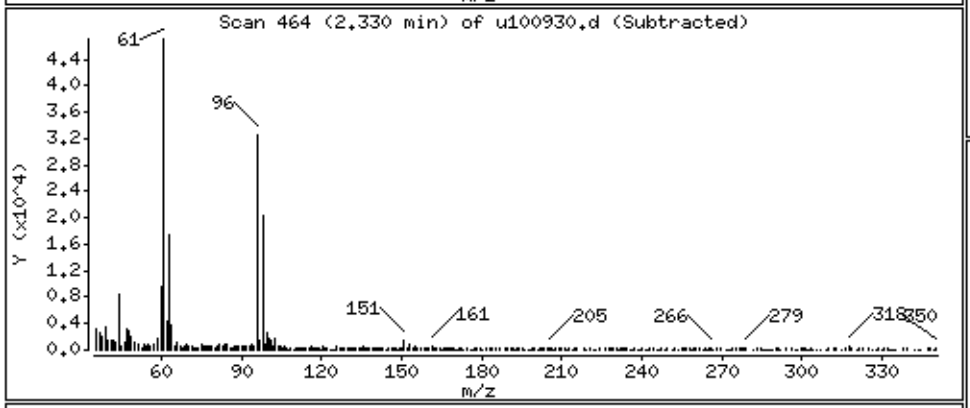
Sample Info: HS23100159-16;HS23100159-16;;;

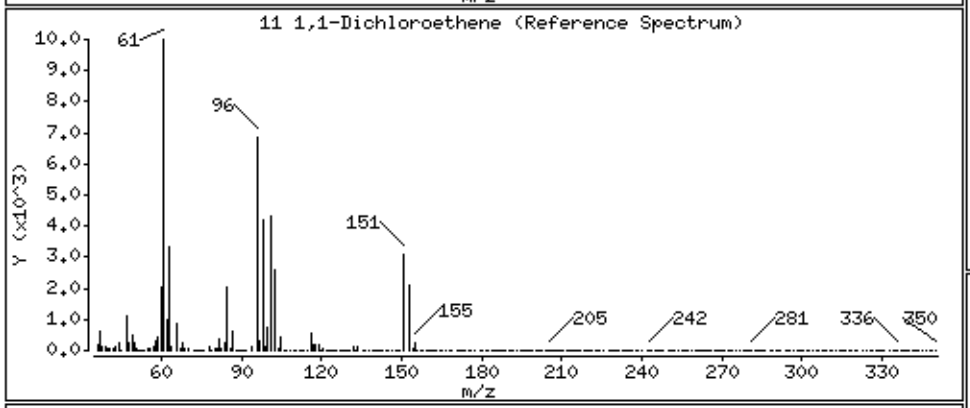
Purge Volume: 5.0 Operator: PC

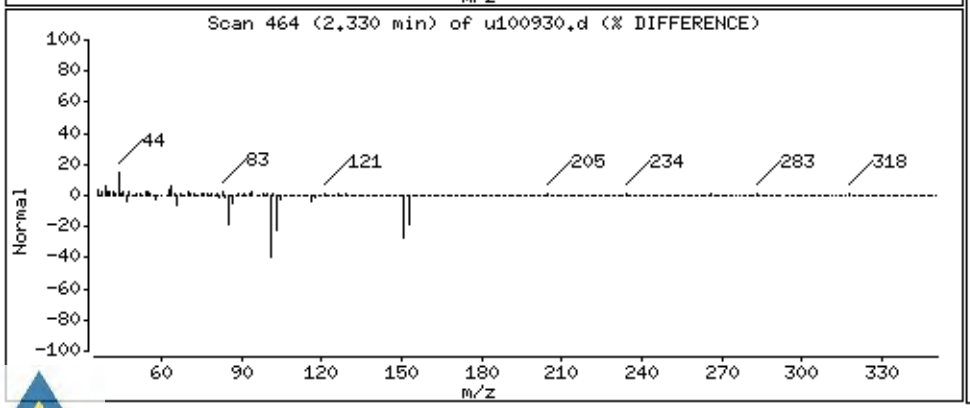
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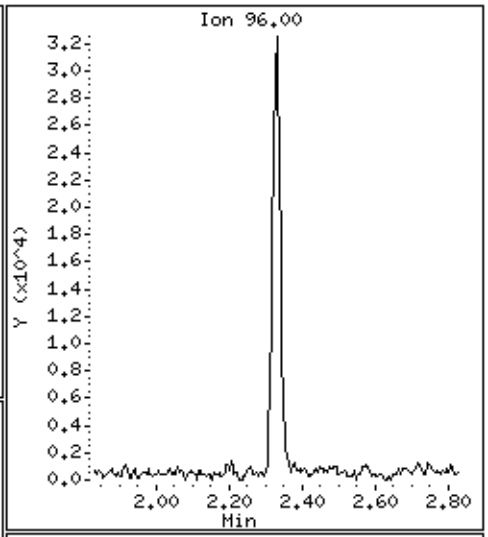
11 1,1-Dichloroethene Concentration: 5.02 ug/l

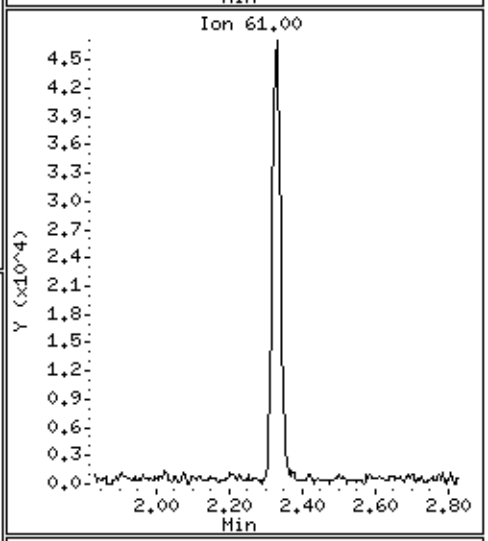


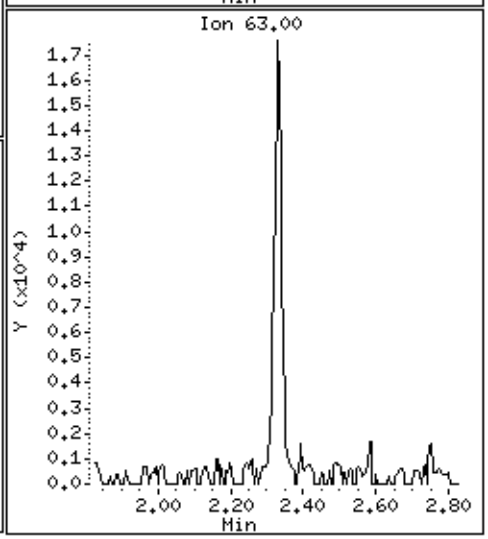












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100930.d Page 3

Date : 10-OCT-2023 01:44

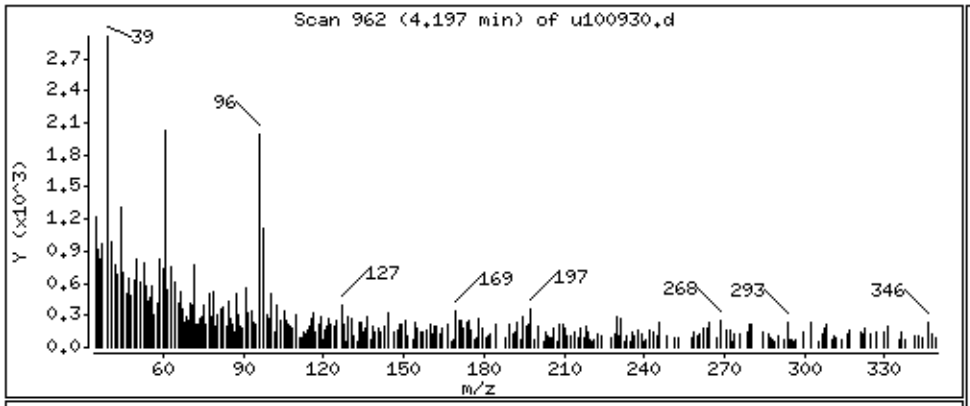
Client ID: HS23100159-16 Instrument: VOA9.i

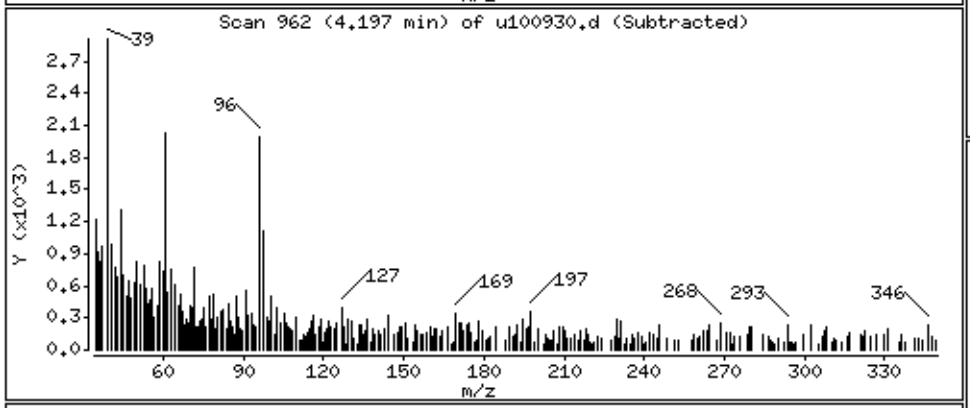
Sample Info: HS23100159-16;HS23100159-16;;;

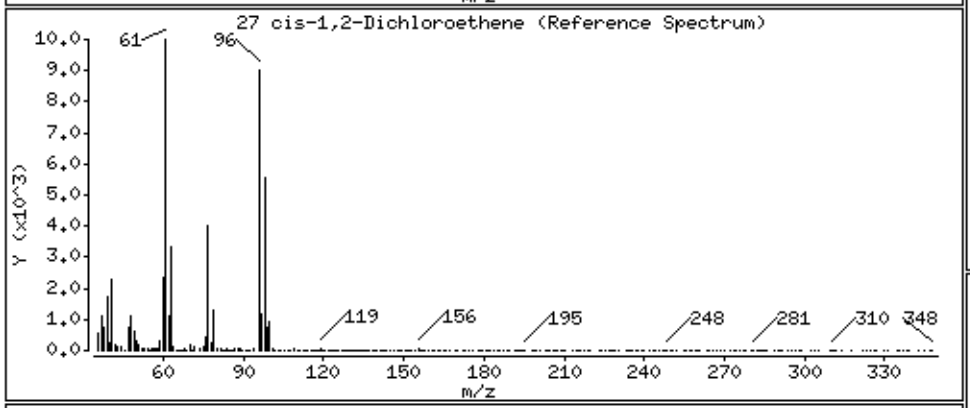
Purge Volume: 5.0 Operator: PC

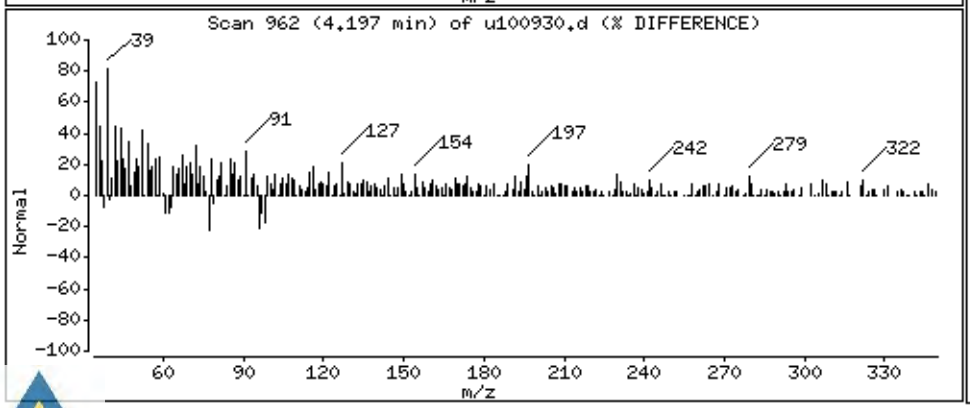
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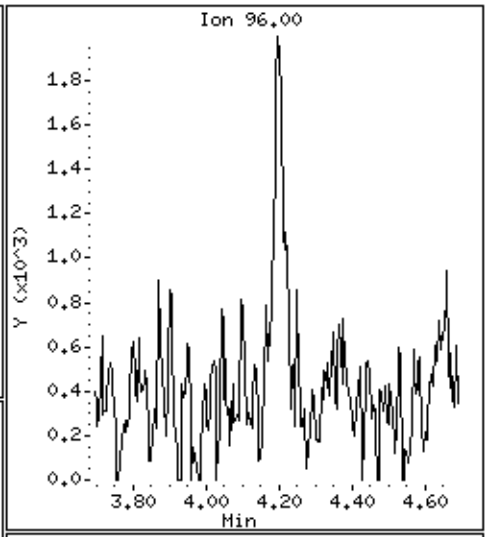
27 cis-1,2-Dichloroethene Concentration: 0.77 ug/l

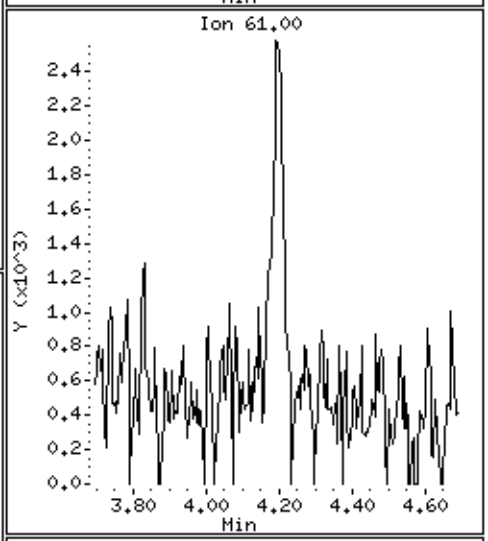


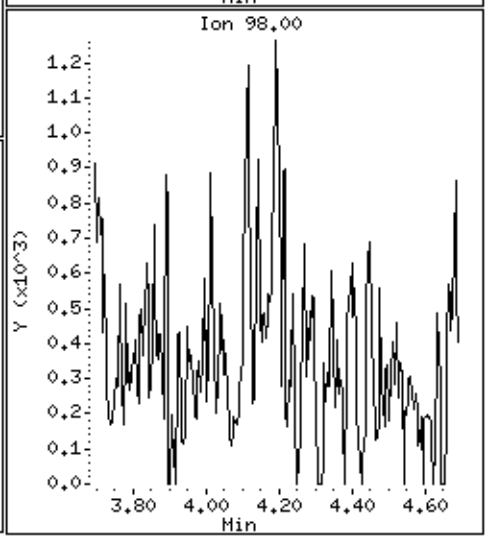












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100930.d Page 4

Date : 10-OCT-2023 01:44

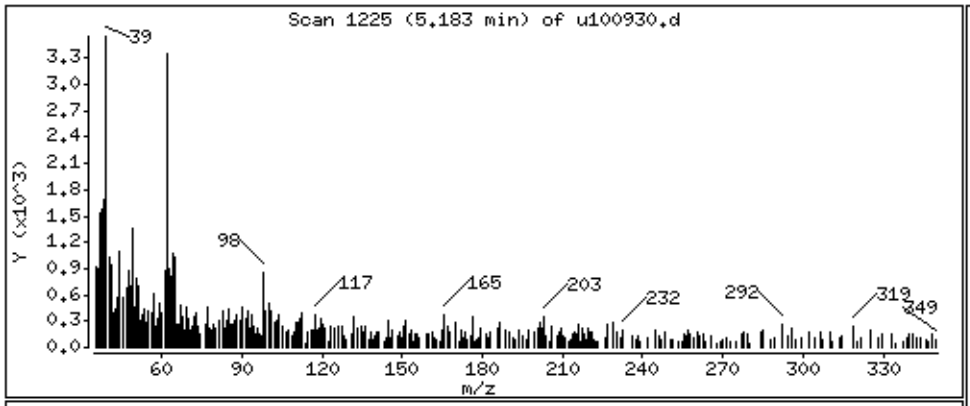
Client ID: HS23100159-16 Instrument: VOA9.i

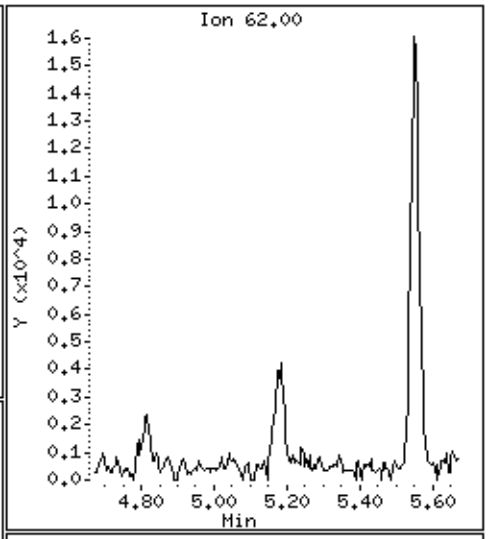
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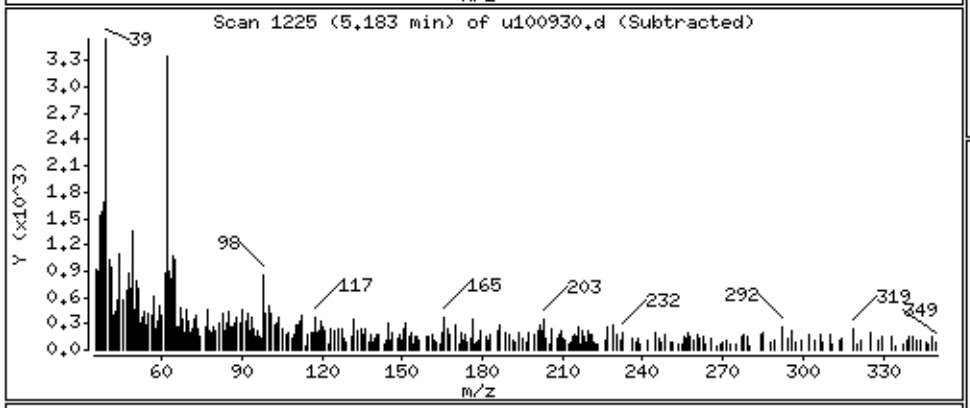
Purge Volume: 5.0 Operator: PC

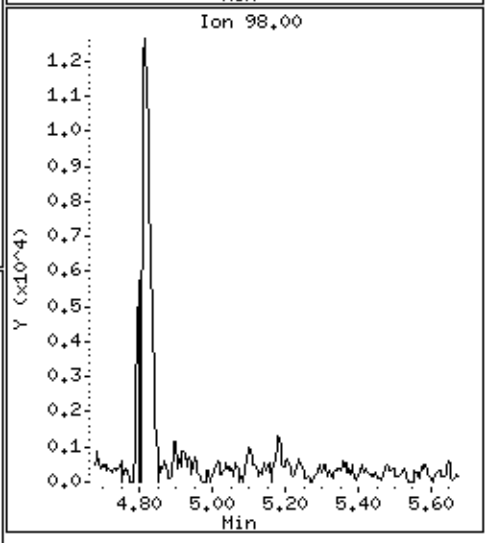
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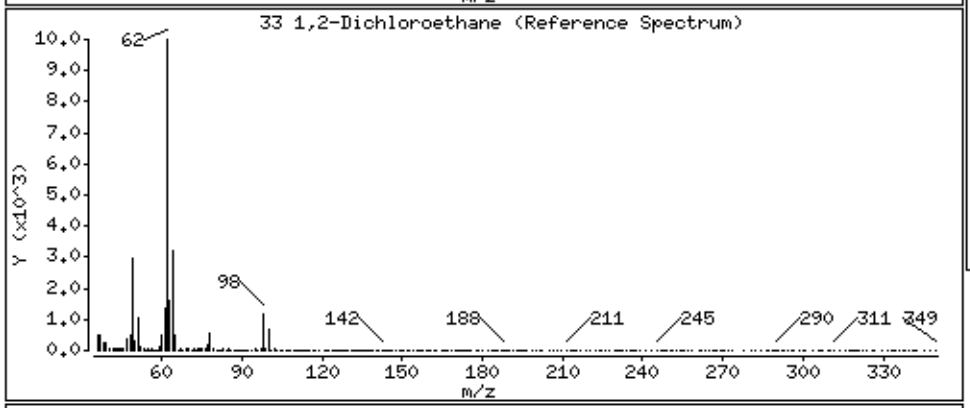
33 1,2-Dichloroethane Concentration: 1.16 ug/l

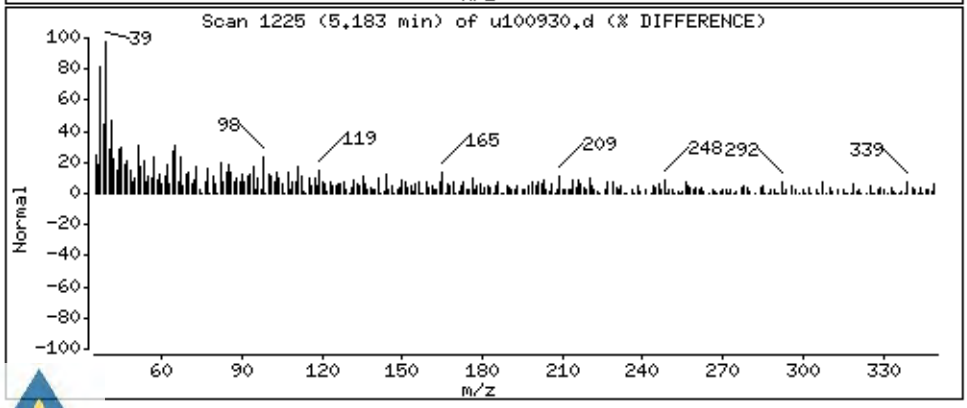












Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100930.d Page 5

Date : 10-OCT-2023 01:44

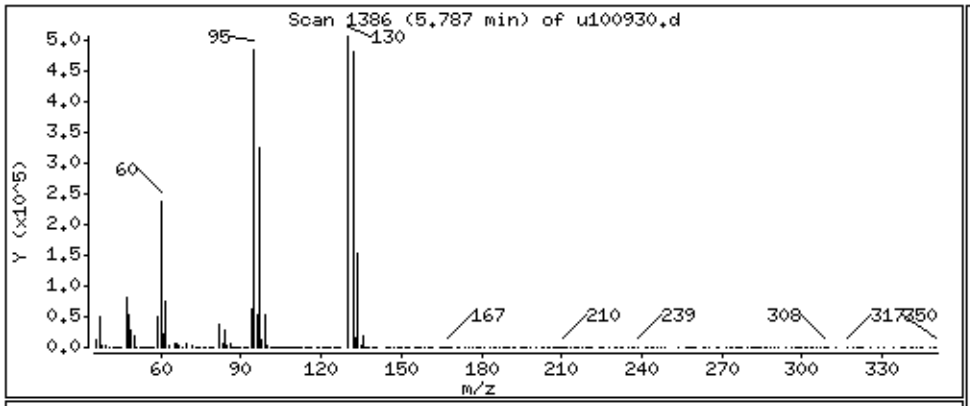
Client ID: HS23100159-16 Instrument: VOA9.i

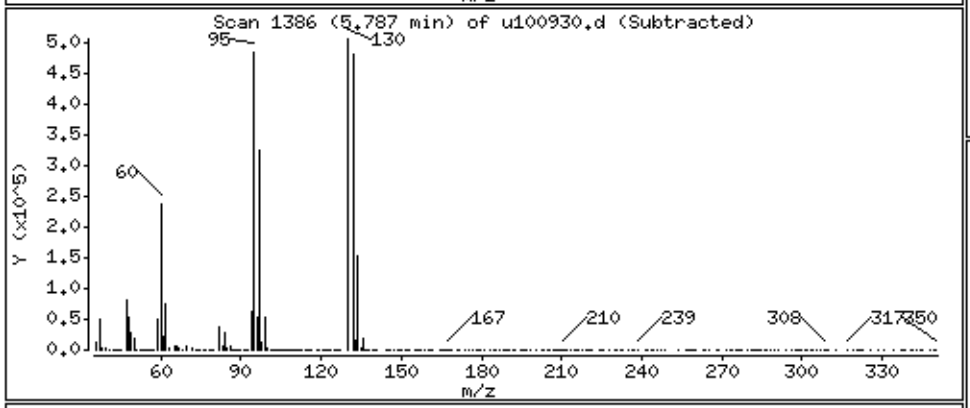
Sample Info: HS23100159-16;HS23100159-16;;;

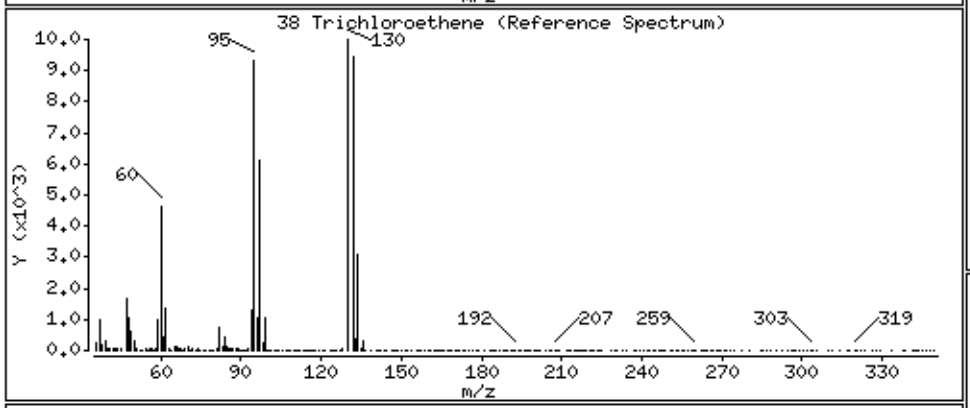
Purge Volume: 5.0 Operator: PC

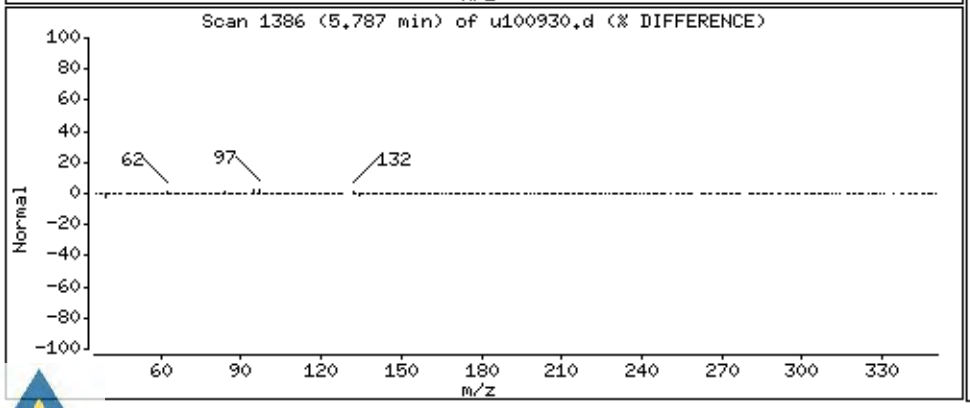
Column phase: DB624 Column diameter: 0.18

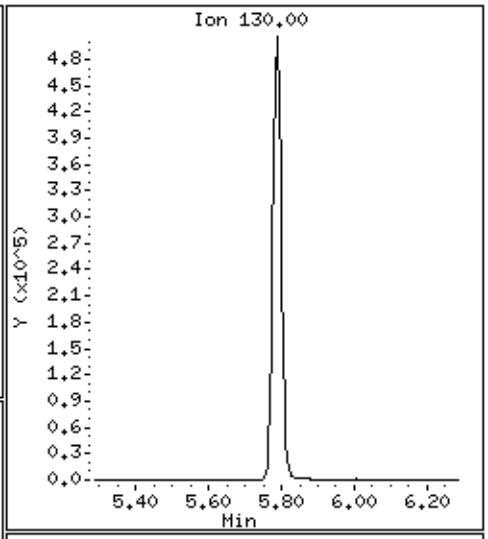
38 Trichloroethene Concentration: 160.25 ug/l

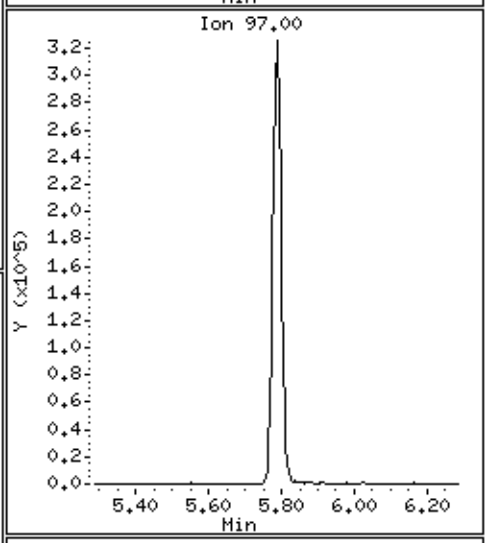


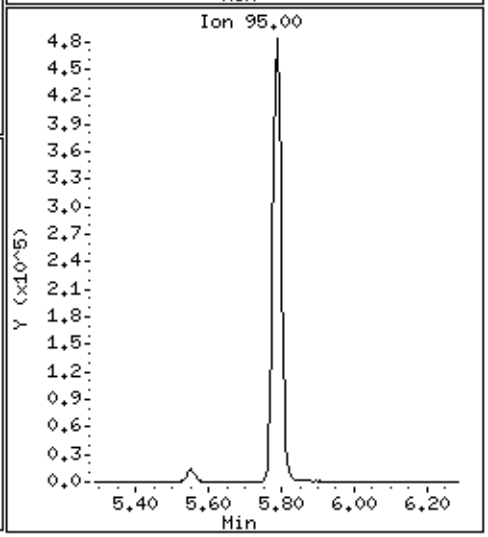










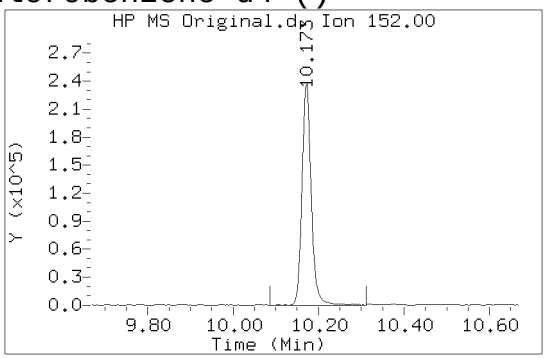


Data File : \\nahstws005\target\chem\voa9.i\u231009.b\u100930.d
Inj Date : 10-OCT-2023 01:44
InstruID : VOA9.i
LabSampID : HS23100159-16

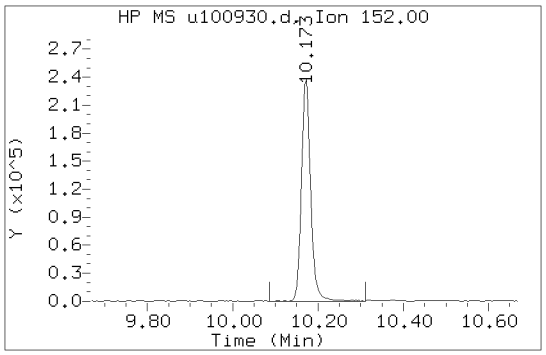
1,4-Dichlorobenzene-d4 ()

Reason Code:

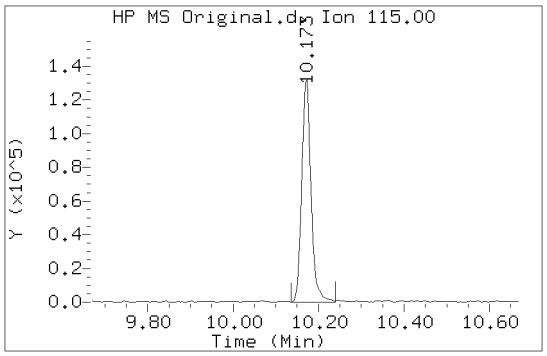
BEFORE
MASS
152
AREA
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HEIGHT
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10-Oct-2023
21:41



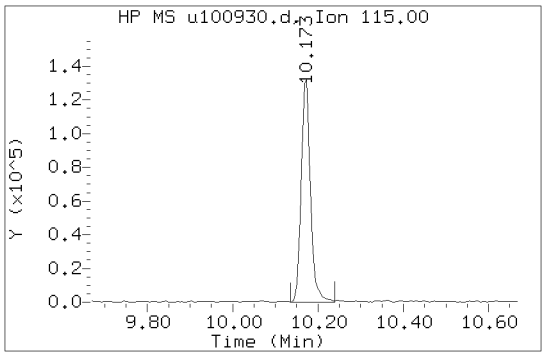
AFTER
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10-Oct-2023
21:41



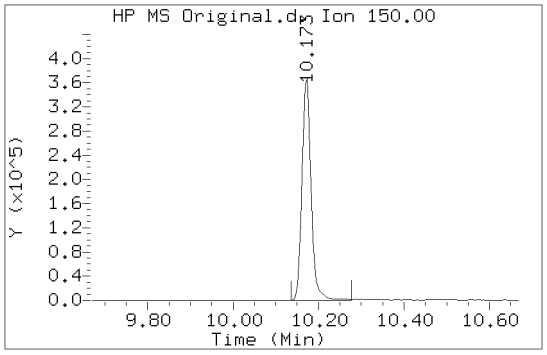
BEFORE
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10-Oct-2023
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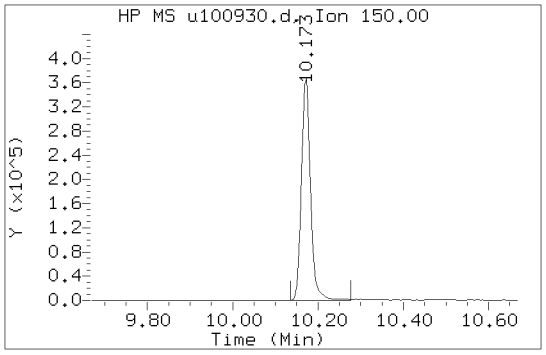
AFTER
MASS
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AREA
203391
HEIGHT
131750
10-Oct-2023
21:41



BEFORE
MASS
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AREA
558920
HEIGHT
366399
10-Oct-2023
21:41



AFTER
MASS
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10-Oct-2023
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Data File: \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100931.D Page 1
Report Date: 10-Oct-2023 10:59

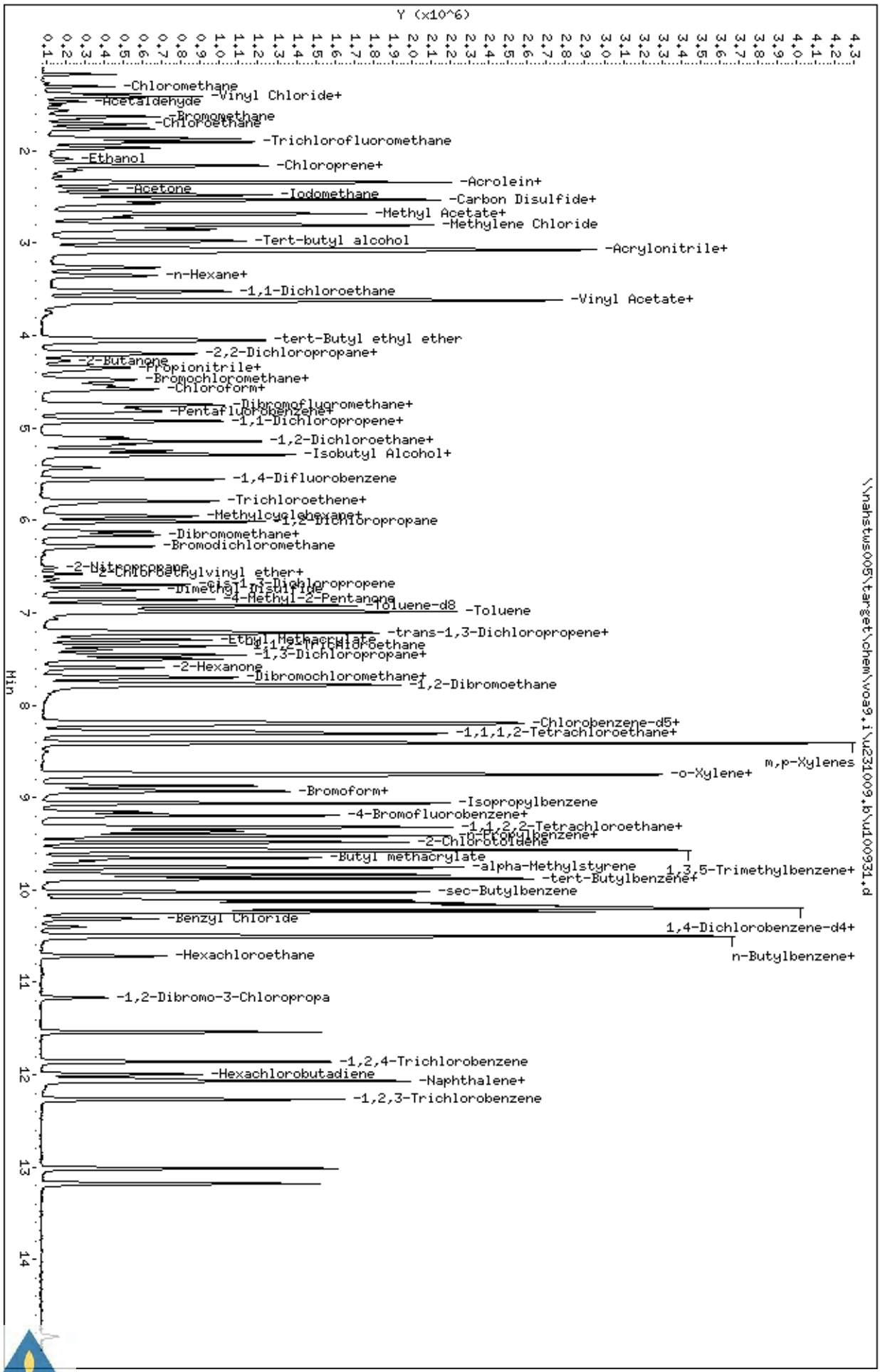
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231009.b\U100931.D
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Inj Date : 10-OCT-2023 02:06
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\U231009.b\8260C.m
Meth Date : 10-Oct-2023 10:59 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 29 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7051

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	4.819	4.819	(1.000)	395421	50.0000	
$ 30 Dibromofluoromethane	113	4.755	4.755	(0.987)	241075	50.0000	55.78
$ 35 1,2-Dichloroethane-d4	65	5.100	5.100	(1.058)	278327	50.0000	55.00
* 36 1,4-Difluorobenzene	114	5.557	5.557	(1.000)	718591	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	841294	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	983281	50.0000	49.24
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	386500	50.0000	48.89
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.172	(1.000)	573513	50.0000	
5 Vinyl Chloride	62	1.385	1.385	(0.287)	302849	50.0000	47.65
11 1,1-Dichloroethene	96	2.341	2.341	(0.486)	431886	50.0000	54.70
20 trans-1,2-Dichloroethene	96	3.068	3.068	(0.637)	531312	50.0000	53.98
27 cis-1,2-Dichloroethene	96	4.204	4.204	(0.872)	265783	50.0000	53.02
33 1,2-Dichloroethane	62	5.179	5.179	(0.932)	340883	50.0000	47.96
38 Trichloroethene	130	5.794	5.794	(1.042)	273764	50.0000	55.19
56 Tetrachloroethene	164	7.458	7.458	(0.911)	195000	50.0000	44.65
16 Acrylonitrile	53	3.072	3.072	(0.638)	373082	100.000	104.17



Data File: \\nahstws005\target\chem\voa9.i\u231009.b\u100931.d
Date : 10-OCT-2023 02:06
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\u231009.b\u100931.d
Inj Date : 10-OCT-2023 02:06
InstruID : VOA9.i
LabSampID : CCV-END

NO MANUAL INTEGRATIONS

right solutions.
right partner.

Raw Data VOA9 448800

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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\U231011.b\U101101.D Page 1
Report Date: 11-Oct-2023 11:25

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101101.D
Lab Smp Id: BFB Client Smp ID: BFB
Inj Date : 11-OCT-2023 10:30
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\U231011.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: 63 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)	TARGET RANGE	RATIO
1 bfb							CAS #: 460-00-4	
9.194	9.180 (0.000)		95	184000			0.00- 100.00	100.00
9.194	9.180 (0.000)		50	34408			15.00- 40.00	18.70
9.194	9.180 (0.000)		75	104016			30.00- 60.00	56.53
9.194	9.180 (0.000)		96	11927			5.00- 9.00	6.48
9.194	9.180 (0.000)		173	776			0.00- 2.00	0.45
9.194	9.180 (0.000)		174	172672			50.00- 0.00	93.84
9.194	9.180 (0.000)		175	14013			5.00- 9.00	8.12
9.194	9.180 (0.000)		176	170304			95.00- 101.00	98.63
9.194	9.180 (0.000)		177	11217			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	18.70
75	30.00 - 60.00% of mass 95	56.53
96	5.00 - 9.00% of mass 95	6.48
173	Less than 2.00% of mass 174	0.42 (0.45)
174	Greater than 50.00% of mass 95	93.84
175	5.00 - 9.00% of mass 174	7.62 (8.12)
176	95.00 - 101.00% of mass 174	92.56 (98.63)
177	5.00 - 9.00% of mass 176	6.10 (6.59)

Data File: U101101.D
Spectrum: Avg. Scans 2293-2297 (9.19)
Location of Maximum: 95.00
Number of points: 300

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.00	937	112.00	214	189.00	196	269.00	53
36.00	4336	113.00	712	190.00	46	270.00	210
37.00	12755	114.00	892	191.00	76	271.00	96
38.00	12210	115.00	411	192.00	220	272.00	82
39.00	7065	116.00	926	193.00	249	273.00	127
40.00	672	117.00	2743	194.00	159	274.00	180
41.00	1408	118.00	1123	195.00	143	275.00	116
42.00	441	119.00	1671	196.00	193	276.00	77
43.00	900	120.00	306	197.00	133	278.00	175
44.00	3017	121.00	369	198.00	164	279.00	38
45.00	2580	122.00	249	199.00	249	280.00	179
46.00	1027	123.00	213	200.00	135	281.00	232
47.00	2354	124.00	513	201.00	210	282.00	84
48.00	2093	125.00	154	202.00	192	283.00	75
49.00	8874	126.00	367	203.00	48	284.00	195
50.00	34408	127.00	467	204.00	45	285.00	35
51.00	11579	128.00	996	205.00	40	286.00	45
52.00	914	129.00	77	206.00	185	287.00	209
53.00	636	130.00	1240	207.00	153	288.00	97
54.00	745	131.00	793	208.00	111	289.00	113
55.00	1199	132.00	235	209.00	107	290.00	127
56.00	5253	133.00	327	210.00	31	291.00	10
57.00	8049	134.00	36	211.00	45	292.00	182
58.00	589	135.00	862	212.00	148	293.00	190
59.00	83	136.00	989	213.00	16	294.00	146
60.00	2542	137.00	144	214.00	92	296.00	10
61.00	11918	138.00	546	215.00	266	297.00	34
62.00	10355	139.00	150	216.00	256	298.00	130
63.00	9437	140.00	208	217.00	147	299.00	173
64.00	1258	141.00	3841	218.00	171	300.00	139
65.00	1074	142.00	528	219.00	46	301.00	131
66.00	205	143.00	3393	220.00	233	302.00	50
67.00	445	144.00	391	221.00	72	303.00	82
68.00	22768	145.00	558	222.00	75	304.00	160
69.00	24576	146.00	511	223.00	65	305.00	86
70.00	2815	147.00	437	224.00	253	306.00	32
71.00	431	148.00	455	226.00	155	307.00	65
72.00	1267	149.00	592	228.00	208	308.00	77
73.00	11522	150.00	431	229.00	114	310.00	13
74.00	41584	151.00	41	230.00	83	311.00	80
75.00	104016	152.00	420	231.00	29	312.00	28
76.00	9677	153.00	219	232.00	188	313.00	148
77.00	2042	154.00	308	234.00	28	314.00	165
79.00	13007	155.00	728	235.00	52	315.00	209
80.00	3466	156.00	173	236.00	45	316.00	48

81.00 12079	157.00 566	237.00 149	317.00 156
82.00 2915	158.00 169	238.00 307	318.00 21
83.00 1104	159.00 693	239.00 90	319.00 31
84.00 308	160.00 30	240.00 280	320.00 191
85.00 261	161.00 437	241.00 125	321.00 38
86.00 745	162.00 80	242.00 46	322.00 56
87.00 8326	163.00 83	243.00 25	324.00 99
88.00 8437	164.00 226	244.00 139	325.00 76
89.00 404	165.00 213	245.00 56	326.00 155
90.00 557	166.00 131	246.00 98	327.00 100
91.00 1267	167.00 254	247.00 191	328.00 124
92.00 6489	168.00 224	248.00 89	329.00 34
93.00 10097	169.00 394	249.00 157	330.00 189
94.00 31336	170.00 483	250.00 133	331.00 117
95.00 184000	171.00 762	251.00 104	332.00 142
96.00 11927	172.00 695	252.00 58	333.00 68
97.00 795	173.00 776	253.00 24	334.00 52
98.00 312	174.00 172672	254.00 75	335.00 61
99.00 244	175.00 14013	255.00 54	336.00 24
100.00 268	176.00 170304	257.00 64	340.00 18
101.00 299	177.00 11217	258.00 22	341.00 11
102.00 176	178.00 661	259.00 122	342.00 149
103.00 384	179.00 164	260.00 84	345.00 56
104.00 1519	181.00 95	261.00 159	346.00 67
105.00 497	182.00 118	262.00 37	347.00 44
106.00 1471	183.00 176	263.00 122	348.00 322
107.00 358	184.00 258	264.00 170	349.00 37
108.00 245	185.00 80	265.00 101	
109.00 372	186.00 132	266.00 29	
110.00 555	187.00 324	267.00 79	
111.00 977	188.00 15	268.00 67	

Data File: \\nahstws005\target\chem\voa9.i\u231011.b\u101101.d Page 1

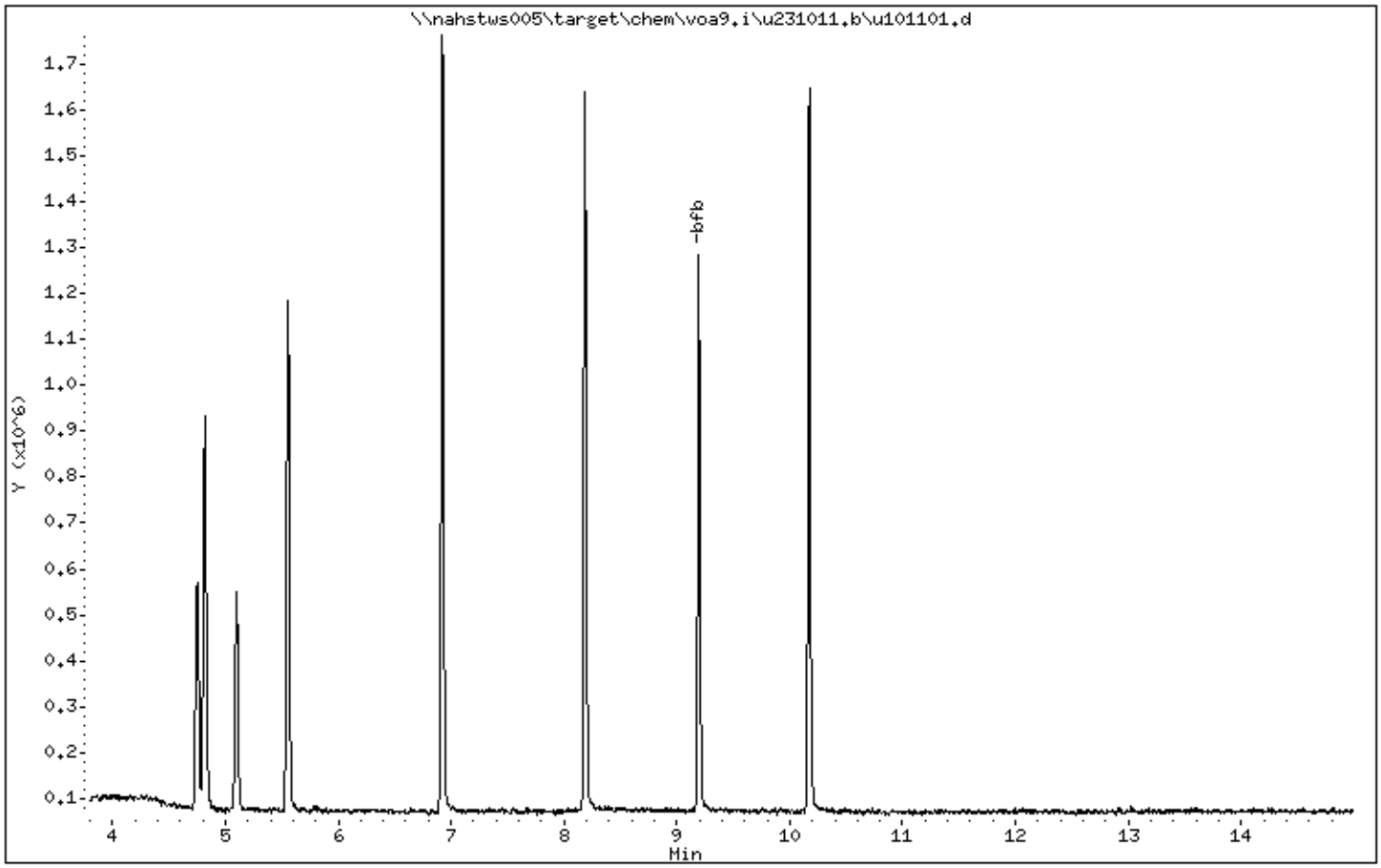
Date : 11-OCT-2023 10:30

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\u231011.b\u101101.d
Inj Date : 11-OCT-2023 10:30
InstruID : VOA9.i
LabSampID : BFB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101102.D Page 1
Report Date: 18-Oct-2023 14:31

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101102.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 11-OCT-2023 11:17
Operator : PC Inst ID: VOA9.i
Smp Info : CCV;CCV;2;;;
Misc Info : V9;WATER;0;1;
Comment :
Method : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 18-Oct-2023 14:25 pcabasca Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14

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)	442168	50.0000	
2	Dichlorodifluoromethane	85	1.164	1.164	(0.242)	216533	50.0000	44.85
3	Chloromethane	50	1.299	1.299	(0.270)	227645	50.0000	47.61
5	Vinyl Chloride	62	1.378	1.378	(0.286)	316196	50.0000	44.49
6	Bromomethane	94	1.621	1.621	(0.337)	278345	50.0000	43.28
7	Chloroethane	64	1.700	1.700	(0.353)	320118	50.0000	45.78
8	Trichlorofluoromethane	101	1.899	1.899	(0.394)	755238	50.0000	46.84
9	Acrolein	56	2.266	2.266	(0.471)	44072	100.000	110.54
10	Acetone	43	2.408	2.408	(0.500)	392893	100.000	109.59
11	1,1-Dichloroethene	96	2.334	2.334	(0.485)	442085	50.0000	50.08
15	Iodomethane	142	2.468	2.468	(0.513)	981734	100.000	85.52
16	Acrylonitrile	53	3.065	3.065	(0.636)	393833	100.000	98.34
17	Methylene Chloride	84	2.795	2.795	(0.580)	605571	50.0000	46.37
18	Methyl tert-butyl ether	73	3.080	3.080	(0.640)	1677350	50.0000	46.20
19	Carbon Disulfide	76	2.525	2.525	(0.524)	2565813	100.000	101.02
20	trans-1,2-Dichloroethene	96	3.061	3.061	(0.636)	535533	50.0000	48.66
21	Vinyl Acetate	43	3.608	3.608	(0.749)	1650644	100.000	103.05
22	1,1-Dichloroethane	63	3.514	3.514	(0.730)	853797	50.0000	76.07
24	2-Butanone	43	4.260	4.260	(0.885)	204450	100.000	99.67
26	2,2-Dichloropropane	77	4.185	4.185	(0.869)	308304	50.0000	49.80
27	cis-1,2-Dichloroethene	96	4.197	4.197	(0.872)	275492	50.0000	49.14

28 Chloroform	83	4.575	4.575 (0.950)	484927	50.0000	47.15
29 Bromochloromethane	128	4.470	4.470 (0.928)	143379	50.0000	53.00

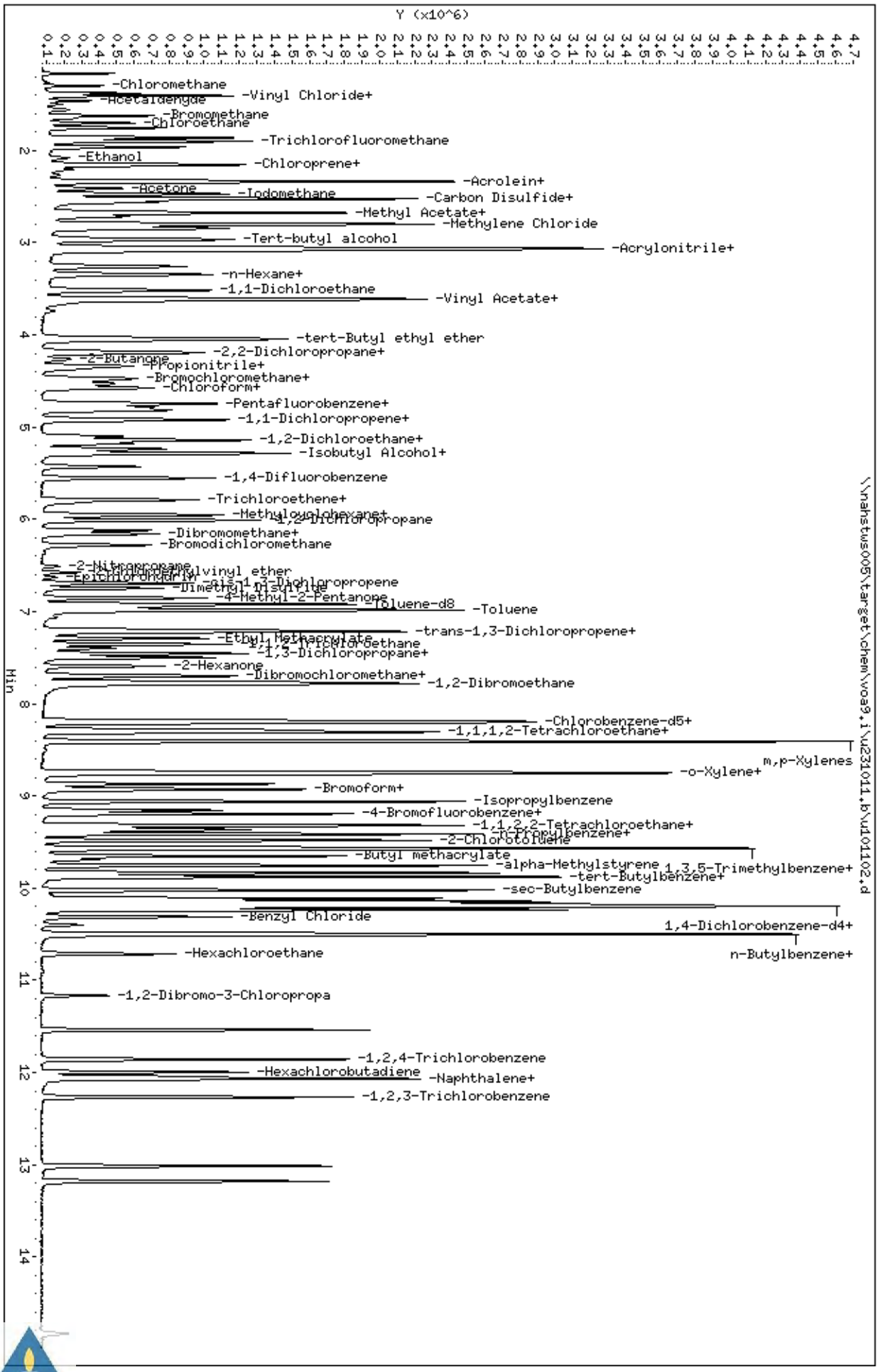
Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101102.D Page 2
Report Date: 18-Oct-2023 14:31

		QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
Compounds								
$	30 Dibromofluoromethane	113	4.748	4.748	(0.986)	256351	50.0000	53.21
	31 1,1,1-Trichloroethane	97	4.744	4.744	(0.985)	352106	50.0000	45.93
	32 1,1-Dichloropropene	75	4.924	4.924	(0.887)	319332	50.0000	49.89
	33 1,2-Dichloroethane	62	5.175	5.175	(0.932)	362963	50.0000	49.15
	34 Carbon Tetrachloride	117	4.913	4.913	(0.885)	282944	50.0000	47.84
$	35 1,2-Dichloroethane-d4	65	5.096	5.096	(1.058)	305183	50.0000	53.97
*	36 1,4-Difluorobenzene	114	5.554	5.554	(1.000)	746667	50.0000	
	37 Benzene	78	5.141	5.141	(0.926)	998207	50.0000	50.17
	38 Trichloroethene	130	5.790	5.790	(1.043)	267673	50.0000	51.94
	39 Bromodichloromethane	83	6.277	6.277	(1.130)	351420	50.0000	50.91
	41 2-Chloroethylvinyl ether	63	6.577	6.577	(1.184)	81465	100.000	76.10
	42 1,2-Dichloropropane	63	6.011	6.011	(1.082)	253742	50.0000	50.17
	44 Dibromomethane	93	6.120	6.120	(1.102)	199316	50.0000	49.66
	45 4-Methyl-2-Pentanone	43	6.854	6.854	(0.837)	536199	100.000	104.33
	46 cis-1,3-Dichloropropene	75	6.689	6.689	(1.205)	421086	50.0000	51.25
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	866443	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	1042103	50.0000	51.30
	50 Toluene	91	6.982	6.982	(0.853)	1222444	50.0000	51.67
	51 trans-1,3-Dichloropropene	75	7.196	7.196	(1.296)	382456	50.0000	53.87
	52 2-Hexanone	43	7.589	7.589	(0.927)	385043	100.000	108.02
	53 1,1,2-Trichloroethane	83	7.353	7.353	(0.898)	242779	50.0000	50.72
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	508387	50.0000	51.00
	55 Dibromochloromethane	129	7.690	7.690	(0.940)	305435	50.0000	52.65
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	219379	50.0000	48.78
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	321884	50.0000	51.22
	58 1-Chlorohexane	55	8.196	8.196	(1.476)	232191	50.0000	52.63
	59 Chlorobenzene	112	8.208	8.208	(1.003)	833834	50.0000	49.64
	60 1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	290033	50.0000	52.73
	61 Ethylbenzene	106	8.305	8.305	(1.015)	421460	50.0000	52.62
	62 m,p-Xylenes	106	8.406	8.406	(1.027)	1154153	100.000	107.60
	63 o-Xylene	106	8.748	8.748	(1.069)	562411	50.0000	51.94
	64 Styrene	104	8.763	8.763	(1.071)	1021559	50.0000	55.51
	66 Bromoform	173	8.920	8.920	(1.090)	215138	50.0000	49.71
	67 Isopropylbenzene	105	9.062	9.062	(1.107)	1404123	50.0000	54.27
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	501752	50.0000	45.69
$	69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	448119	50.0000	54.78
*	70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	649707	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.921)	477096	50.0000	43.65
	73 n-Propylbenzene	91	9.411	9.411	(0.926)	1772629	50.0000	49.76
	74 Bromobenzene	156	9.317	9.317	(0.916)	405084	50.0000	44.88
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	1335230	50.0000	48.51
	76 2-Chlorotoluene	91	9.482	9.482	(0.933)	1070545	50.0000	47.43
	77 4-Chlorotoluene	91	9.576	9.576	(0.942)	1382723	50.0000	51.60
	78 tert-Butylbenzene	119	9.835	9.835	(0.967)	1120712	50.0000	47.48
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.972)	1459253	50.0000	50.64
	81 sec-Butylbenzene	105	10.022	10.022	(0.986)	1557323	50.0000	48.93
	82 p-Isopropyltoluene	119	10.146	10.146	(0.998)	1434840	50.0000	51.23
	83 1,3-Dichlorobenzene	146	10.112	10.112	(0.994)	800504	50.0000	47.41
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	955502	50.0000	50.15
	87 n-Butylbenzene	91	10.491	10.491	(1.032)	1434653	50.0000	55.20
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	910230	50.0000	52.29
	89 1,2-Dibromo-3-Chloropropane	155	11.165	11.165	(1.098)	69734	50.0000	47.70

90 1,2,4-Trichlorobenzene	180	11.859	11.859 (1.166)	467637	50.0000	45.54	
91 Hexachlorobutadiene	225	11.998	11.998 (1.180)	186232	50.0000	49.28	

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101102.D Page 3
Report Date: 18-Oct-2023 14:31

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	92 Naphthalene	128	12.065	12.065	(1.187)	1399895	50.0000	46.25
	93 1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	472790	50.0000	46.26
M	94 1,2-Dichloroethylene (total)	96				811025	100.000	97.65
M	95 Xylenes (total)	106				1716564	150.000	148.22
	135 1,4-Dioxane	88	6.165	6.165	(1.280)	78457	1000.00	839.80
	141 Cyclohexane	56	4.785	4.785	(0.994)	254297	50.0000	45.23
	138 Freon TF	101	2.337	2.337	(0.485)	416123	50.0000	48.39
	140 1,3-Butadiene	54	1.404	1.404	(0.292)	293013	50.0000	47.35
	147 Methylcyclohexane	55	5.947	5.947	(1.071)	527424	50.0000	50.43
	146 Methyl Acetate	43	2.712	2.712	(0.563)	426775	50.0000	49.98
	148 Tert-Butyl alcohol	59	2.963	2.963	(0.615)	1143018	1000.00	871.26
	149 Isopropyl Alcohol	45	2.558	2.558	(0.531)	629501	1000.00	884.83
	72 trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	92149	50.0000	48.11



Data File: \\nahstws005\target\chem\voa9.i\u231011.b\u101102.d
Date : 11-OCT-2023 11:17
Client ID: CCV
Sample Info: CCV;CCV;2;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231011.b\u101102.d
Inj Date : 11-OCT-2023 11:17
InstruID : VOA9.i
LabSampID : CCV

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101104.D Page 1
Report Date: 16-Oct-2023 12:08

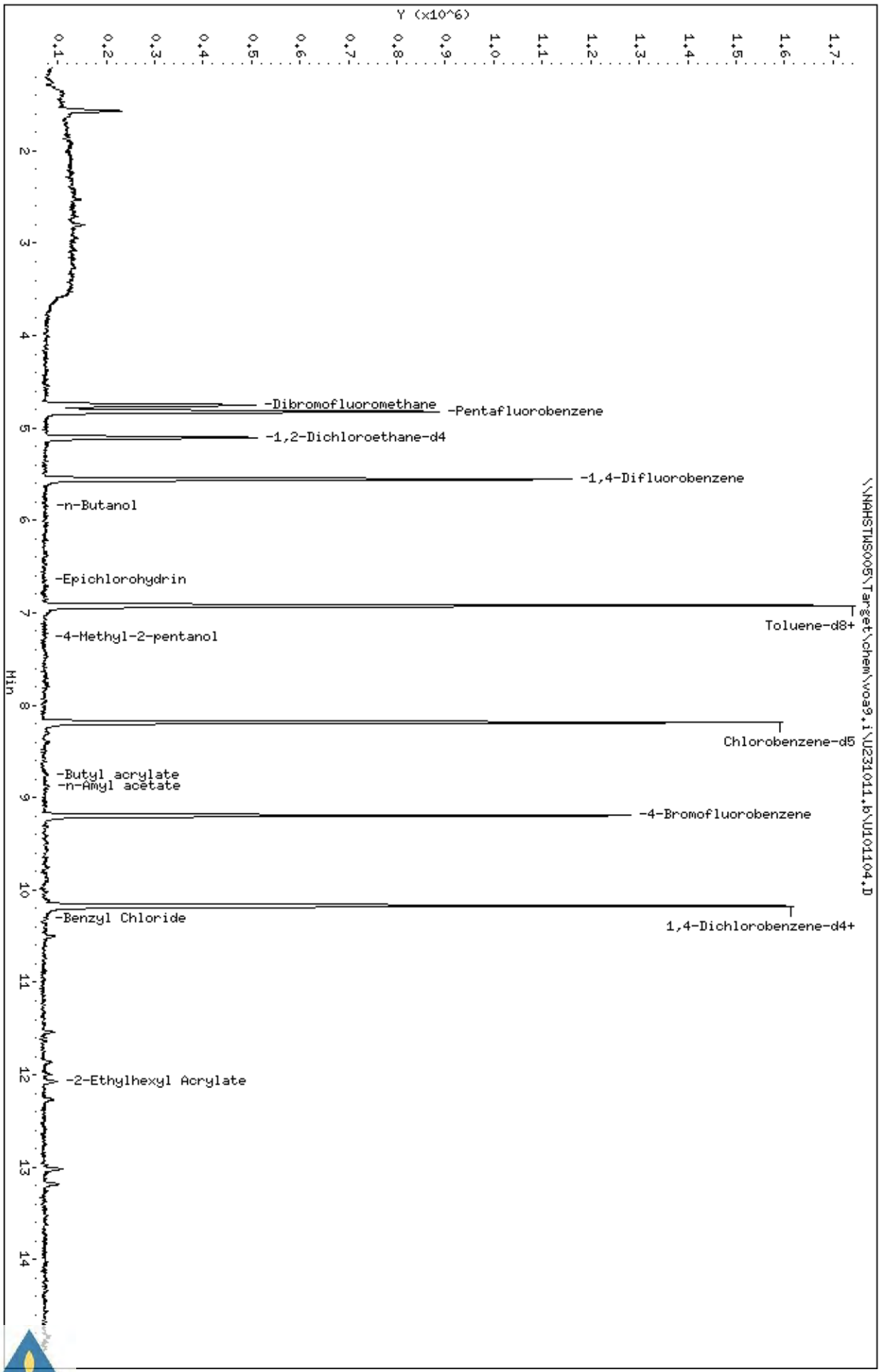
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101104.D
Lab Smp Id: CCB Client Smp ID: CCB
Inj Date : 11-OCT-2023 12:01
Operator : PC Inst ID: VOA9.i
Smp Info : CCB;CCB;;;
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 16-Oct-2023 12:08 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 3
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	4.819	4.815	(1.000)	548198	50.0000	
$ 30 Dibromofluoromethane	113	4.752	4.748	(0.986)	246144	41.7664	41.76
$ 35 1,2-Dichloroethane-d4	65	5.100	5.096	(1.058)	284191	40.8169	40.81
* 36 1,4-Difluorobenzene	114	5.558	5.554	(1.000)	828512	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	762637	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	1000415	55.9513	55.95
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	320805	44.9195	44.91
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	383374	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa9,i\U231011,b\U101104,D
Date : 11-OCT-2023 12:01
Client ID: CCB
Sample Info: CCB;CCB;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101104.D
Inj Date : 11-OCT-2023 12:01
InstruID : VOA9.i
LabSampID : CCB

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101105.D Page 1
Report Date: 18-Oct-2023 14:25

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Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101105.D
Lab Smp Id: VLCSW-231010 Client Smp ID: VLCSW-231010
Inj Date : 11-OCT-2023 12:24
Operator : PC Inst ID: VOA9.i
Smp Info : VLCSW-231010;VLCSW-231010;3;;LCS
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 18-Oct-2023 14:25 pcabasca Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 4 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14

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

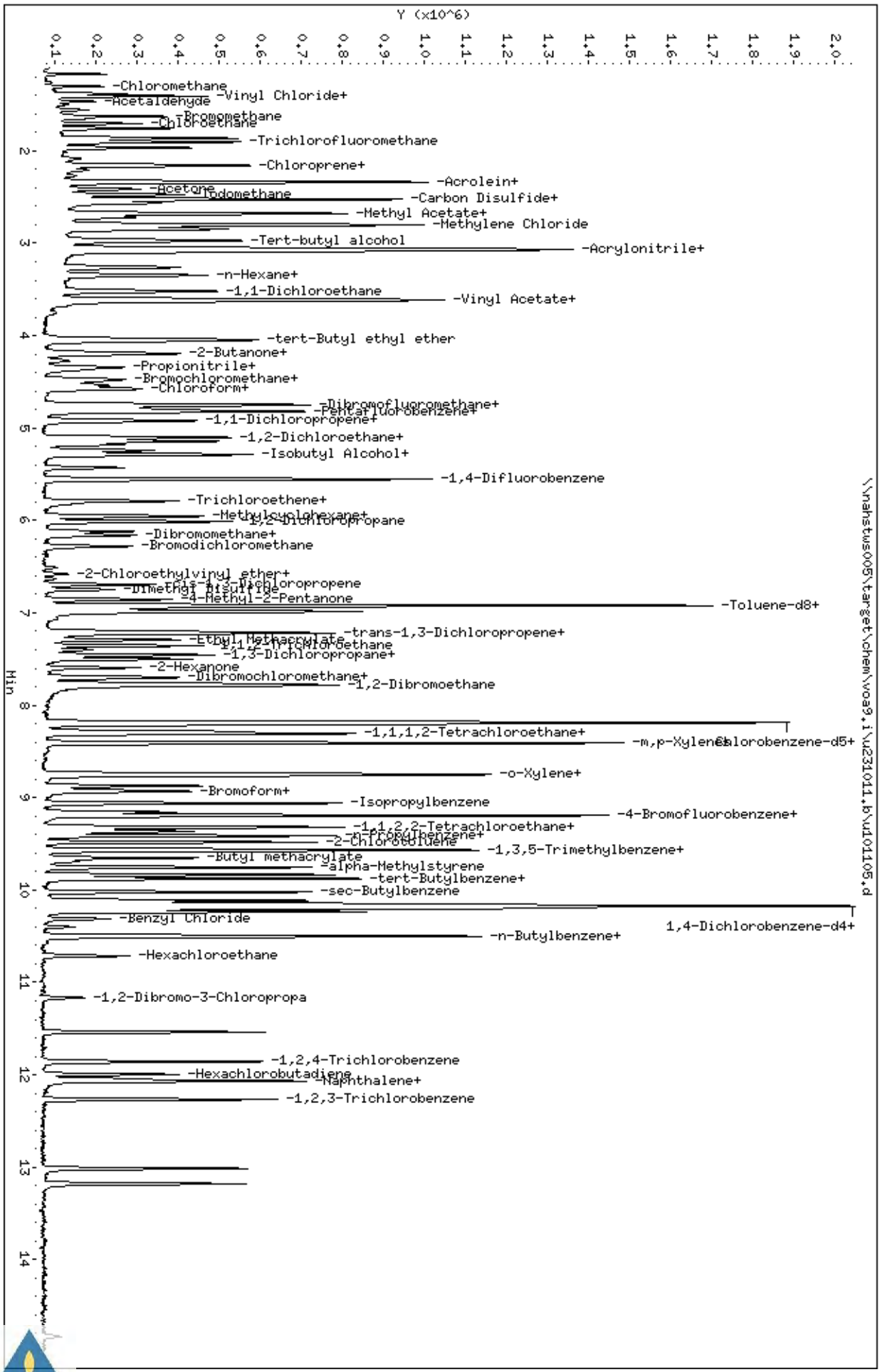
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1	Pentafluorobenzene	168	4.819	4.815	(1.000)	416224	50.0000	
2	Dichlorodifluoromethane	85	1.168	1.164	(0.242)	79753	18.1646	18.16
3	Chloromethane	50	1.303	1.299	(0.270)	86182	18.4626	18.46
5	Vinyl Chloride	62	1.381	1.378	(0.287)	114590	17.1298	17.12
6	Bromomethane	94	1.625	1.621	(0.337)	115153	19.2989	19.29
7	Chloroethane	64	1.704	1.700	(0.354)	124173	18.8678	18.86
8	Trichlorofluoromethane	101	1.902	1.899	(0.395)	287579	18.9484	18.94
9	Acrolein	56	2.270	2.266	(0.471)	20961	55.9100	55.91
10	Acetone	43	2.412	2.408	(0.501)	175165	49.5975	49.59
11	1,1-Dichloroethene	96	2.337	2.334	(0.485)	172161	20.7184	20.71
15	Iodomethane	142	2.472	2.468	(0.513)	273948	27.7485	27.74
16	Acrylonitrile	53	3.068	3.065	(0.637)	181053	48.0279	48.02
17	Methylene Chloride	84	2.798	2.795	(0.581)	243017	19.7720	19.77
18	Methyl tert-butyl ether	73	3.087	3.080	(0.641)	708255	20.7254	20.72
19	Carbon Disulfide	76	2.525	2.525	(0.524)	975424	40.8012	40.80
20	trans-1,2-Dichloroethene	96	3.065	3.061	(0.636)	215000	20.7551	20.75
21	Vinyl Acetate	43	3.608	3.608	(0.749)	741828	49.2025	49.20
22	1,1-Dichloroethane	63	3.518	3.514	(0.730)	350667	33.1944	33.19
24	2-Butanone	43	4.268	4.260	(0.886)	81536	42.2284	42.22
26	2,2-Dichloropropane	77	4.189	4.185	(0.869)	103571	18.2882	18.28
27	cis-1,2-Dichloroethene	96	4.200	4.197	(0.872)	99682	18.8917	18.89

28 Chloroform	83	4.575	4.575 (0.949)	182670	18.8710	18.87
29 Bromochloromethane	128	4.470	4.470 (0.928)	53344	20.9483	20.94

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
$	30 Dibromofluoromethane	113	4.751	4.748	(0.986)	249274	54.8635	54.86
	31 1,1,1-Trichloroethane	97	4.748	4.744	(0.985)	128432	17.7998	17.79
	32 1,1-Dichloropropene	75	4.924	4.924	(0.887)	115378	18.7663	18.76
	33 1,2-Dichloroethane	62	5.179	5.175	(0.933)	138682	19.5504	19.55
	34 Carbon Tetrachloride	117	4.916	4.913	(0.885)	97249	17.1184	17.11
$	35 1,2-Dichloroethane-d4	65	5.100	5.096	(1.058)	293377	55.0836	55.08
*	36 1,4-Difluorobenzene	114	5.554	5.554	(1.000)	717240	50.0000	
	37 Benzene	78	5.141	5.141	(0.926)	362412	18.9635	18.96
	38 Trichloroethene	130	5.790	5.790	(1.043)	91405	18.4645	18.46
	39 Bromodichloromethane	83	6.281	6.277	(1.131)	118635	17.8933	17.89
	41 2-Chloroethylvinyl ether	63	6.581	6.577	(1.185)	27427	26.6724	26.67
	42 1,2-Dichloropropane	63	6.011	6.011	(1.082)	87779	18.0704	18.07
	44 Dibromomethane	93	6.120	6.120	(1.102)	71649	18.5856	18.58
	45 4-Methyl-2-Pentanone	43	6.854	6.854	(0.837)	191875	41.2050	41.20
	46 cis-1,3-Dichloropropene	75	6.693	6.689	(1.205)	130153	16.4921	16.49
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	785093	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	981535	53.3252	53.32
	50 Toluene	91	6.982	6.982	(0.853)	433494	20.2224	20.22
	51 trans-1,3-Dichloropropene	75	7.199	7.196	(1.296)	116624	18.9918	18.99
	52 2-Hexanone	43	7.593	7.589	(0.928)	134435	41.6250	41.62
	53 1,1,2-Trichloroethane	83	7.357	7.353	(0.899)	85072	19.6152	19.61
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	178234	19.7339	19.73
	55 Dibromochloromethane	129	7.694	7.690	(0.940)	96768	18.4114	18.41
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	78070	19.1599	19.15
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	104326	18.3223	18.32
	58 1-Chlorohexane	55	8.197	8.196	(1.476)	77476	19.9140	19.91
	59 Chlorobenzene	112	8.212	8.208	(1.003)	286456	18.8221	18.82
	60 1,1,1,2-Tetrachloroethane	131	8.286	8.283	(1.012)	95328	19.1281	19.12
	61 Ethylbenzene	106	8.305	8.305	(1.015)	142532	19.6411	19.64
	62 m,p-Xylenes	106	8.410	8.406	(1.027)	365901	37.6495	37.64
	63 o-Xylene	106	8.748	8.748	(1.069)	172198	17.5532	17.55
	64 Styrene	104	8.763	8.763	(1.071)	308298	18.4899	18.48
	66 Bromoform	173	8.920	8.920	(1.090)	57374	15.1653	15.16
	67 Isopropylbenzene	105	9.062	9.062	(1.107)	437100	18.6451	18.64
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	158725	21.2490	21.24
$	69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	333753	45.3784	45.37
*	70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	446923	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.920)	144662	19.2420	19.24
	73 n-Propylbenzene	91	9.411	9.411	(0.925)	515502	21.0405	21.04
	74 Bromobenzene	156	9.317	9.317	(0.916)	122275	19.6982	19.69
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	367746	19.4232	19.42
	76 2-Chlorotoluene	91	9.482	9.482	(0.932)	313864	20.2151	20.21
	77 4-Chlorotoluene	91	9.576	9.576	(0.941)	373237	20.2499	20.24
	78 tert-Butylbenzene	119	9.838	9.835	(0.967)	312243	19.2333	19.23
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.971)	384882	19.4176	19.41
	81 sec-Butylbenzene	105	10.022	10.022	(0.985)	422122	19.2834	19.28
	82 p-Isopropyltoluene	119	10.146	10.146	(0.997)	385193	19.9959	19.99
	83 1,3-Dichlorobenzene	146	10.116	10.112	(0.994)	222005	19.1149	19.11
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	248330	18.9484	18.94
	87 n-Butylbenzene	91	10.491	10.491	(1.031)	343897	19.2375	19.23
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	233320	19.4880	19.48
	89 1,2-Dibromo-3-Chloropropane	155	11.169	11.165	(1.098)	18278	19.2784	19.27

90 1,2,4-Trichlorobenzene	180	11.859	11.859 (1.166)	148773	21.0620	21.06
91 Hexachlorobutadiene	225	11.998	11.998 (1.179)	52816	20.3180	20.31

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	92 Naphthalene	128	12.069	12.065	(1.186)	423256	20.3316	20.33
	93 1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	155193	22.0748	22.07
M	94 1,2-Dichloroethylene (total)	96				314682	40.2524	40.25
M	95 Xylenes (total)	106				538099	54.0305	54.03
	135 1,4-Dioxane	88	6.172	6.165	(1.281)	32496	369.521	369.52
	141 Cyclohexane	56	4.789	4.785	(0.994)	99793	18.8562	18.85
	138 Freon TF	101	2.341	2.337	(0.486)	154705	19.7461	19.74
	140 1,3-Butadiene	54	1.408	1.404	(0.292)	96081	16.4951	16.49
	147 Methylcyclohexane	55	5.947	5.947	(1.071)	197413	19.6510	19.65
	146 Methyl Acetate	43	2.720	2.712	(0.564)	162926	20.2713	20.27
	148 Tert-Butyl alcohol	59	2.971	2.963	(0.617)	468614	379.466	379.46
	149 Isopropyl Alcohol	45	2.566	2.558	(0.533)	262334	391.726	391.72
	72 trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	25022	14.4199	14.41



Data File: \\nahstws005\target\chem\voa9.i\u231011.b\u101105.d
Date : 11-OCT-2023 12:24
Client ID: VLCSW-231010
Sample Info: VLCSW-231010;VLCSW-231010;3;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231011.b\u101105.d
Inj Date : 11-OCT-2023 12:24
InstruID : VOA9.i
LabSampID : VLCSW-231010

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101107.D Page 1
Report Date: 16-Oct-2023 12:08

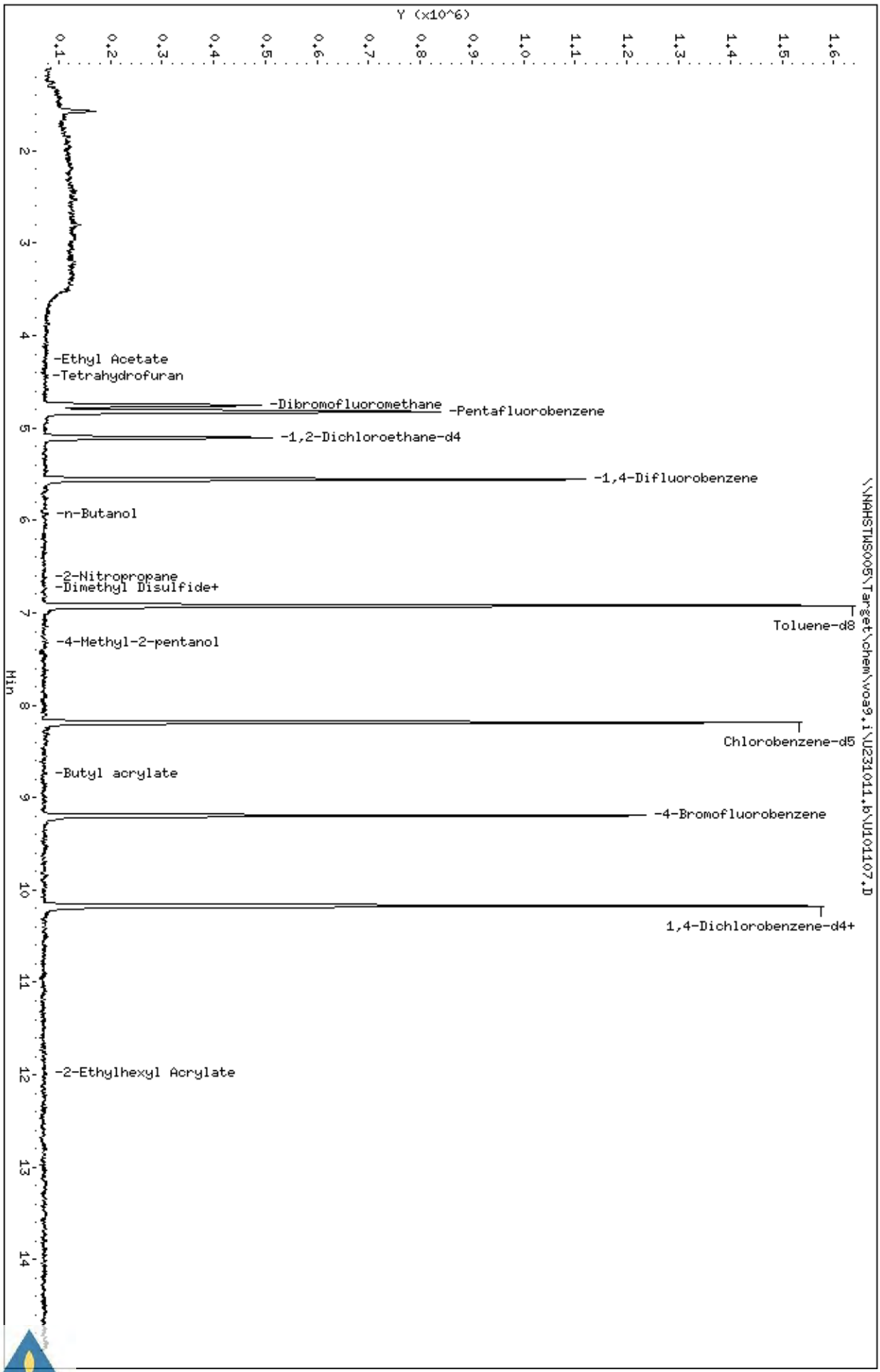
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101107.D
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Inj Date : 11-OCT-2023 13:08
Operator : PC Inst ID: VOA9.i
Smp Info : VBLKW-231010;VBLKW-231010;3;;BLANK
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 16-Oct-2023 12:08 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 6 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	4.823	4.815	(1.000)	507539	50.0000	
$ 30 Dibromofluoromethane	113	4.755	4.748	(0.986)	229576	42.0625	42.06
$ 35 1,2-Dichloroethane-d4	65	5.104	5.096	(1.058)	277365	42.9850	42.98
* 36 1,4-Difluorobenzene	114	5.557	5.554	(1.000)	783121	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	730730	50.0000	
$ 48 Toluene-d8	98	6.926	6.922	(0.846)	957375	55.8821	55.88
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	302094	44.1742	44.17
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	376295	50.0000	



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101107.D
Date : 11-OCT-2023 13:08
Client ID: VBLKW-231010
Sample Info: VBLKW-231010;VBLKW-231010;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\U231011.b\U101107.D
Inj Date : 11-OCT-2023 13:08
InstruID : VOA9.i
LabSampID : VBLKW-231010

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101114.D Page 1
Report Date: 18-Oct-2023 14:35

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101114.D
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Inj Date : 11-OCT-2023 15:45
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100355-09MS;HS23100355-09MS;3;;MS
Misc Info : V9;WATER;0;1;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 18-Oct-2023 14:25 pcabasca Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 13 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14

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

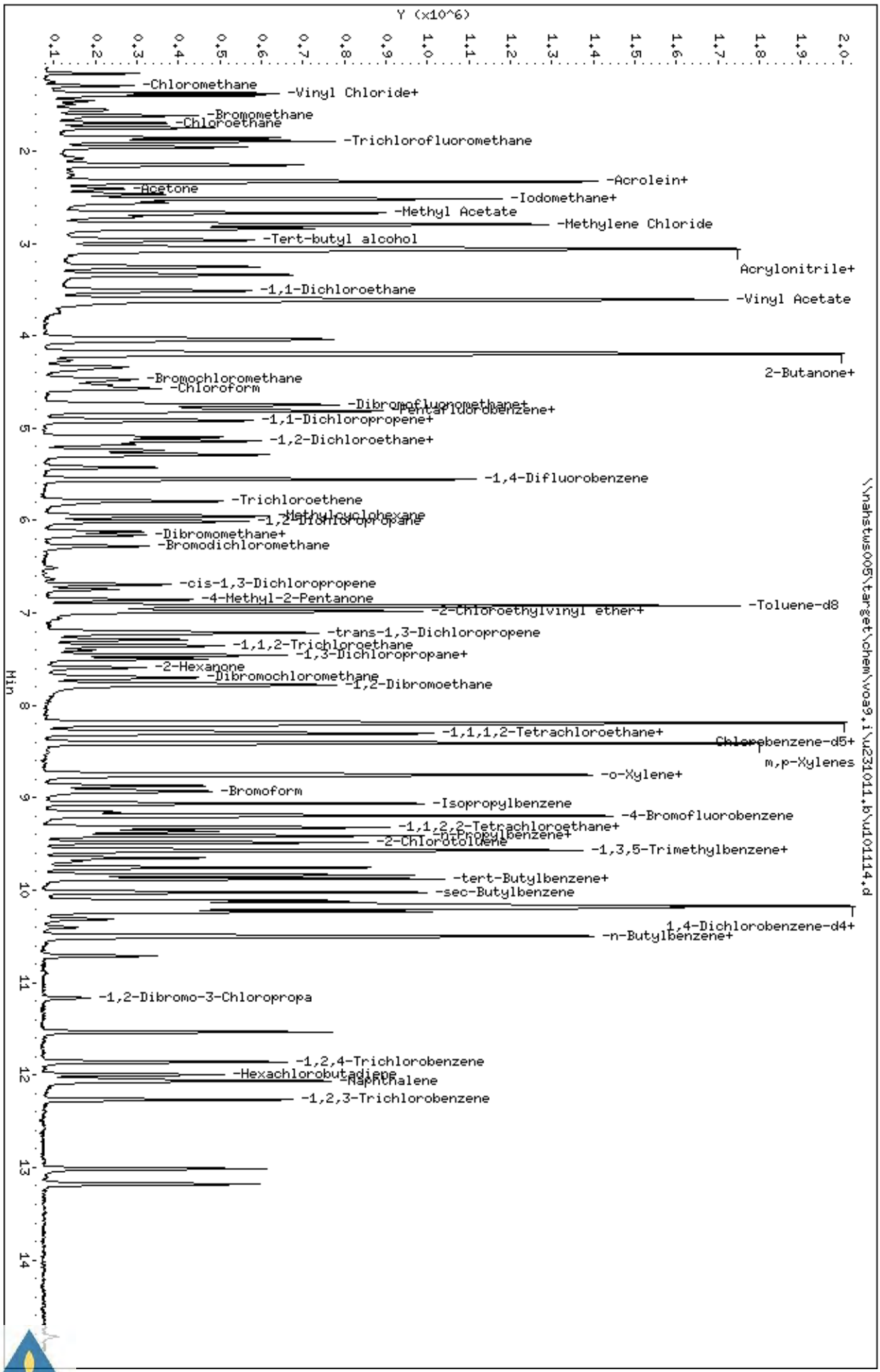
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.815	4.815	(1.000)	522526	50.0000	
2 Dichlorodifluoromethane	85	1.160	1.164	(0.241)	131988	23.6242	23.62
3 Chloromethane	50	1.295	1.299	(0.269)	140689	24.3533	24.35
5 Vinyl Chloride	62	1.374	1.378	(0.285)	323015	38.4633	38.46
6 Bromomethane	94	1.618	1.621	(0.336)	155237	20.6874	20.68
7 Chloroethane	64	1.696	1.700	(0.352)	170053	20.5825	20.58
8 Trichlorofluoromethane	101	1.895	1.899	(0.394)	441245	23.1588	23.15
9 Acrolein	56	2.262	2.266	(0.470)	21622	45.9603	45.96
10 Acetone	43	2.409	2.408	(0.500)	141597	30.3749	30.37
11 1,1-Dichloroethene	96	2.334	2.334	(0.485)	230349	22.0814	22.08
15 Iodomethane	142	2.469	2.468	(0.513)	241043	20.0924	20.09
16 Acrylonitrile	53	3.065	3.065	(0.636)	177922	37.5955	37.59
17 Methylene Chloride	84	2.795	2.795	(0.580)	280922	18.2062	18.20
18 Methyl tert-butyl ether	73	3.080	3.080	(0.640)	749051	17.4600	17.46
19 Carbon Disulfide	76	2.521	2.525	(0.524)	1274520	42.4664	42.46
20 trans-1,2-Dichloroethene	96	3.057	3.061	(0.635)	305268	23.4739	23.47
21 Vinyl Acetate	43	3.605	3.608	(0.749)	1119577	59.1503	59.15
22 1,1-Dichloroethane	63	3.515	3.514	(0.730)	419450	31.6278	31.62
24 2-Butanone	43	4.264	4.260	(0.886)	79052	32.6128	32.61
26 2,2-Dichloropropane	77	4.182	4.185	(0.868)	124944	17.6050	17.60
27 cis-1,2-Dichloroethene	96	4.197	4.197	(0.872)	857345	129.428	129.42

28 Chloroform	83	4.572	4.575 (0.949)	210735	17.3414	17.34
29 Bromochloromethane	128	4.470	4.470 (0.928)	58593	18.3285	18.32

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
$	30 Dibromofluoromethane	113	4.748	4.748	(0.986)	251881	44.6968	44.69
	31 1,1,1-Trichloroethane	97	4.744	4.744	(0.985)	171690	18.9542	18.95
	32 1,1-Dichloropropene	75	4.920	4.924	(0.886)	153372	22.6833	22.68
	33 1,2-Dichloroethane	62	5.175	5.175	(0.932)	159219	20.4097	20.40
	34 Carbon Tetrachloride	117	4.913	4.913	(0.885)	135960	21.7617	21.76
$	35 1,2-Dichloroethane-d4	65	5.096	5.096	(1.058)	280641	42.2597	42.25
*	36 1,4-Difluorobenzene	114	5.554	5.554	(1.000)	788786	50.0000	
	37 Benzene	78	5.138	5.141	(0.925)	453931	21.5979	21.59
	38 Trichloroethene	130	5.790	5.790	(1.043)	128808	23.6601	23.66
	39 Bromodichloromethane	83	6.277	6.277	(1.130)	139393	19.1172	19.11
	41 2-Chloroethylvinyl ether	63	6.978	6.577	(1.256)	48129	42.5595	42.55
	42 1,2-Dichloropropane	63	6.011	6.011	(1.082)	105097	19.6731	19.67
	44 Dibromomethane	93	6.120	6.120	(1.102)	82203	19.3891	19.38
	45 4-Methyl-2-Pentanone	43	6.855	6.854	(0.837)	208734	44.9169	44.91
	46 cis-1,3-Dichloropropene	75	6.690	6.689	(1.205)	154977	17.8564	17.85
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	783495	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	1001867	54.5408	54.54
	50 Toluene	91	6.978	6.982	(0.853)	524003	24.4945	24.49
	51 trans-1,3-Dichloropropene	75	7.196	7.196	(1.296)	130068	19.2521	19.25
	52 2-Hexanone	43	7.593	7.589	(0.928)	145245	45.0638	45.06
	53 1,1,2-Trichloroethane	83	7.353	7.353	(0.898)	97462	22.5178	22.51
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	196028	21.7483	21.74
	55 Dibromochloromethane	129	7.691	7.690	(0.940)	103560	19.7439	19.74
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	110385	27.1458	27.14
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	119404	21.0131	21.01
	58 1-Chlorohexane	55	8.197	8.196	(1.476)	108729	25.2363	25.23
	59 Chlorobenzene	112	8.208	8.208	(1.003)	355565	23.4107	23.41
	60 1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	108316	21.7786	21.77
	61 Ethylbenzene	106	8.305	8.305	(1.015)	170767	23.5799	23.57
	62 m,p-Xylenes	106	8.407	8.406	(1.027)	455251	46.9388	46.93
	63 o-Xylene	106	8.748	8.748	(1.069)	213066	21.7634	21.76
	64 Styrene	104	8.763	8.763	(1.071)	361754	21.7401	21.74
	66 Bromoform	173	8.916	8.920	(1.089)	66814	17.6366	17.63
	67 Isopropylbenzene	105	9.063	9.062	(1.107)	560046	23.9383	23.93
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	175374	23.7975	23.79
$	69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	346337	47.1172	47.11
*	70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	439928	50.0000	
	71 1,2,3-Trichloropropane	75	9.362	9.362	(0.920)	156365	21.1293	21.12
	73 n-Propylbenzene	91	9.411	9.411	(0.925)	660061	27.3692	27.36
	74 Bromobenzene	156	9.318	9.317	(0.916)	141217	23.1114	23.11
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	458461	24.5995	24.59
	76 2-Chlorotoluene	91	9.482	9.482	(0.932)	369422	24.1717	24.17
	77 4-Chlorotoluene	91	9.576	9.576	(0.941)	438589	24.1739	24.17
	78 tert-Butylbenzene	119	9.835	9.835	(0.967)	392340	24.5513	24.55
	79 1,2,4-Trimethylbenzene	105	9.876	9.880	(0.971)	471886	24.1855	24.18
	81 sec-Butylbenzene	105	10.022	10.022	(0.985)	578660	26.8547	26.85
	82 p-Isopropyltoluene	119	10.146	10.146	(0.997)	486635	25.6635	25.66
	83 1,3-Dichlorobenzene	146	10.116	10.112	(0.994)	257669	22.5384	22.53
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	280346	21.7314	21.73
	87 n-Butylbenzene	91	10.491	10.491	(1.031)	447184	25.4131	25.41
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	288280	24.4614	24.46
	89 1,2-Dibromo-3-Chloropropane	155	11.166	11.165	(1.098)	22061	23.5141	23.51

90 1,2,4-Trichlorobenzene	180	11.855	11.859 (1.165)	171321	24.6398	24.63
91 Hexachlorobutadiene	225	11.998	11.998 (1.179)	70166	27.4216	27.42

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	92 Naphthalene	128	12.065	12.065	(1.186)	466293	22.7550	22.75
	93 1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	166011	23.9890	23.98
M	94 1,2-Dichloroethylene (total)	96				1162613	118.461	118.46
M	95 Xylenes (total)	106				668317	60.5060	60.50
	135 1,4-Dioxane	88	6.165	6.165	(1.280)	33971	307.707	307.70
	141 Cyclohexane	56	4.782	4.785	(0.993)	147562	22.2100	22.21
	138 Freon TF	101	2.334	2.337	(0.485)	241871	24.5206	24.52
	140 1,3-Butadiene	54	1.400	1.404	(0.291)	136008	18.5995	18.59
	147 Methylcyclohexane	55	5.947	5.947	(1.071)	235315	21.2992	21.29
	146 Methyl Acetate	43	2.712	2.712	(0.563)	179470	17.7870	17.78
	148 Tert-Butyl alcohol	59	2.963	2.963	(0.615)	487255	314.292	314.29
	149 Isopropyl Alcohol	45	2.562	2.558	(0.532)	266163	316.588	316.58
	72 trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	24424	14.1039	14.10



Data File: \\nahstws005\target\chem\voa9,i\u231011,b\u101114,d
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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 : 11-OCT-2023 15:45
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LabSampID : HS23100355-09MS

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101115.D Page 1
Report Date: 18-Oct-2023 14:35

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101115.D
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Inj Date : 11-OCT-2023 16:07
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100355-09MSD;HS23100355-09MSD;3;;MSD
Misc Info : V9;WATER;0;1;
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Meth Date : 18-Oct-2023 14:25 pcabasca Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 13 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14

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	4.812	4.815	(1.000)	526341	50.0000	
2 Dichlorodifluoromethane	85	1.157	1.164	(0.240)	127429	22.6849	22.68
3 Chloromethane	50	1.291	1.299	(0.268)	125169	21.3755	21.37
5 Vinyl Chloride	62	1.370	1.378	(0.285)	304011	35.9380	35.93
6 Bromomethane	94	1.614	1.621	(0.335)	147474	19.5385	19.53
7 Chloroethane	64	1.693	1.700	(0.352)	159839	19.2060	19.20
8 Trichlorofluoromethane	101	1.891	1.899	(0.393)	432907	22.5564	22.55
9 Acrolein	56	2.259	2.266	(0.469)	18628	39.3255	39.32
10 Acetone	43	2.401	2.408	(0.499)	143351	30.5505	30.55
11 1,1-Dichloroethene	96	2.326	2.334	(0.484)	230882	21.9721	21.97
15 Iodomethane	142	2.465	2.468	(0.512)	403267	31.9128	31.91
16 Acrylonitrile	53	3.061	3.065	(0.636)	176019	36.9239	36.92
17 Methylene Chloride	84	2.791	2.795	(0.580)	270223	17.3858	17.38
18 Methyl tert-butyl ether	73	3.076	3.080	(0.639)	748599	17.3230	17.32
19 Carbon Disulfide	76	2.514	2.525	(0.522)	1255210	41.5198	41.51
20 trans-1,2-Dichloroethene	96	3.053	3.061	(0.635)	289416	22.0937	22.09
21 Vinyl Acetate	43	3.601	3.608	(0.748)	1162699	60.9833	60.98
22 1,1-Dichloroethane	63	3.511	3.514	(0.730)	419704	31.4176	31.41
24 2-Butanone	43	4.260	4.260	(0.885)	82657	33.8528	33.85
26 2,2-Dichloropropane	77	4.182	4.185	(0.869)	123343	17.2694	17.26
27 cis-1,2-Dichloroethene	96	4.193	4.197	(0.871)	679958	101.905	101.90

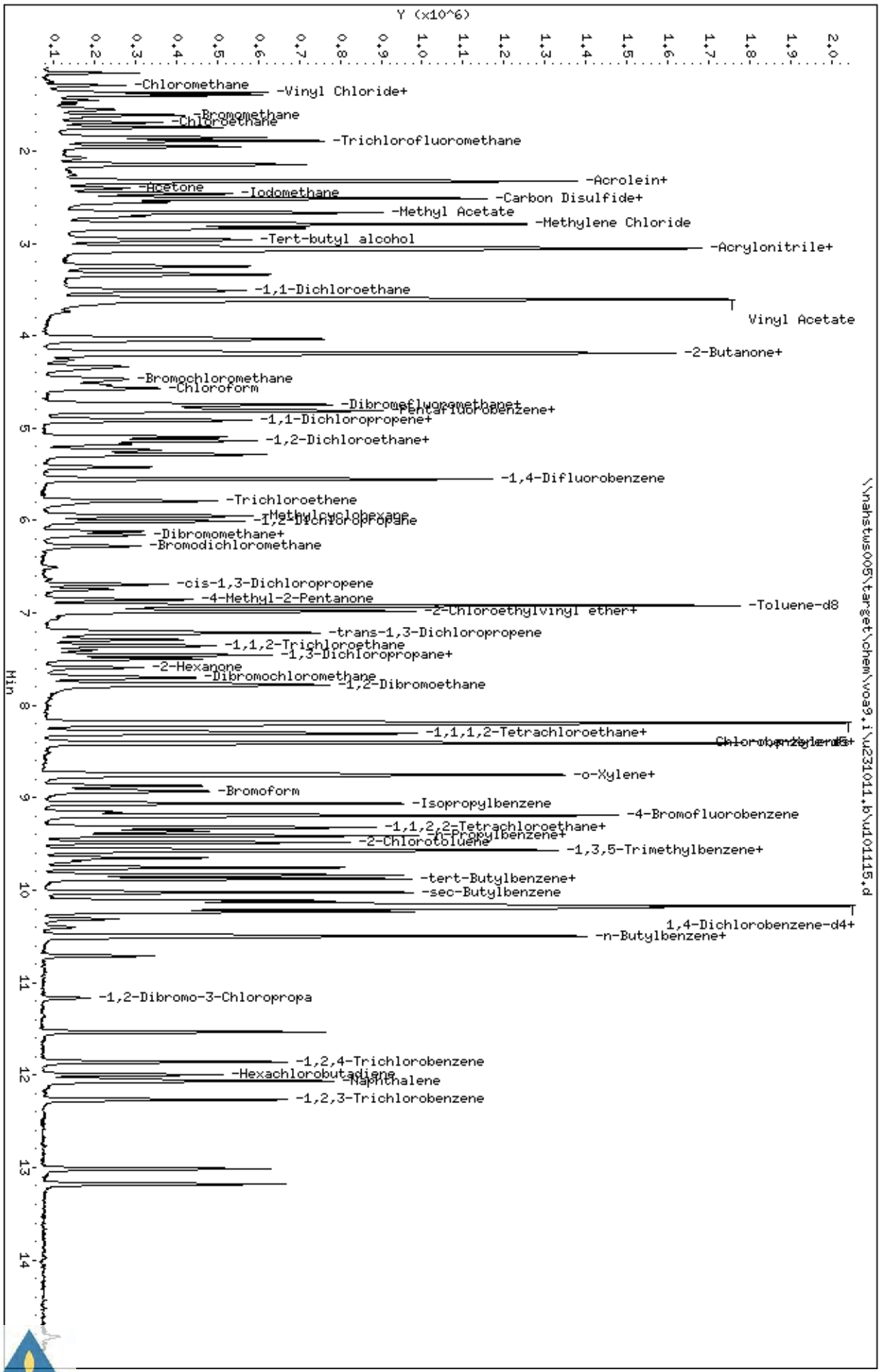
28 Chloroform	83	4.572	4.575 (0.950)	207430	16.9457	16.94
29 Bromochloromethane	128	4.463	4.470 (0.928)	55866	17.3488	17.34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
$	30 Dibromofluoromethane	113	4.744	4.748	(0.986)	251295	44.2896	44.28
	31 1,1,1-Trichloroethane	97	4.740	4.744	(0.985)	162462	17.8055	17.80
	32 1,1-Dichloropropene	75	4.920	4.924	(0.887)	145483	20.5808	20.58
	33 1,2-Dichloroethane	62	5.175	5.175	(0.932)	153330	18.8000	18.80
	34 Carbon Tetrachloride	117	4.909	4.913	(0.885)	136604	20.9139	20.91
$	35 1,2-Dichloroethane-d4	65	5.093	5.096	(1.058)	285507	42.6725	42.67
*	36 1,4-Difluorobenzene	114	5.550	5.554	(1.000)	824650	50.0000	
	37 Benzene	78	5.138	5.141	(0.926)	440161	20.0319	20.03
	38 Trichloroethene	130	5.786	5.790	(1.043)	121413	21.3318	21.33
	39 Bromodichloromethane	83	6.277	6.277	(1.131)	126567	16.6033	16.60
	41 2-Chloroethylvinyl ether	63	6.978	6.577	(1.257)	48056	40.6468	40.64
	42 1,2-Dichloropropane	63	6.007	6.011	(1.082)	103287	18.4934	18.49
	44 Dibromomethane	93	6.120	6.120	(1.103)	78013	17.6006	17.60
	45 4-Methyl-2-Pentanone	43	6.855	6.854	(0.837)	211043	44.3031	44.30
	46 cis-1,3-Dichloropropene	75	6.690	6.689	(1.205)	147982	16.3089	16.30
*	47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	803137	50.0000	
$	48 Toluene-d8	98	6.922	6.922	(0.846)	1029224	54.6598	54.65
	50 Toluene	91	6.978	6.982	(0.853)	510046	23.2590	23.25
	51 trans-1,3-Dichloropropene	75	7.196	7.196	(1.296)	126713	17.9735	17.97
	52 2-Hexanone	43	7.593	7.589	(0.928)	150162	45.4500	45.44
	53 1,1,2-Trichloroethane	83	7.353	7.353	(0.898)	93149	20.9950	20.99
	54 1,3-Dichloropropane	76	7.499	7.499	(0.916)	196151	21.2297	21.22
	55 Dibromochloromethane	129	7.691	7.690	(0.940)	104031	19.3486	19.34
	56 Tetrachloroethene	164	7.458	7.458	(0.911)	106159	25.4681	25.46
	57 1,2-Dibromoethane	107	7.784	7.784	(0.951)	119802	20.5675	20.56
	58 1-Chlorohexane	55	8.197	8.196	(1.477)	100892	22.4926	22.49
	59 Chlorobenzene	112	8.208	8.208	(1.003)	350242	22.4962	22.49
	60 1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	103954	20.3904	20.39
	61 Ethylbenzene	106	8.305	8.305	(1.015)	167756	22.5977	22.59
	62 m,p-Xylenes	106	8.406	8.406	(1.027)	435634	43.8177	43.81
	63 o-Xylene	106	8.744	8.748	(1.068)	207255	20.6521	20.65
	64 Styrene	104	8.759	8.763	(1.070)	360770	21.1507	21.15
	66 Bromoform	173	8.920	8.920	(1.090)	65787	16.9560	16.95
	67 Isopropylbenzene	105	9.063	9.062	(1.107)	535045	22.3103	22.31
	68 1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	173836	23.4534	23.45
$	69 4-Bromofluorobenzene	95	9.190	9.194	(1.123)	350213	46.5029	46.50
*	70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	442591	50.0000	
	71 1,2,3-Trichloropropane	75	9.359	9.362	(0.920)	157250	21.1211	21.12
	73 n-Propylbenzene	91	9.411	9.411	(0.926)	633501	26.1098	26.10
	74 Bromobenzene	156	9.317	9.317	(0.916)	139560	22.7028	22.70
	75 1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	444335	23.6981	23.69
	76 2-Chlorotoluene	91	9.482	9.482	(0.933)	357483	23.2498	23.24
	77 4-Chlorotoluene	91	9.576	9.576	(0.942)	424972	23.2824	23.28
	78 tert-Butylbenzene	119	9.835	9.835	(0.967)	383161	23.8327	23.83
	79 1,2,4-Trimethylbenzene	105	9.880	9.880	(0.972)	454513	23.1550	23.15
	81 sec-Butylbenzene	105	10.022	10.022	(0.986)	555963	25.6461	25.64
	82 p-Isopropyltoluene	119	10.146	10.146	(0.998)	472850	24.7865	24.78
	83 1,3-Dichlorobenzene	146	10.116	10.112	(0.995)	262237	22.7999	22.79
	84 1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	290102	22.3523	22.35
	87 n-Butylbenzene	91	10.491	10.491	(1.032)	436787	24.6729	24.67
	88 1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	282959	23.8655	23.86
	89 1,2-Dibromo-3-Chloropropane	155	11.169	11.165	(1.098)	21245	22.5397	22.53

90 1,2,4-Trichlorobenzene	180	11.855	11.859 (1.166)	162562	23.2394	23.23
91 Hexachlorobutadiene	225	11.998	11.998 (1.180)	71711	27.8568	27.85

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101115.D Page 3
Report Date: 18-Oct-2023 14:35

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	92 Naphthalene	128	12.065	12.065	(1.187)	464465	22.5295	22.52
	93 1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	166825	23.9616	23.96
M	94 1,2-Dichloroethylene (total)	96				969374	98.0554	98.05
M	95 Xylenes (total)	106				642889	55.9975	55.99
	135 1,4-Dioxane	88	6.165	6.165	(1.281)	31456	282.861	282.86
	141 Cyclohexane	56	4.782	4.785	(0.994)	143748	21.4791	21.47
	138 Freon TF	101	2.330	2.337	(0.484)	236541	23.8193	23.81
	140 1,3-Butadiene	54	1.396	1.404	(0.290)	136430	18.5220	18.52
	147 Methylcyclohexane	55	5.947	5.947	(1.072)	236080	20.4392	20.43
	146 Methyl Acetate	43	2.708	2.712	(0.563)	180500	17.7594	17.75
	148 Tert-Butyl alcohol	59	2.960	2.963	(0.615)	495823	317.500	317.50
	149 Isopropyl Alcohol	45	2.555	2.558	(0.531)	272252	321.484	321.48
	72 trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	25130	14.1567	14.15



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Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File : \\nahstws005\target\chem\voa9.i\u231011.b\u101115.d
Inj Date : 11-OCT-2023 16:07
InstruID : VOA9.i
LabSampID : HS23100355-09MSD

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101116.D Page 1
Report Date: 16-Oct-2023 12:08

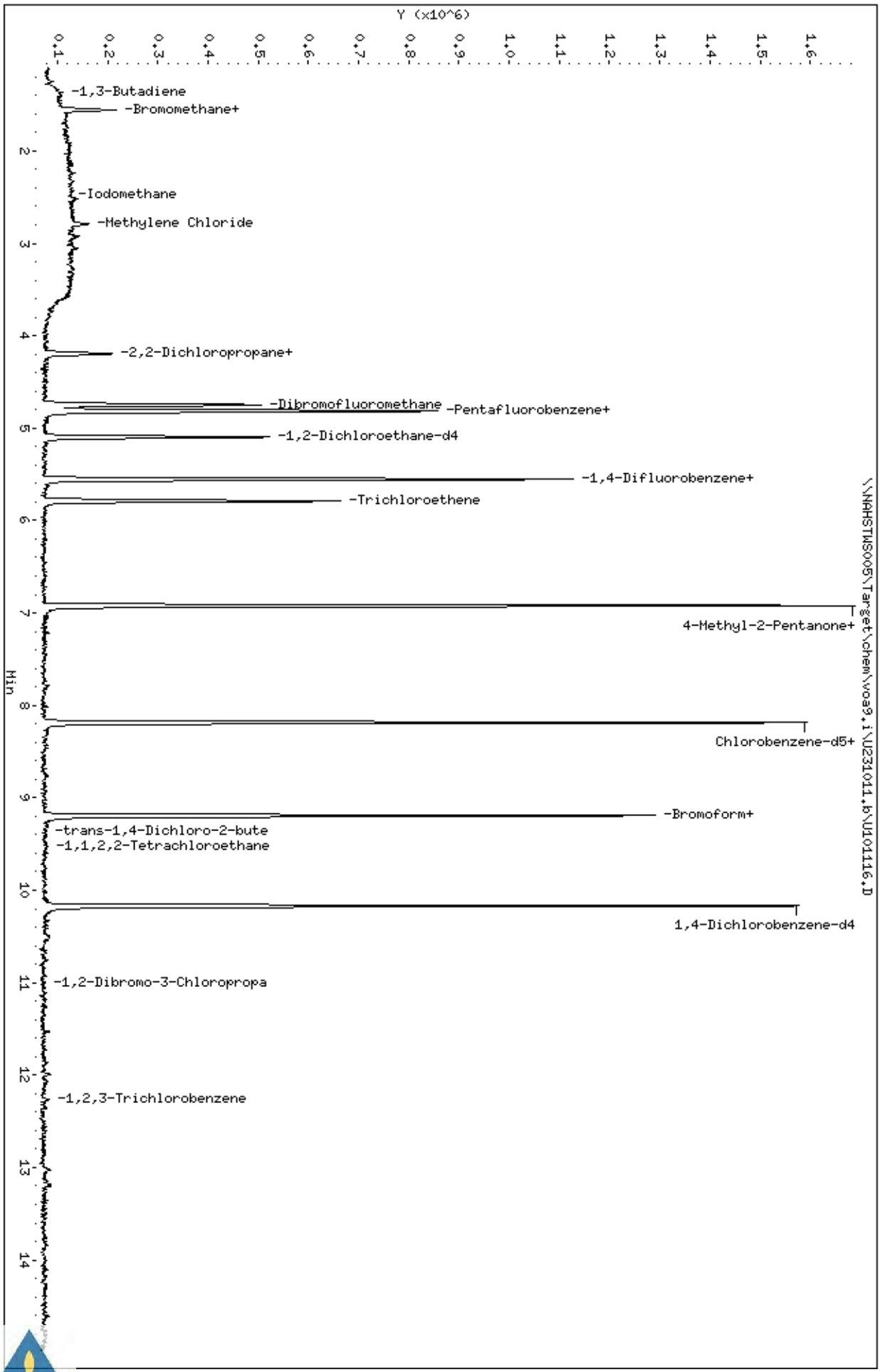
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101116.D
Lab Smp Id: HS23100159-02 Client Smp ID: HS23100159-02
Inj Date : 11-OCT-2023 16:30
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-02;HS23100159-02;;;
Misc Info : V9;WATER;0;20;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 16-Oct-2023 12:08 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 14
Dil Factor: 20.00000
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	20.000	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)	517268	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.748	(0.986)	241195	43.3021	43.30
$ 35 1,2-Dichloroethane-d4	65	5.096	5.096	(1.058)	282390	42.9415	42.94
* 36 1,4-Difluorobenzene	114	5.550	5.554	(1.000)	824994	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	767955	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	967978	53.7622	53.76
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	315701	43.9351	43.93
* 70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	380334	50.0000	
27 cis-1,2-Dichloroethene	96	4.197	4.197	(0.872)	65717	10.0217	200.43
38 Trichloroethene	130	5.786	5.790	(1.043)	172294	30.2588	605.17



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101116.D
Date : 11-OCT-2023 16:30
Client ID: HS23100159-02
Sample Info: HS23100159-02;HS23100159-02;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101116.D Page 2

Date : 11-OCT-2023 16:30

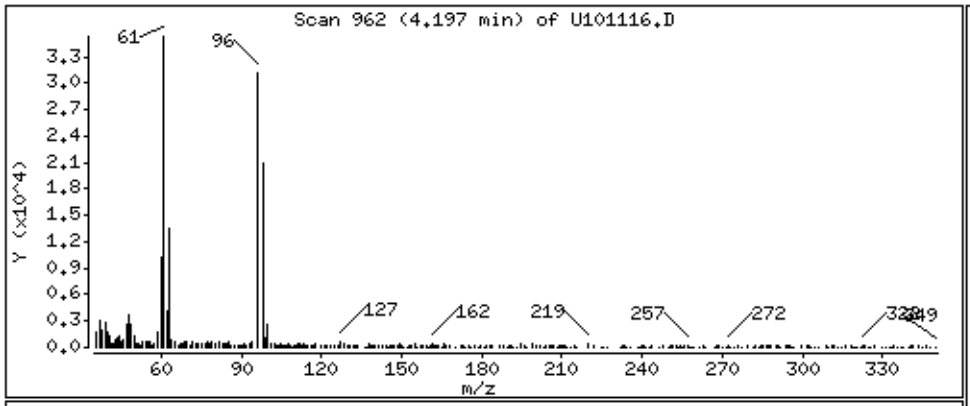
Client ID: HS23100159-02 Instrument: VOA9.i

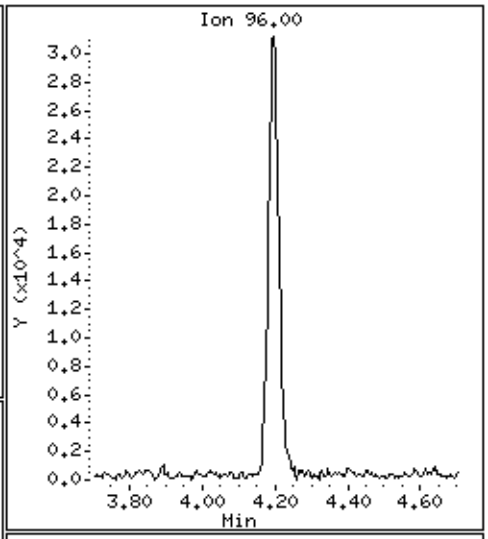
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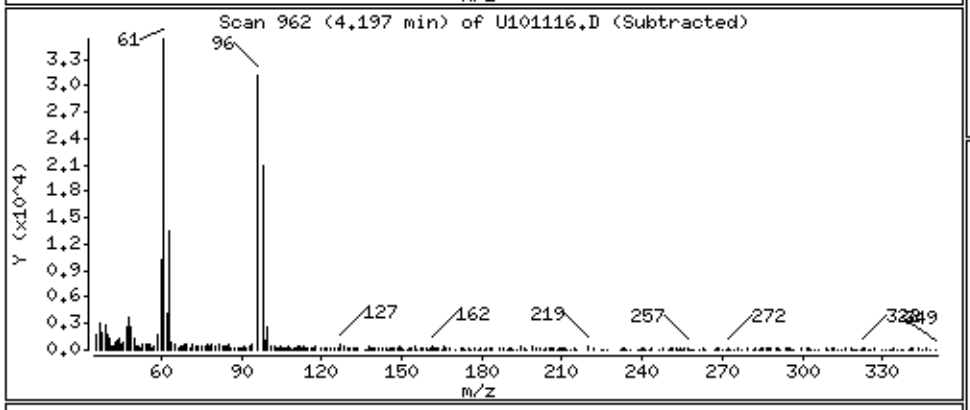
Purge Volume: 5.0 Operator: PC

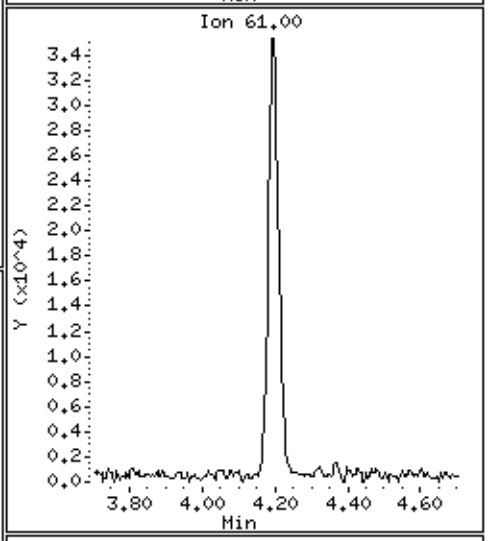
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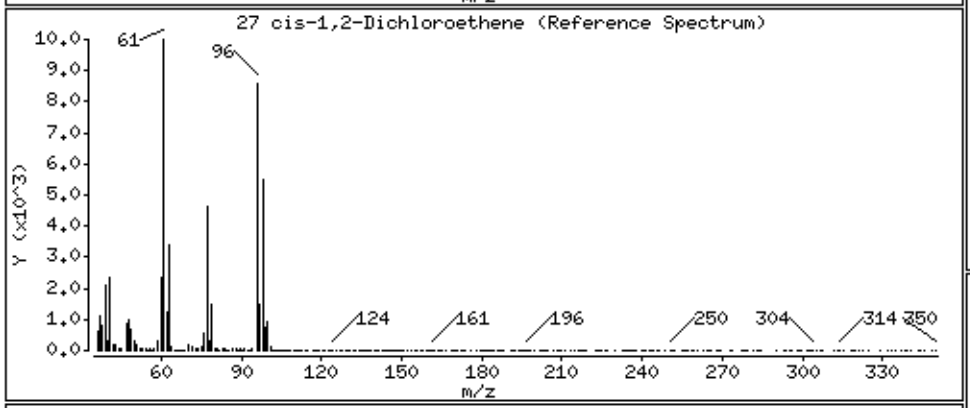
27 cis-1,2-Dichloroethene Concentration: 200.43 ug/l

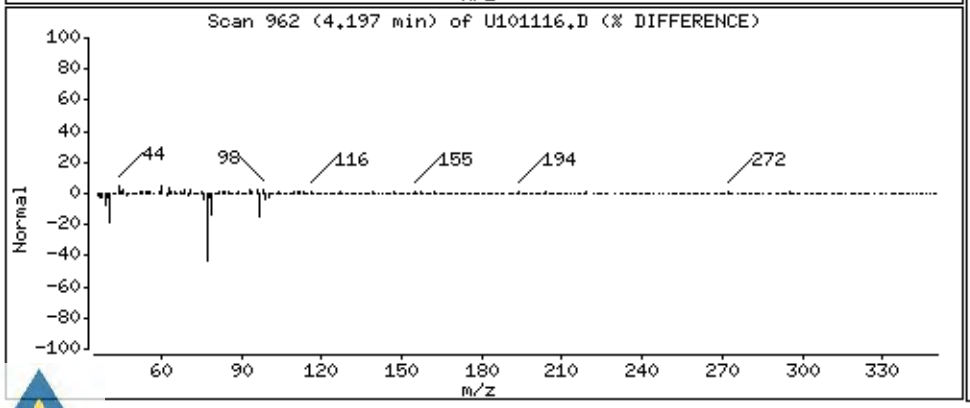


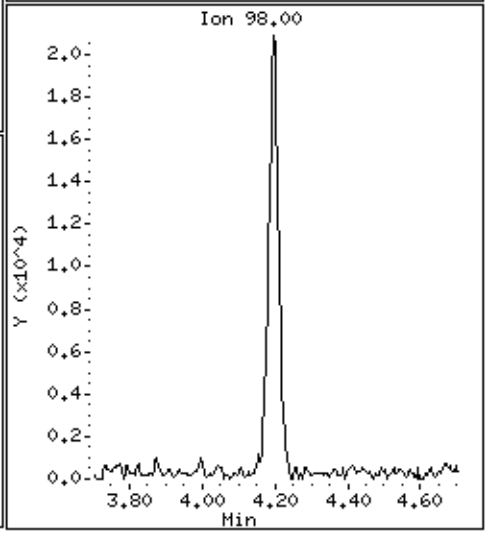












Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101116.D Page 3

Date : 11-OCT-2023 16:30

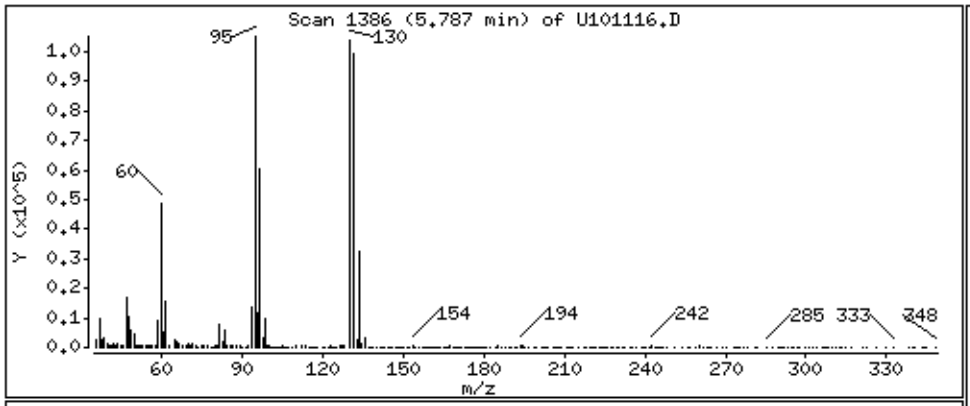
Client ID: HS23100159-02 Instrument: VOA9.i

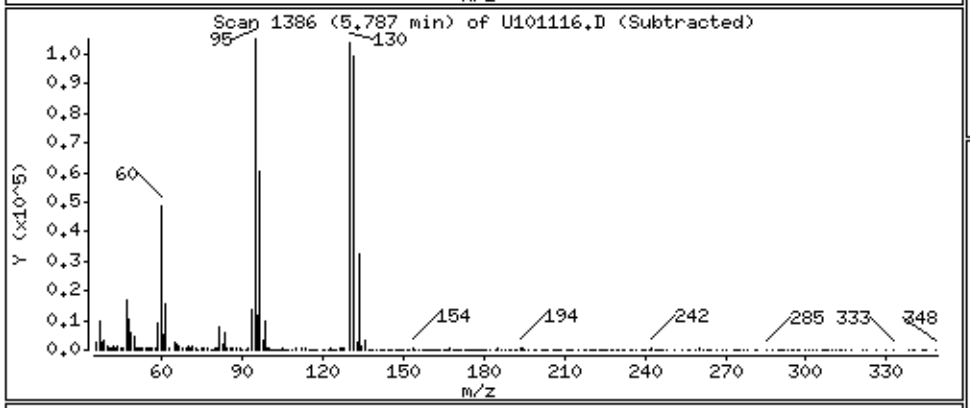
Sample Info: HS23100159-02;HS23100159-02;;;

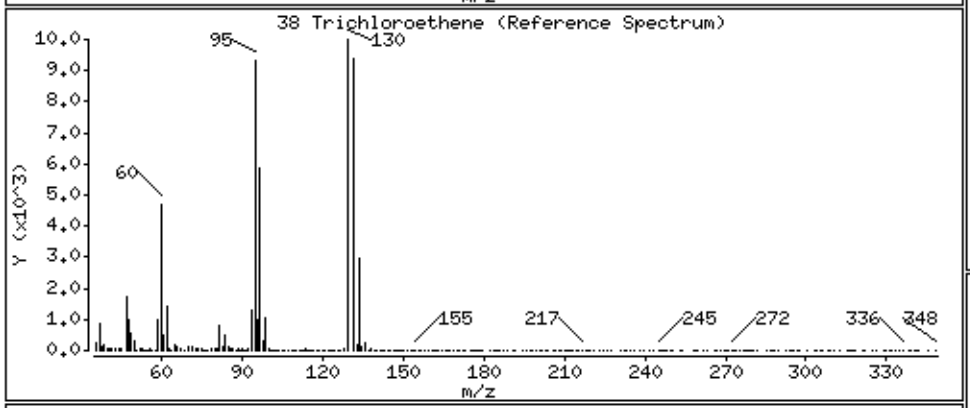
Purge Volume: 5.0 Operator: PC

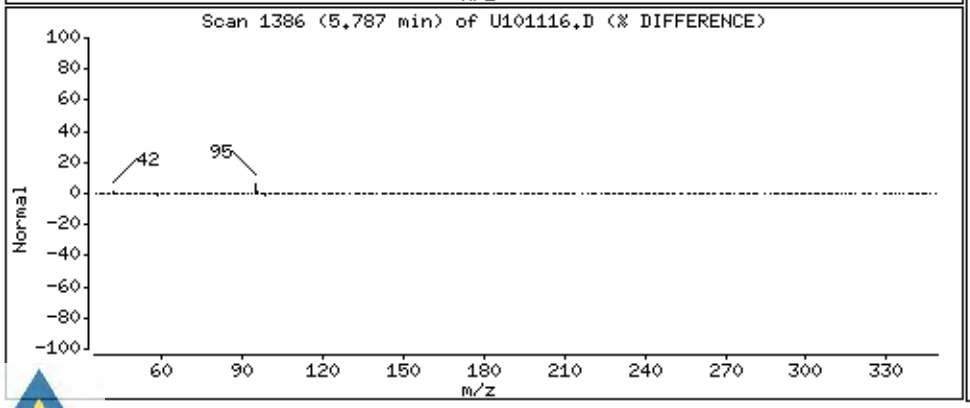
Column phase: DB624 Column diameter: 0.18

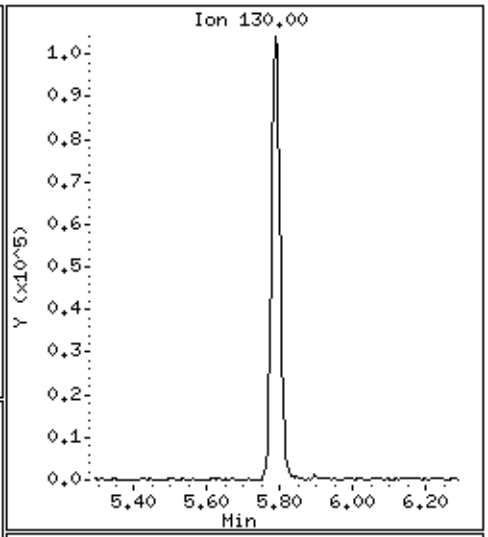
38 Trichloroethene Concentration: 605.17 ug/l

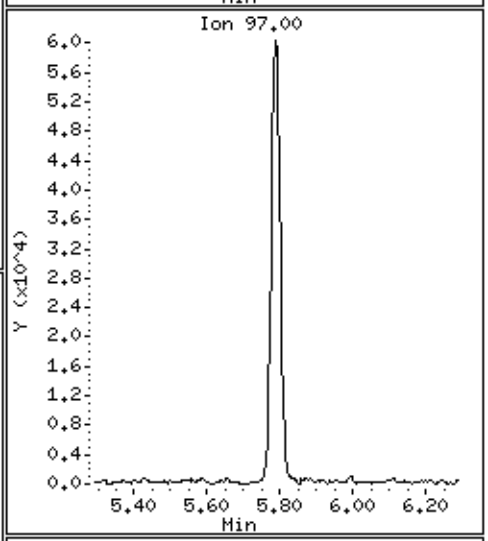


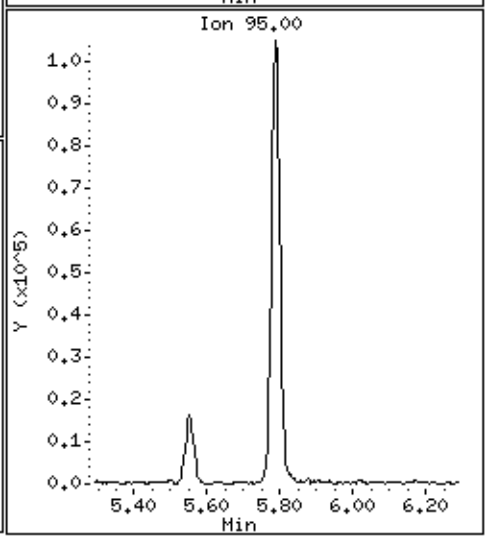












Data File : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101116.D
Inj Date : 11-OCT-2023 16:30
InstruID : VOA9.i
LabSampID : HS23100159-02

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101117.D Page 1
Report Date: 16-Oct-2023 12:08

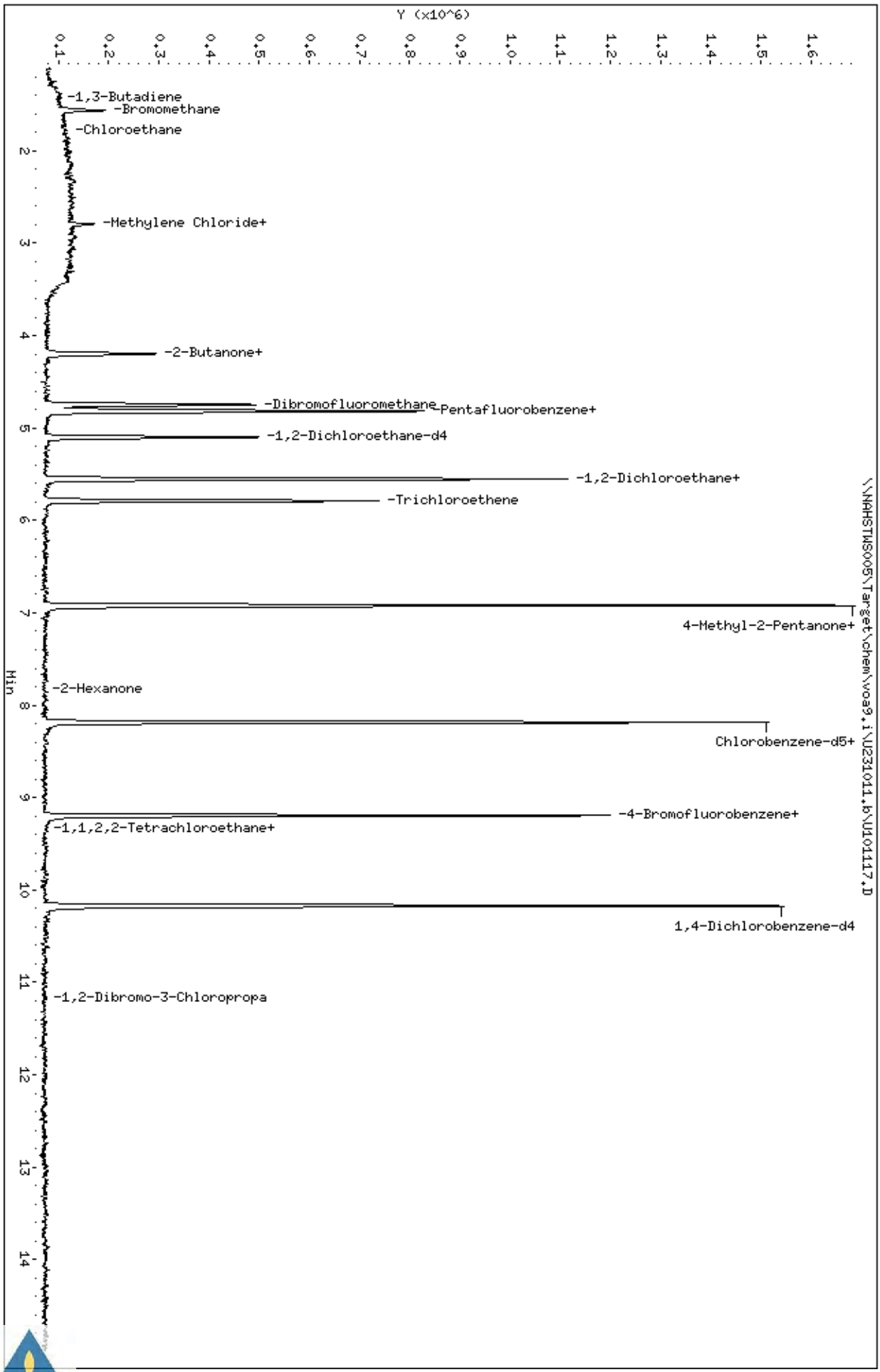
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101117.D
Lab Smp Id: HS23100159-06 Client Smp ID: HS23100159-06
Inj Date : 11-OCT-2023 16:52
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-06;HS23100159-06;;;
Misc Info : V9;WATER;0;5;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 16-Oct-2023 12:08 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 15
Dil Factor: 5.00000
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	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	4.815	4.815	(1.000)	513899	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.748	(0.986)	239775	43.3282	43.32
$ 35 1,2-Dichloroethane-d4	65	5.096	5.096	(1.058)	278563	42.6433	42.64
* 36 1,4-Difluorobenzene	114	5.554	5.554	(1.000)	800600	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	733412	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	953232	55.4368	55.43
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	296564	43.2411	43.24
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	369011	50.0000	
27 cis-1,2-Dichloroethene	96	4.197	4.197	(0.872)	113001	17.3454	86.72
38 Trichloroethene	130	5.790	5.790	(1.043)	195963	35.4642	177.32



Data File: \\NAHSTWS005\Target\chem\voa9,i\U231011,b\U101117,D
Date : 11-OCT-2023 16:52
Client ID: HS23100159-06
Sample Info: HS23100159-06;HS23100159-06;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101117.D Page 2

Date : 11-OCT-2023 16:52

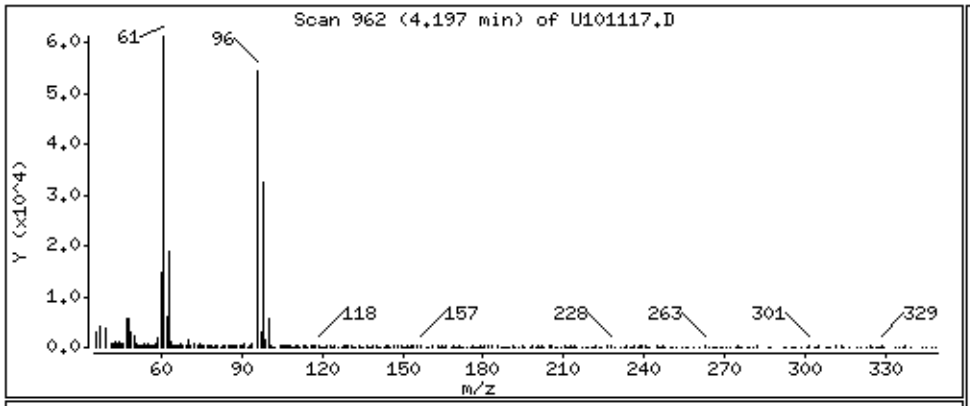
Client ID: HS23100159-06 Instrument: VOA9.i

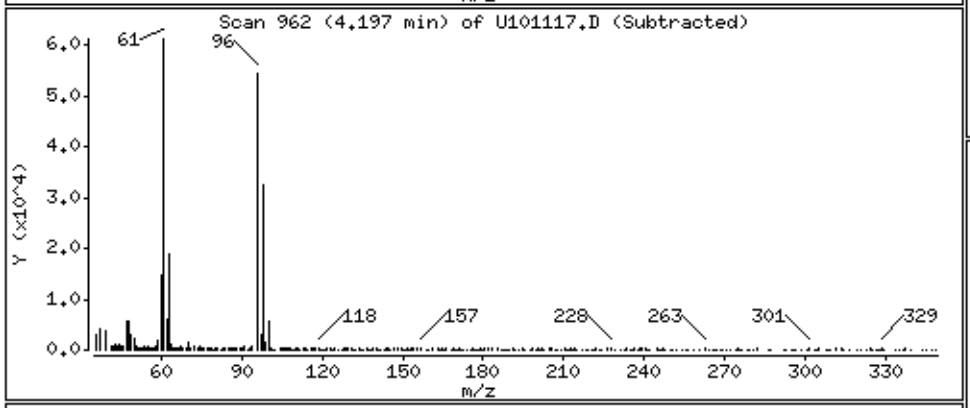
Sample Info: HS23100159-06;HS23100159-06;;;

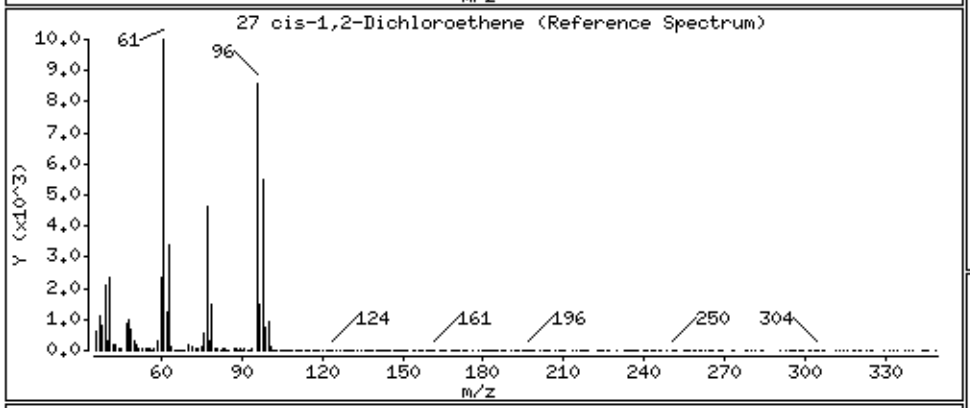
Purge Volume: 5.0 Operator: PC

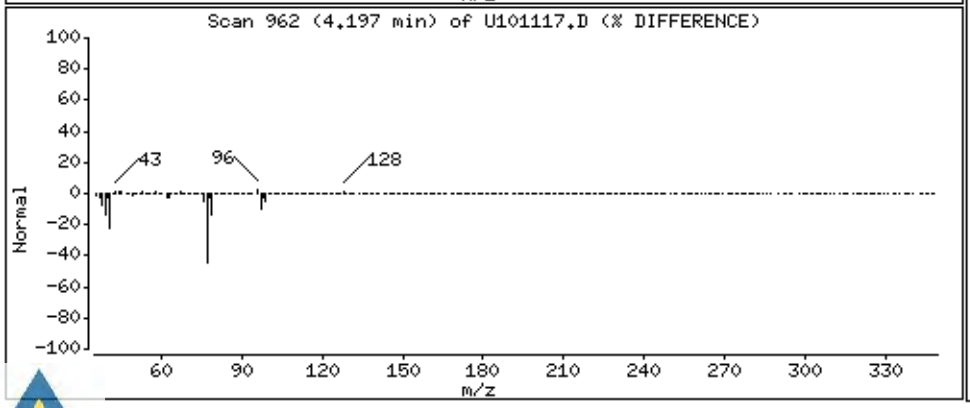
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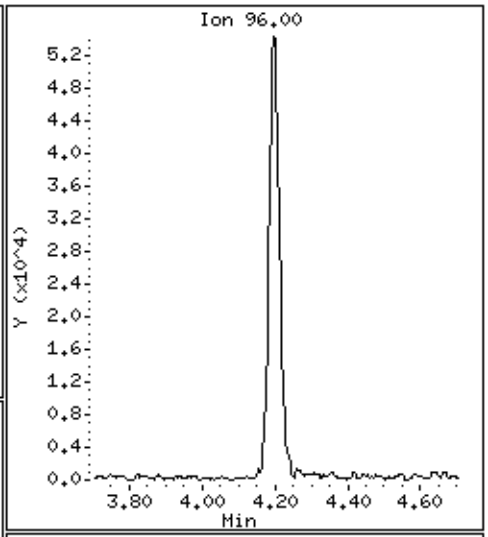
27 cis-1,2-Dichloroethene Concentration: 86.72 ug/l

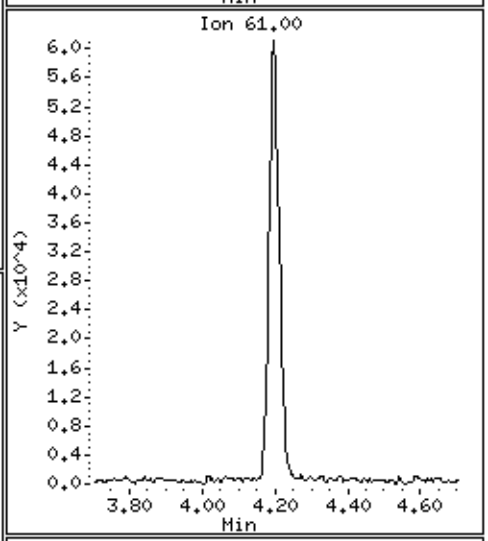


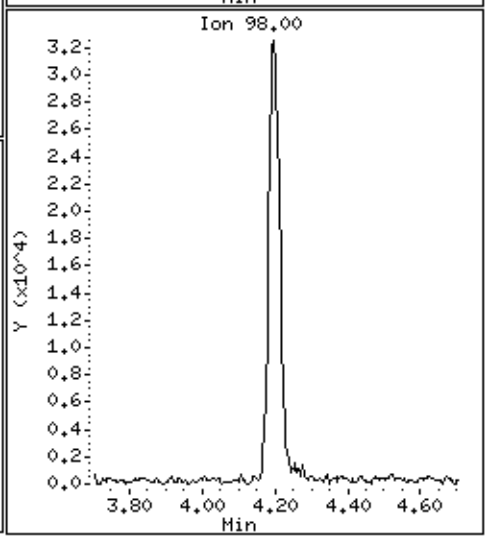












Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101117.D Page 3

Date : 11-OCT-2023 16:52

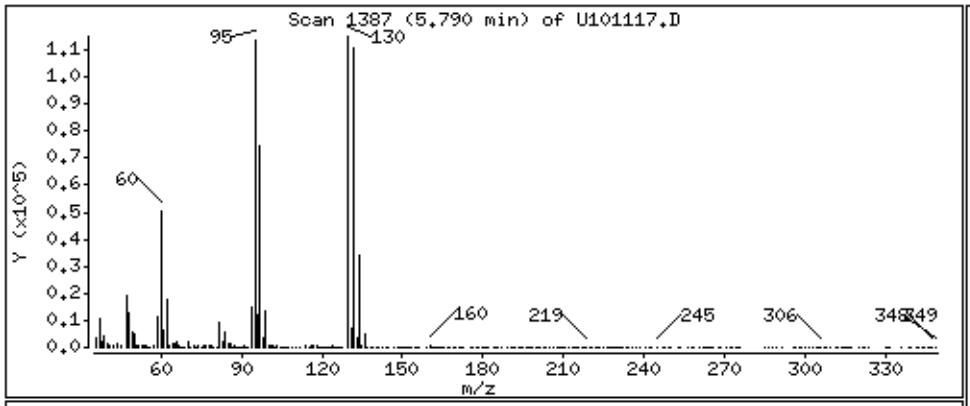
Client ID: HS23100159-06 Instrument: VOA9.i

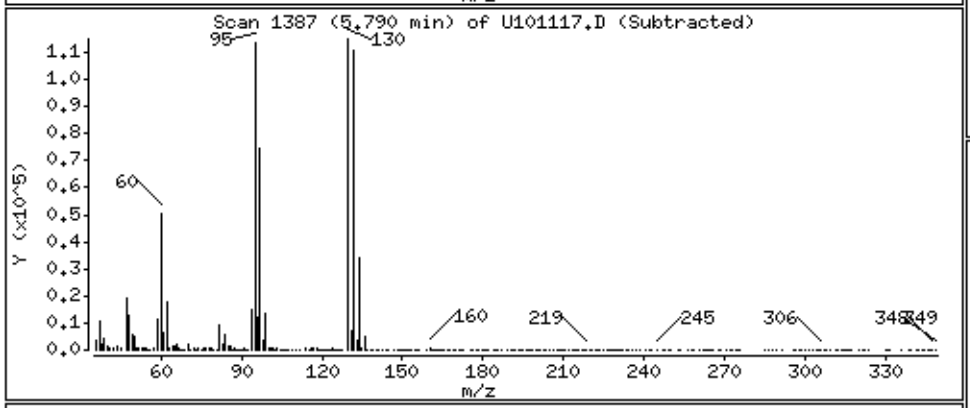
Sample Info: HS23100159-06;HS23100159-06;;;

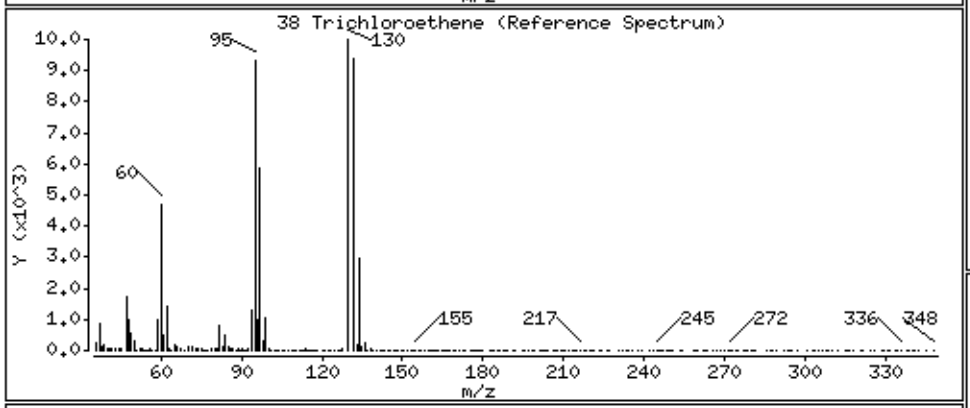
Purge Volume: 5.0 Operator: PC

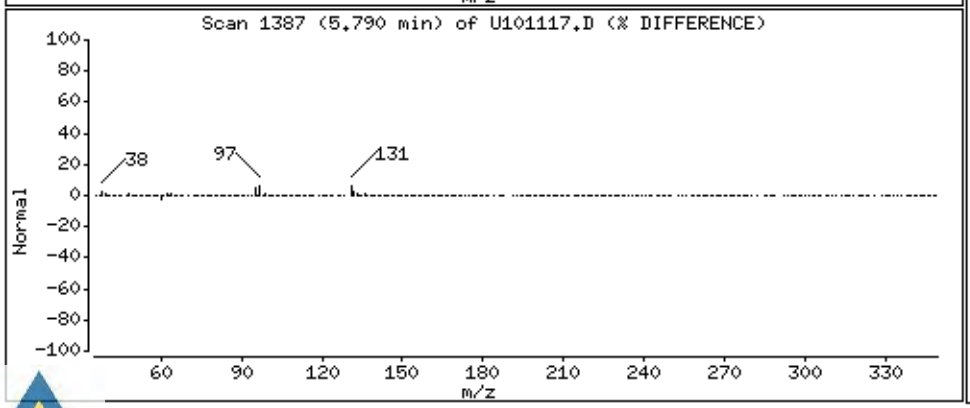
Column phase: DB624 Column diameter: 0.18

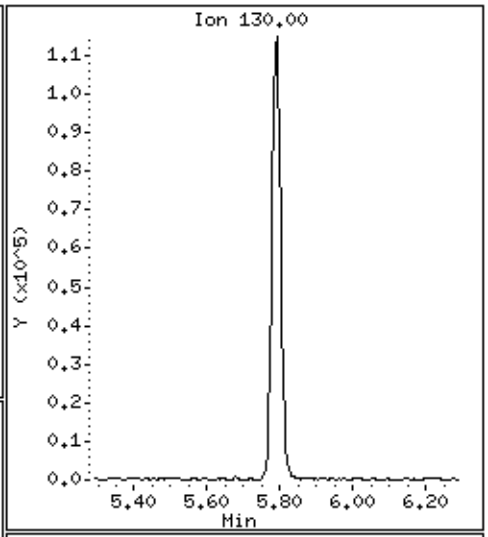
38 Trichloroethene Concentration: 177.32 ug/l

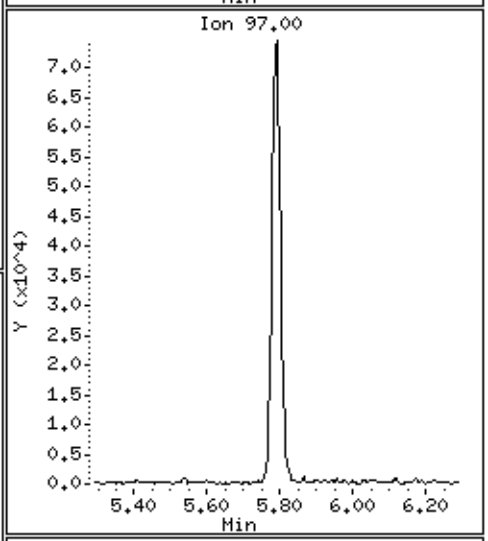


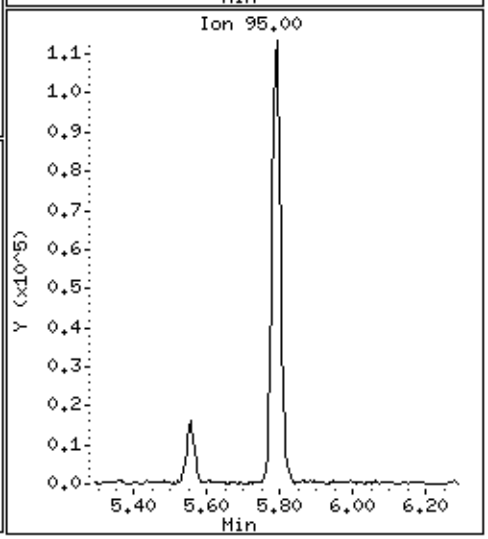












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Inj Date : 11-OCT-2023 16:52
InstruID : VOA9.i
LabSampID : HS23100159-06

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101118.D Page 1
Report Date: 16-Oct-2023 12:08

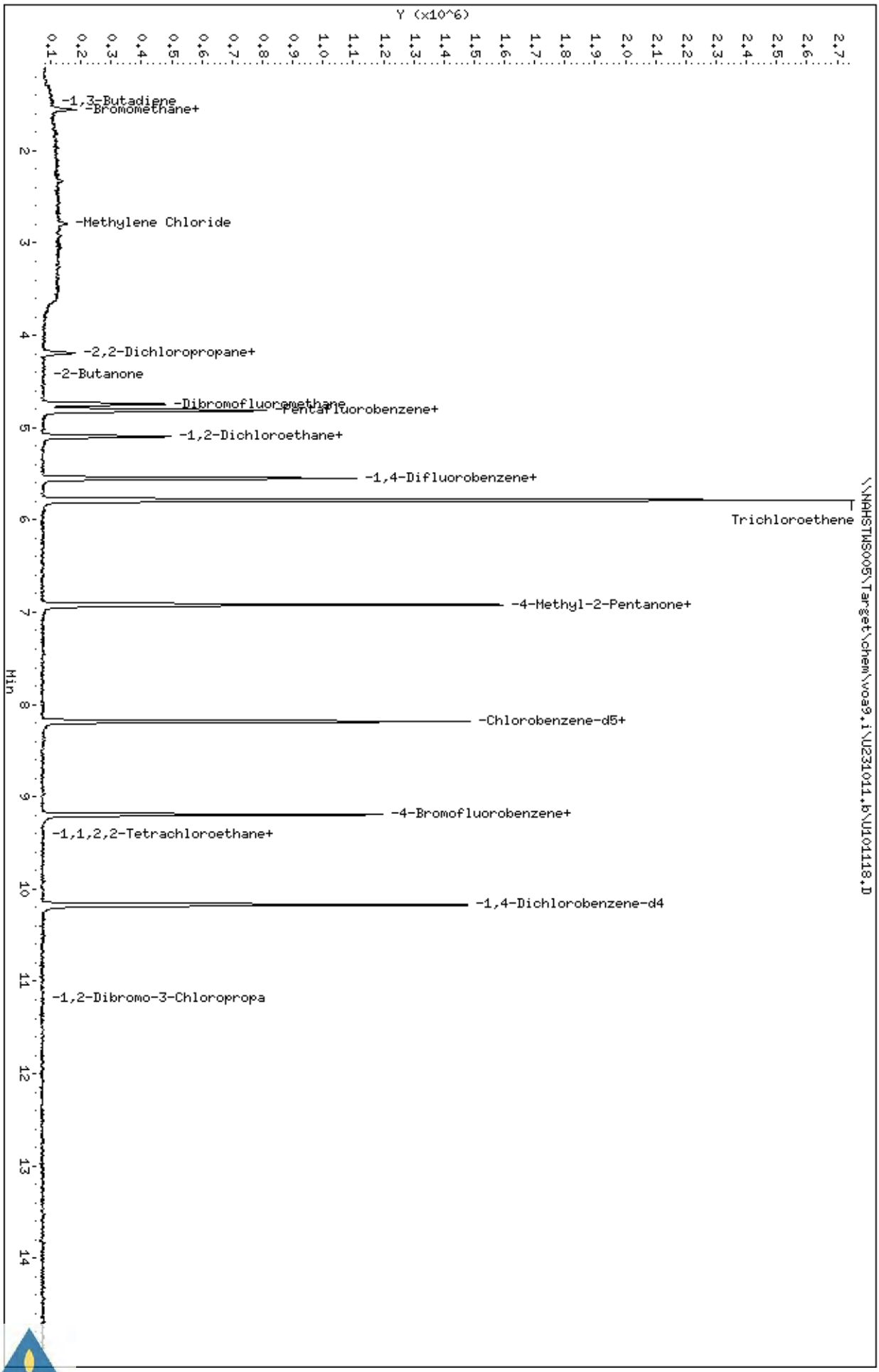
ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101118.D
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Inj Date : 11-OCT-2023 17:14
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-11;HS23100159-11;;;
Misc Info : V9;WATER;0;50;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 16-Oct-2023 12:08 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 16
Dil Factor: 50.00000
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	50.000	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)	494807	50.0000	
$ 30 Dibromofluoromethane	113	4.748	4.748	(0.986)	226629	42.5679	42.56
$ 35 1,2-Dichloroethane-d4	65	5.093	5.096	(1.058)	266570	42.3870	42.38
* 36 1,4-Difluorobenzene	114	5.550	5.554	(1.000)	785070	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	723304	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	929733	54.8258	54.82
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	288392	42.6583	42.65
* 70 1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	357755	50.0000	
27 cis-1,2-Dichloroethene	96	4.197	4.197	(0.872)	53717	8.56360	428.17
38 Trichloroethene	130	5.786	5.790	(1.043)	772177	142.508	7125.42



Data File: \\NAHSTWS005\Target\chem\voa9,i\U231011,b\U101118,D
Date : 11-OCT-2023 17:14
Client ID: HS23100159-11
Sample Info: HS23100159-11;HS23100159-11;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101118.D Page 2

Date : 11-OCT-2023 17:14

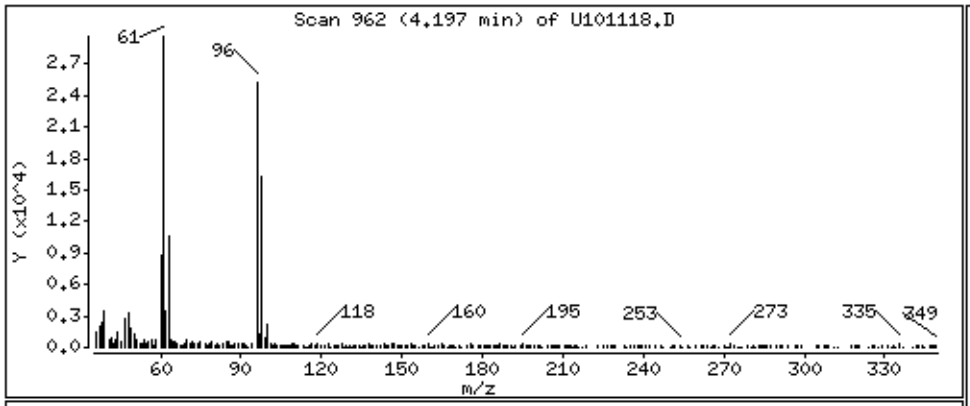
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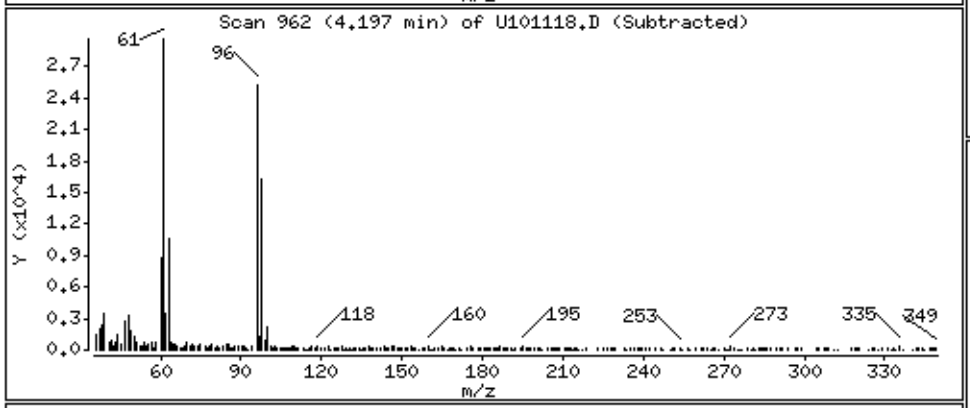
Sample Info: HS23100159-11;HS23100159-11;;;

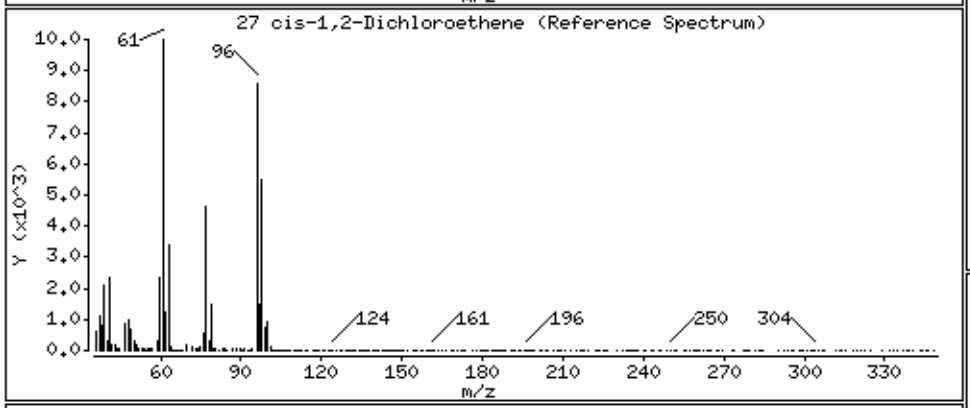
Purge Volume: 5.0 Operator: PC

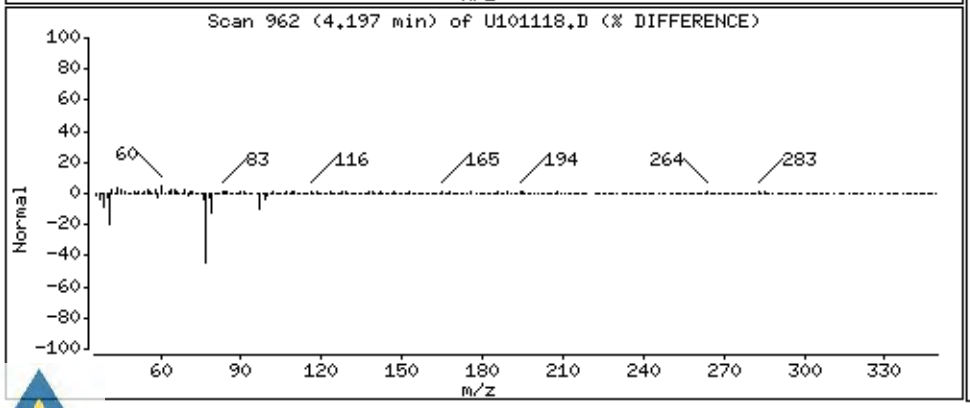
Column phase: DB624 Column diameter: 0.18

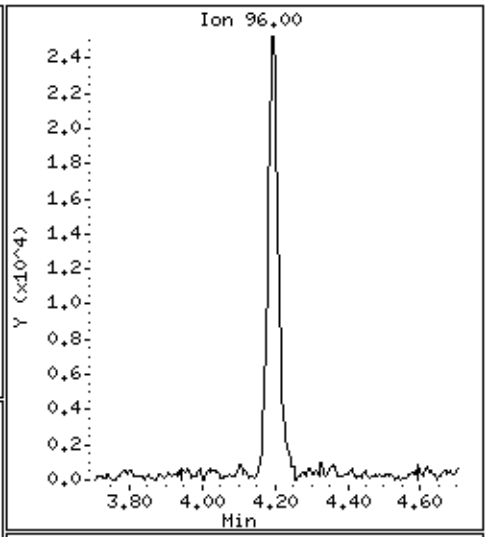
27 cis-1,2-Dichloroethene Concentration: 428.17 ug/l

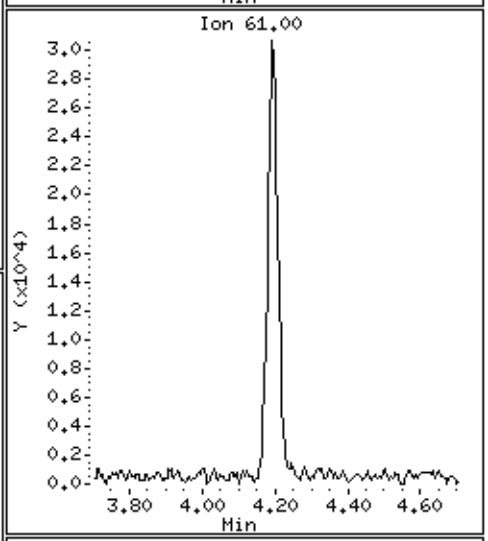


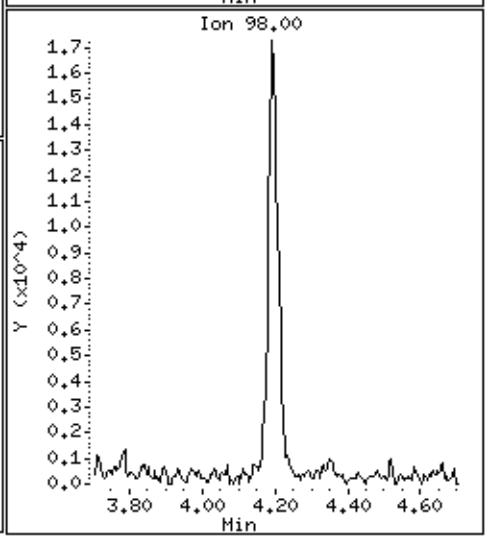












Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101118.D Page 3

Date : 11-OCT-2023 17:14

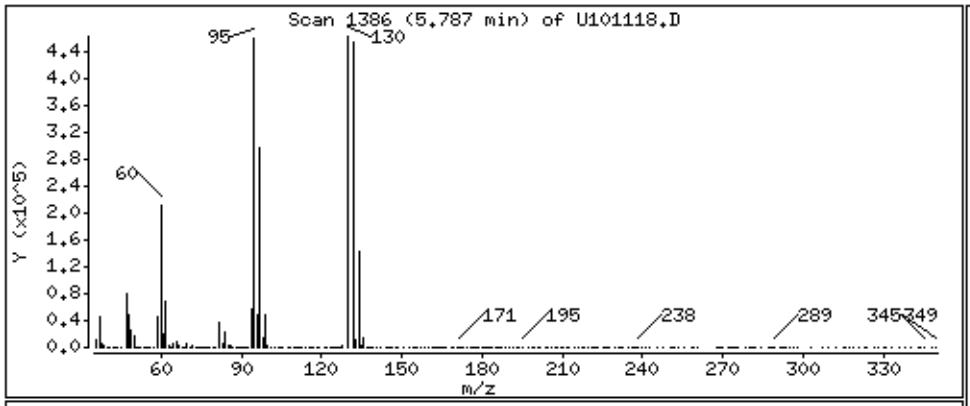
Client ID: HS23100159-11 Instrument: VOA9.i

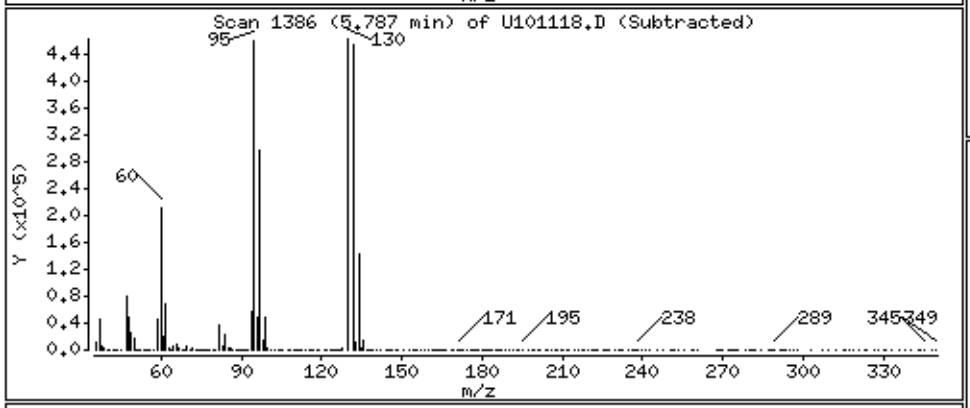
Sample Info: HS23100159-11;HS23100159-11;;;

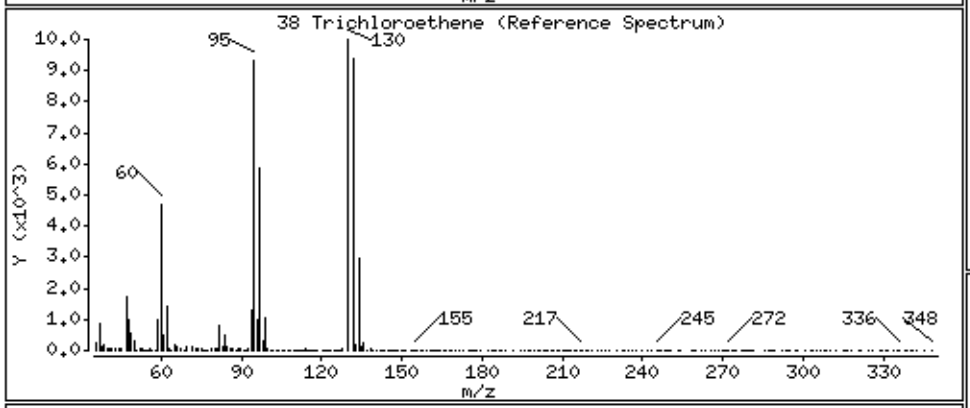
Purge Volume: 5.0 Operator: PC

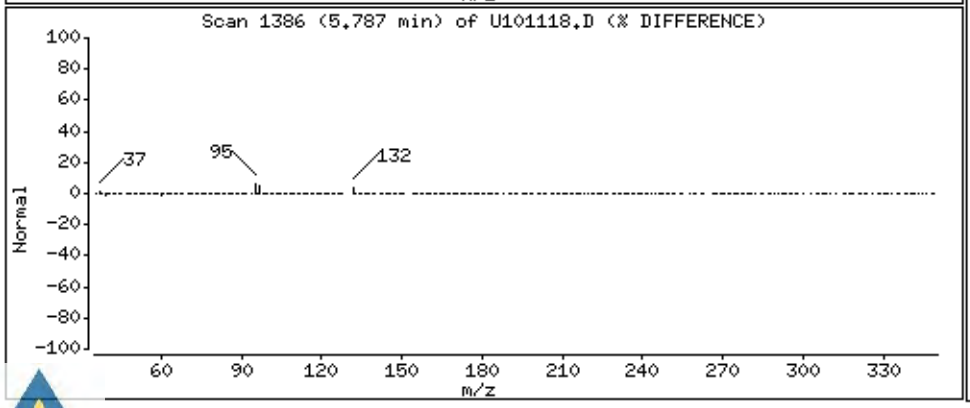
Column phase: DB624 Column diameter: 0.18

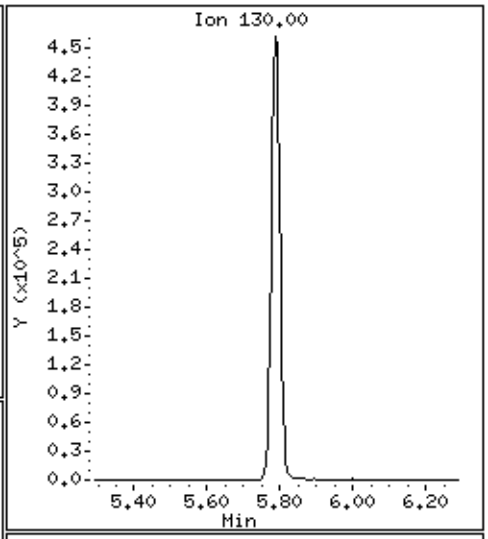
38 Trichloroethene Concentration: 7125.42 ug/l

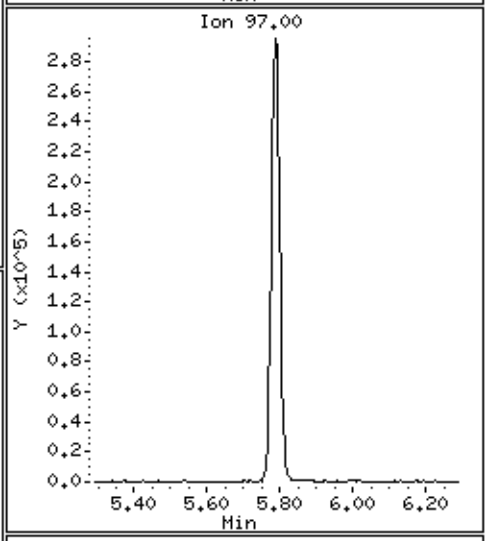


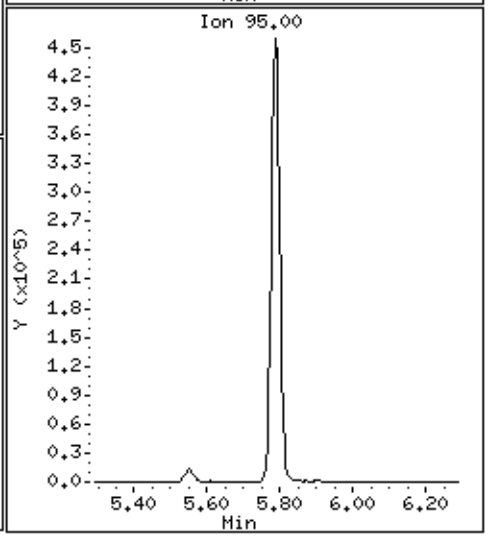












Data File : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101118.D
Inj Date : 11-OCT-2023 17:14
InstruID : VOA9.i
LabSampID : HS23100159-11

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101119.D Page 1
Report Date: 16-Oct-2023 12:08

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101119.D
Lab Smp Id: HS23100159-12 Client Smp ID: HS23100159-12
Inj Date : 11-OCT-2023 17:37
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-12;HS23100159-12;;;
Misc Info : V9;WATER;0;50;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 16-Oct-2023 12:08 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 17
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7056

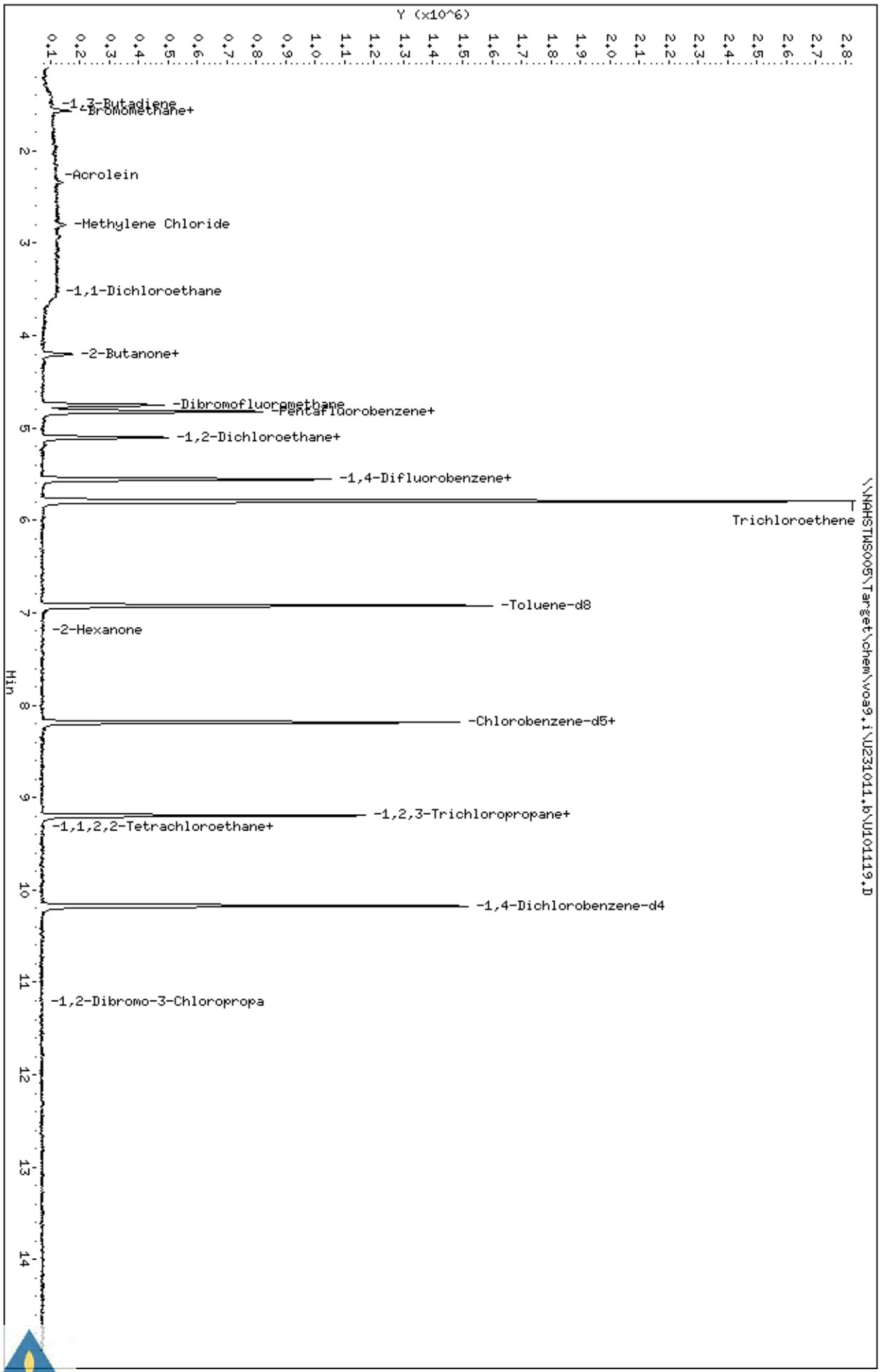
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	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	4.819	4.815	(1.000)	496506	50.0000	
$ 30 Dibromofluoromethane	113	4.751	4.748	(0.986)	220003	41.2402	41.24
$ 35 1,2-Dichloroethane-d4	65	5.100	5.096	(1.058)	272265	43.1293	43.12
* 36 1,4-Difluorobenzene	114	5.557	5.554	(1.000)	762253	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	716412	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	914305	54.4347	54.43
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	287461	42.9201	42.92(M)
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	351614	50.0000	
27 cis-1,2-Dichloroethene	96	4.200	4.197	(0.872)	51384	8.16364	408.18
38 Trichloroethene	130	5.790	5.790	(1.042)	805340	153.078	7653.88

QC Flag Legend

M - Compound response manually integrated.



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101119.D
Date : 11-OCT-2023 17:37
Client ID: HS23100159-12
Sample Info: HS23100159-12;HS23100159-12;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101119.D Page 2

Date : 11-OCT-2023 17:37

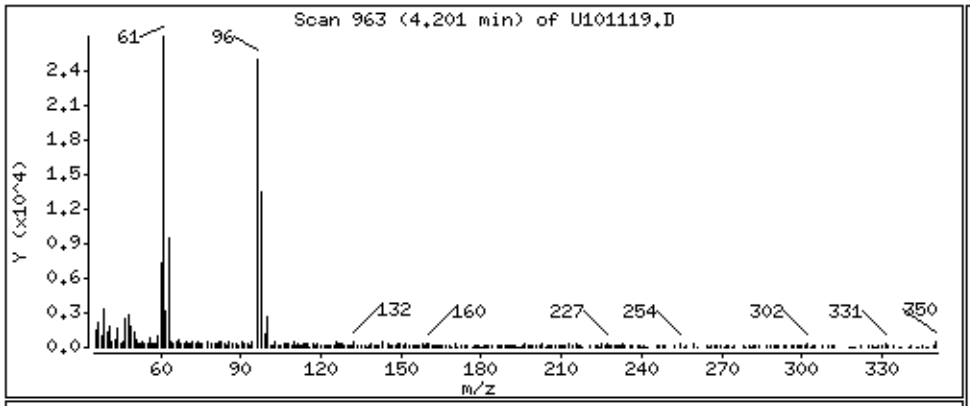
Client ID: HS23100159-12 Instrument: VOA9.i

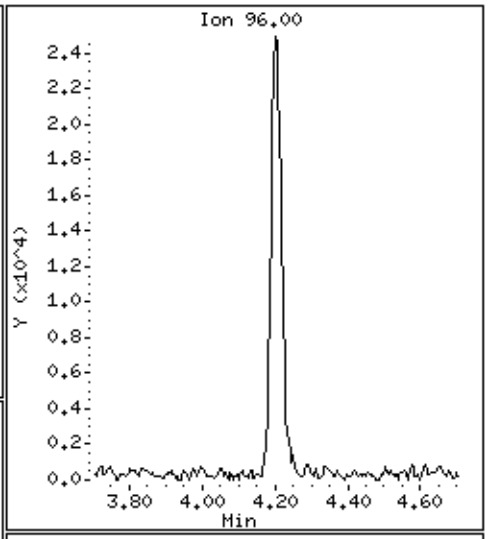
Sample Info: HS23100159-12;HS23100159-12;;;

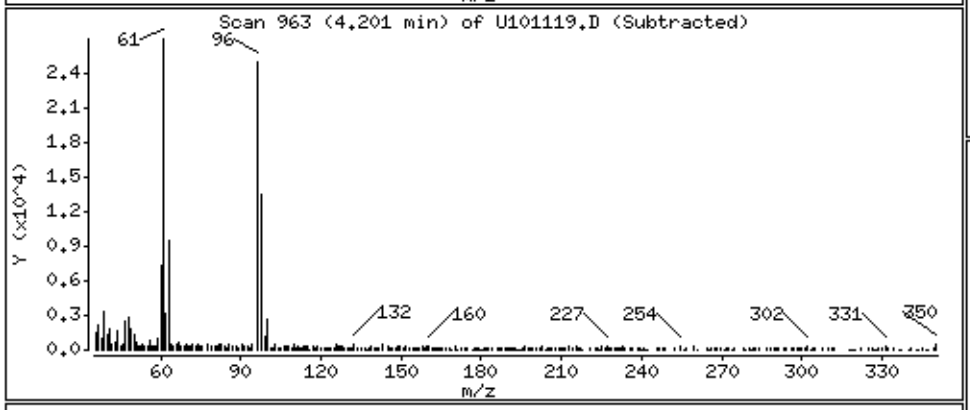
Purge Volume: 5.0 Operator: PC

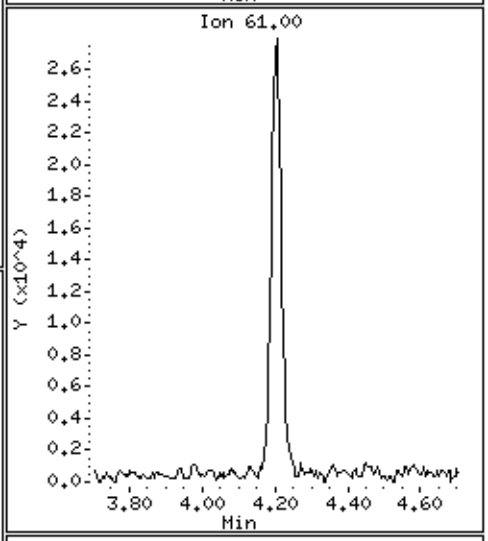
Column phase: DB624 Column diameter: 0.18

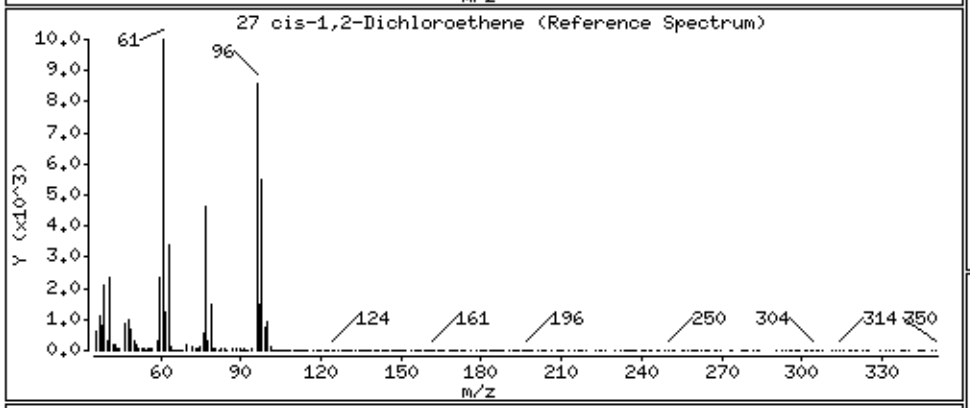
27 cis-1,2-Dichloroethene Concentration: 408.18 ug/l

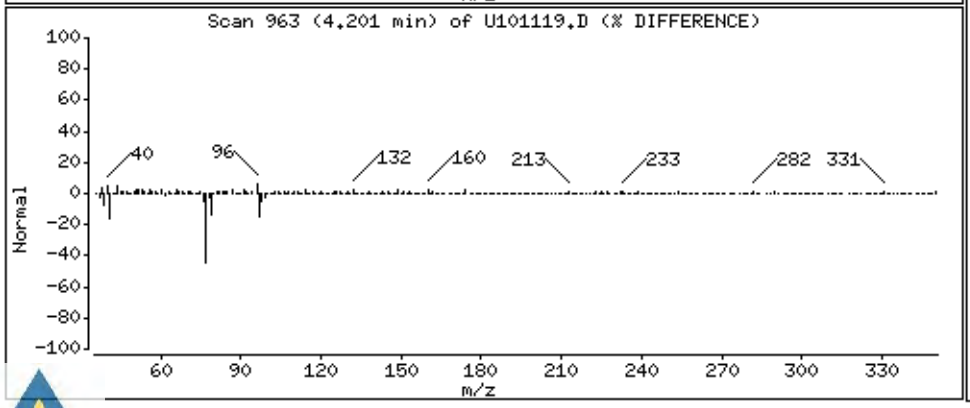


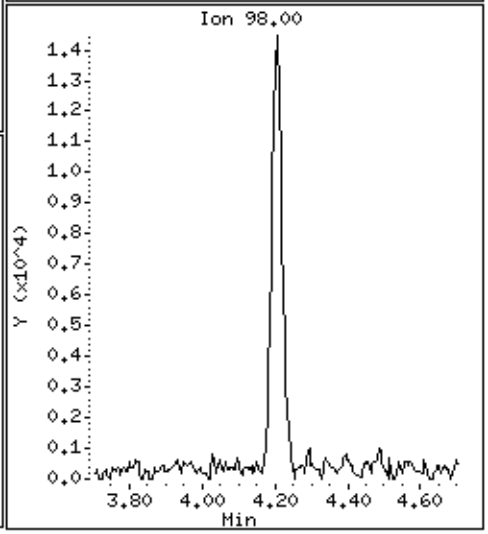












Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101119.D Page 3

Date : 11-OCT-2023 17:37

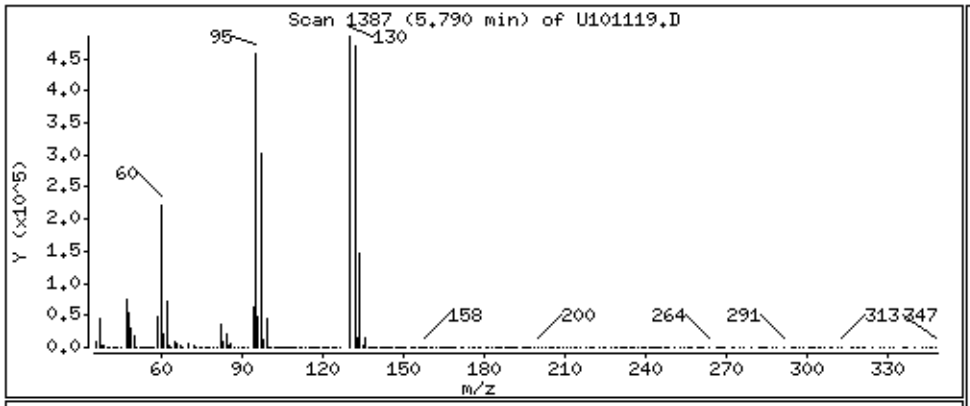
Client ID: HS23100159-12 Instrument: VOA9.i

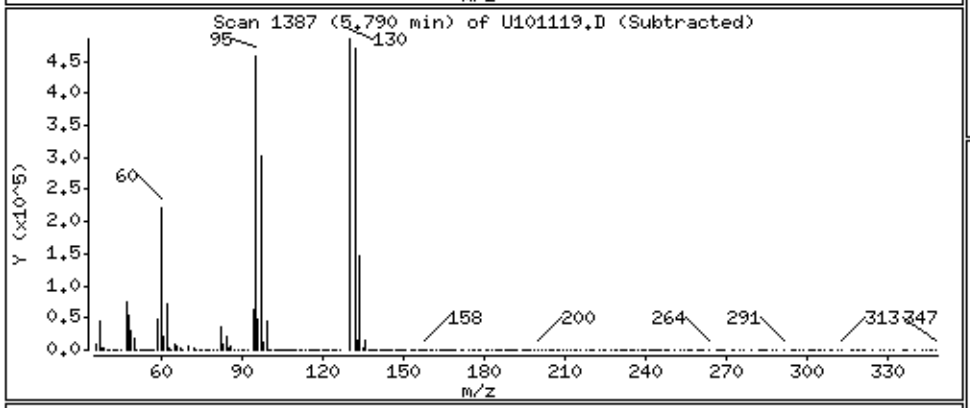
Sample Info: HS23100159-12;HS23100159-12;;;

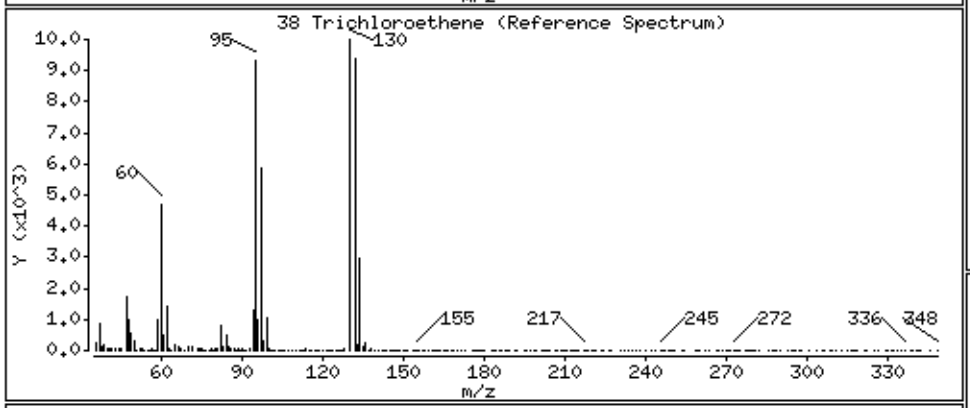
Purge Volume: 5.0 Operator: PC

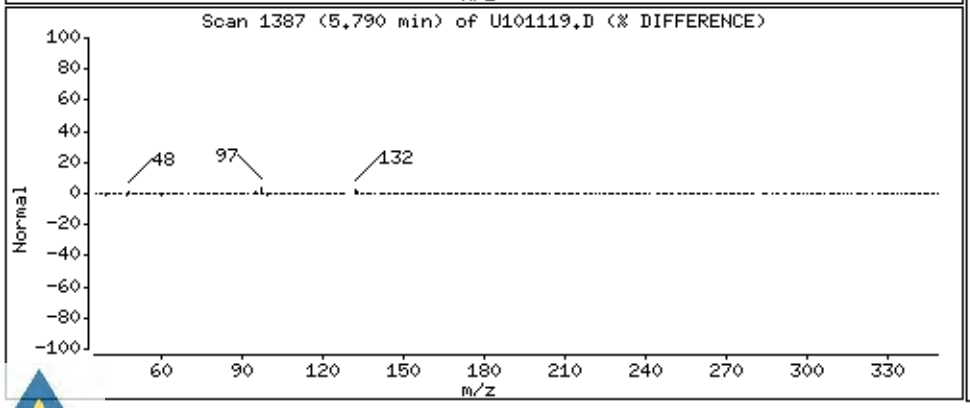
Column phase: DB624 Column diameter: 0.18

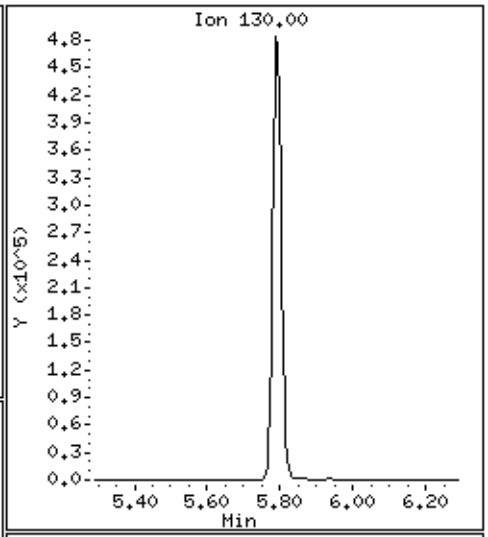
38 Trichloroethene Concentration: 7653.88 ug/l

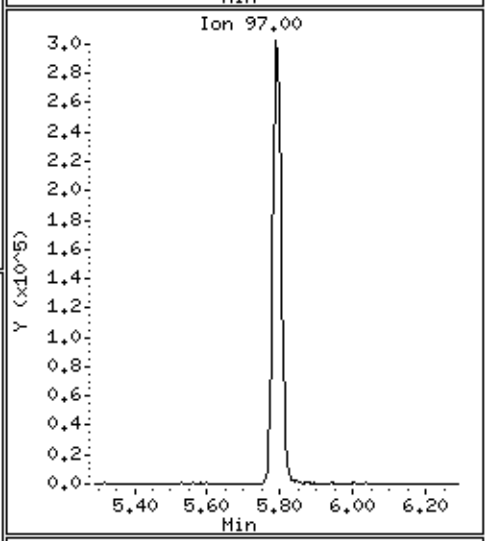


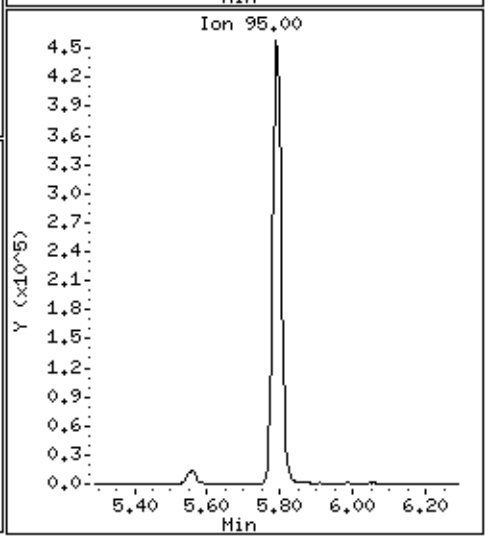












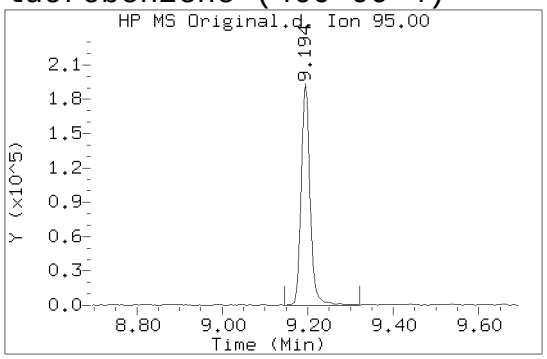
Data File : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101119.D
Inj Date : 11-OCT-2023 17:37
InstruID : VOA9.i
LabSampID : HS23100159-12

4-Bromofluorobenzene (460-00-4)

Reason Code:

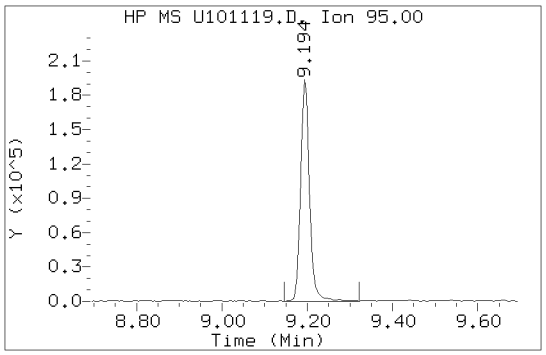
BEFORE

MASS
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AREA
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HEIGHT
193515
16-Oct-2023
12:07
linh
pham



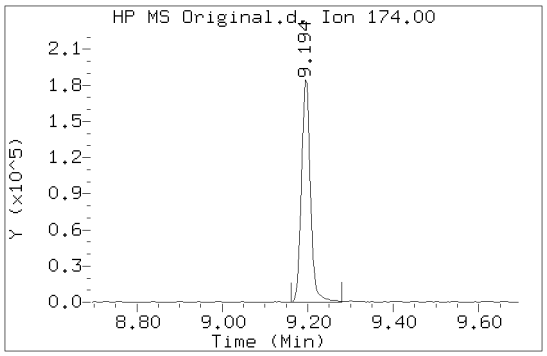
AFTER

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HEIGHT
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16-Oct-2023
12:07
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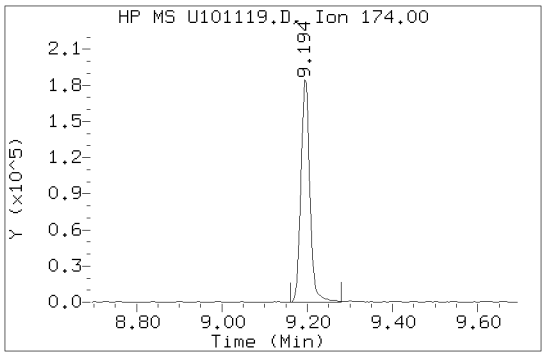
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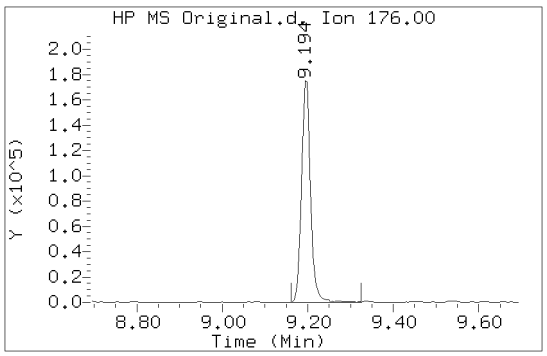
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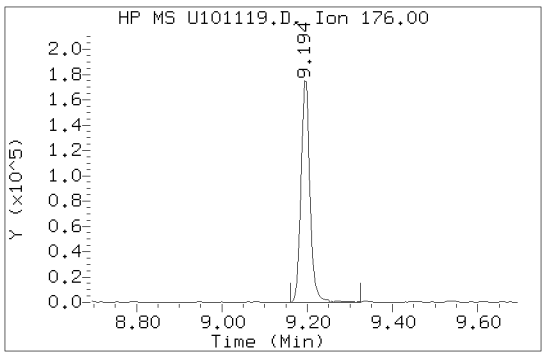
BEFORE

MASS
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AREA
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HEIGHT
175053
16-Oct-2023
12:07
linh
pham



AFTER

MASS
176
AREA
263185
HEIGHT
175053
16-Oct-2023
12:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101120.D Page 1
Report Date: 16-Oct-2023 12:08

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101120.D
Lab Smp Id: HS23100159-13 Client Smp ID: HS23100159-13
Inj Date : 11-OCT-2023 17:59
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-13;HS23100159-13;;;
Misc Info : V9;WATER;0;50;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 16-Oct-2023 12:08 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 18
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7056

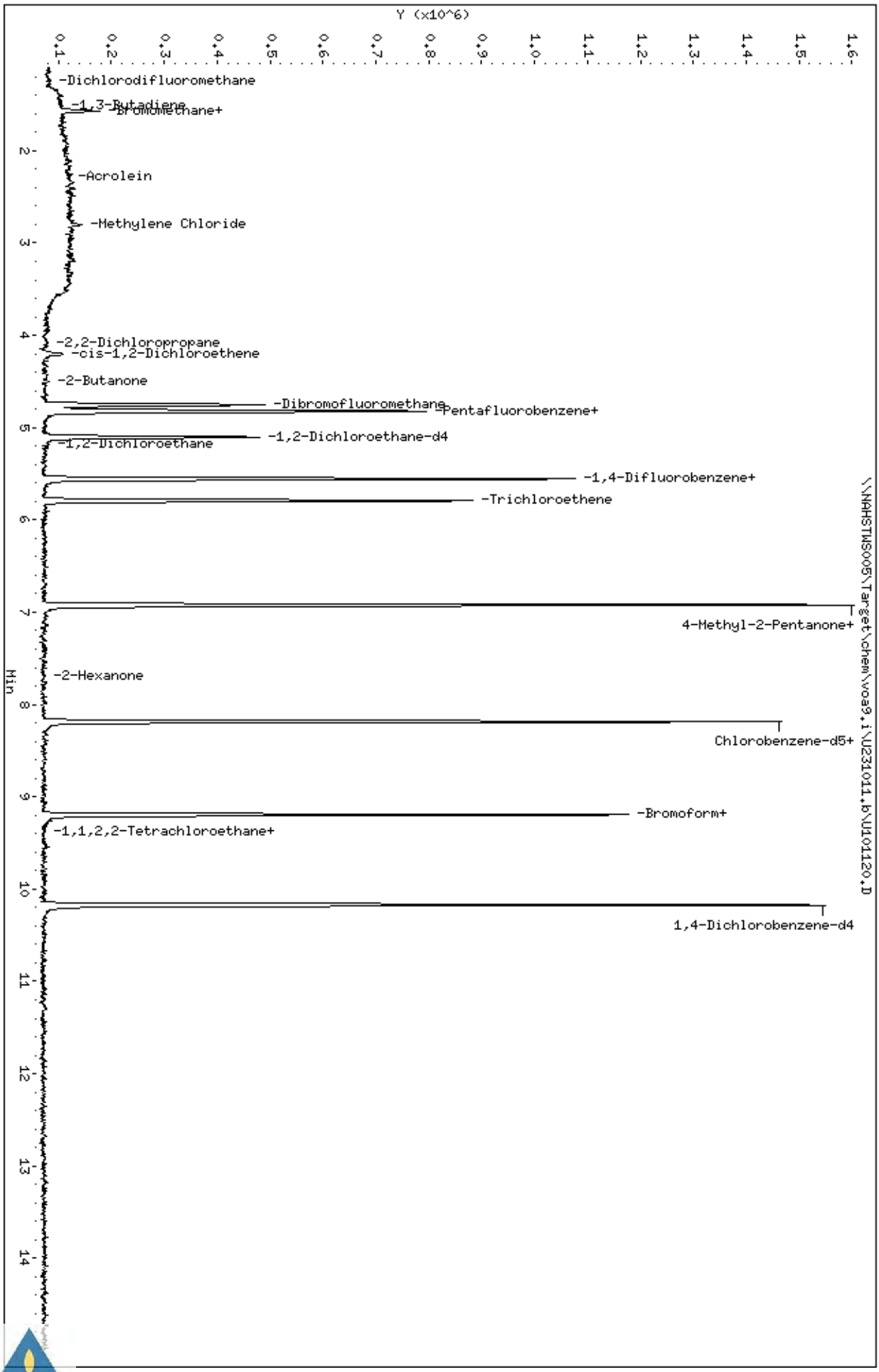
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	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	4.823	4.815	(1.000)	482725	50.0000	
$ 30 Dibromofluoromethane	113	4.755	4.748	(0.986)	226426	43.5478	43.54
$ 35 1,2-Dichloroethane-d4	65	5.104	5.096	(1.058)	260014	42.3795	42.37
* 36 1,4-Difluorobenzene	114	5.557	5.554	(1.000)	756267	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	702609	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	921048	55.9134	55.91(M)
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	288428	43.8750	43.87
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	364462	50.0000	
27 cis-1,2-Dichloroethene	96	4.204	4.197	(0.872)	18673	3.05137	152.56(a)
38 Trichloroethene	130	5.794	5.790	(1.042)	249648	47.8283	2391.41

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\voa9,i\U231011,b\U101120,D
Date : 11-OCT-2023 17:59
Client ID: HS23100159-13
Sample Info: HS23100159-13;HS23100159-13;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101120.D Page 2

Date : 11-OCT-2023 17:59

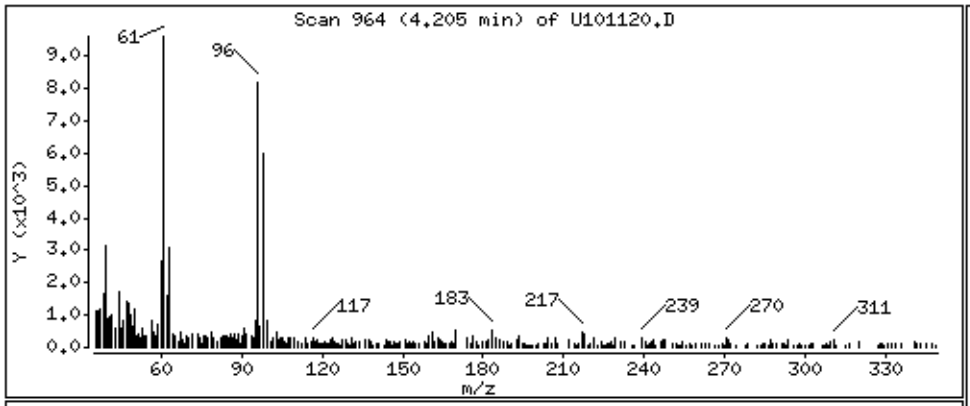
Client ID: HS23100159-13 Instrument: VOA9.i

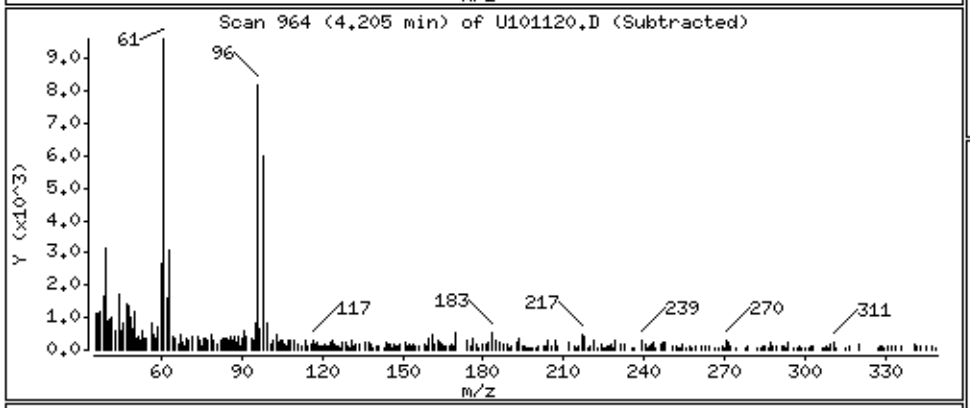
Sample Info: HS23100159-13;HS23100159-13;;;

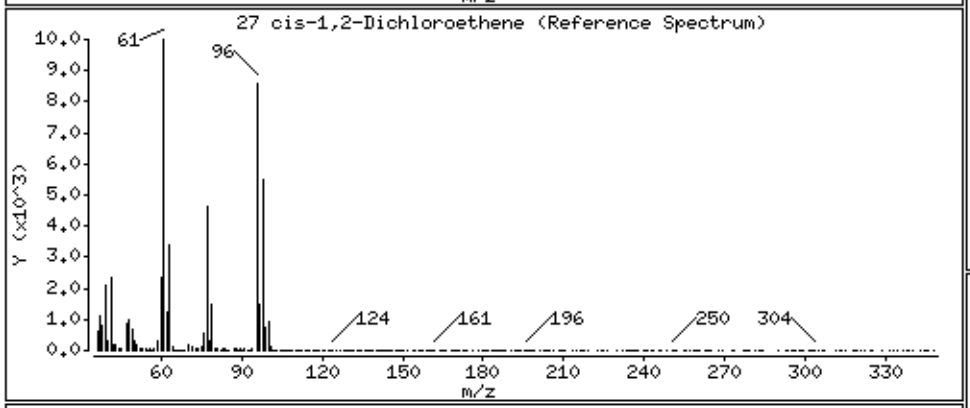
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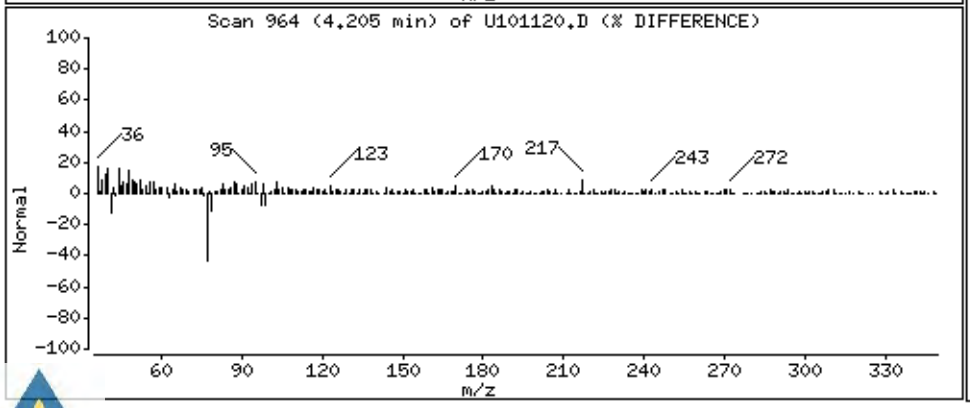
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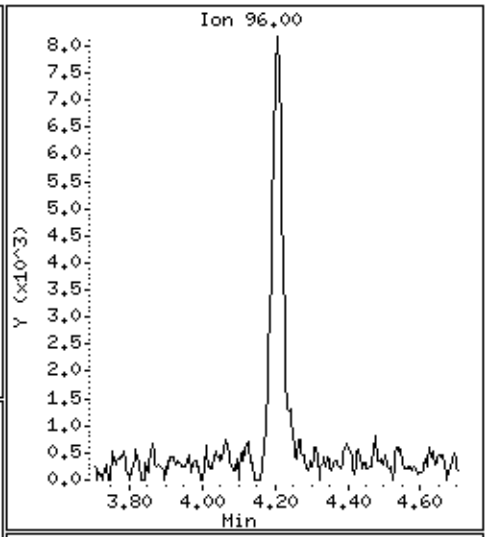
27 cis-1,2-Dichloroethene Concentration: 152.56 ug/l

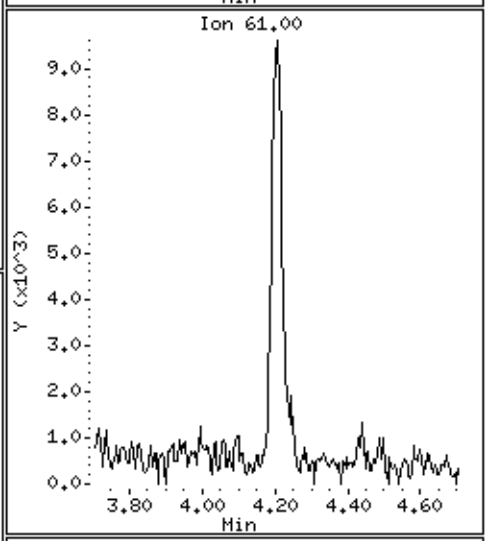


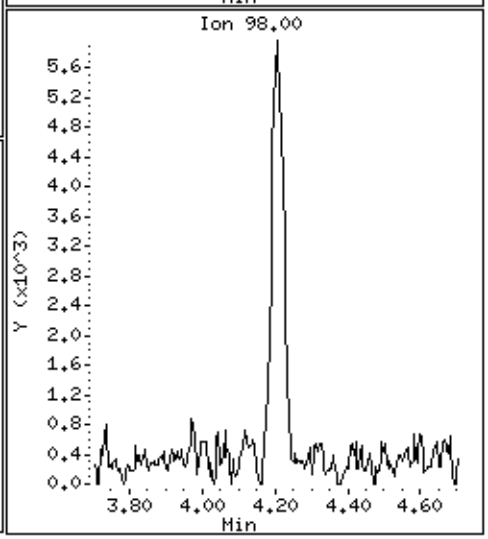












Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101120.D Page 3

Date : 11-OCT-2023 17:59

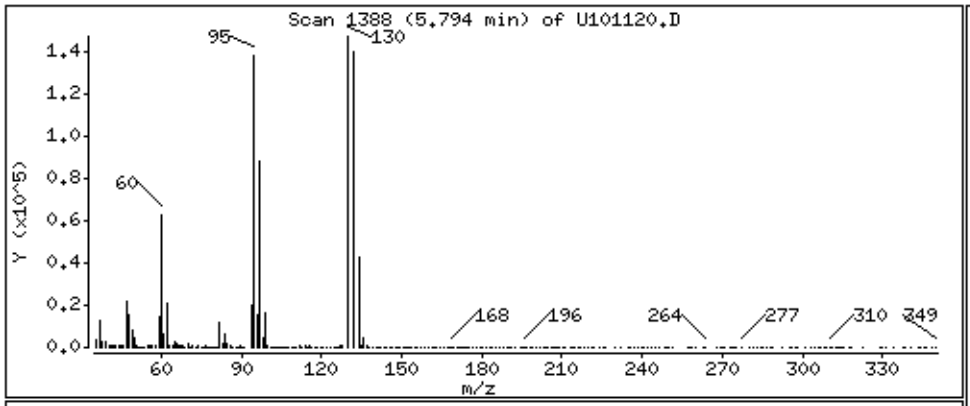
Client ID: HS23100159-13 Instrument: VOA9.i

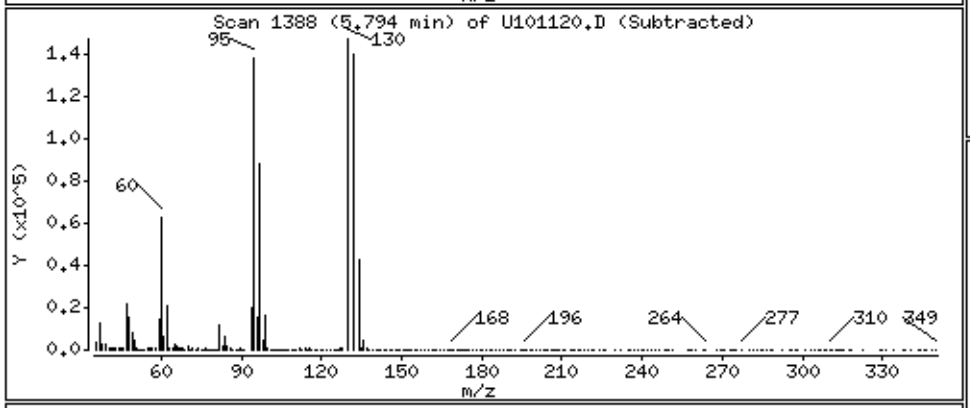
Sample Info: HS23100159-13;HS23100159-13;;;

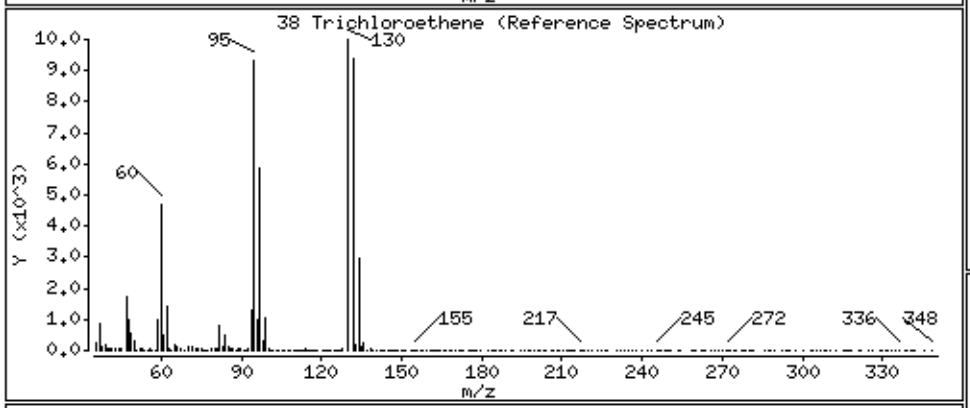
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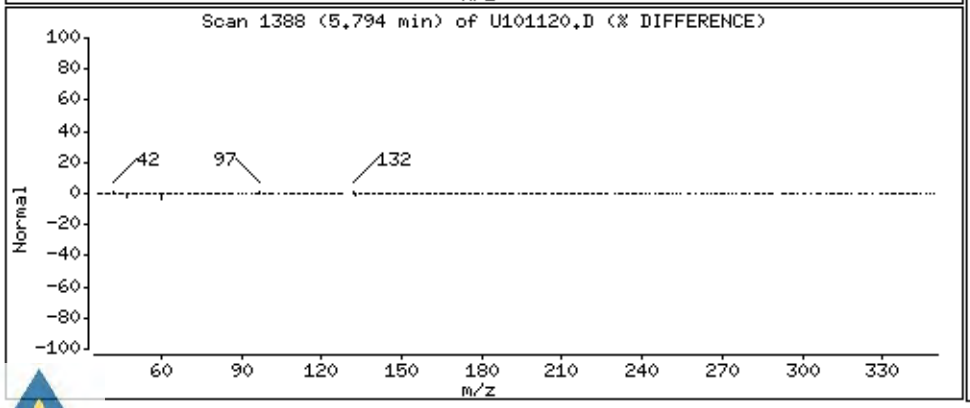
Column phase: DB624 Column diameter: 0.18

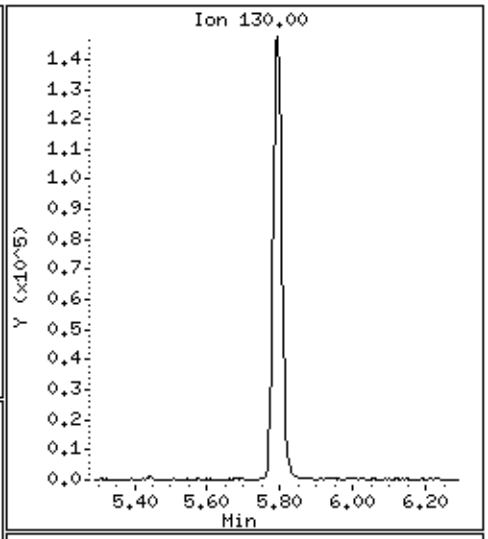
38 Trichloroethene Concentration: 2391.41 ug/l

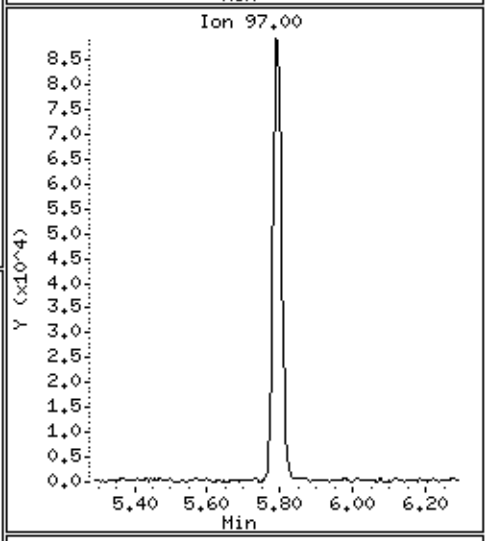


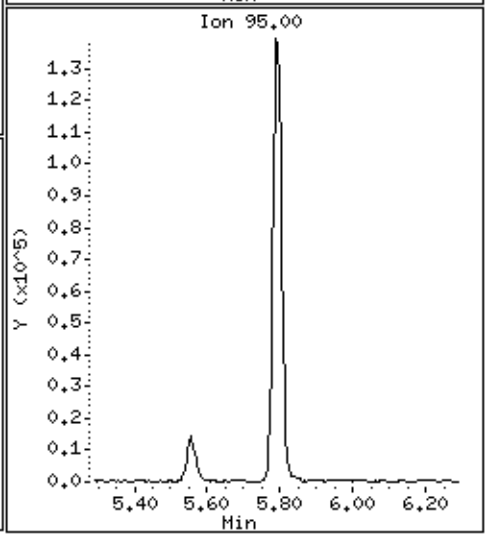












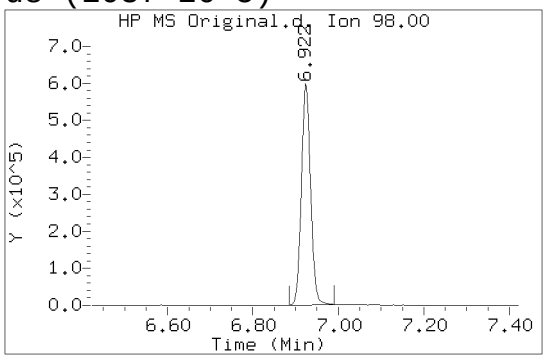
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Inj Date : 11-OCT-2023 17:59
InstruID : VOA9.i
LabSampID : HS23100159-13

Toluene-d8 (2037-26-5)

Reason Code:

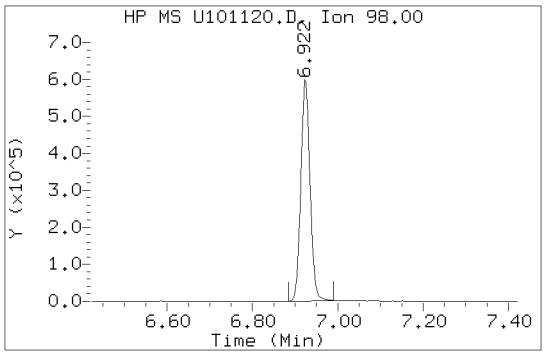
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MASS
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AREA
921048
HEIGHT
598385
16-Oct-2023
12:07
linh
pham



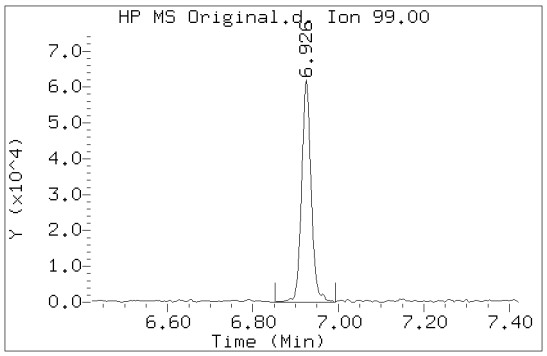
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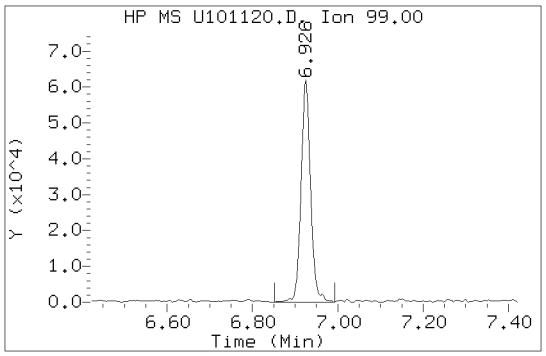
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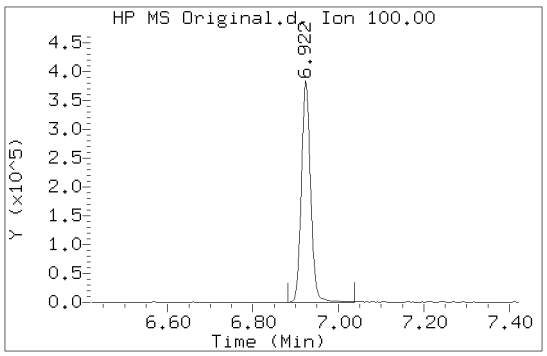
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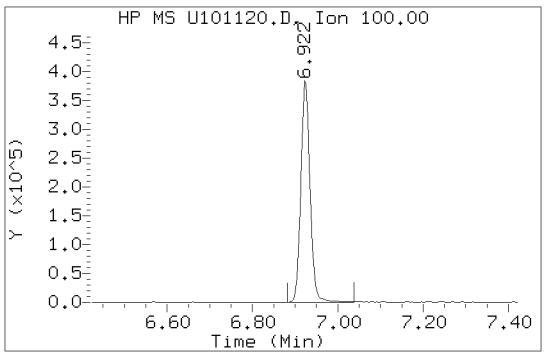
BEFORE

MASS
100
AREA
591209
HEIGHT
383972
16-Oct-2023
12:07
linh
pham



AFTER

MASS
100
AREA
591209
HEIGHT
383972
16-Oct-2023
12:07
linh
pham



Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101121.D Page 1
Report Date: 16-Oct-2023 12:08

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101121.D
Lab Smp Id: HS23100159-14 Client Smp ID: HS23100159-14
Inj Date : 11-OCT-2023 18:21
Operator : PC Inst ID: VOA9.i
Smp Info : HS23100159-14;HS23100159-14;;;
Misc Info : V9;WATER;0;50;
Comment   :
Method   : \\nahstws005\Target\chem\voa9.i\U231011.b\8260C.m
Meth Date : 16-Oct-2023 12:08 VOA9.i Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 19
Dil Factor: 50.00000
Integrator: HP RTE Compound Sublist: 8260-dryclean.sub
Target Version: 4.14
Processing Host: NAHSTW7056

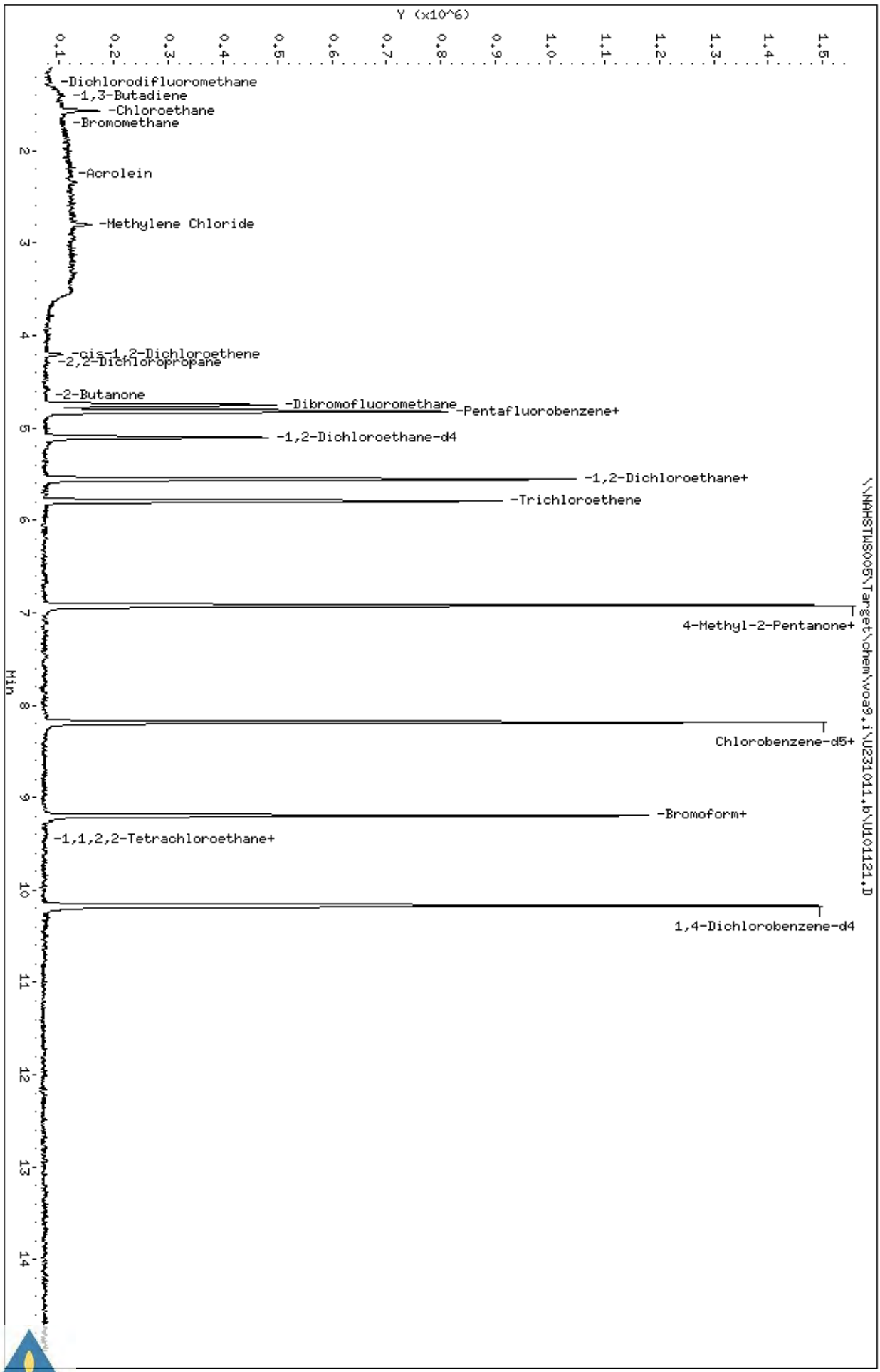
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	50.000	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	4.819	4.815	(1.000)	485441	50.0000	
$ 30 Dibromofluoromethane	113	4.751	4.748	(0.986)	227175	43.4520	43.45
$ 35 1,2-Dichloroethane-d4	65	5.100	5.096	(1.058)	271548	43.9783	43.97
* 36 1,4-Difluorobenzene	114	5.554	5.554	(1.000)	742277	50.0000	
* 47 Chlorobenzene-d5	117	8.185	8.185	(1.000)	703028	50.0000	
$ 48 Toluene-d8	98	6.922	6.922	(0.846)	914329	55.4725	55.47
$ 69 4-Bromofluorobenzene	95	9.194	9.194	(1.123)	285573	43.4311	43.43
* 70 1,4-Dichlorobenzene-d4	152	10.172	10.168	(1.000)	354324	50.0000	
27 cis-1,2-Dichloroethene	96	4.204	4.197	(0.872)	14765	2.39926	119.96(a)
38 Trichloroethene	130	5.790	5.790	(1.043)	248127	48.4329	2421.64

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS005\Target\chem\voa9,i\U231011,b\U101121,D
Date : 11-OCT-2023 18:21
Client ID: HS23100159-14
Sample Info: HS23100159-14;HS23100159-14;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: VOA9,i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101121.D Page 2

Date : 11-OCT-2023 18:21

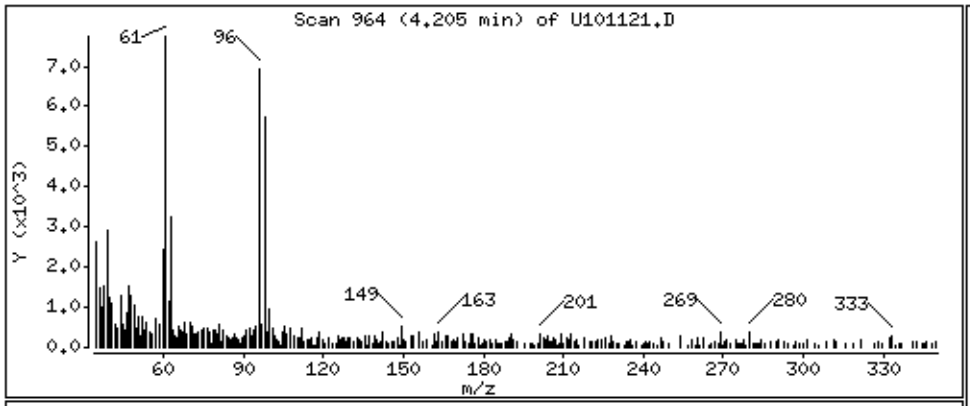
Client ID: HS23100159-14 Instrument: VOA9.i

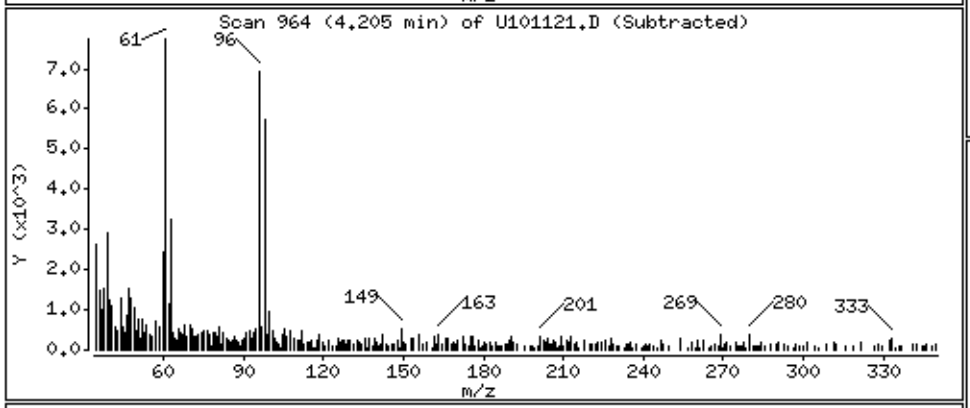
Sample Info: HS23100159-14;HS23100159-14;;;

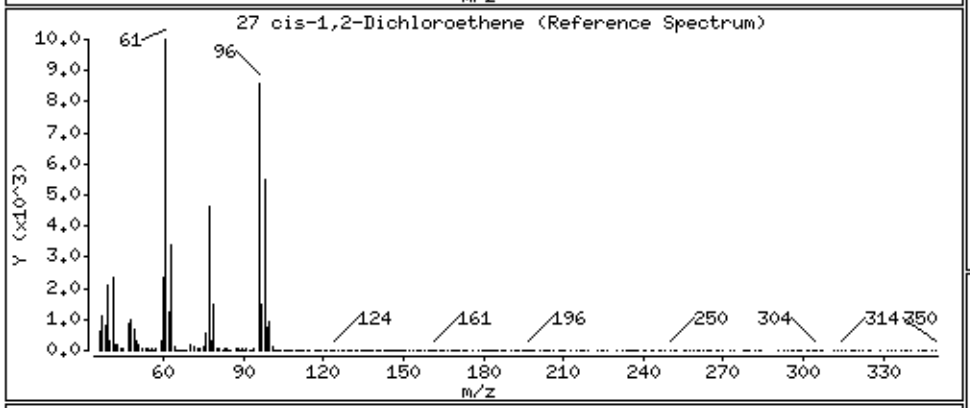
Purge Volume: 5.0 Operator: PC

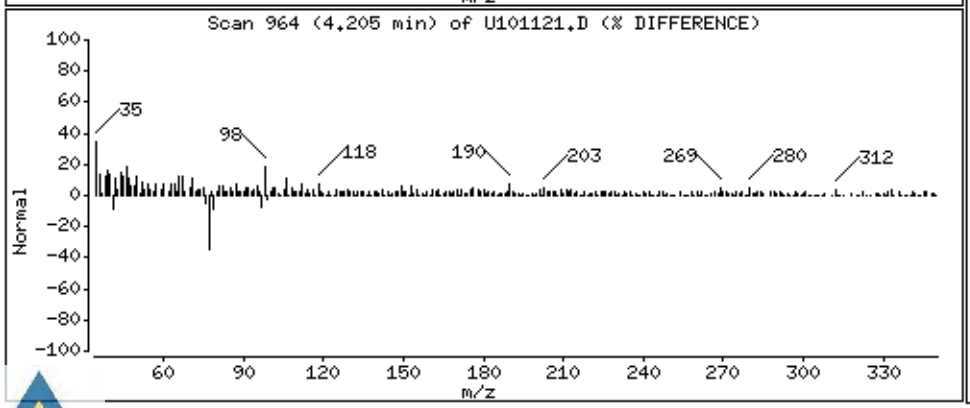
Column phase: DB624 Column diameter: 0.18

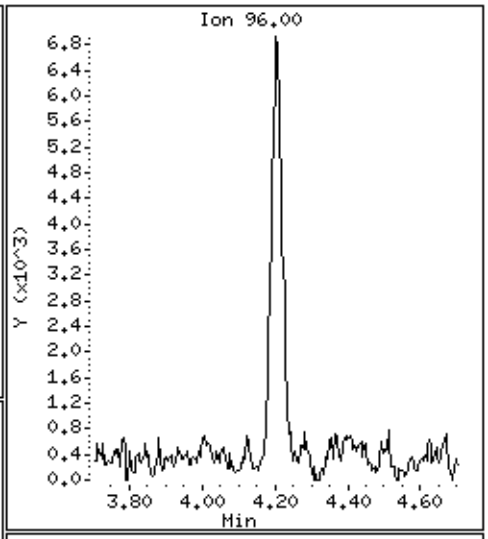
27 cis-1,2-Dichloroethene Concentration: 119.96 ug/l

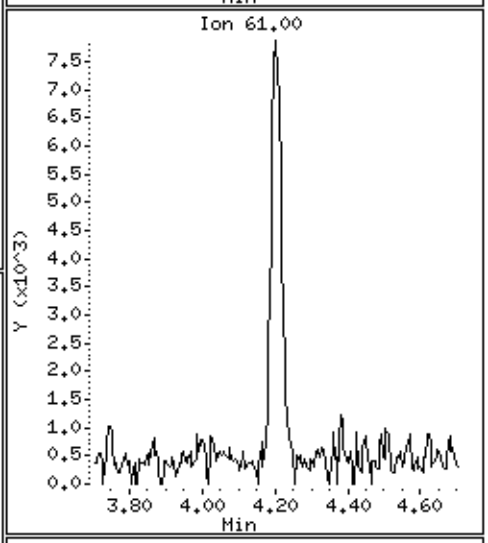


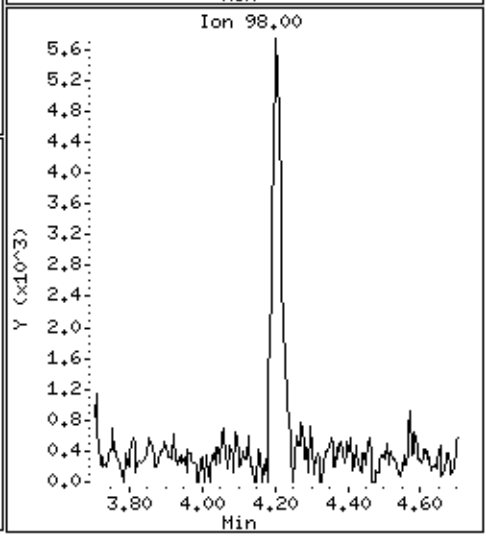












Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101121.D Page 3

Date : 11-OCT-2023 18:21

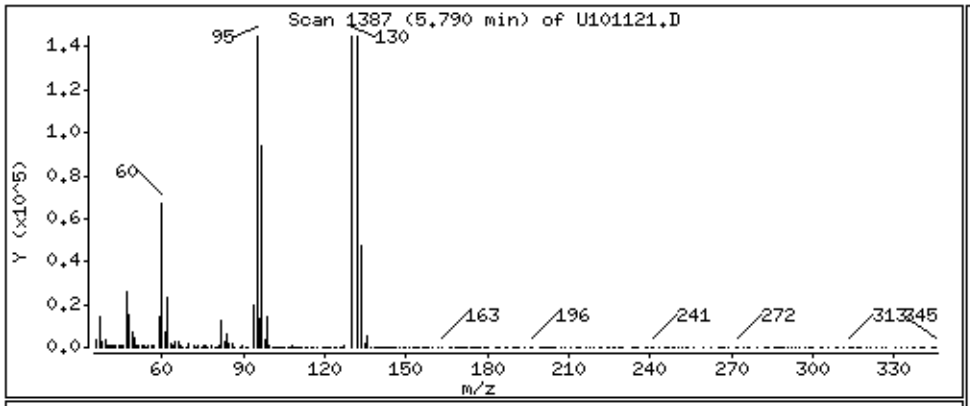
Client ID: HS23100159-14 Instrument: VOA9.i

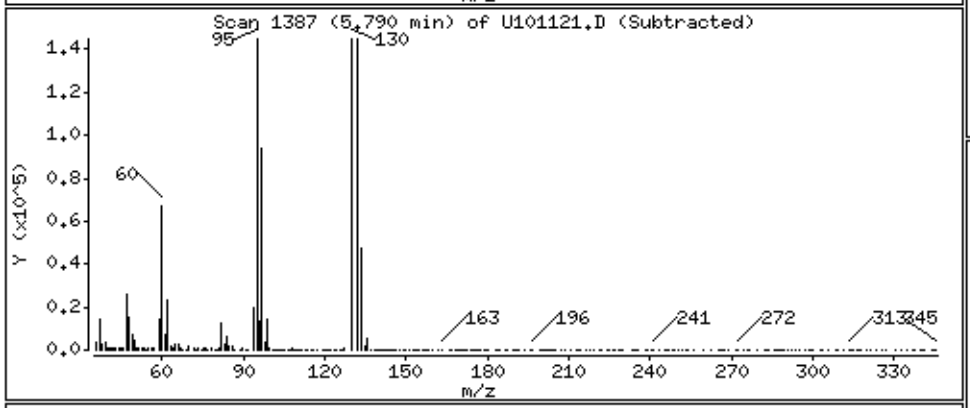
Sample Info: HS23100159-14;HS23100159-14;;;

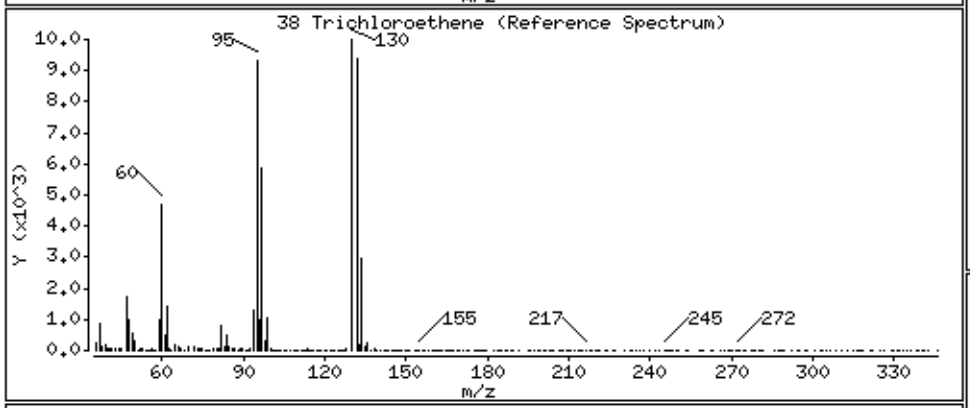
Purge Volume: 5.0 Operator: PC

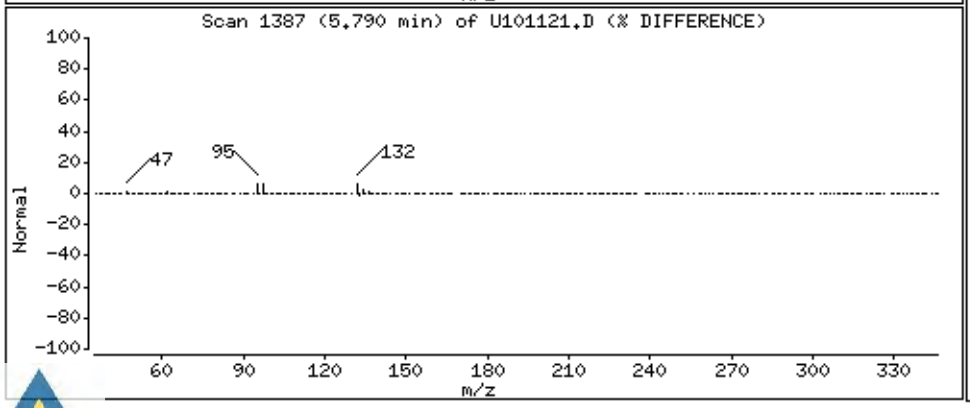
Column phase: DB624 Column diameter: 0.18

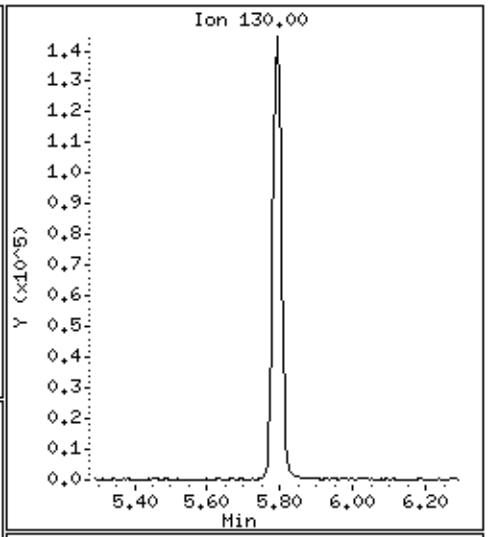
38 Trichloroethene Concentration: 2421.64 ug/l

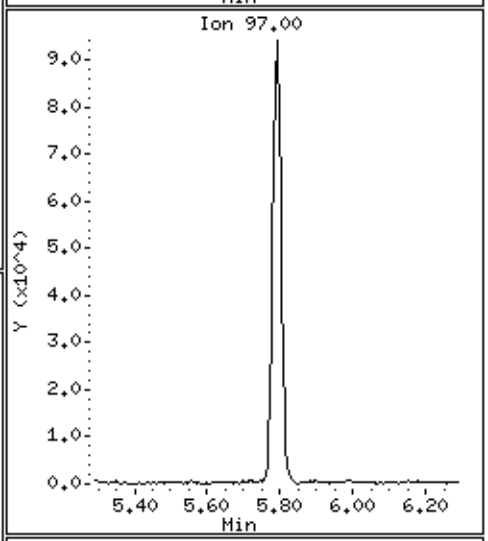


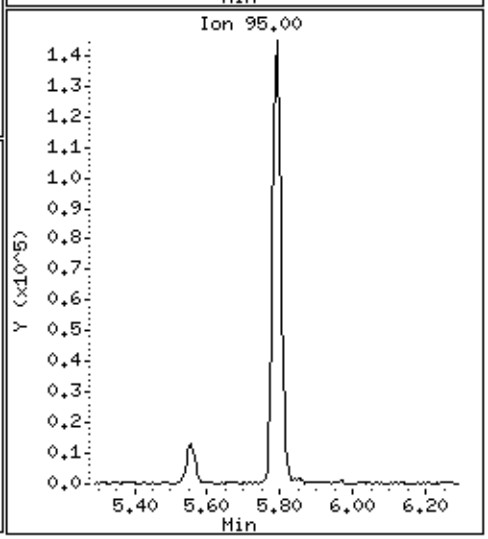












Data File : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101121.D
Inj Date : 11-OCT-2023 18:21
InstruID : VOA9.i
LabSampID : HS23100159-14

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101130.D Page 1
Report Date: 18-Oct-2023 14:40

ALS Laboratory Group

Data file : \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101130.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 11-OCT-2023 21:43
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\U231011.b\8260C.m
Meth Date : 18-Oct-2023 14:25 pcabasca Quant Type: ISTD
Cal Date : 08-OCT-2023 16:25 Cal File: V100808.D
Als bottle: 28 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB.sub
Target Version: 4.14

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)	387833	50.0000	
2	Dichlorodifluoromethane	85	1.164	1.164	(0.242)	197193	50.0000	46.52
3	Chloromethane	50	1.299	1.299	(0.270)	228319	50.0000	54.61
5	Vinyl Chloride	62	1.378	1.378	(0.286)	306060	50.0000	49.10
6	Bromomethane	94	1.621	1.621	(0.337)	267317	50.0000	47.34
7	Chloroethane	64	1.700	1.700	(0.353)	316956	50.0000	51.68
8	Trichlorofluoromethane	101	1.899	1.899	(0.394)	772707	50.0000	54.64
9	Acrolein	56	2.266	2.266	(0.471)	50604	100.000	144.67
10	Acetone	43	2.408	2.408	(0.500)	336988	100.000	107.07
11	1,1-Dichloroethene	96	2.334	2.334	(0.485)	449670	50.0000	58.07
15	Iodomethane	142	2.468	2.468	(0.513)	959077	100.000	94.37
16	Acrylonitrile	53	3.065	3.065	(0.636)	382018	100.000	108.75
17	Methylene Chloride	84	2.795	2.795	(0.580)	608123	50.0000	53.09
18	Methyl tert-butyl ether	73	3.079	3.079	(0.640)	1604384	50.0000	50.38
19	Carbon Disulfide	76	2.521	2.521	(0.524)	2406243	100.000	108.01
20	trans-1,2-Dichloroethene	96	3.061	3.061	(0.636)	540056	50.0000	55.95
21	Vinyl Acetate	43	3.608	3.608	(0.749)	1406104	100.000	100.08
22	1,1-Dichloroethane	63	3.514	3.514	(0.730)	866294	50.0000	88.00
24	2-Butanone	43	4.264	4.264	(0.886)	176516	100.000	98.11
26	2,2-Dichloropropane	77	4.185	4.185	(0.869)	230482	50.0000	42.57
27	cis-1,2-Dichloroethene	96	4.197	4.197	(0.872)	286422	50.0000	58.25

28 Chloroform	83	4.575	4.575 (0.950)	438828	50.0000	48.65
29 Bromochloromethane	128	4.470	4.470 (0.928)	130654	50.0000	55.06

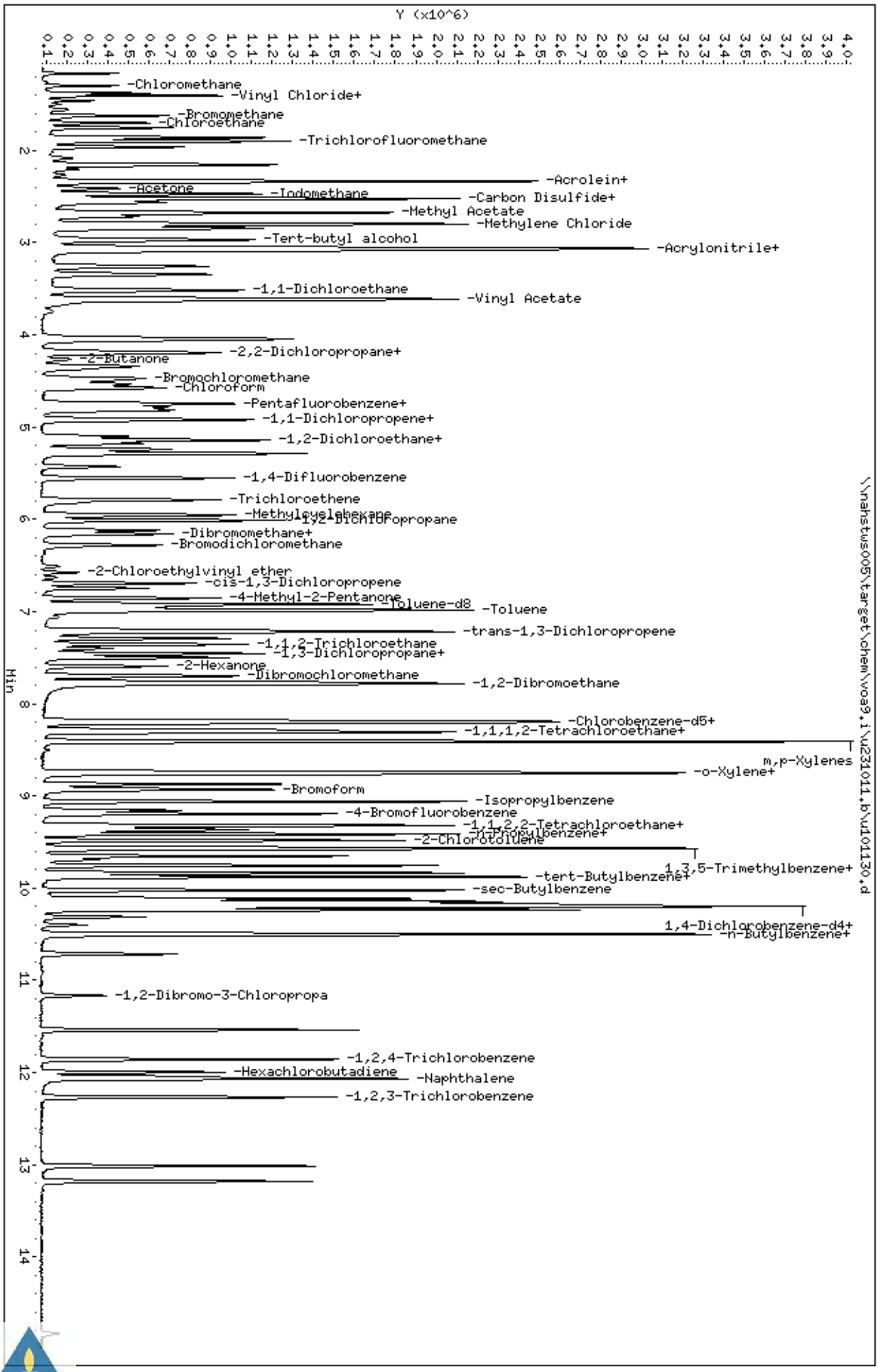
Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101130.D Page 2
Report Date: 18-Oct-2023 14:40

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
$	30	Dibromofluoromethane	113	4.748	4.748	(0.986)	235910	50.0000	55.66
	31	1,1,1-Trichloroethane	97	4.744	4.744	(0.985)	335488	50.0000	49.90
	32	1,1-Dichloropropene	75	4.924	4.924	(0.887)	295360	50.0000	48.36
	33	1,2-Dichloroethane	62	5.175	5.175	(0.932)	336879	50.0000	47.81
	34	Carbon Tetrachloride	117	4.913	4.913	(0.885)	273849	50.0000	48.53
$	35	1,2-Dichloroethane-d4	65	5.100	5.100	(1.059)	270271	50.0000	54.47
*	36	1,4-Difluorobenzene	114	5.554	5.554	(1.000)	712358	50.0000	
	37	Benzene	78	5.141	5.141	(0.926)	939042	50.0000	49.47
	38	Trichloroethene	130	5.790	5.790	(1.043)	255113	50.0000	51.88
	39	Bromodichloromethane	83	6.277	6.277	(1.130)	316210	50.0000	48.01
	41	2-Chloroethylvinyl ether	63	6.577	6.577	(1.184)	71261	100.000	69.77
	42	1,2-Dichloropropane	63	6.011	6.011	(1.082)	242937	50.0000	50.35
	44	Dibromomethane	93	6.120	6.120	(1.102)	180179	50.0000	47.05
	45	4-Methyl-2-Pentanone	43	6.854	6.854	(0.837)	480839	100.000	100.24
	46	cis-1,3-Dichloropropene	75	6.689	6.689	(1.205)	367189	50.0000	46.84
*	47	Chlorobenzene-d5	117	8.185	8.185	(1.000)	808684	50.0000	
$	48	Toluene-d8	98	6.922	6.922	(0.846)	952691	50.0000	50.24
	50	Toluene	91	6.982	6.982	(0.853)	1130623	50.0000	51.20
	51	trans-1,3-Dichloropropene	75	7.196	7.196	(1.296)	315696	50.0000	47.74
	52	2-Hexanone	43	7.593	7.593	(0.928)	334866	100.000	100.65
	53	1,1,2-Trichloroethane	83	7.353	7.353	(0.898)	222585	50.0000	49.82
	54	1,3-Dichloropropane	76	7.499	7.499	(0.916)	465676	50.0000	50.05
	55	Dibromochloromethane	129	7.690	7.690	(0.940)	259955	50.0000	48.01
	56	Tetrachloroethene	164	7.458	7.458	(0.911)	205142	50.0000	48.87
	57	1,2-Dibromoethane	107	7.784	7.784	(0.951)	282808	50.0000	48.21
	58	1-Chlorohexane	55	8.196	8.196	(1.476)	200499	50.0000	48.38
	59	Chlorobenzene	112	8.208	8.208	(1.003)	760202	50.0000	48.49
	60	1,1,1,2-Tetrachloroethane	131	8.283	8.283	(1.012)	251681	50.0000	49.02
	61	Ethylbenzene	106	8.305	8.305	(1.015)	368455	50.0000	49.29
	62	m,p-Xylenes	106	8.406	8.406	(1.027)	1013584	100.000	101.25
	63	o-Xylene	106	8.748	8.748	(1.069)	497879	50.0000	49.27
	64	Styrene	104	8.763	8.763	(1.071)	868543	50.0000	50.57
	66	Bromoform	173	8.920	8.920	(1.090)	178555	50.0000	44.42
	67	Isopropylbenzene	105	9.062	9.062	(1.107)	1202941	50.0000	49.81
	68	1,1,2,2-Tetrachloroethane	83	9.329	9.329	(0.917)	425332	50.0000	48.79
$	69	4-Bromofluorobenzene	95	9.194	9.194	(1.123)	356588	50.0000	47.00
*	70	1,4-Dichlorobenzene-d4	152	10.168	10.168	(1.000)	515416	50.0000	
	71	1,2,3-Trichloropropane	75	9.362	9.362	(0.921)	386485	50.0000	44.57
	73	n-Propylbenzene	91	9.411	9.411	(0.926)	1376192	50.0000	48.70
	74	Bromobenzene	156	9.317	9.317	(0.916)	338234	50.0000	47.24
	75	1,3,5-Trimethylbenzene	105	9.561	9.561	(0.940)	1058247	50.0000	48.46
	76	2-Chlorotoluene	91	9.482	9.482	(0.933)	834435	50.0000	46.60
	77	4-Chlorotoluene	91	9.576	9.576	(0.942)	1043937	50.0000	49.11
	78	tert-Butylbenzene	119	9.838	9.838	(0.968)	915220	50.0000	48.88
	79	1,2,4-Trimethylbenzene	105	9.880	9.880	(0.972)	1130742	50.0000	49.46
	81	sec-Butylbenzene	105	10.022	10.022	(0.986)	1267194	50.0000	50.19
	82	p-Isopropyltoluene	119	10.146	10.146	(0.998)	1117382	50.0000	50.29
	83	1,3-Dichlorobenzene	146	10.116	10.116	(0.995)	617221	50.0000	46.08
	84	1,4-Dichlorobenzene	146	10.191	10.191	(1.002)	729937	50.0000	48.29
	87	n-Butylbenzene	91	10.491	10.491	(1.032)	1036422	50.0000	50.27
	88	1,2-Dichlorobenzene	146	10.506	10.506	(1.033)	695888	50.0000	50.39
	89	1,2-Dibromo-3-Chloropropane	155	11.165	11.165	(1.098)	58240	50.0000	49.91

90 1,2,4-Trichlorobenzene	180	11.855	11.855 (1.166)	389029	50.0000	47.75	
91 Hexachlorobutadiene	225	11.998	11.998 (1.180)	139602	50.0000	46.56	

Data File: \\NAHSTWS005\Target\chem\voa9.i\U231011.b\U101130.D Page 3
Report Date: 18-Oct-2023 14:40

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	92 Naphthalene	128	12.065	12.065	(1.187)	1142176	50.0000	47.57
	93 1,2,3-Trichlorobenzene	180	12.268	12.268	(1.206)	390200	50.0000	48.12
M	94 1,2-Dichloroethylene (total)	96				826478	100.000	113.45
M	95 Xylenes (total)	106				1511463	150.000	138.44
	135 1,4-Dioxane	88	6.165	6.165	(1.280)	75852	1000.00	925.67
	141 Cyclohexane	56	4.785	4.785	(0.994)	239706	50.0000	48.60
	138 Freon TF	101	2.337	2.337	(0.485)	416423	50.0000	54.66
	140 1,3-Butadiene	54	1.404	1.404	(0.292)	233683	50.0000	43.05
	147 Methylcyclohexane	55	5.947	5.947	(1.071)	481046	50.0000	48.21
	146 Methyl Acetate	43	2.716	2.716	(0.564)	416178	50.0000	55.57
	148 Tert-Butyl alcohol	59	2.967	2.967	(0.616)	1035402	1000.00	899.80
	149 Isopropyl Alcohol	45	2.562	2.562	(0.532)	593990	1000.00	951.89
	72 trans-1,4-Dichloro-2-butene	53	9.377	9.377	(1.146)	70222	50.0000	39.28



Data File: \\nahstws005\target\chem\voa9,i\u231011,b\u101130,d
Date : 11-OCT-2023 21:43
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\u231011.b\u101130.d
Inj Date : 11-OCT-2023 21:43
InstruID : VOA9.i
LabSampID : CCV-END

NO MANUAL INTEGRATIONS

HS23100159-GCSEMI-RSK-175

ALS WO# HS23100159

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Form 1

Organic Analysis Data Sheet

Dissolved Gasses by Dissolved Gases by RSK-175

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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 LHAAP Site 50

Workorder
HS23100159

Dissolved Gasses by Dissolved Gases by RSK-175

HS23100159-10	Collected	Received	Matrix	Basis
50WW14_100323	10/03/23 07:40	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Ethane	mg/L	0.00100	U	0.00014	0.00100	0.00100	1	10/10/23 09:31	FID-4_448812	007.D
Ethene	mg/L	0.00100	U	0.00023	0.00100	0.00100	1	10/10/23 09:31	FID-4_448812	007.D
Methane	mg/L	0.00540		0.00010	0.000500	0.000500	1	10/10/23 09:31	FID-4_448812	007.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Dissolved Gasses by Dissolved Gases by RSK-175

HS23100159-11	Collected	Received	Matrix	Basis
50WW13_100323	10/03/23 08:25	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Ethane	mg/L	0.00100	U	0.00014	0.00100	0.00100	1	10/10/23 09:40	FID-4_448812	008.D
Ethene	mg/L	0.000630	J	0.00023	0.00100	0.00100	1	10/10/23 09:40	FID-4_448812	008.D
Methane	mg/L	0.0256		0.00010	0.000500	0.000500	1	10/10/23 09:40	FID-4_448812	008.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Dissolved Gasses by Dissolved Gases by RSK-175

HS23100159-12	Collected	Received	Matrix	Basis
50WW13_100323_a	10/03/23 08:25	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Ethane	mg/L	0.00104		0.00014	0.00100	0.00100	1	10/10/23 09:48	FID-4_448812	009.D
Ethene	mg/L	0.000666	J	0.00023	0.00100	0.00100	1	10/10/23 09:48	FID-4_448812	009.D
Methane	mg/L	0.0276		0.00010	0.000500	0.000500	1	10/10/23 09:48	FID-4_448812	009.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Dissolved Gasses by Dissolved Gases by RSK-175

HS23100159-13	Collected	Received	Matrix	Basis
50WW11_100323	10/03/23 09:15	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Ethane	mg/L	0.00100	U	0.00014	0.00100	0.00100	1	10/10/23 10:04	FID-4_448812	010.D
Ethene	mg/L	0.00100	U	0.00023	0.00100	0.00100	1	10/10/23 10:04	FID-4_448812	010.D
Methane	mg/L	1.33		0.00535	0.0250	0.0250	50	10/10/23 11:13	FID-4_448812	016.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Dissolved Gasses by Dissolved Gases by RSK-175

HS23100159-14	Collected	Received	Matrix	Basis
50WW11_100323_a	10/03/23 09:15	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Ethane	mg/L	0.00100	U	0.00014	0.00100	0.00100	1	10/10/23 10:27	FID-4_448812	012.D
Ethene	mg/L	0.00100	U	0.00023	0.00100	0.00100	1	10/10/23 10:27	FID-4_448812	012.D
Methane	mg/L	1.36		0.00535	0.0250	0.0250	50	10/10/23 11:27	FID-4_448812	017.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Dissolved Gasses by Dissolved Gases by RSK-175

HS23100159-15	Collected	Received	Matrix	Basis
50WW06_100323	10/03/23 10:10	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Ethane	mg/L	0.00100	U	0.00014	0.00100	0.00100	1	10/10/23 10:40	FID-4_448812	013.D
Ethene	mg/L	0.00100	U	0.00023	0.00100	0.00100	1	10/10/23 10:40	FID-4_448812	013.D
Methane	mg/L	0.216		0.00107	0.00500	0.00500	10	10/10/23 11:40	FID-4_448812	018.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Dissolved Gasses by Dissolved Gases by RSK-175

HS23100159-16	Collected	Received	Matrix	Basis
50WW12_100323	10/03/23 10:55	10/04/23 09:10	Water	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Ethane	mg/L	0.00100	U	0.00014	0.00100	0.00100	1	10/10/23 10:53	FID-4_448812	014.D
Ethene	mg/L	0.00100	U	0.00023	0.00100	0.00100	1	10/10/23 10:53	FID-4_448812	014.D
Methane	mg/L	8.89		0.0535	0.250	0.250	500	10/10/23 11:50	FID-4_448812	019.D

Form 1 - Organic Analysis Data Sheet

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Dissolved Gasses by Dissolved Gases by RSK-175

MBLK-231010

MBLK-231010

Collected	Received	Matrix	Basis
NA	NA	Aqueous	Wet

Analyte	Units	Result	Q	DL	LOD	LOQ	DF	Analysis Date	Run ID	DataFile
Ethane	mg/L	0.00100	U	0.00014	0.00100	0.00100	1	10/10/23 08:24	FID-4_448812	002.D
Ethene	mg/L	0.00100	U	0.00023	0.00100	0.00100	1	10/10/23 08:24	FID-4_448812	002.D
Methane	mg/L	0.000500	U	0.00010	0.000500	0.000500	1	10/10/23 08:24	FID-4_448812	002.D

Form 4 - Method Blank Summary

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

Dissolved Gasses by Dissolved Gases by RSK-175

Client Sample ID	Type	Lab Sample ID	File ID	Date Analyzed	BatchID
METHOD BLANK	MBLK	MBLK-231010	002.D	10/10/23 08:24	0
LCS-231010	LCS	LCS-231010	003.D	10/10/23 08:40	0
LCSD-231010	LCSD	LCSD-231010	004.D	10/10/23 08:56	0
50WW14_100323	SAMP	HS23100159-10	007.D	10/10/23 09:31	0
50WW13_100323	SAMP	HS23100159-11	008.D	10/10/23 09:40	0
50WW13_100323_a	SAMP	HS23100159-12	009.D	10/10/23 09:48	0
50WW11_100323	SAMP	HS23100159-13	010.D	10/10/23 10:04	0
50WW11_100323_a	SAMP	HS23100159-14	012.D	10/10/23 10:27	0
50WW06_100323	SAMP	HS23100159-15	013.D	10/10/23 10:40	0
50WW12_100323	SAMP	HS23100159-16	014.D	10/10/23 10:53	0
50WW13_100323	DUP	HS23100159-11DUP	015.D	10/10/23 11:02	0
50WW11_100323	SAMP	HS23100159-13	016.D	10/10/23 11:13	0
50WW11_100323_a	SAMP	HS23100159-14	017.D	10/10/23 11:27	0
50WW06_100323	SAMP	HS23100159-15	018.D	10/10/23 11:40	0
50WW12_100323	SAMP	HS23100159-16	019.D	10/10/23 11:50	0

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Form 4

Method Blank Summary

Dissolved Gasses by Dissolved Gases by RSK-175

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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www.alsglobal.com

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Form 6

Initial Calibration Data

Dissolved Gasses by Dissolved Gases by RSK-175

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

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10/18/2023

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Initial Calibration Data

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID FID-4_322102

Dissolved Gasses by Dissolved Gases by RSK-175

ICAL Start Date 24-JAN-2017 0906
ICAL End Date 24-JAN-2017 1113

Calibration Files

Level 1 ..target\chem\fid-4.i\170124.b\001.d
Level 2 ..target\chem\fid-4.i\170124.b\002.d
Level 3 ..target\chem\fid-4.i\170124.b\003.d
Level 4 ..target\chem\fid-4.i\170124.b\004.d
Level 5 ..target\chem\fid-4.i\170124.b\005.d
Level 6 ..target\chem\fid-4.i\170124.b\006.d
Level 7 ..target\chem\fid-4.i\170124.b\007.d

Compound	1000.00 Level 7 10.00 Level 1	25.00 Level 2	50.00 Level 3	100.00 Level 4	250.00 Level 5	500.00 Level 6	Curve	b	m1	m2	%RSD or R2	Q
Methane	969 1082	978	1020	881	961	931	AVRG		974		6.55041	
Ethene	536 829	567	565	516	665	426	AVRG		586		21.93197	
Ethane	602 999	670	659	597	809	818	AVRG		736		19.88517	
Propane	500 96509	1279	2602	4785	18294	38286	QUAD	0.97987	0.00153	-4.583e-00	0.99914	
N-Butane	438 114164	936	2034	3864	18446	42817	QUAD	2.46870	0.00183	-5.537e-00	0.99808	
Pentane	115 488	3945	2080	950	501	412	AVRG		1213		112	*
Hexane	NE NE	NE	NE	NE	NE	NE	AVRG		0.000e+000		0.000e+000	

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)

Dissolved Gasses by Dissolved Gases by RSK-175

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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Initial Calibration Verification (ICV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID FID-4_322102

Dissolved Gasses by Dissolved Gases by RSK-175

Sample Matrix	LIQUID	**Fraction**	GASES
Lab Smp Id	ICV	**Client Smp ID**	ICV
Data Type	GC DATA	**SampleType**	METHSPIKE
File ID	008.D	**Inj Date**	24-JAN-2017 1205

Compound	Conc Added	Conc 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	

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Form 7

Continuing Calibration Verification (CCV)

Dissolved Gasses by Dissolved Gases by RSK-175

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

ALS Environmental–Houston Laboratory
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Phone (281) 530-5656 Fax (281) 530-5887
www.alsglobal.com

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID FID-4_448812

Dissolved Gasses by Dissolved Gases by RSK-175

Instrument ID FID-4.i
Lab File ID 001.D
Analysis Type WATER
Lab Sample ID RSK-CCV

Injection Date 10-OCT-2023 0813
ICAL Date(s) 24-JAN-2017, 24-JAN-2017
ICAL Times 09:06, 11:13
Quant Type ESTD

Compound	$\overline{RRF}$ / Conc	RF250	CCV RRF250	Min RRF	%D / %DRIFT	Max %D / %DRIFT	CURVE TYPE	Q
Methane	975	783	783	0.010	19.69807	20.0	Averaged	
Ethene	586	580	580	0.010	0.96315	20.0	Averaged	
Ethane	719	795	795	0.010	-10.47815	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID FID-4_448812

Dissolved Gasses by Dissolved Gases by RSK-175

Instrument ID FID-4.i
Lab File ID 011.D
Analysis Type WATER
Lab Sample ID RSK-CCV

Injection Date 10-OCT-2023 1016
ICAL Date(s) 24-JAN-2017, 24-JAN-2017
ICAL Times 09:06, 11:13
Quant Type ESTD

Compound	$\overline{RRF}$ / Conc	RF250	CCV RRF250	Min RRF	%D / %DRIFT	Max %D / %DRIFT	CURVE TYPE	Q
Methane	975	815	815	0.010	16.40221	20.0	Averaged	
Ethene	586	622	622	0.010	-6.10874	20.0	Averaged	
Ethane	719	805	805	0.010	-11.85701	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID FID-4_448812

Dissolved Gasses by Dissolved Gases by RSK-175

Instrument ID FID-4.i
Lab File ID 022.D
Analysis Type WATER
Lab Sample ID RSK-CCV

Injection Date 10-OCT-2023 1236
ICAL Date(s) 24-JAN-2017, 24-JAN-2017
ICAL Times 09:06, 11:13
Quant Type ESTD

Compound	$\overline{RRF}$ / Conc	RF250	CCV RRF250	Min RRF	%D / %DRIFT	Max %D / %DRIFT	CURVE TYPE	Q
Methane	975	832	832	0.010	14.70112	20.0	Averaged	
Ethene	586	618	618	0.010	-5.44005	20.0	Averaged	
Ethane	719	803	803	0.010	-11.56429	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID FID-4_448812

Dissolved Gasses by Dissolved Gases by RSK-175

Instrument ID FID-4.i
Lab File ID 033.D
Analysis Type WATER
Lab Sample ID RSK-CCV

Injection Date 10-OCT-2023 1526
ICAL Date(s) 24-JAN-2017, 24-JAN-2017
ICAL Times 09:06, 11:13
Quant Type ESTD

Compound	$\overline{RRF}$ / Conc	RF250	CCV RRF250	Min RRF	%D / %DRIFT	Max %D / %DRIFT	CURVE TYPE	Q
Methane	975	808	808	0.010	17.11454	20.0	Averaged	
Ethene	586	617	617	0.010	-5.38939	20.0	Averaged	
Ethane	719	792	792	0.010	-10.11611	20.0	Averaged	

Continuing Calibration Verification (CCV)

Client Bhate Environmental Associates, Inc.
Project LHAAP Site 50

Workorder HS23100159

RunID FID-4_448812

Dissolved Gasses by Dissolved Gases by RSK-175

Instrument ID FID-4.i
Lab File ID 040.D
Analysis Type WATER
Lab Sample ID RSK-CCV

Injection Date 10-OCT-2023 1729
ICAL Date(s) 24-JAN-2017, 24-JAN-2017
ICAL Times 09:06, 11:13
Quant Type ESTD

Compound	$\overline{RRF}$ / Conc	RF250	CCV RRF250	Min RRF	%D / %DRIFT	Max %D / %DRIFT	CURVE TYPE	Q
Methane	975	787	787	0.010	19.27279	20.0	Averaged	
Ethene	586	609	609	0.010	-3.98110	20.0	Averaged	
Ethane	719	787	787	0.010	-9.40742	20.0	Averaged	

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Analysis Run Log

Dissolved Gasses by Dissolved Gases by RSK-175

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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.

Project LHAAP Site 50

Workorder
HS23100159

RunID
FID-4-322102

Dissolved Gasses by Dissolved Gases by RSK-175

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 Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder
HS23100159

RunID
FID-4-448812

Dissolved Gasses by Dissolved Gases by RSK-175

Run ID FID-4_448812 **Start Date** 10/10/23 **EndDate** 10/10/23

Inj. Time	Client Sample ID	Type	Lab Sample ID	File ID	Analysis Date	DF
08:13	RSK-CCV	CCV	RSK-CCV	001.D	10/10/23	1
08:24	MBLK-231010	MBLK	MBLK-231010	002.D	10/10/23	1
08:40	LCS-231010	LCS	LCS-231010	003.D	10/10/23	1
08:56	LCSD-231010	LCSD	LCSD-231010	004.D	10/10/23	1
09:31	HS23100159-10	SAMP	50WW14_100323	007.D	10/10/23	1
09:40	HS23100159-11	SAMP	50WW13_100323	008.D	10/10/23	1
09:48	HS23100159-12	SAMP	50WW13_100323_a	009.D	10/10/23	1
10:04	HS23100159-13	SAMP	50WW11_100323	010.D	10/10/23	1
10:16	RSK-CCV	CCV	RSK-CCV	011.D	10/10/23	1
10:27	HS23100159-14	SAMP	50WW11_100323_a	012.D	10/10/23	1
10:40	HS23100159-15	SAMP	50WW06_100323	013.D	10/10/23	1
10:53	HS23100159-16	SAMP	50WW12_100323	014.D	10/10/23	1
11:02	HS23100159-11DUP	DUP	HS23100159-11DUP	015.D	10/10/23	1
11:13	HS23100159-13	SAMP	50WW11_100323	016.D	10/10/23	50
11:27	HS23100159-14	SAMP	50WW11_100323_a	017.D	10/10/23	50
11:40	HS23100159-15	SAMP	50WW06_100323	018.D	10/10/23	10
11:50	HS23100159-16	SAMP	50WW12_100323	019.D	10/10/23	500
12:11	HS23100325-01	SAMP	ZZZZZZZZZZ	020.D	10/10/23	1
12:26	HS23100325-02	SAMP	ZZZZZZZZZZ	021.D	10/10/23	1
12:36	RSK-CCV	CCV	RSK-CCV	022.D	10/10/23	1
12:50	HS23100325-03	SAMP	ZZZZZZZZZZ	023.D	10/10/23	1
13:10	HS23100325-04	SAMP	ZZZZZZZZZZ	024.D	10/10/23	1
13:29	HS23100491-14	SAMP	ZZZZZZZZZZ	025.D	10/10/23	1
13:38	HS23100491-17	SAMP	ZZZZZZZZZZ	026.D	10/10/23	1
13:47	HS23100491-18	SAMP	ZZZZZZZZZZ	027.D	10/10/23	1
13:59	HS23100491-19	SAMP	ZZZZZZZZZZ	028.D	10/10/23	1
14:13	HS23100491-31	SAMP	ZZZZZZZZZZ	029.D	10/10/23	1
14:23	HS23100491-32	SAMP	ZZZZZZZZZZ	030.D	10/10/23	1
14:42	HS23100491-36	SAMP	ZZZZZZZZZZ	031.D	10/10/23	1
15:01	HS23100491-14	SAMP	ZZZZZZZZZZ	032.D	10/10/23	100
15:26	RSK-CCV	CCV	RSK-CCV	033.D	10/10/23	1
15:39	HS23100491-17	SAMP	ZZZZZZZZZZ	034.D	10/10/23	500
15:50	HS23100491-18	SAMP	ZZZZZZZZZZ	035.D	10/10/23	50
16:10	HS23100491-19	SAMP	ZZZZZZZZZZ	036.D	10/10/23	500
16:30	HS23100491-31	SAMP	ZZZZZZZZZZ	037.D	10/10/23	100
17:01	HS23100491-32	SAMP	ZZZZZZZZZZ	038.D	10/10/23	20
17:19	HS23100491-36	SAMP	ZZZZZZZZZZ	039.D	10/10/23	200
17:29	RSK-CCV	CCV	RSK-CCV	040.D	10/10/23	1

Form 13 - Analysis Run Log

Client Bhate Environmental Associates, Inc.

Project LHAAP Site 50

Workorder

HS23100159

RunID

FID-4-448812

Dissolved Gasses by Dissolved Gases by RSK-175

right solutions.
right partner.

Raw Data FID 4 322102

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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).

01332324

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\001.D

Date : 24-JAN-2017 09:06

Client ID: ICAL1

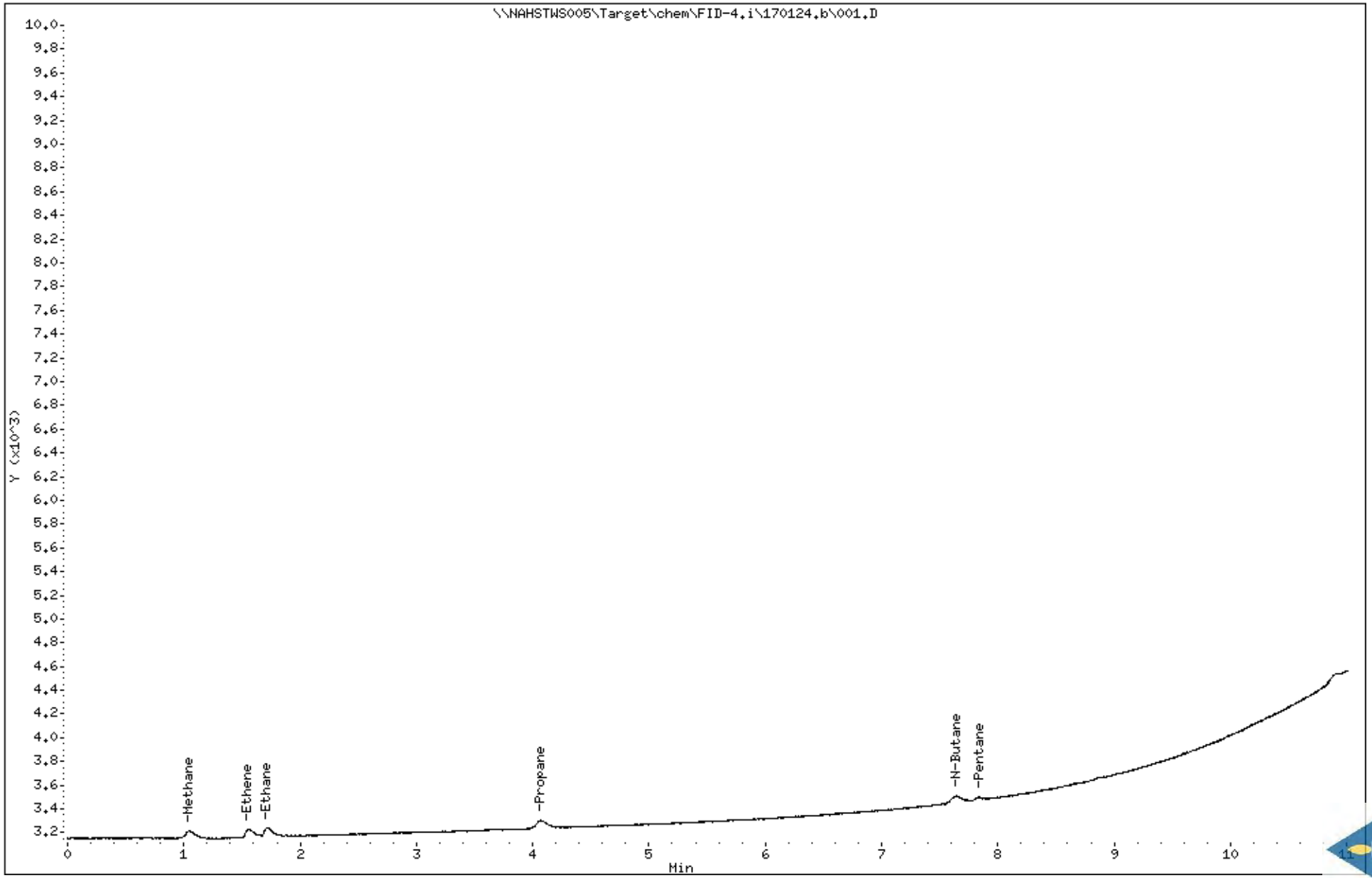
Instrument: FID-4.i

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

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\002.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\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

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\002.D

Date : 24-JAN-2017 09:30

Client ID: ICAL2

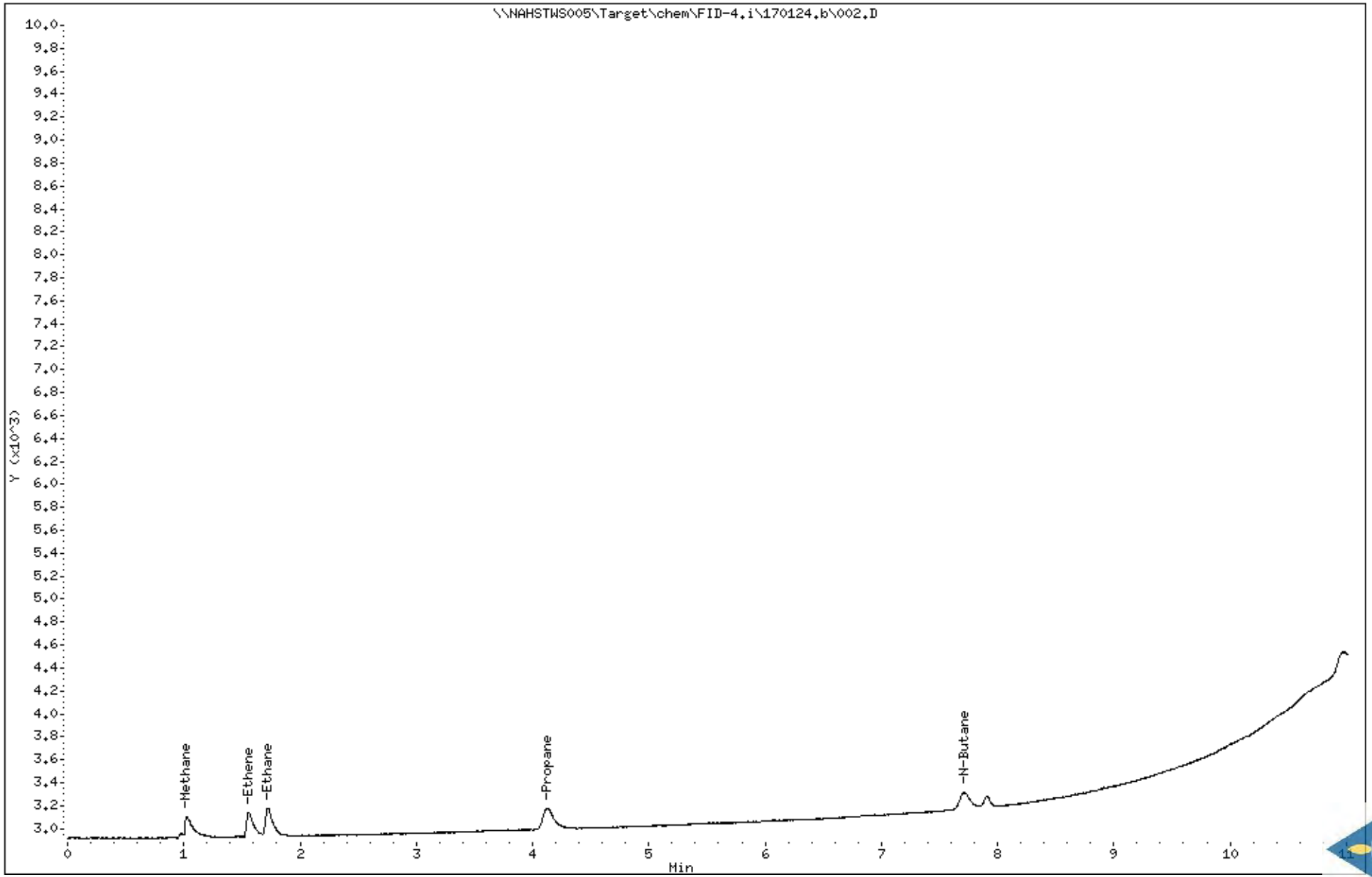
Instrument: FID-4.i

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

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\003.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\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)	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

01332330

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\003.D

Date : 24-JAN-2017 09:59

Client ID: ICAL3

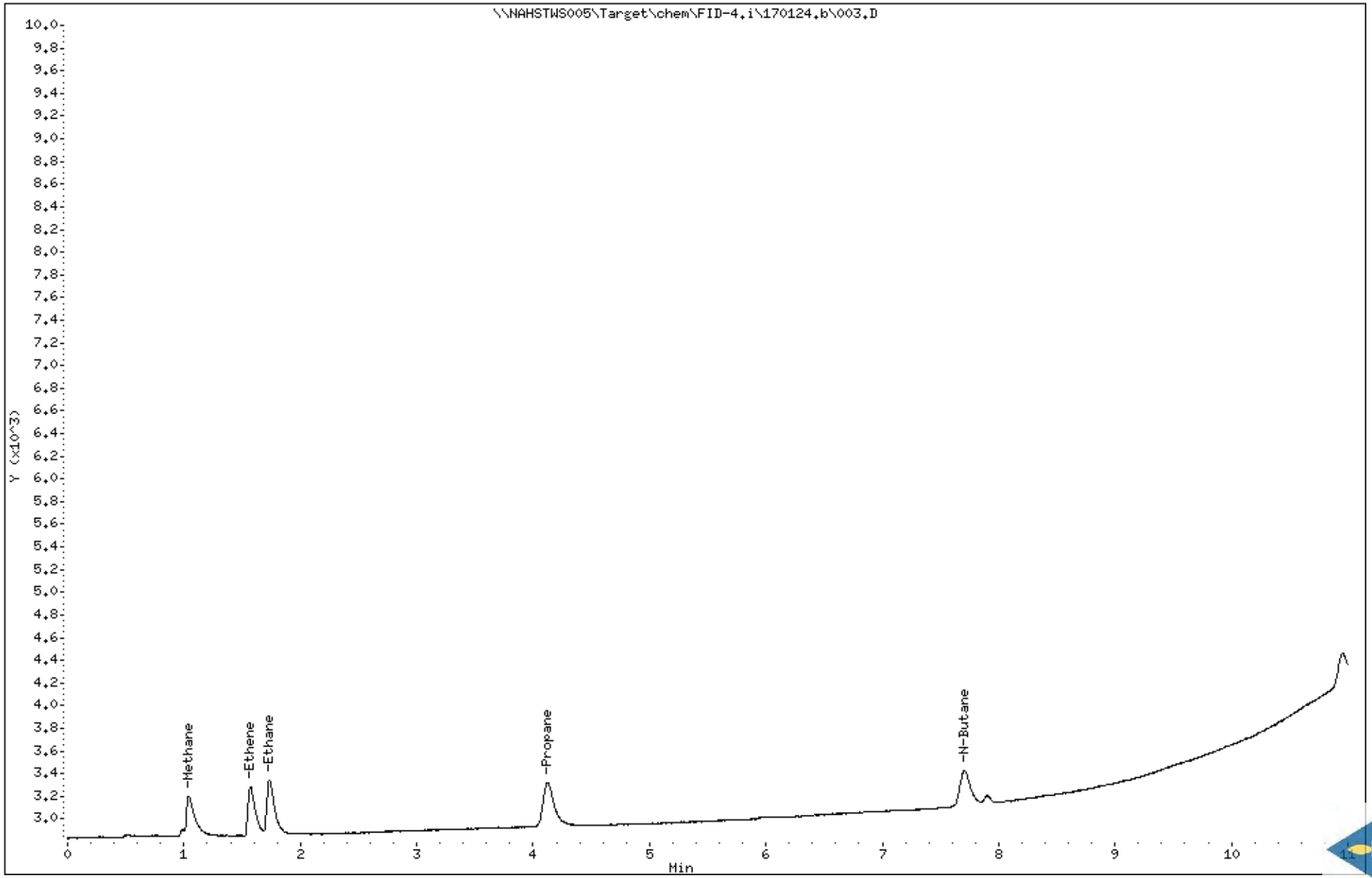
Instrument: FID-4.i

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.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\004.D

Date : 24-JAN-2017 10:15

Client ID: ICAL4

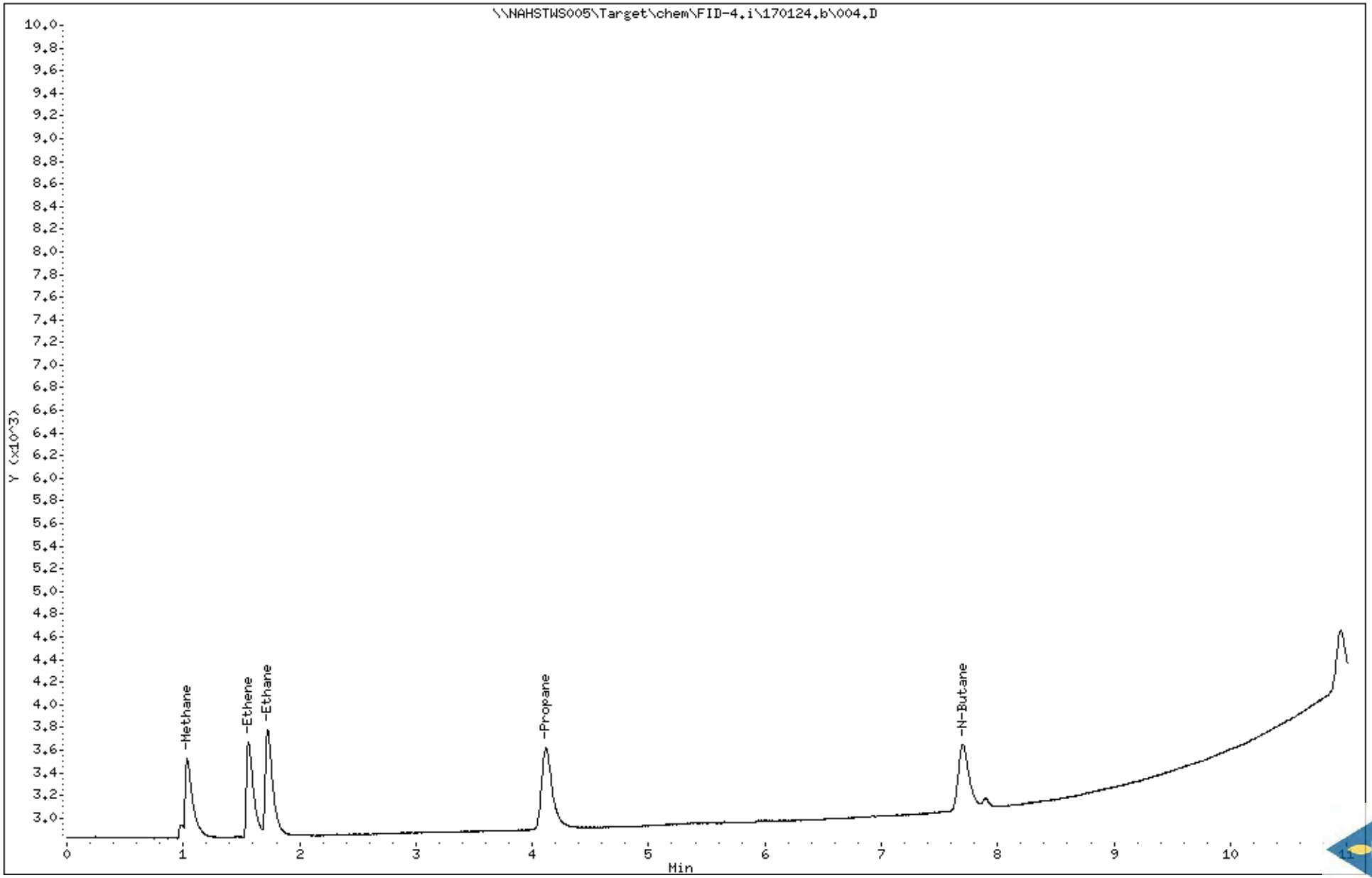
Instrument: FID-4.i

Sample Info: ICAL4;ICAL4;;;

Operator: MA

Column phase: Rtx-PLOT

Column diameter: 0.53



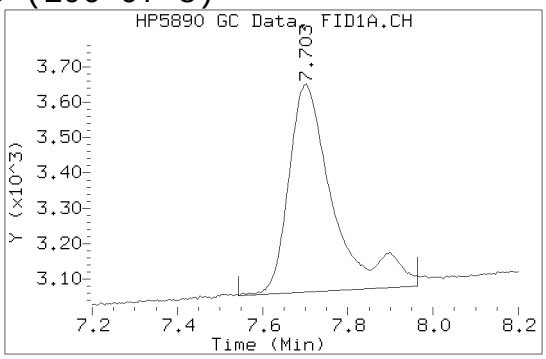
Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\004.D
Inj Date : 24-JAN-2017 10:15
InstruID : FID-4.i
LabSampID : ICAL4

N-Butane (106-97-8)

Reason Code:

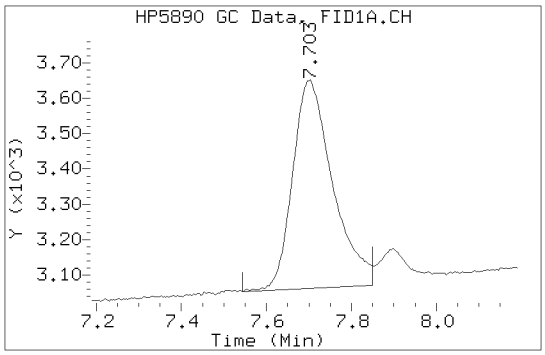
BEFORE

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.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\005.D

Date : 24-JAN-2017 10:39

Client ID: ICAL5

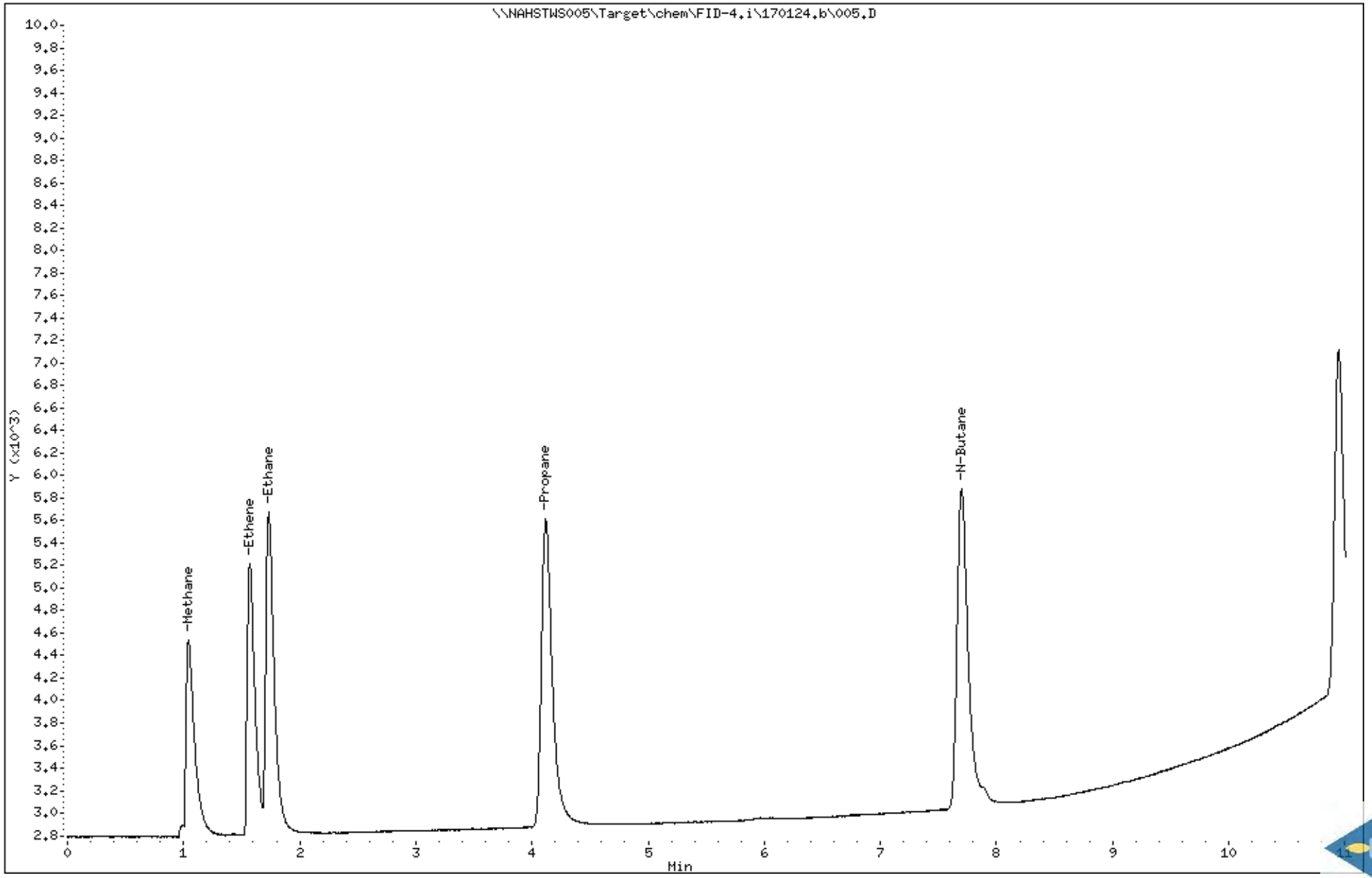
Instrument: FID-4.i

Sample Info: ICAL5;ICAL5;;;

Operator: MA

Column phase: Rtx-PLOT

Column diameter: 0.53



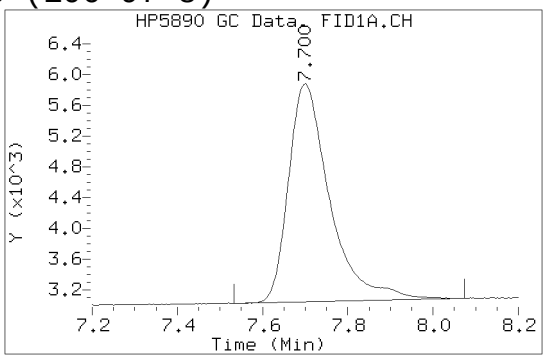
Data File : \\NAHSTWS005\Target\chem\FID-4.i\170124.b\005.D
Inj Date : 24-JAN-2017 10:39
InstruID : FID-4.i
LabSampID : ICAL5

N-Butane (106-97-8)

Reason Code:

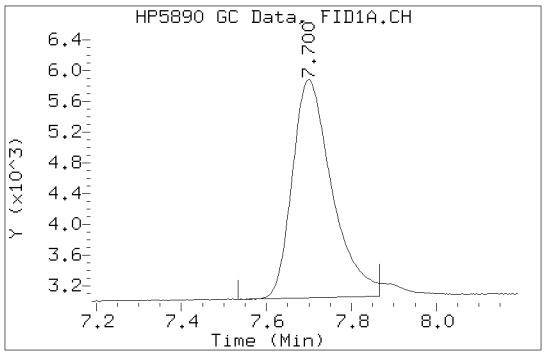
BEFORE

MASS
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AREA
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HEIGHT
2839
28-Sep-2022
10:02
linh
pham



AFTER

MASS
100
AREA
18446
HEIGHT
2838
28-Sep-2022
10:02
linh
pham



Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\006.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\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)	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

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\006.D

Date : 24-JAN-2017 10:57

Client ID: ICAL6

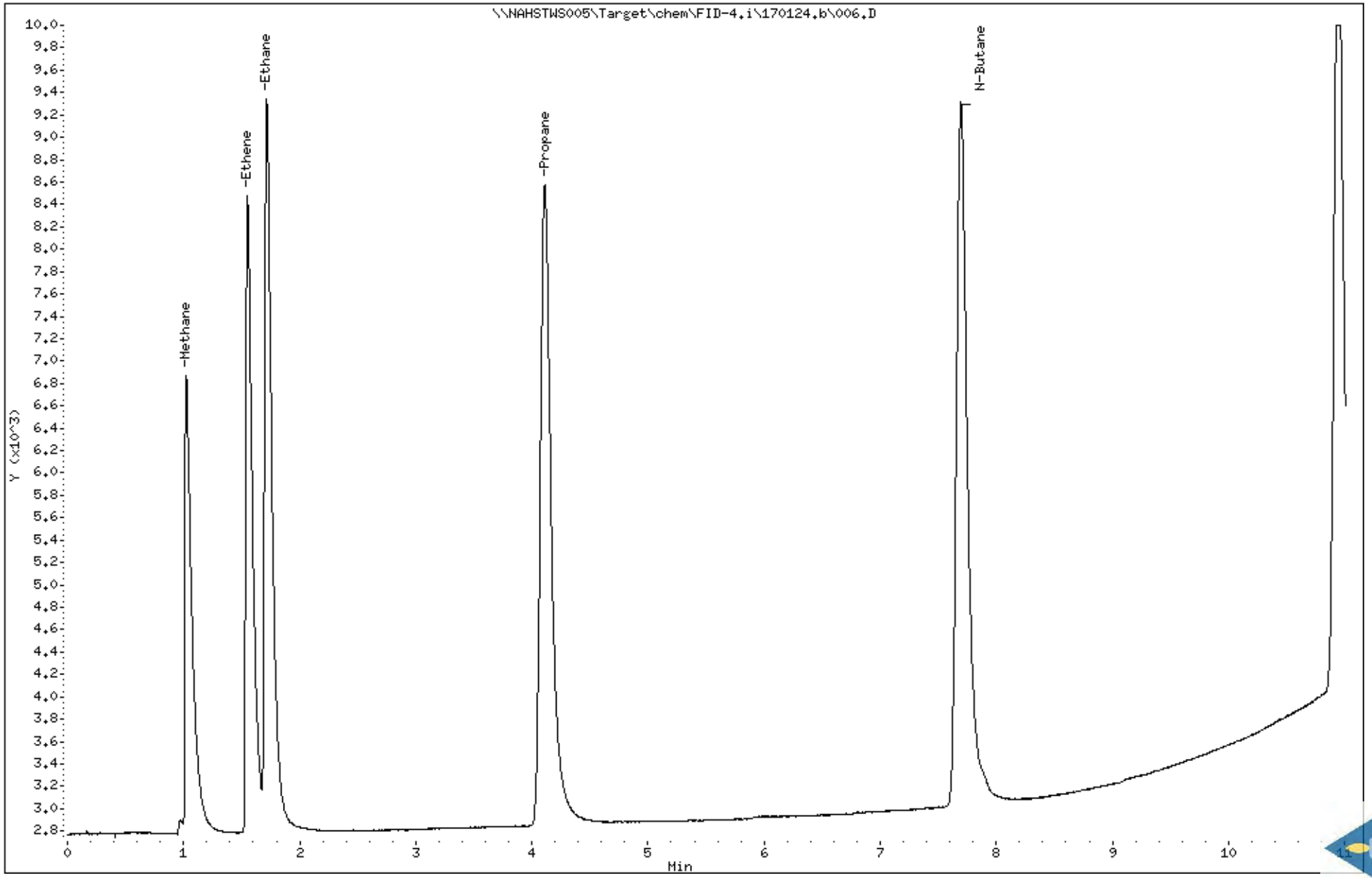
Instrument: FID-4.i

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.

01332342

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\007.D

Page 1

Date : 24-JAN-2017 11:13

Client ID: ICAL7

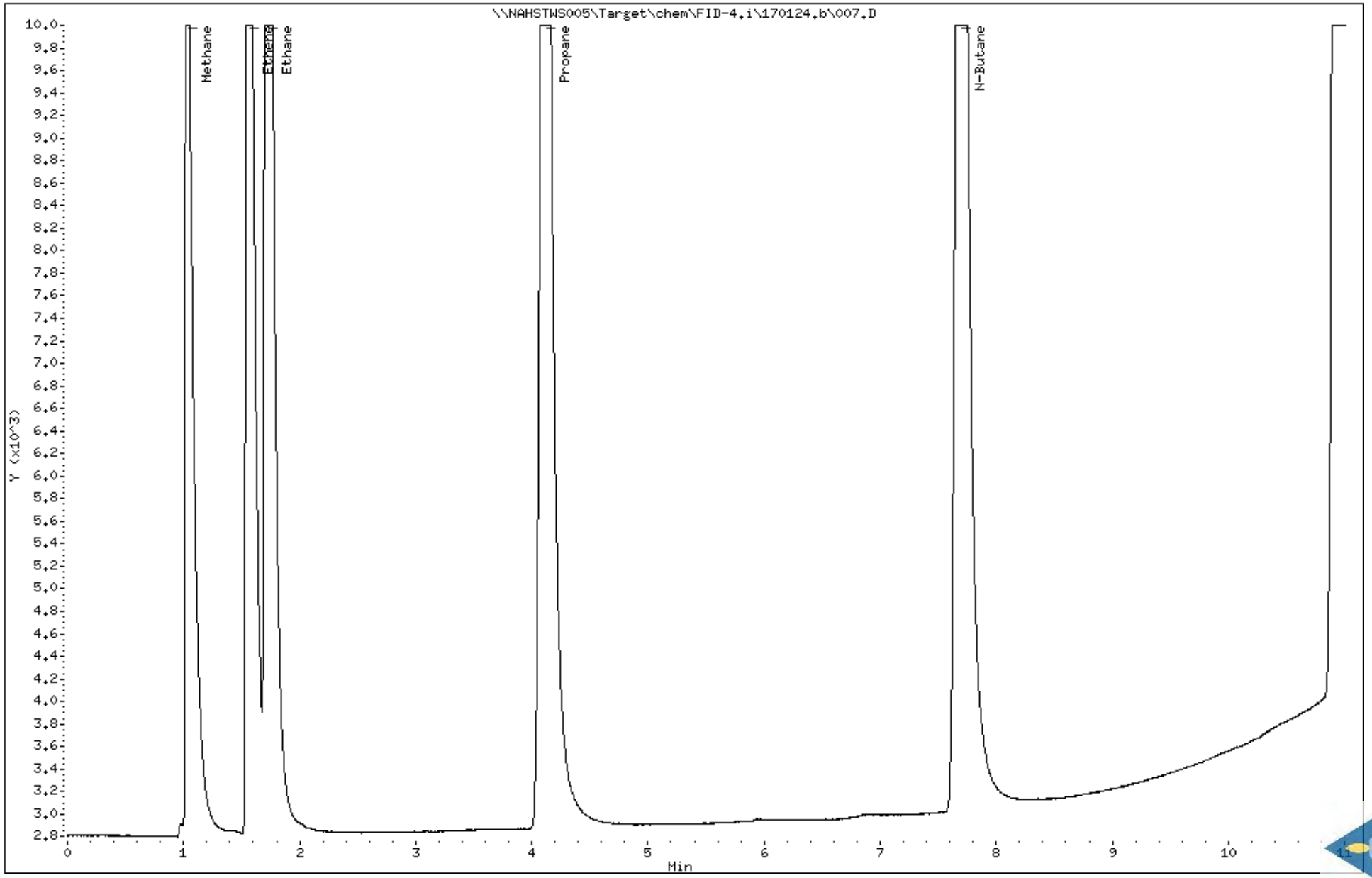
Instrument: FID-4.i

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

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(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

01332345

Data File: \\NAHSTWS005\Target\chem\FID-4.i\170124.b\008.D

Page 1

Date : 24-JAN-2017 12:05

Client ID: ICV

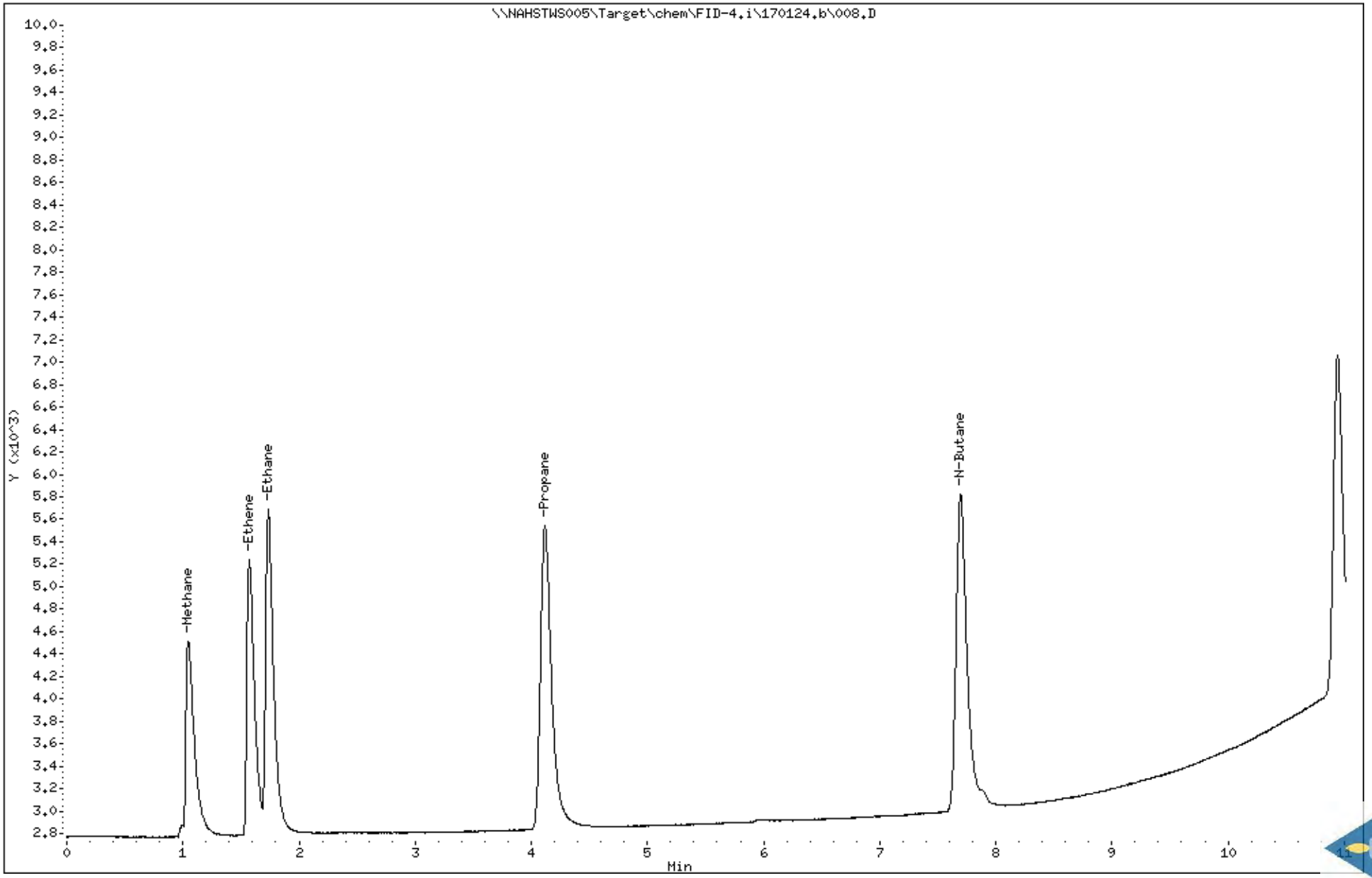
Instrument: FID-4.i

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

right solutions.
right partner.

Raw Data FID 4 448812

Workorder

HS23100159

Client

Bhate Environmental Associates, Inc.

Project

LHAAP Site 50

10/18/2023

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\231010.b\001.D Page 1
Report Date: 10-Oct-2023 08:25

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\001.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 10-OCT-2023 08:13
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\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 08:25 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	0.423	0.423	0.000	7553	9.64700	7.746
2 Ethene	0.626	0.626	0.000	9775	16.8500	16.687
3 Ethane	0.693	0.693	0.000	14342	18.0430	19.933

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\001.D

Date : 10-OCT-2023 08:13

Client ID: RSK-CCV

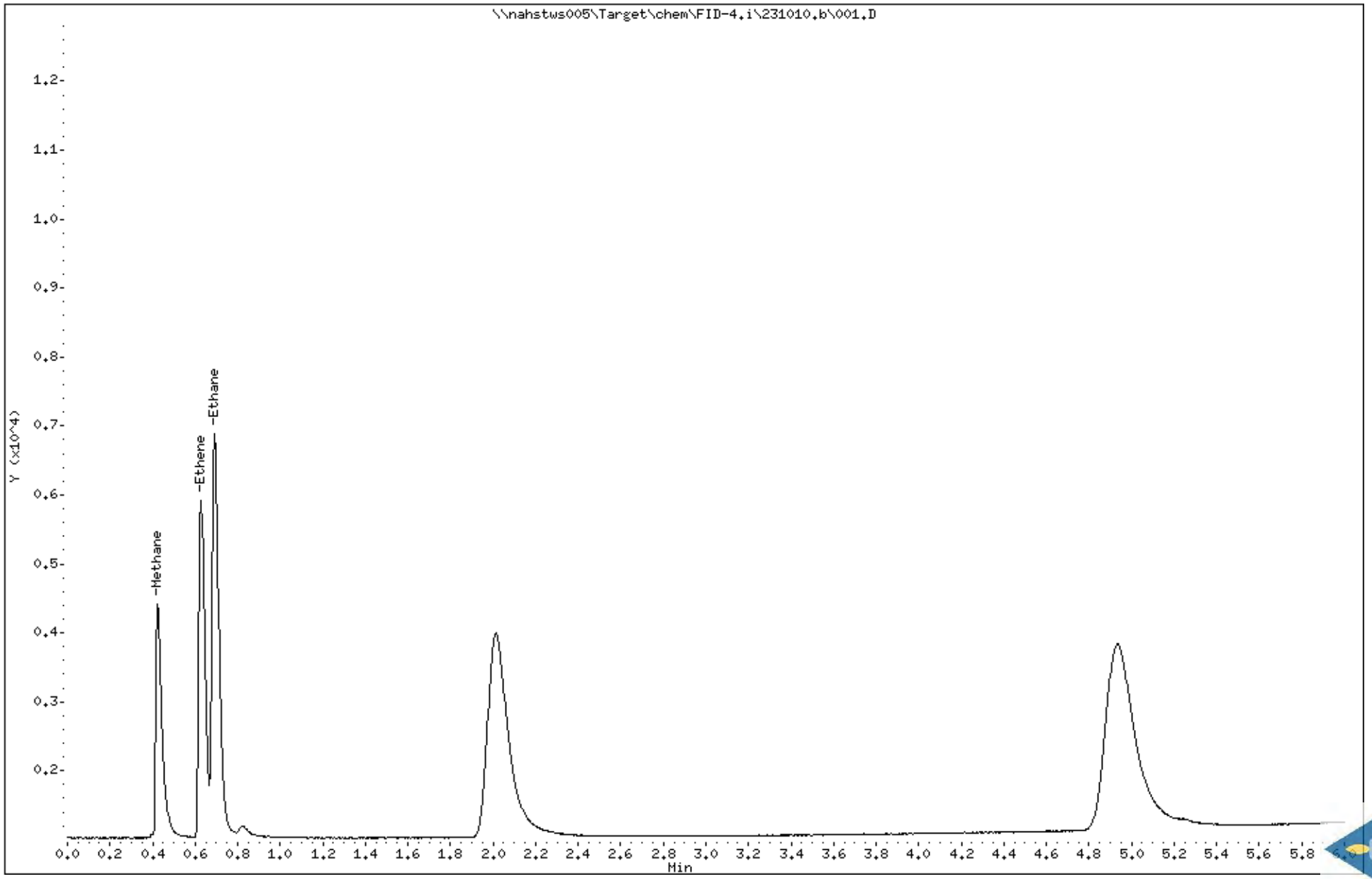
Instrument: FID-4.i

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\231010.b\001.D
Inj Date : 10-OCT-2023 08:13
InstruID : FID-4.i
LabSampID : RSK-CCV

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\002.D Page 1
Report Date: 10-Oct-2023 08:55

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\002.D
Lab Smp Id: MBLK-231010 Client Smp ID: MBLK-231010
Inj Date : 10-OCT-2023 08:24
Operator : PL Inst ID: FID-4.i
Smp Info : MBLK-231010;MBLK-231010;3;;BLANK
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 08:25 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)

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\002.D

Date : 10-OCT-2023 08:24

Client ID: MBLK-231010

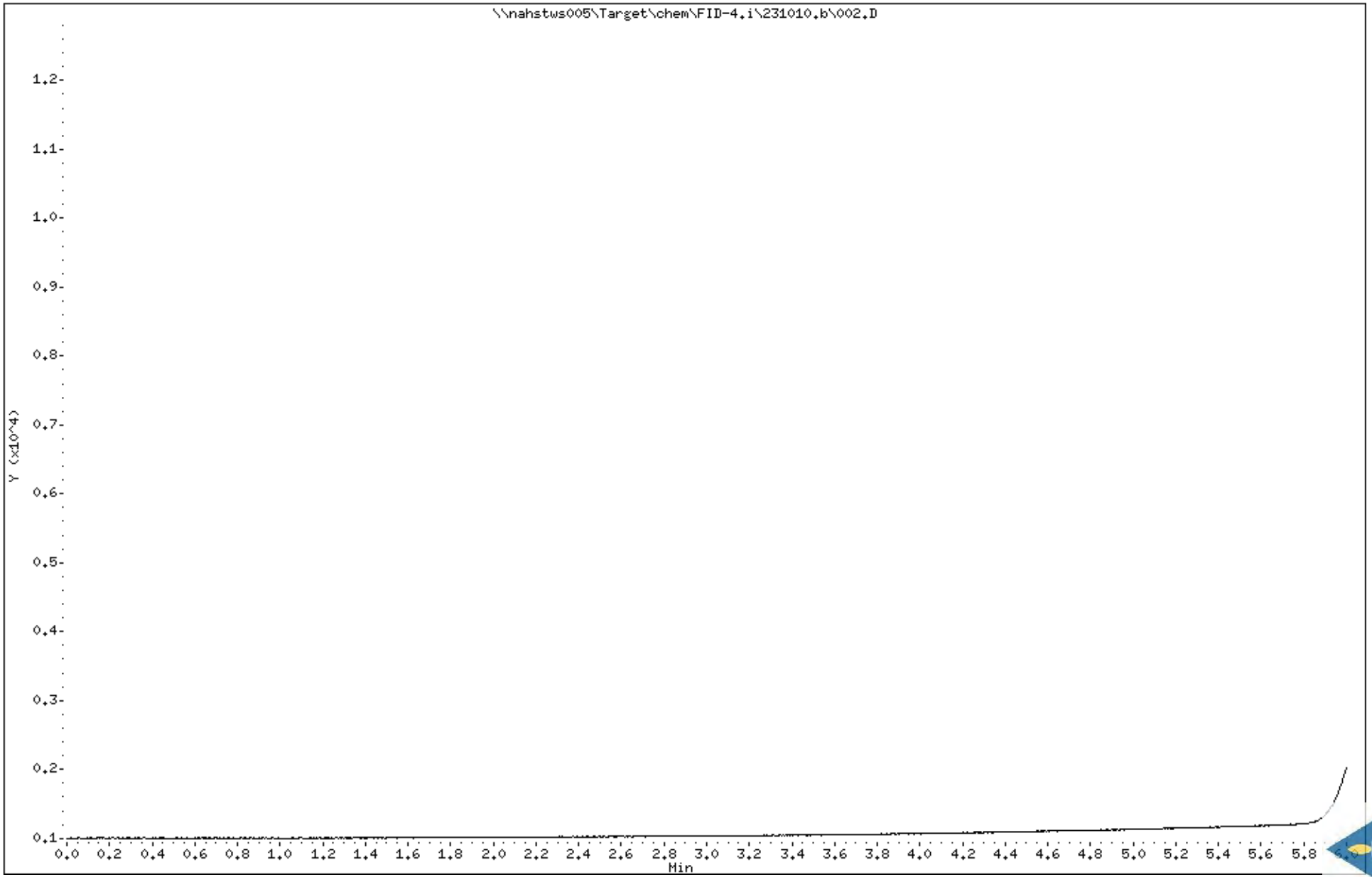
Instrument: FID-4.i

Sample Info: MBLK-231010;MBLK-231010;3;;BLANK

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\002.D
Inj Date : 10-OCT-2023 08:24
InstruID : FID-4.i
LabSampID : MBLK-231010

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\003.D Page 1
Report Date: 10-Oct-2023 08:56

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\003.D
Lab Smp Id: LCS-231010 Client Smp ID: LCS-231010
Inj Date : 10-OCT-2023 08:40
Operator : PL Inst ID: FID-4.i
Smp Info : LCS-231010;LCS-231010;3;;LCS
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 08:25 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: 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	0.426	0.423	0.003	7525	7.71801	7.718
2 Ethene	0.630	0.626	0.004	10045	17.1486	17.148(M)
3 Ethane	0.696	0.693	0.003	14250	19.8057	19.805(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\003.D

Page 1

Date : 10-OCT-2023 08:40

Client ID: LCS-231010

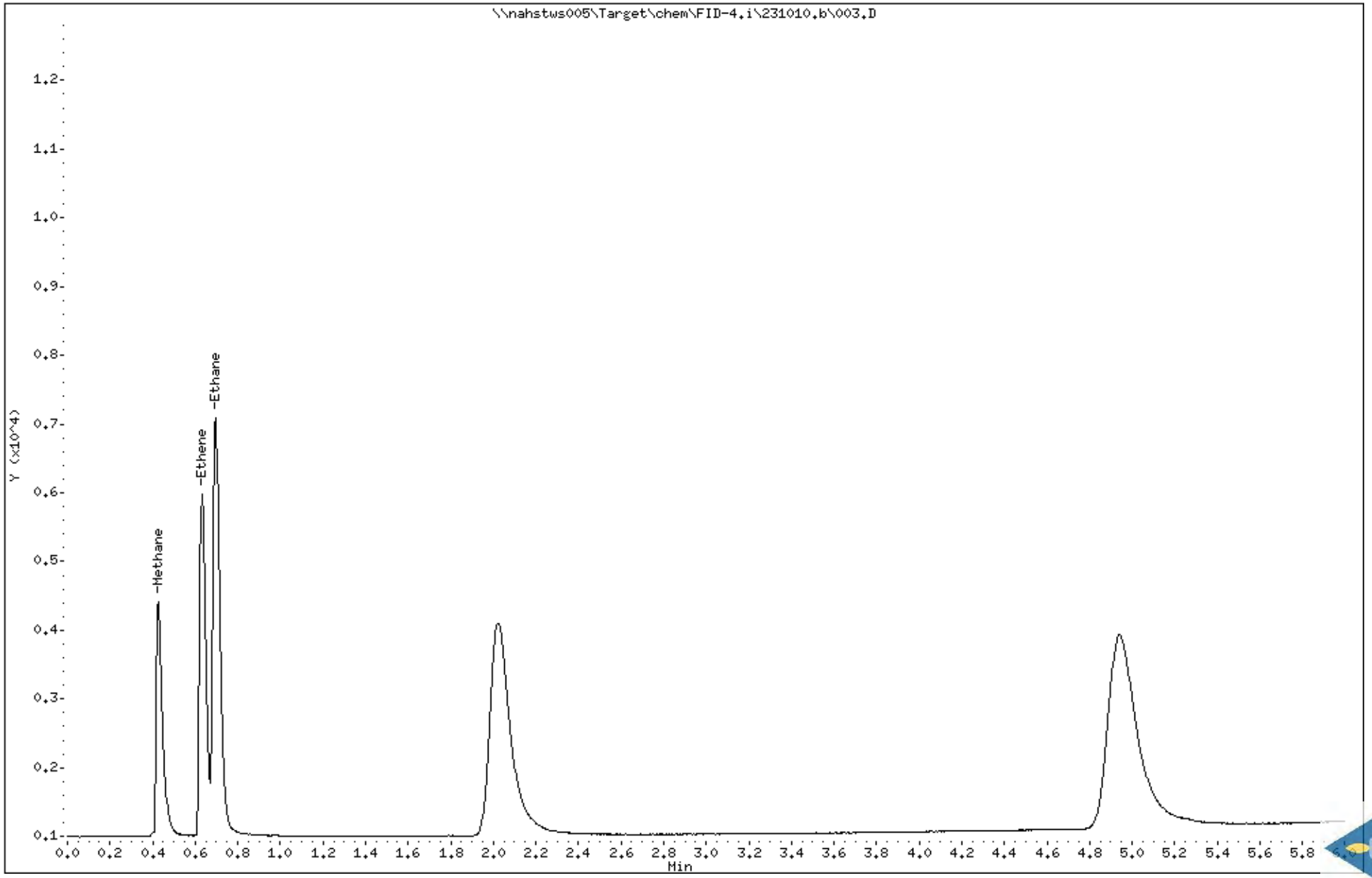
Instrument: FID-4.i

Sample Info: LCS-231010;LCS-231010;3;;LCS

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



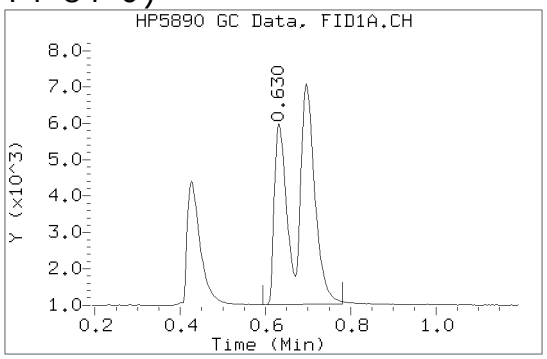
Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\003.D
Inj Date : 10-OCT-2023 08:40
InstruID : FID-4.i
LabSampID : LCS-231010

Ethane (74-84-0)

Reason Code:

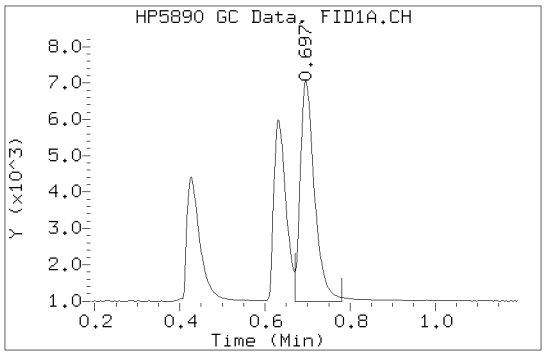
BEFORE

MASS
44
AREA
23786
HEIGHT
4967
10-Oct-2023
08:47
ALSHS
Server



AFTER

MASS
44
AREA
14250
HEIGHT
6098
10-Oct-2023
08:56
ALSHS
Ser

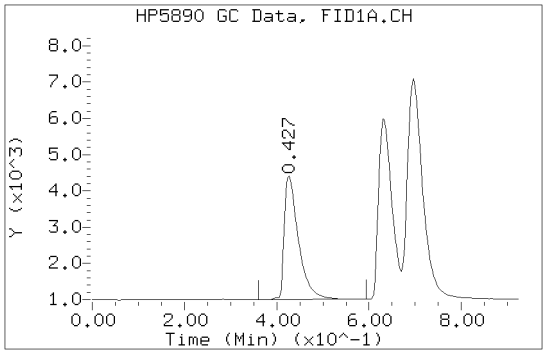


Ethene (74-85-1)

Reason Code:

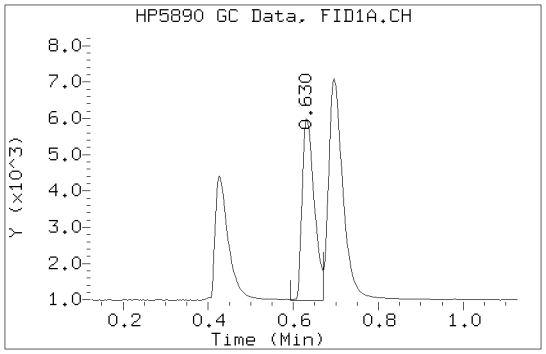
BEFORE

MASS
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AREA
0
HEIGHT
0
10-Oct-2023
08:47
ALSHS
Server



AFTER

MASS
100
AREA
10045
HEIGHT
4991
10-Oct-2023
08:56
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\004.D Page 1
Report Date: 10-Oct-2023 10:32

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\004.D
Lab Smp Id: LCSD-231010 Client Smp ID: LCSD-231010
Inj Date : 10-OCT-2023 08:56
Operator : PL Inst ID: FID-4.i
Smp Info : LCSD-231010;LCSD-231010;3;;LCSD
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:25 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 4 QC Sample: LCSD
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

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.426	0.423	0.003	7666	7.86263	7.862
3 Ethane	0.630	0.630	0.000	24468	34.0074	34.007(R)

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

01332358

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\004.D

Page 1

Date : 10-OCT-2023 08:56

Client ID: LCSD-231010

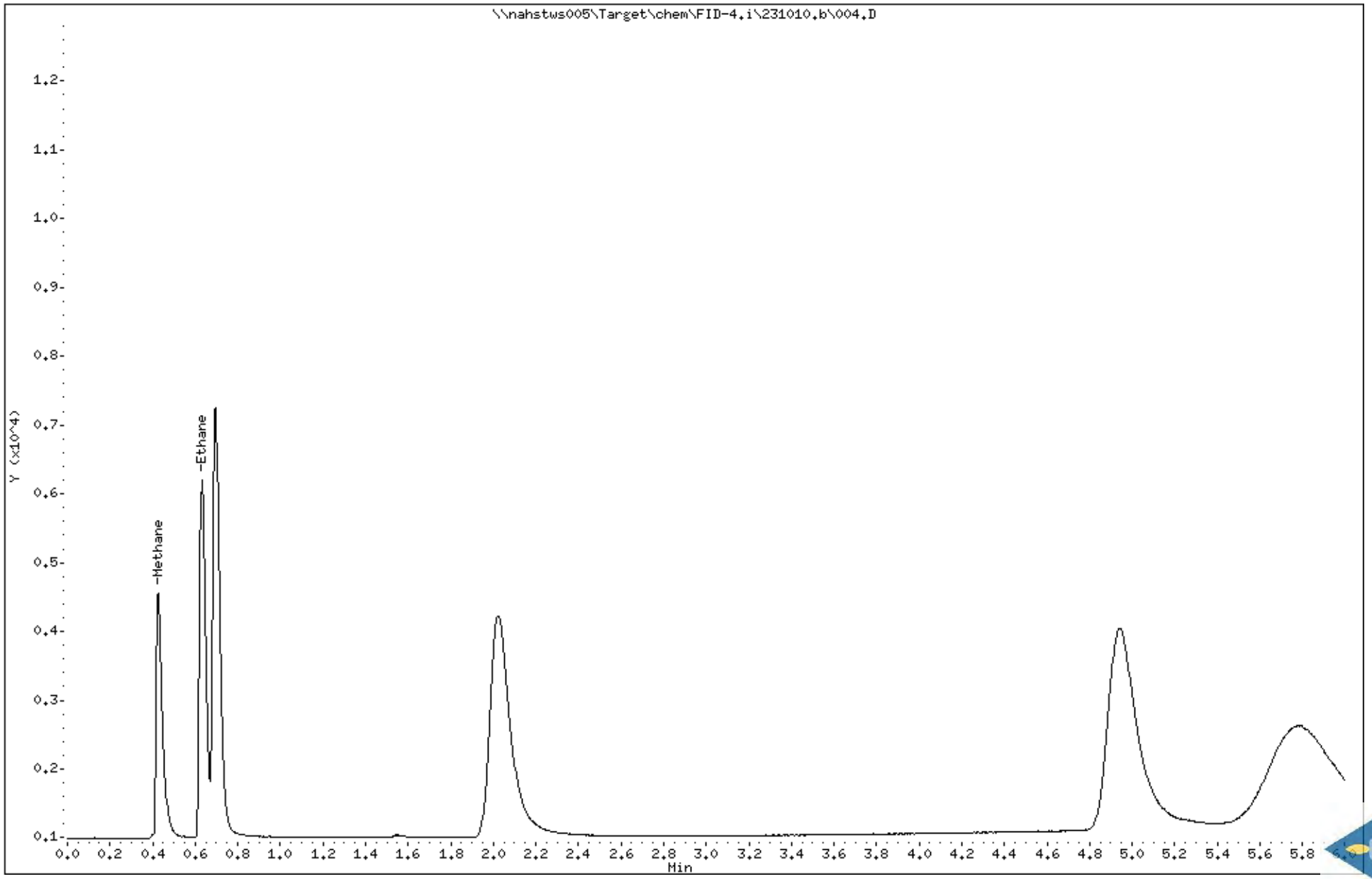
Instrument: FID-4.i

Sample Info: LCSD-231010;LCSD-231010;3;;LCSD

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\004.D
Inj Date : 10-OCT-2023 08:56
InstruID : FID-4.i
LabSampID : LCSD-231010

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\007.D Page 1
Report Date: 10-Oct-2023 10:32

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\007.D
Lab Smp Id: HS23100159-10 Client Smp ID: HS23100159-10
Inj Date : 10-OCT-2023 09:31
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-10;HS23100159-10
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:25 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

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.426	0.423	0.003	5263	5.39799	5.397

Data File: \\nahstws005\target\chem\fid-4.i\231010.b\007.d

Date : 10-OCT-2023 09:31

Client ID: HS23100159-10

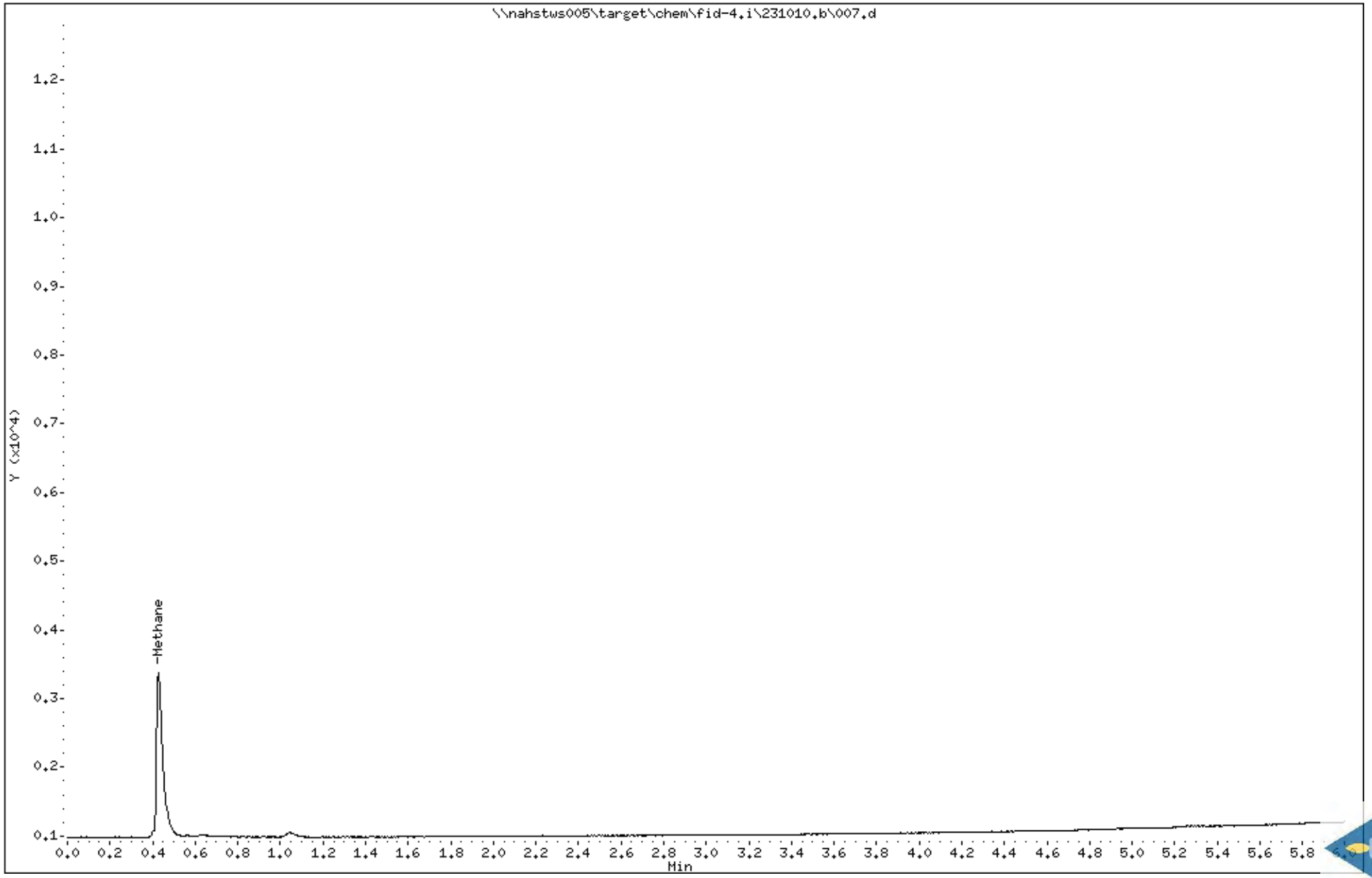
Instrument: FID-4.i

Sample Info: HS23100159-10;HS23100159-10

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\target\chem\fid-4.i\231010.b\007.d
Inj Date : 10-OCT-2023 09:31
InstruID : FID-4.i
LabSampID : HS23100159-10

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\008.D Page 1
Report Date: 10-Oct-2023 11:26

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\008.D
Lab Smp Id: HS23100159-11 Client Smp ID: HS23100159-11
Inj Date : 10-OCT-2023 09:40
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-11;HS23100159-11
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 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	0.426	0.423	0.003	24976	25.6166	25.616(M)
2 Ethene	0.630	0.630	0.000	369	0.62995	0.629(M)

QC Flag Legend

M - Compound response manually integrated.

01332364

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\008.D

Page 1

Date : 10-OCT-2023 09:40

Client ID: HS23100159-11

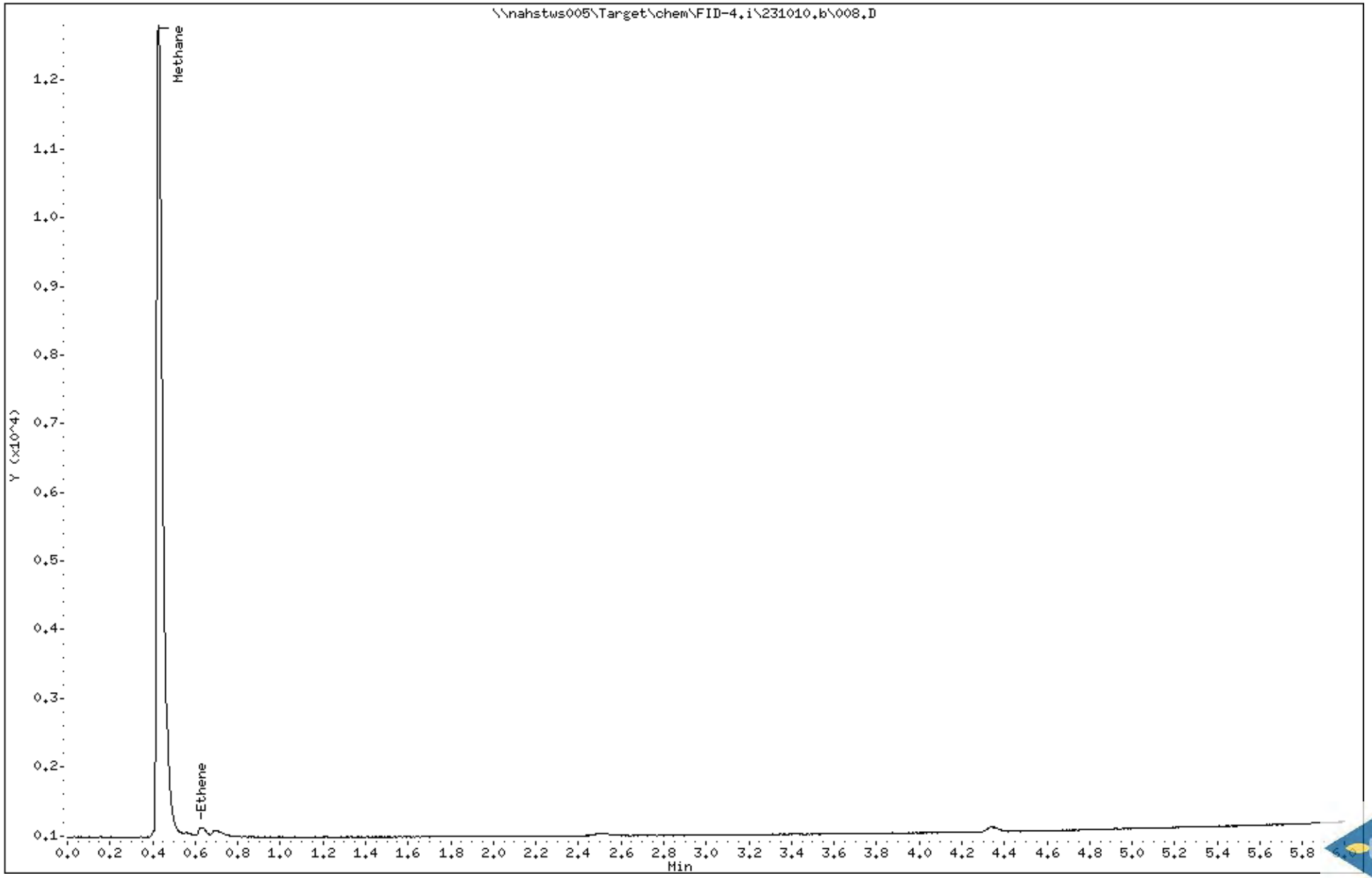
Instrument: FID-4.i

Sample Info: HS23100159-11;HS23100159-11

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



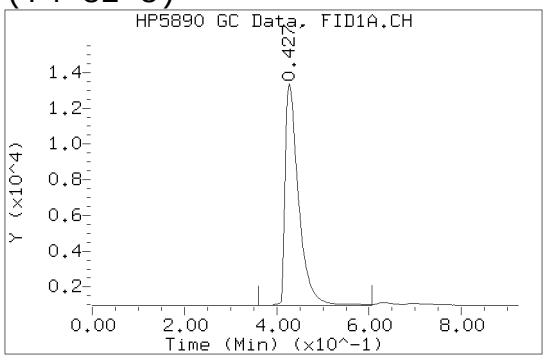
Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\008.D
Inj Date : 10-OCT-2023 09:40
InstruID : FID-4.i
LabSampID : HS23100159-11

Methane (74-82-8)

Reason Code:

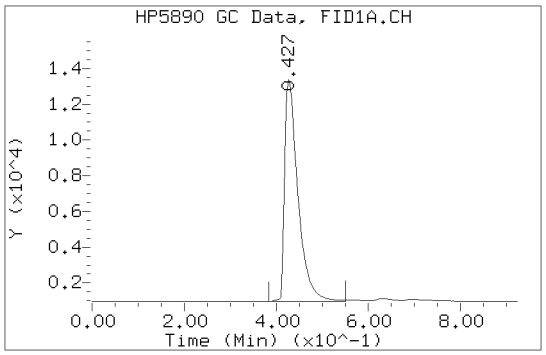
BEFORE

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0
HEIGHT
0
10-Oct-2023
09:47
ALSHS
Server



AFTER

MASS
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AREA
24976
HEIGHT
12402
10-Oct-2023
11:26
ALSHS
Ser

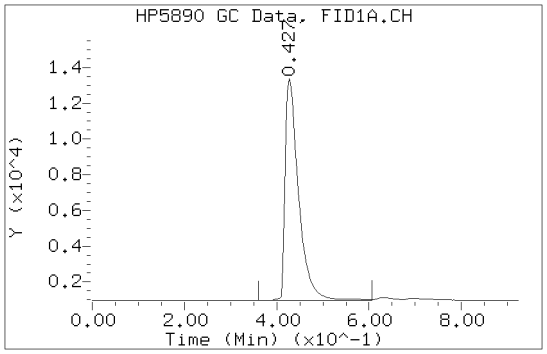


Ethene (74-85-1)

Reason Code:

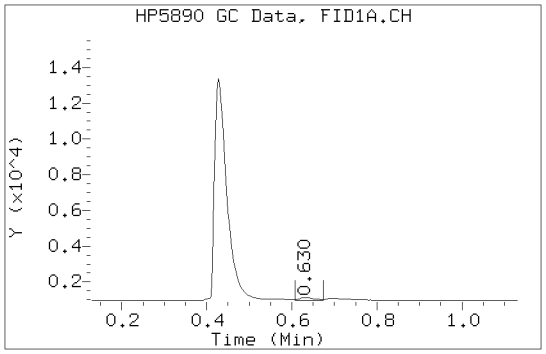
BEFORE

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AREA
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HEIGHT
0
10-Oct-2023
09:47
ALSHS
Server



AFTER

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AREA
369
HEIGHT
143
10-Oct-2023
11:26
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\009.D Page 1
Report Date: 10-Oct-2023 10:38

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\009.D
Lab Smp Id: HS23100159-12 Client Smp ID: HS23100159-12
Inj Date : 10-OCT-2023 09:48
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-12;HS23100159-12
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 9
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	0.426	0.423	0.003	26885	27.5746	27.574(M)
2 Ethene	0.633	0.630	0.003	390	0.66580	0.665(M)
3 Ethane	0.696	0.693	0.003	748	1.03963	1.039(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\target\chem\fid-4.i\231010.b\009.d

Page 1

Date : 10-OCT-2023 09:48

Client ID: HS23100159-12

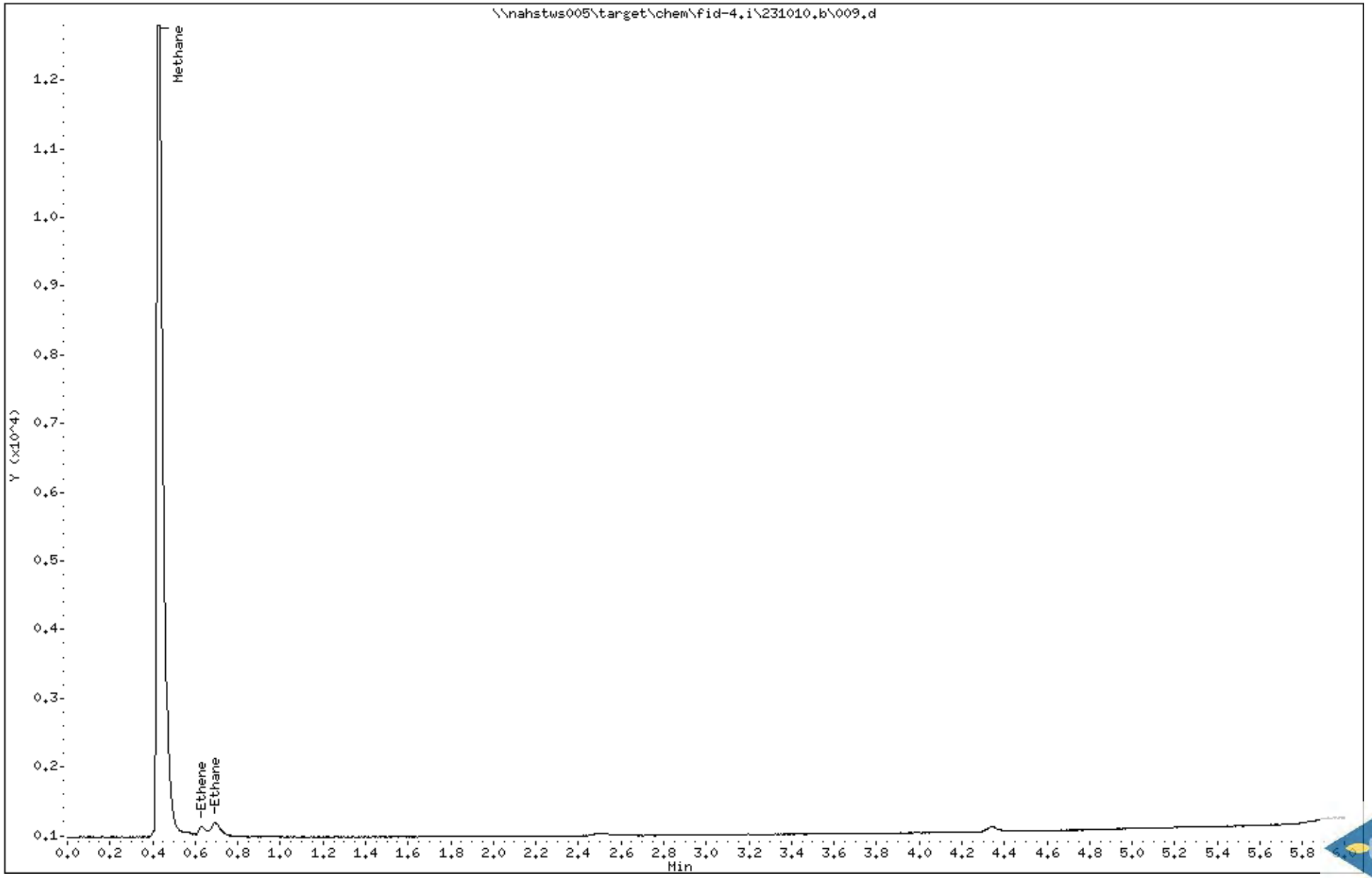
Instrument: FID-4.i

Sample Info: HS23100159-12;HS23100159-12

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



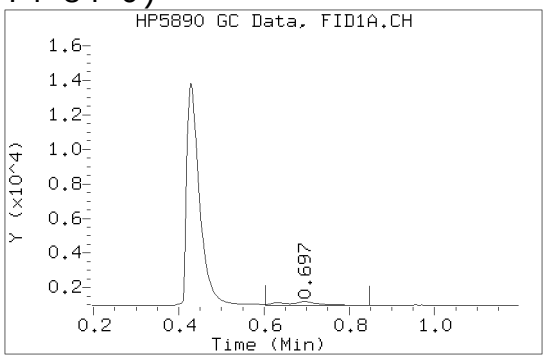
Data File : \\nahstws005\target\chem\fid-4.i\231010.b\009.d
Inj Date : 10-OCT-2023 09:48
InstruID : FID-4.i
LabSampID : HS23100159-12

Ethane (74-84-0)

Reason Code:

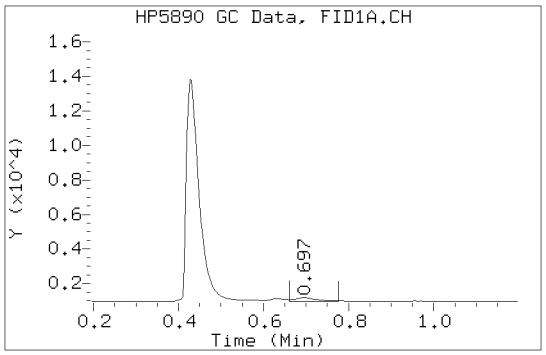
BEFORE

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AREA
1143
HEIGHT
214
10-Oct-2023
09:55
ALSHS
Server



AFTER

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AREA
748
HEIGHT
215
12-Oct-2023
08:20
ALSHS
Ser

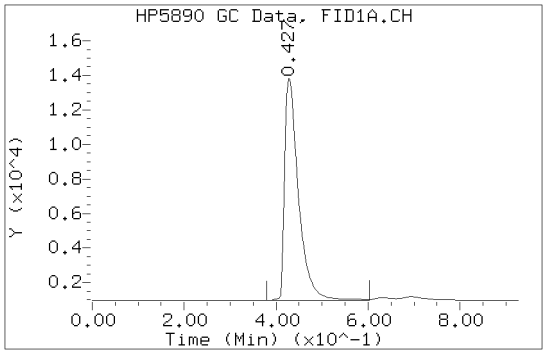


Methane (74-82-8)

Reason Code:

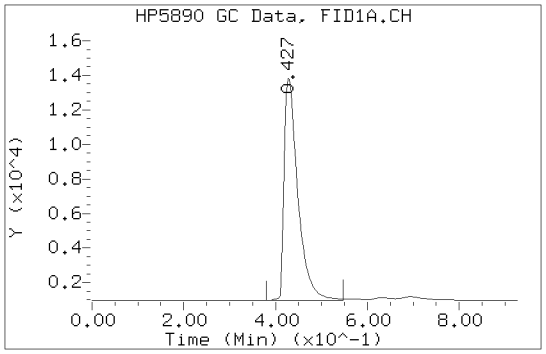
BEFORE

MASS
100
AREA
0
HEIGHT
0
10-Oct-2023
09:55
ALSHS
Server



AFTER

MASS
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AREA
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HEIGHT
12833
12-Oct-2023
08:20
ALSHS
Ser

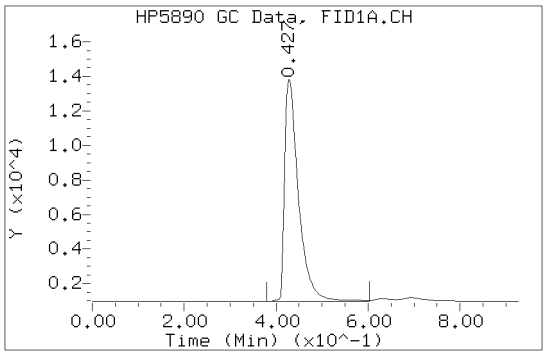


Ethene (74-85-1)

Reason Code:

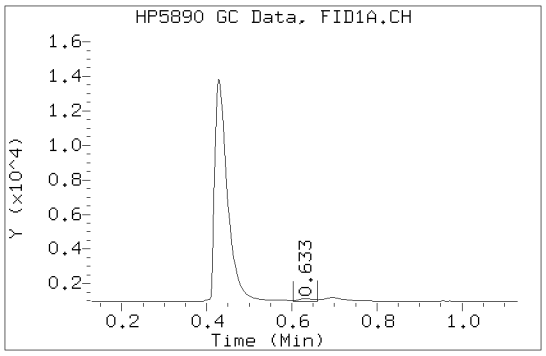
BEFORE

MASS
100
AREA
0
HEIGHT
0
10-Oct-2023
09:55
ALSHS
Server



AFTER

MASS
100
AREA
390
HEIGHT
159
12-Oct-2023
08:20
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\010.D Page 1
Report Date: 10-Oct-2023 10:32

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\010.D
Lab Smp Id: HS23100159-13 Client Smp ID: HS23100159-13
Inj Date : 10-OCT-2023 10:04
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-13;HS23100159-13
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:25 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 10
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	0.426	0.423	0.003	1237819	1269.57	1269.567(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

01332370

Data File: \\nahstws005\target\chem\fid-4.i\231010.b\010.d

Page 1

Date : 10-OCT-2023 10:04

Client ID: HS23100159-13

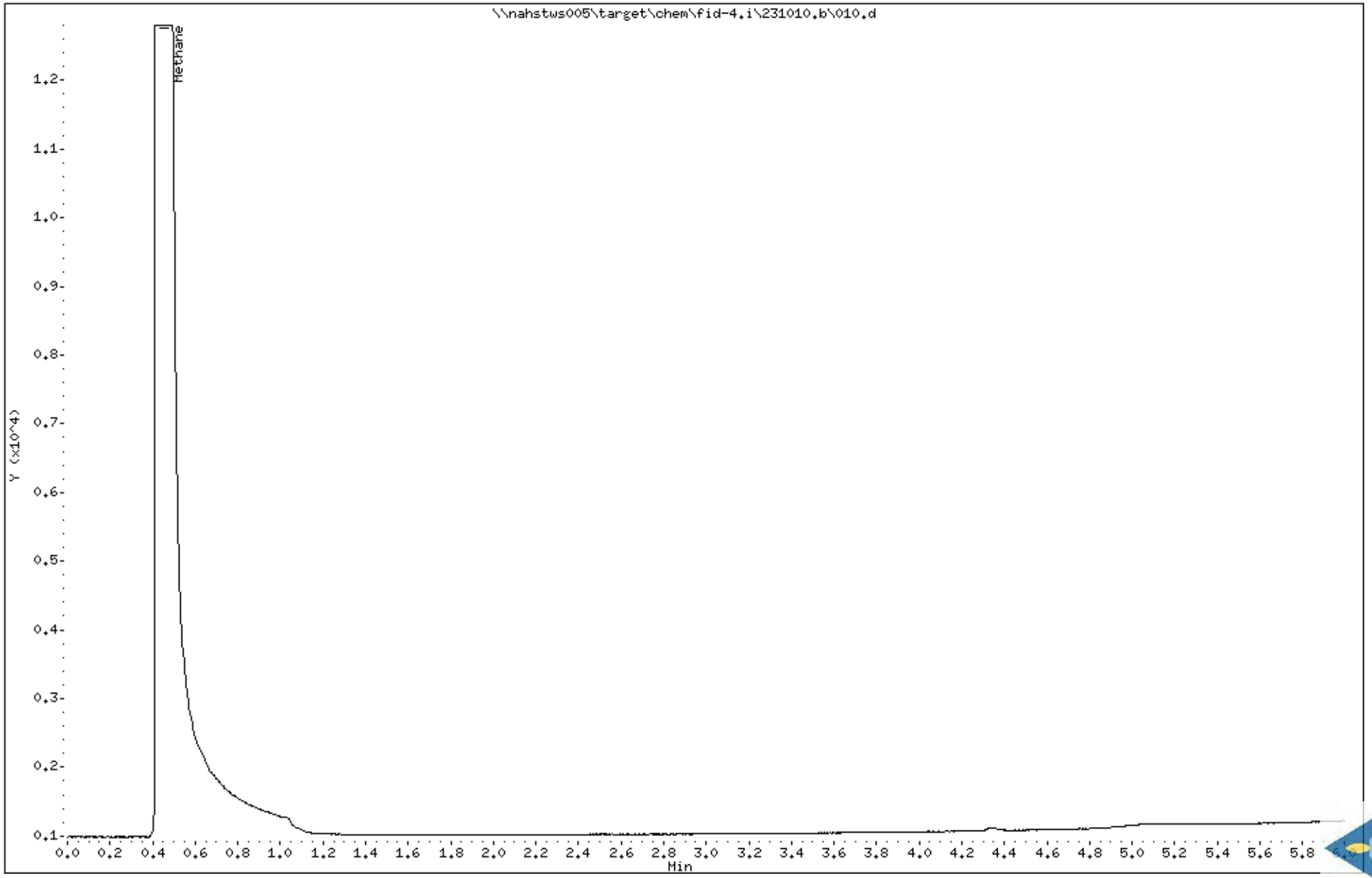
Instrument: FID-4.i

Sample Info: HS23100159-13;HS23100159-13

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\target\chem\fid-4.i\231010.b\010.d
Inj Date : 10-OCT-2023 10:04
InstruID : FID-4.i
LabSampID : HS23100159-13

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\011.D Page 1
Report Date: 10-Oct-2023 10:37

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\011.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 10-OCT-2023 10:16
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\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 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

Compounds	RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
1 Methane	0.423	0.423	0.000	7863	9.64700	8.064
2 Ethene	0.630	0.630	0.000	10473	16.8500	17.879(M)
3 Ethane	0.693	0.693	0.000	14521	18.0430	20.182(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\011.D

Date : 10-OCT-2023 10:16

Client ID: RSK-CCV

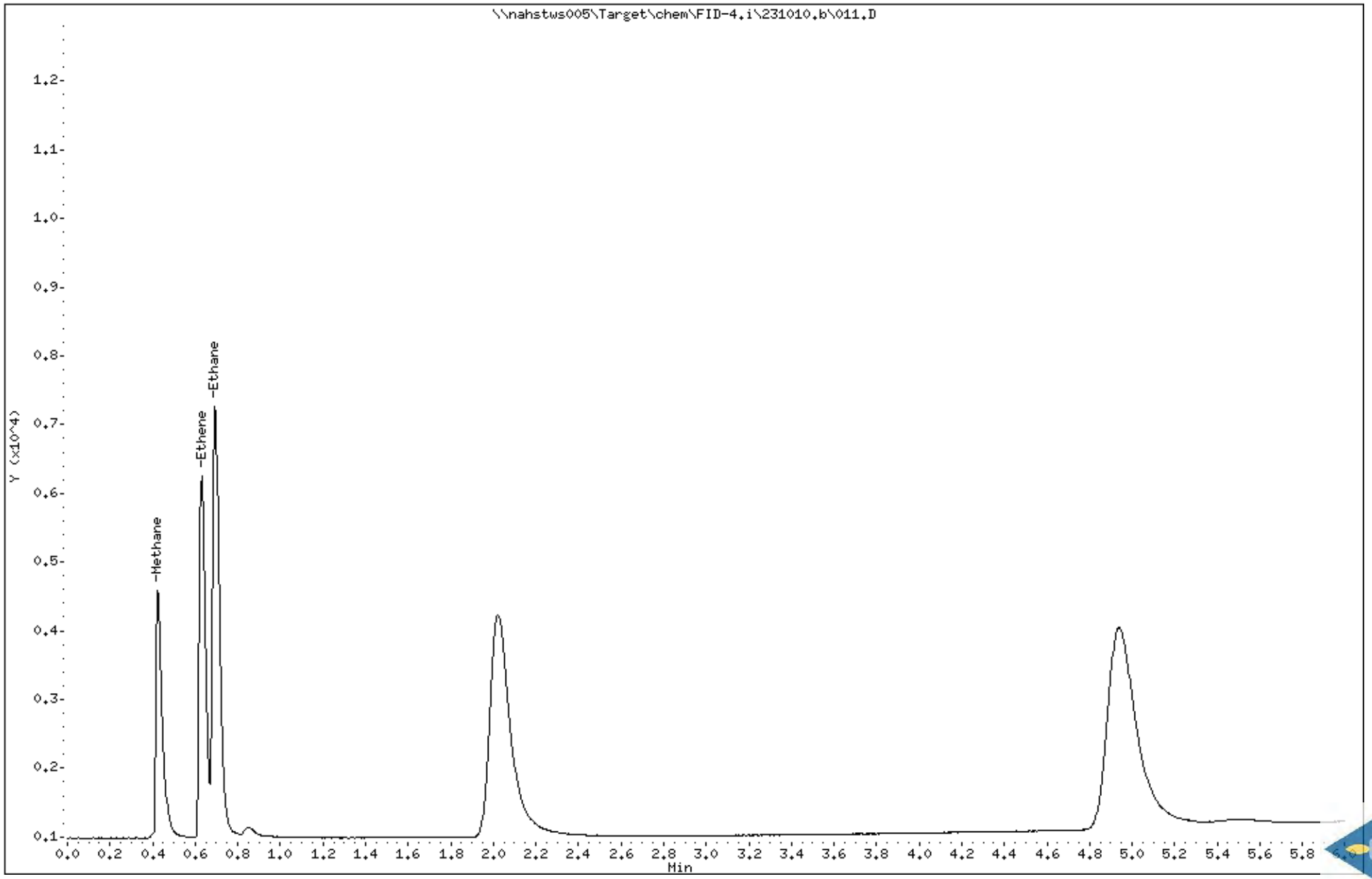
Instrument: FID-4.i

Sample Info: RSK-CCV;RSK-CCV;2;4

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



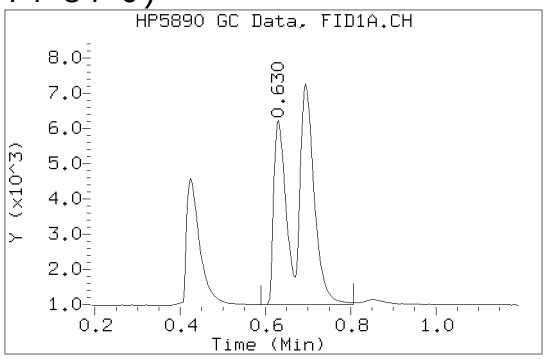
Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\011.D
Inj Date : 10-OCT-2023 10:16
InstruID : FID-4.i
LabSampID : RSK-CCV

Ethane (74-84-0)

Reason Code:

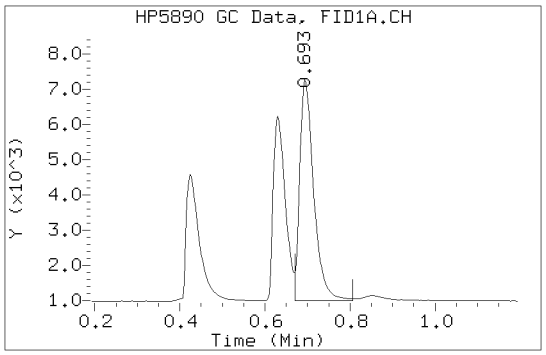
BEFORE

MASS
44
AREA
24831
HEIGHT
5254
10-Oct-2023
10:25
ALSHS
Server



AFTER

MASS
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AREA
14521
HEIGHT
6283
10-Oct-2023
10:37
ALSHS
Ser

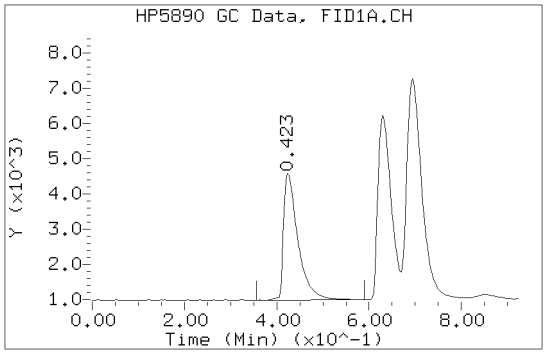


Ethene (74-85-1)

Reason Code:

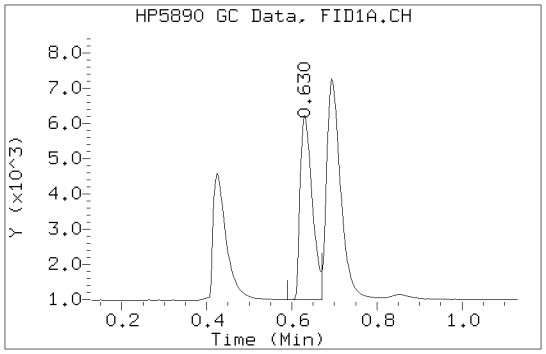
BEFORE

MASS
100
AREA
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HEIGHT
0
10-Oct-2023
10:25
ALSHS
Server



AFTER

MASS
100
AREA
10473
HEIGHT
5254
10-Oct-2023
10:37
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\012.D Page 1
Report Date: 10-Oct-2023 10:39

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\012.D
Lab Smp Id: HS23100159-14 Client Smp ID: HS23100159-14
Inj Date : 10-OCT-2023 10:27
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-14;HS23100159-14
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 12
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

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.430	0.423	0.007	1280409	1313.25	1313.250(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

01332376

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\012.D

Page 1

Date : 10-OCT-2023 10:27

Client ID: HS23100159-14

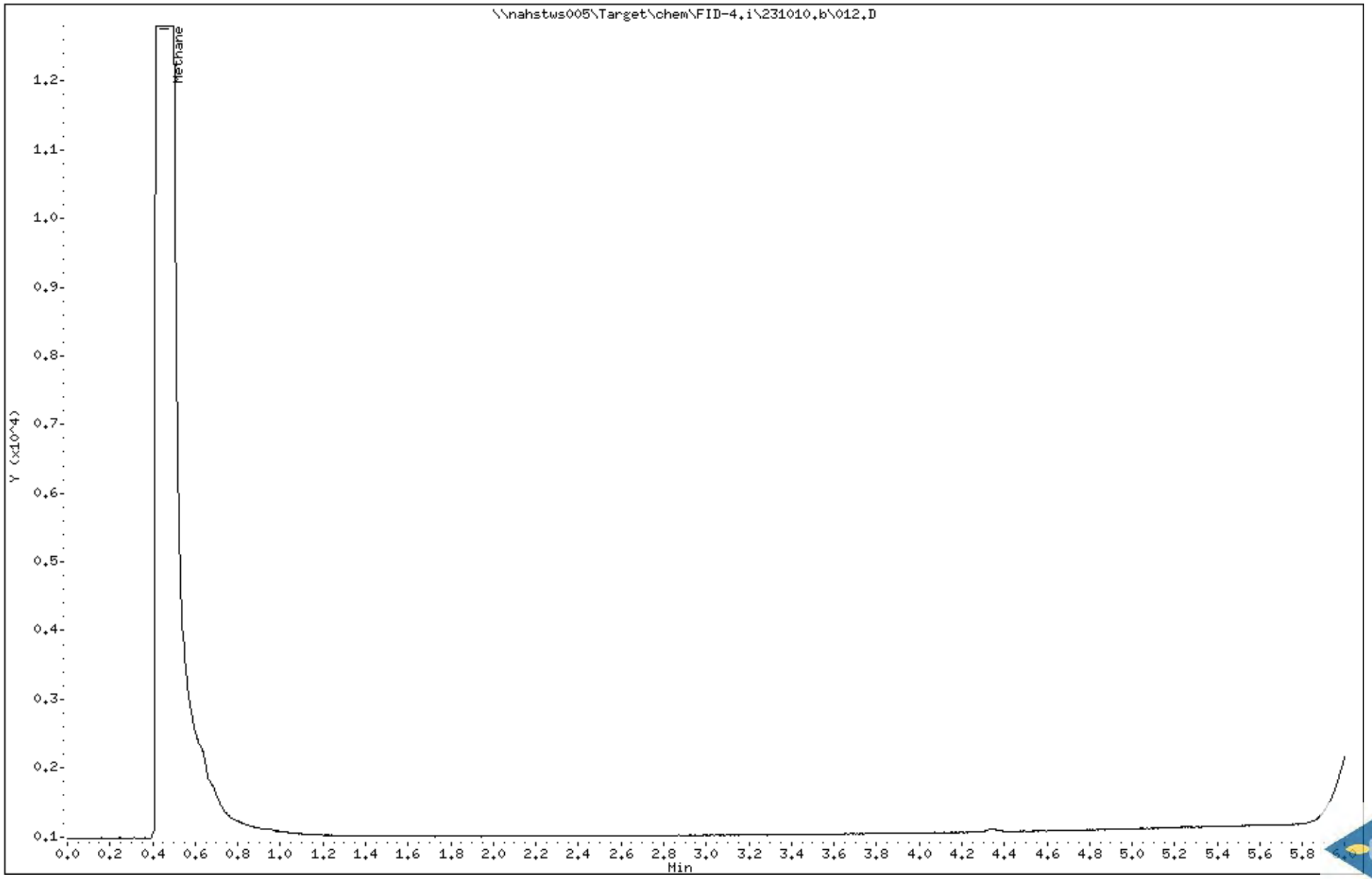
Instrument: FID-4.i

Sample Info: HS23100159-14;HS23100159-14

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\012.D
Inj Date : 10-OCT-2023 10:27
InstruID : FID-4.i
LabSampID : HS23100159-14

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\013.D Page 1
Report Date: 10-Oct-2023 11:03

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\013.D
Lab Smp Id: HS23100159-15 Client Smp ID: HS23100159-15
Inj Date : 10-OCT-2023 10:40
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-15;HS23100159-15
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 13
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

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.430	0.423	0.007	198762	203.860	203.860(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\013.D

Date : 10-OCT-2023 10:40

Client ID: HS23100159-15

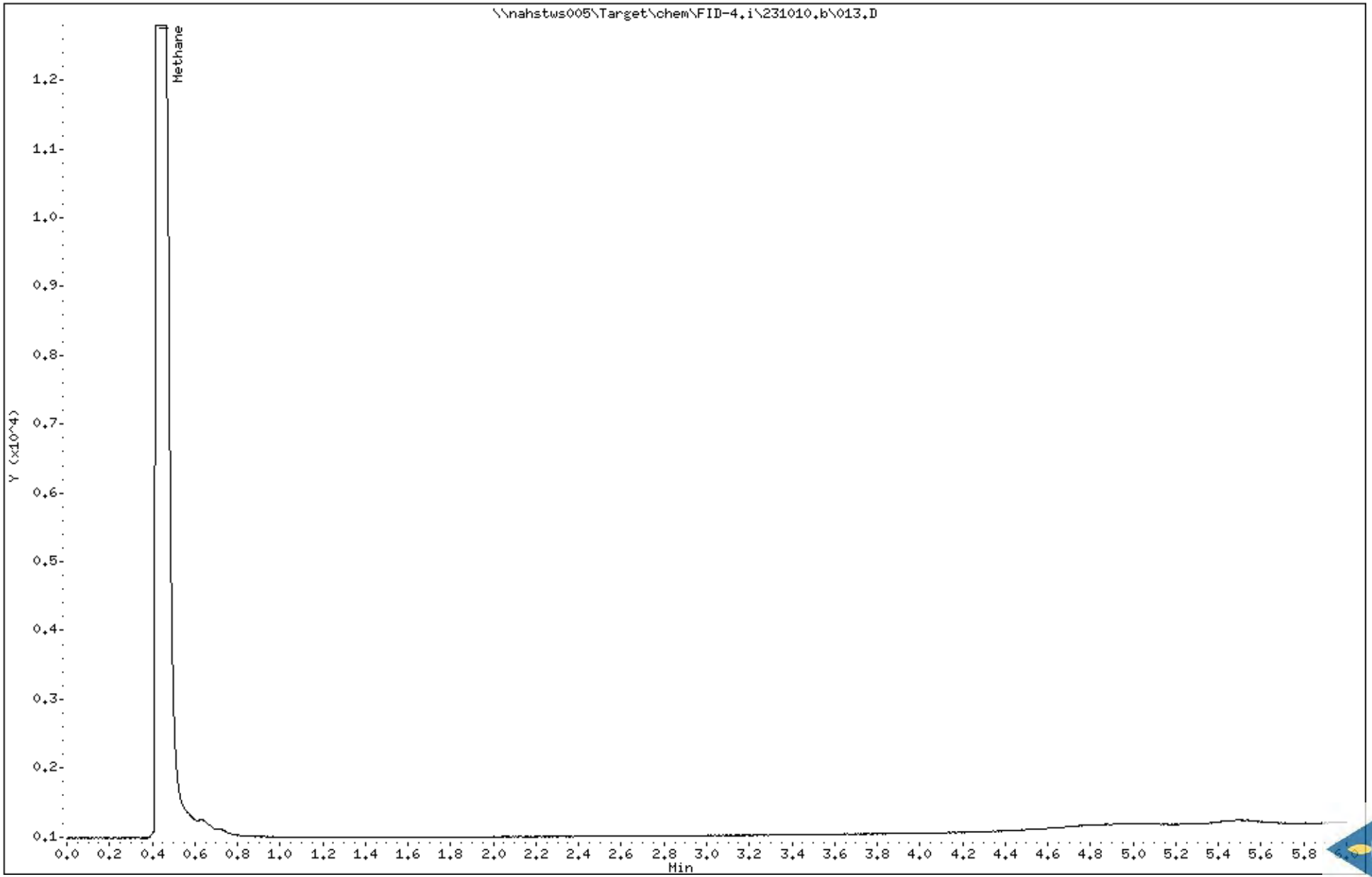
Instrument: FID-4.i

Sample Info: HS23100159-15;HS23100159-15

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\013.D
Inj Date : 10-OCT-2023 10:40
InstruID : FID-4.i
LabSampID : HS23100159-15

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\014.D Page 1
Report Date: 10-Oct-2023 11:03

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\014.D
Lab Smp Id: HS23100159-16 Client Smp ID: HS23100159-16
Inj Date : 10-OCT-2023 10:53
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-16;HS23100159-16
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 14
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

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.433	0.423	0.010	6874885	7051.22	7051.219(A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

01332382

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\014.D

Page 1

Date : 10-OCT-2023 10:53

Client ID: HS23100159-16

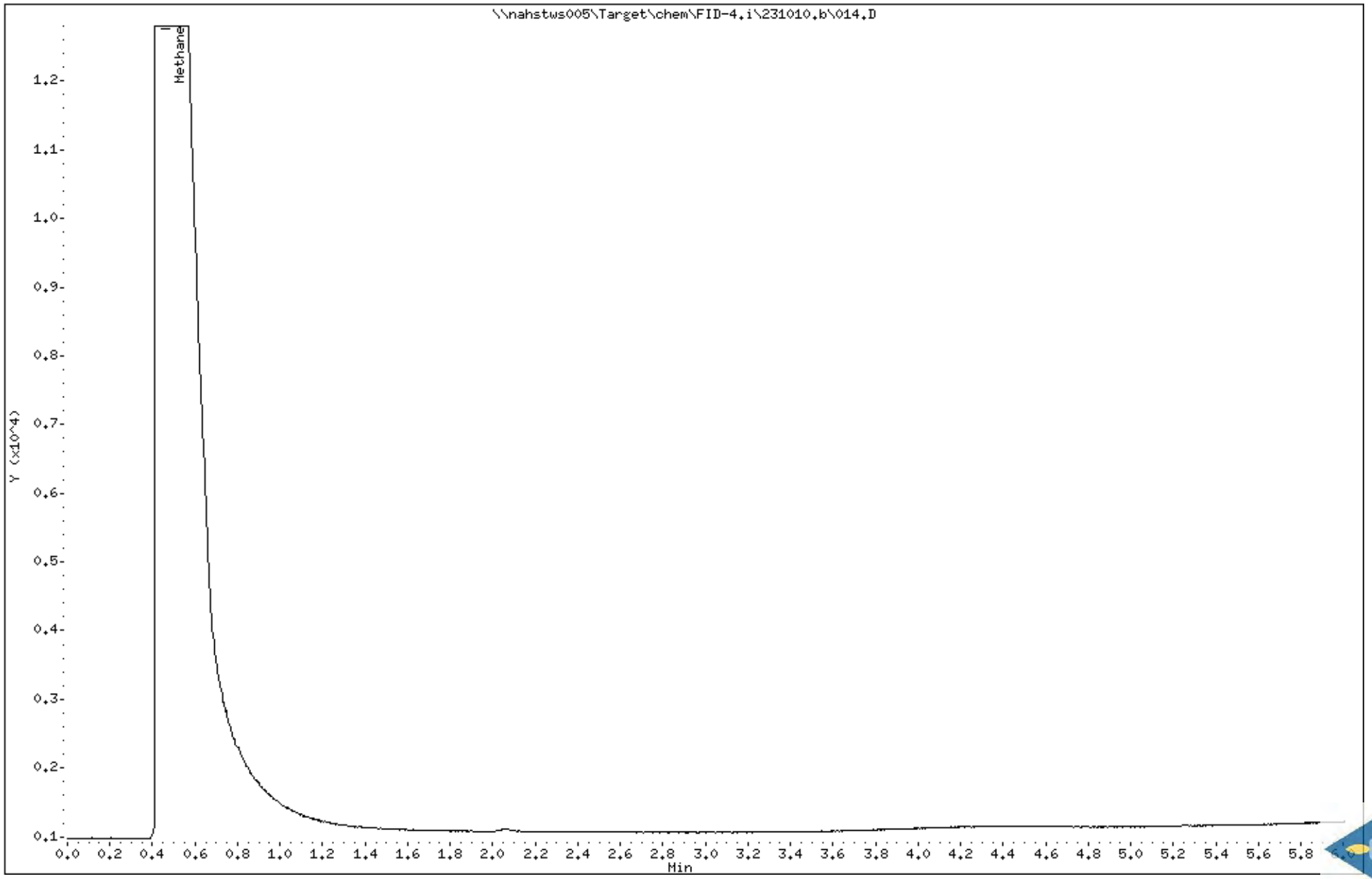
Instrument: FID-4.i

Sample Info: HS23100159-16;HS23100159-16

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\014.D
Inj Date : 10-OCT-2023 10:53
InstruID : FID-4.i
LabSampID : HS23100159-16

NO MANUAL INTEGRATIONS

Data File: \\NAHSTWS005\Target\chem\FID-4.i\231010.b\015.D Page 1
Report Date: 16-Oct-2023 11:47

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\231010.b\015.D
Lab Smp Id: HS23100159-11DUP Client Smp ID: HS23100159-11DUP
Inj Date : 10-OCT-2023 11:02
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-11DUP;HS23100159-11DUP
Misc Info : ;1;0;1
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 18:03 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 15
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	0.433	0.426	0.007	24446	25.0730	25.073(M)
2 Ethene	0.633	0.630	0.003	354	0.60434	0.604(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\NAHSTWS005\Target\chem\FID-4.i\231010.b\015.D

Date : 10-OCT-2023 11:02

Client ID: HS23100159-11DUP

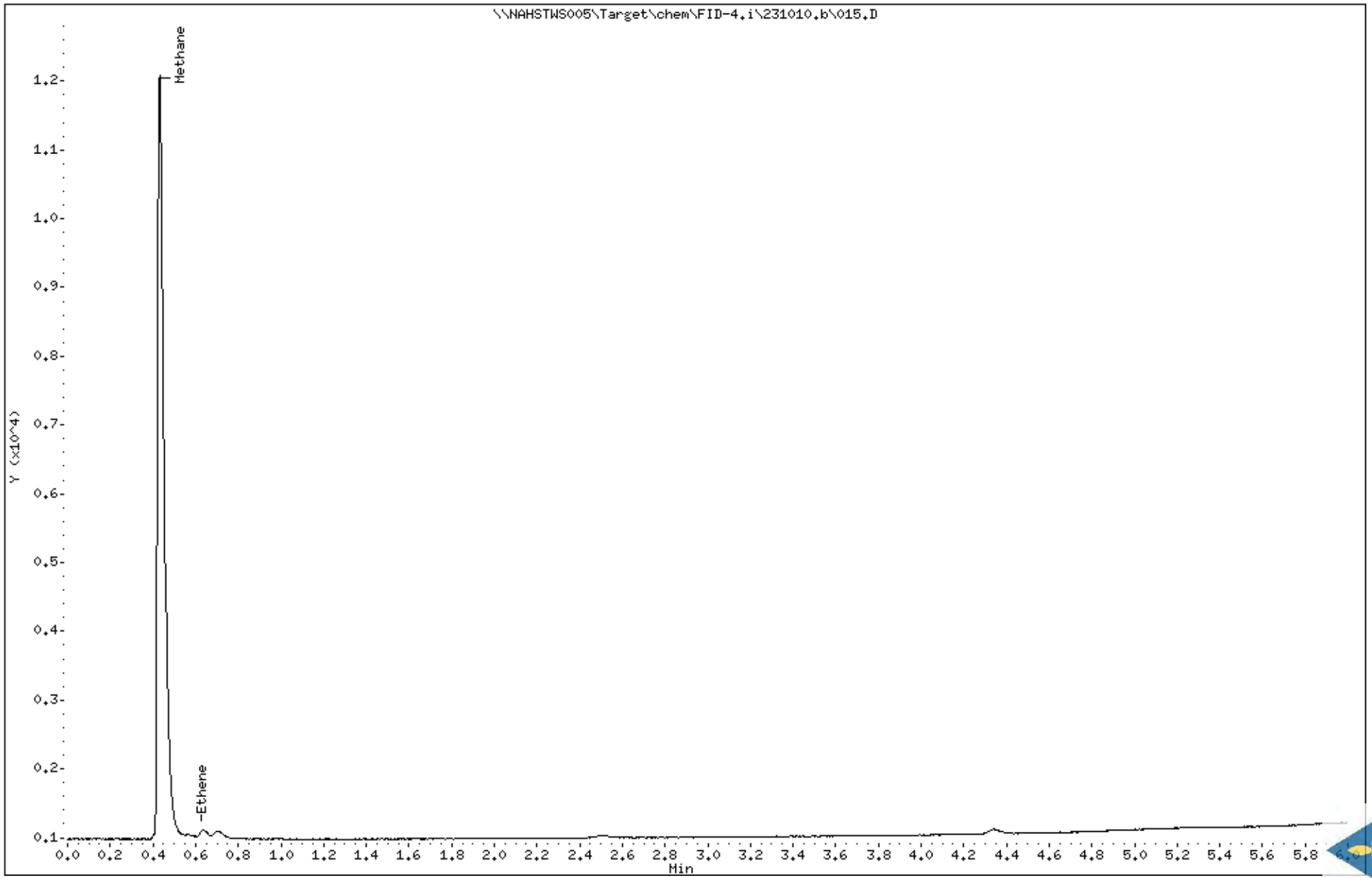
Instrument: FID-4.i

Sample Info: HS23100159-11DUP;HS23100159-11DUP

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



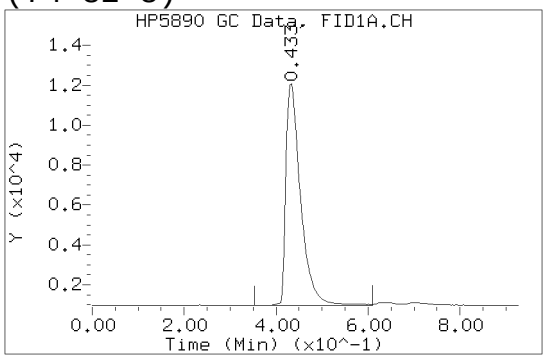
Data File : \\NAHSTWS005\Target\chem\FID-4.i\231010.b\015.D
Inj Date : 10-OCT-2023 11:02
InstruID : FID-4.i
LabSampID : HS23100159-11DUP

Methane (74-82-8)

Reason Code:

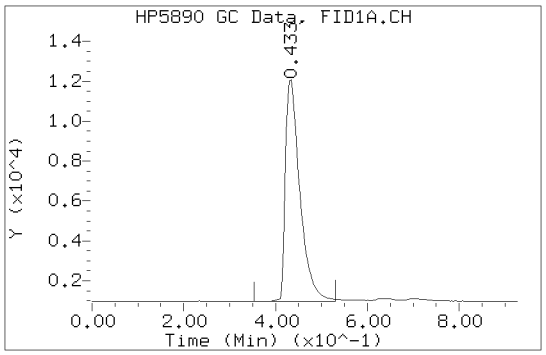
BEFORE

MASS
100
AREA
0
HEIGHT
0
10-Oct-2023
11:08
ALSHS
Server



AFTER

MASS
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AREA
24446
HEIGHT
11100
16-Oct-2023
11:47
ALSHS
Ser

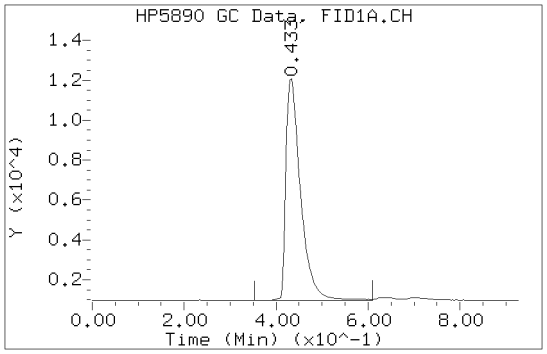


Ethene (74-85-1)

Reason Code:

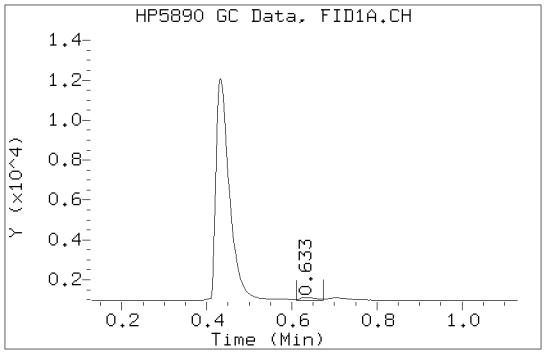
BEFORE

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HEIGHT
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10-Oct-2023
11:08
ALSHS
Server



AFTER

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AREA
354
HEIGHT
133
16-Oct-2023
11:47
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\016.D Page 1
Report Date: 10-Oct-2023 12:07

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\016.D
Lab Smp Id: HS23100159-13 Client Smp ID: HS23100159-13
Inj Date : 10-OCT-2023 11:13
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-13;HS23100159-13
Misc Info : ;1;0;50
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 16
Dil Factor: 50.00000
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	0.423	0.013	26804	27.4915	1374.574

01332388

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\016.D

Date : 10-OCT-2023 11:13

Client ID: HS23100159-13

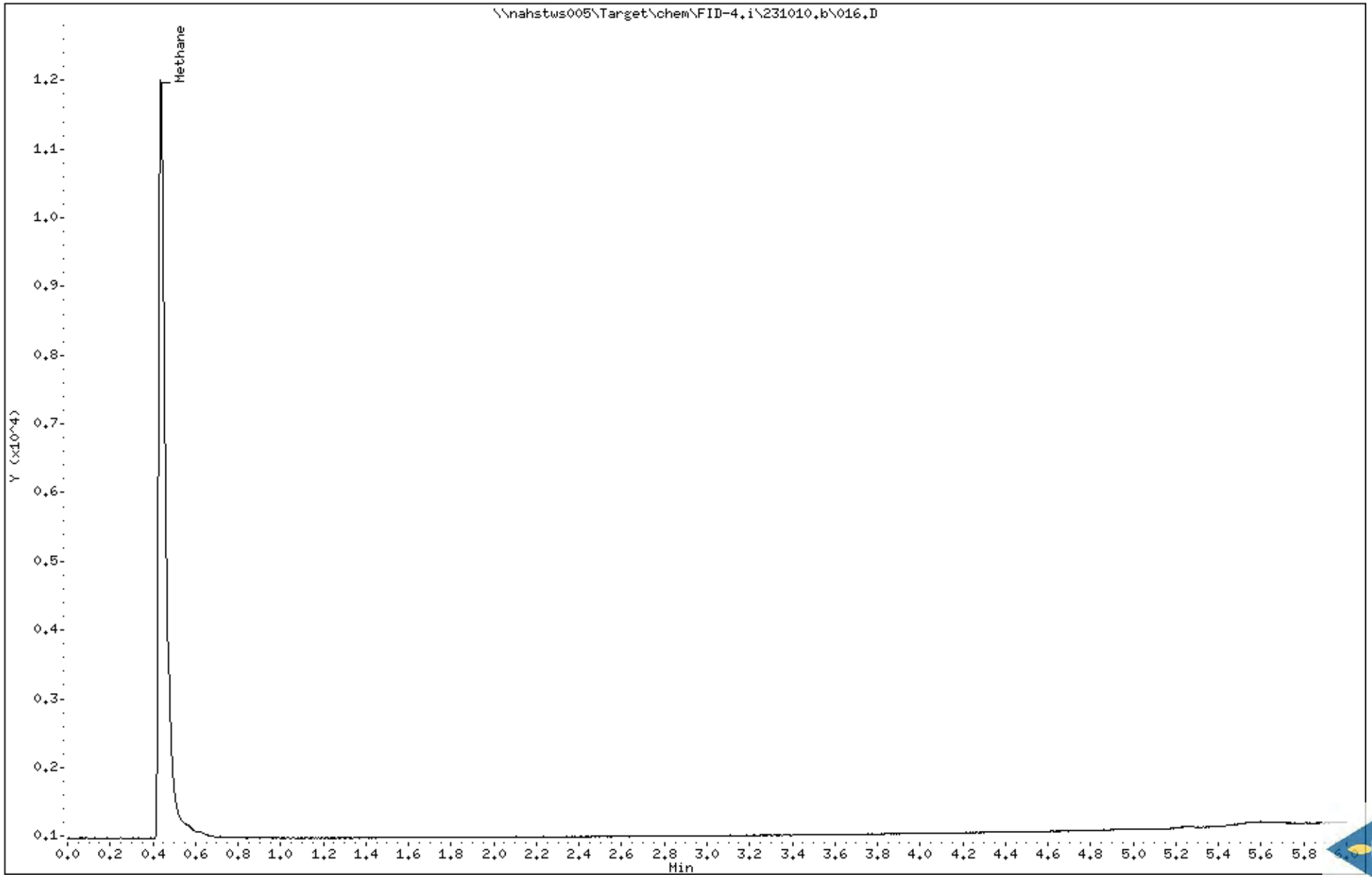
Instrument: FID-4.i

Sample Info: HS23100159-13;HS23100159-13

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\016.D
Inj Date : 10-OCT-2023 11:13
InstruID : FID-4.i
LabSampID : HS23100159-13

NO MANUAL INTEGRATIONS

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\017.D Page 1
Report Date: 10-Oct-2023 12:08

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\017.D
Lab Smp Id: HS23100159-14 Client Smp ID: HS23100159-14
Inj Date : 10-OCT-2023 11:27
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-14;HS23100159-14
Misc Info : ;1;0;50
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 17
Dil Factor: 50.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.436	0.423	0.013	26603	27.2853	1364.267(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\017.D

Date : 10-OCT-2023 11:27

Client ID: HS23100159-14

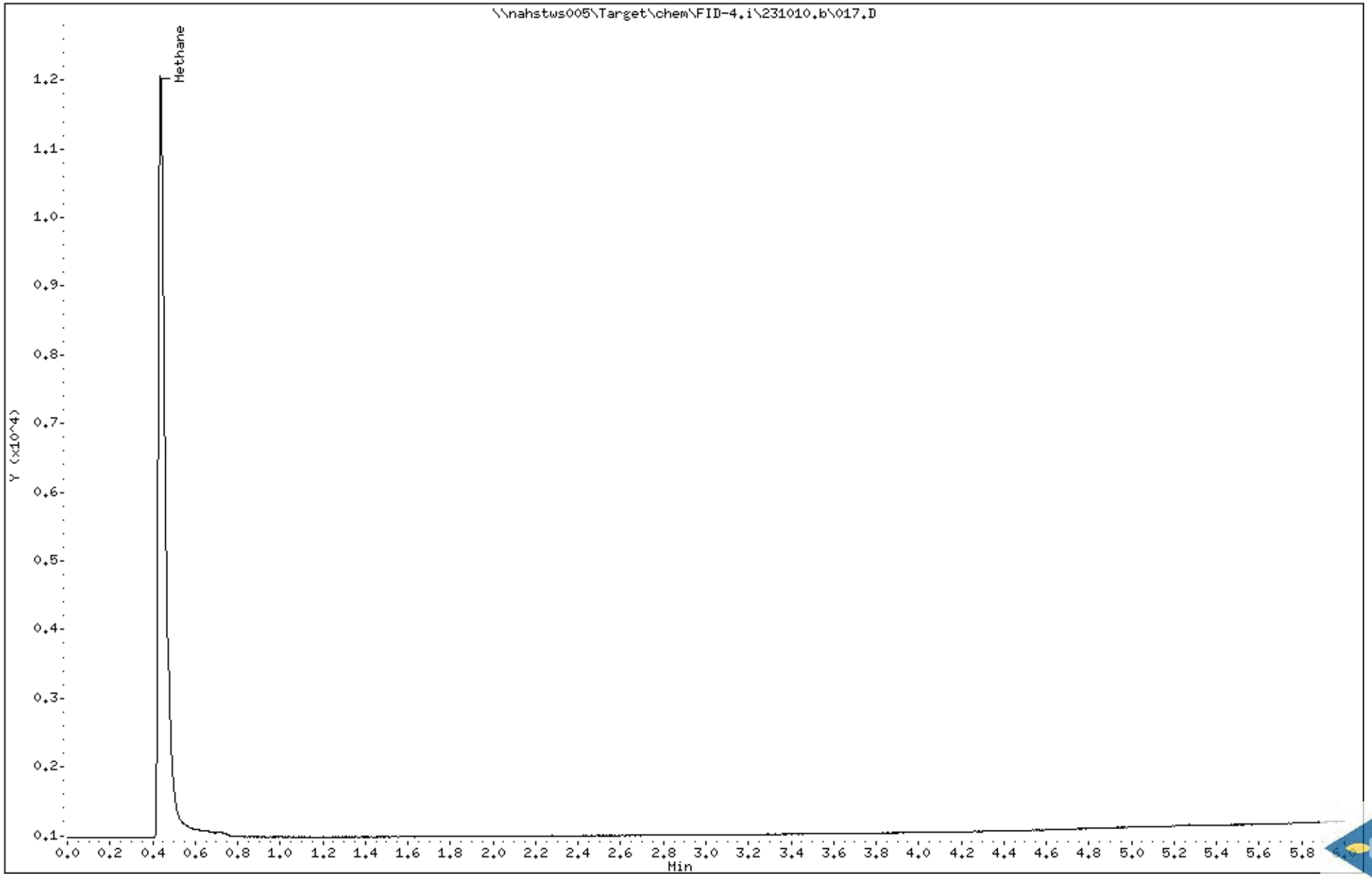
Instrument: FID-4.i

Sample Info: HS23100159-14;HS23100159-14

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



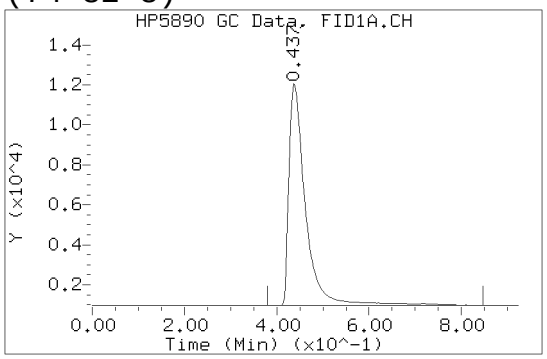
Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\017.D
Inj Date : 10-OCT-2023 11:27
InstruID : FID-4.i
LabSampID : HS23100159-14

Methane (74-82-8)

Reason Code:

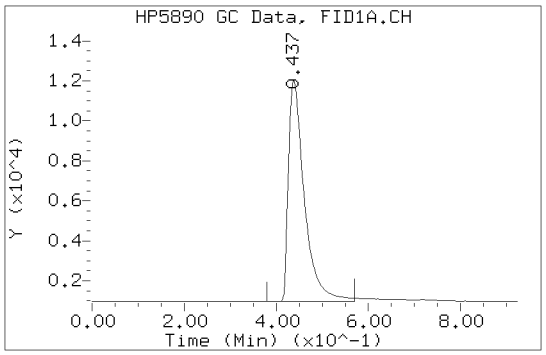
BEFORE

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AREA
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HEIGHT
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10-Oct-2023
11:34
ALSHS
Server



AFTER

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AREA
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HEIGHT
11089
10-Oct-2023
12:08
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\018.D Page 1
Report Date: 10-Oct-2023 12:09

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\018.D
Lab Smp Id: HS23100159-15 Client Smp ID: HS23100159-15
Inj Date : 10-OCT-2023 11:40
Operator : PL Inst ID: FID-4.i
Smp Info : HS23100159-15;HS23100159-15
Misc Info : ;1;0;10
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 18
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: RSK175.sub
Target Version: 4.14
Processing Host: NAHSTW7022

Concentration Formula: Amt * DF * CpndVariable
Cpnd Variable Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.423	0.423	0.000	21074	21.6145	216.145(M)

QC Flag Legend

M - Compound response manually integrated.

01332394

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\018.D

Page 1

Date : 10-OCT-2023 11:40

Client ID: HS23100159-15

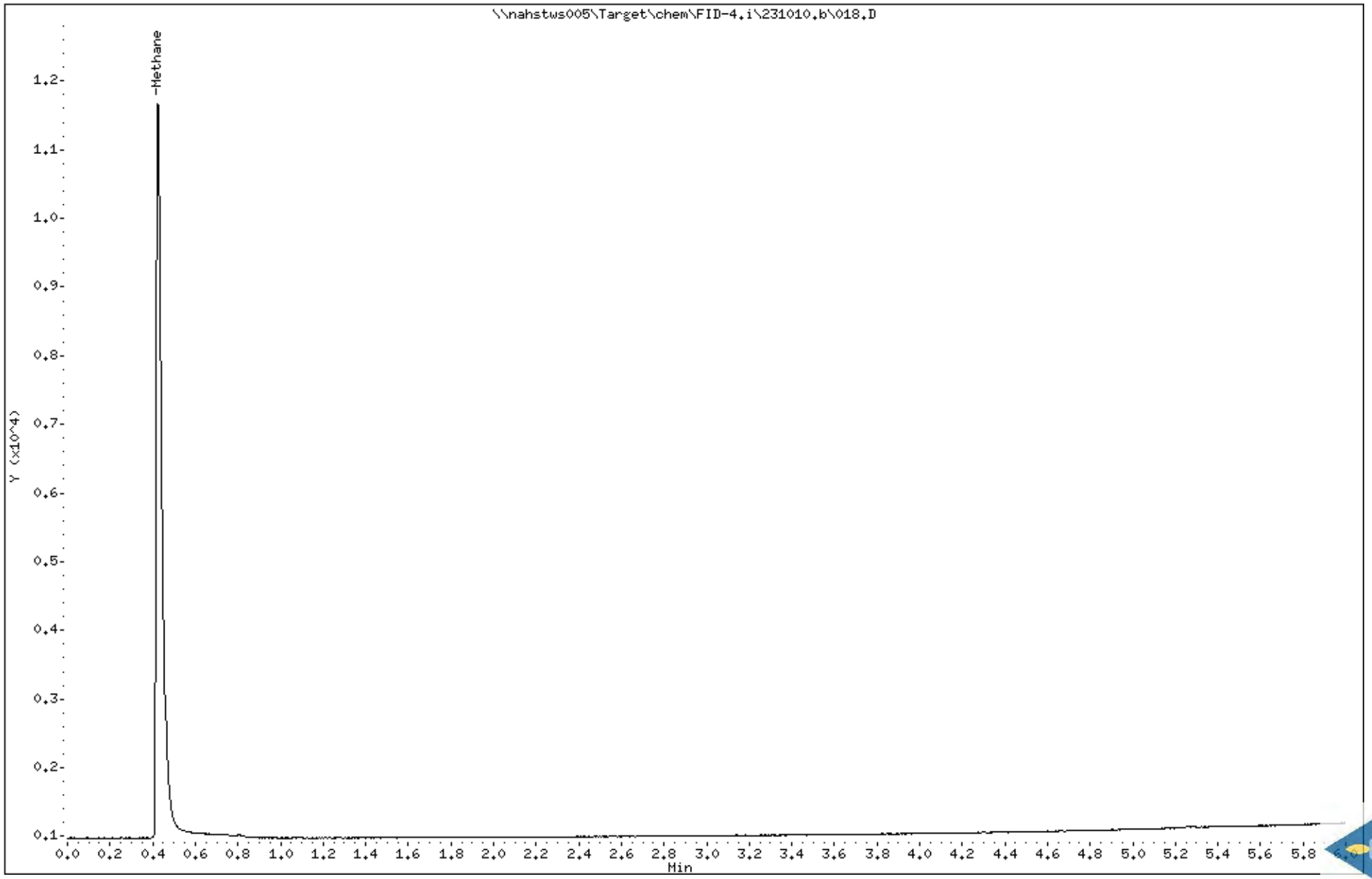
Instrument: FID-4.i

Sample Info: HS23100159-15;HS23100159-15

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



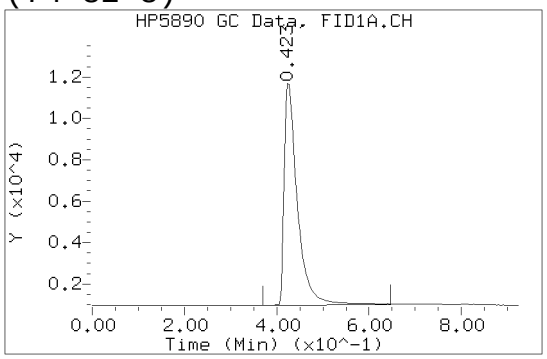
Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\018.D
Inj Date : 10-OCT-2023 11:40
InstruID : FID-4.i
LabSampID : HS23100159-15

Methane (74-82-8)

Reason Code:

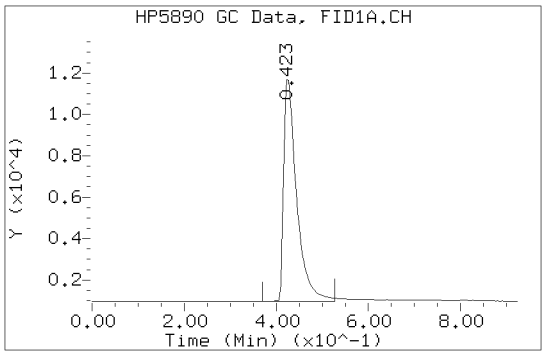
BEFORE

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AREA
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HEIGHT
0
10-Oct-2023
11:49
ALSHS
Server



AFTER

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AREA
21074
HEIGHT
10704
10-Oct-2023
12:09
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\019.D Page 1
Report Date: 10-Oct-2023 12:10

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\019.D
Lab Smp Id: HS23100159-16 Client Smp ID: HS23100159-16
Inj Date : 10-OCT-2023 11:50
Operator : JA Inst ID: FID-4.i
Smp Info : HS23100159-16;HS23100159-16
Misc Info : X500
Comment :
Method : \\nahstws005\Target\chem\FID-4.i\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 10:32 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 19
Dil Factor: 500.00000
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	0.423	0.423	0.000	17337	17.7817	8890.839(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\target\chem\fid-4.i\231010.b\019.d

Date : 10-OCT-2023 11:50

Client ID: HS23100159-16

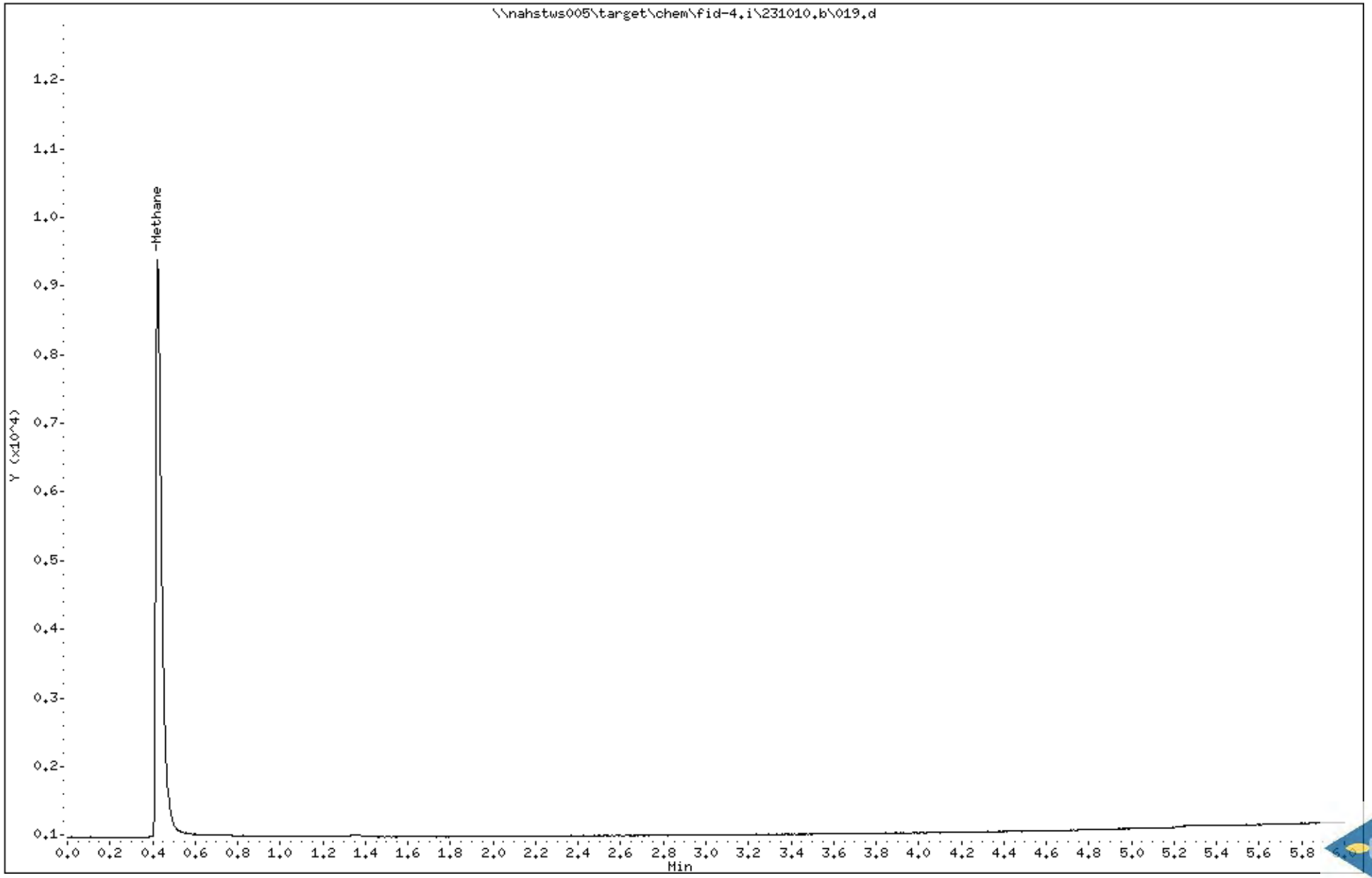
Instrument: FID-4.i

Sample Info: HS23100159-16;HS23100159-16

Operator: JA

Column phase: Rtx-PLOT

Column diameter: 0.53



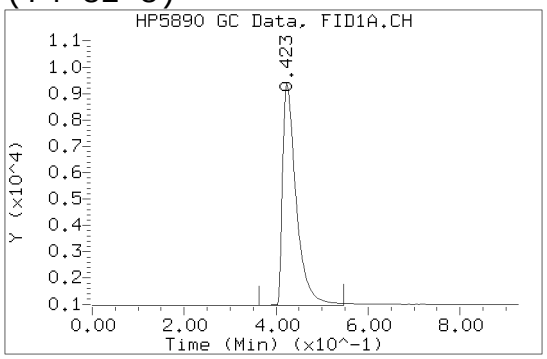
Data File : \\nahstws005\target\chem\fid-4.i\231010.b\019.d
Inj Date : 10-OCT-2023 11:50
InstruID : FID-4.i
LabSampID : HS23100159-16

Methane (74-82-8)

Reason Code:

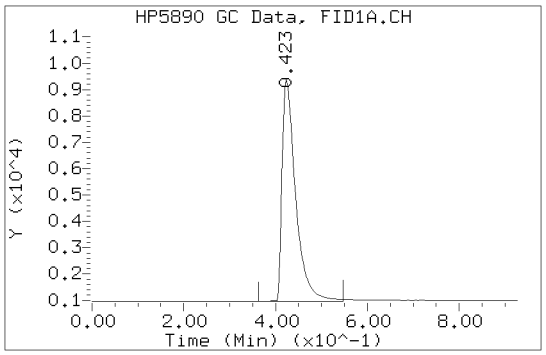
BEFORE

MASS
100
AREA
17337
HEIGHT
8410
12-Oct-2023
08:20
samy
mata



AFTER

MASS
100
AREA
17337
HEIGHT
8410
12-Oct-2023
08:20
samy
mata



Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\022.D Page 1
Report Date: 10-Oct-2023 12:56

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\022.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 10-OCT-2023 12:36
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\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 12:56 samy.mata Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 22 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	8023	9.64700	8.228
2 Ethene	0.630	0.630	0.000	10407	16.8500	17.766(M)
3 Ethane	0.696	0.696	0.000	14483	18.0430	20.129(M)

QC Flag Legend

M - Compound response manually integrated.

01332400

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\022.D

Page 1

Date : 10-OCT-2023 12:36

Client ID: RSK-CCV

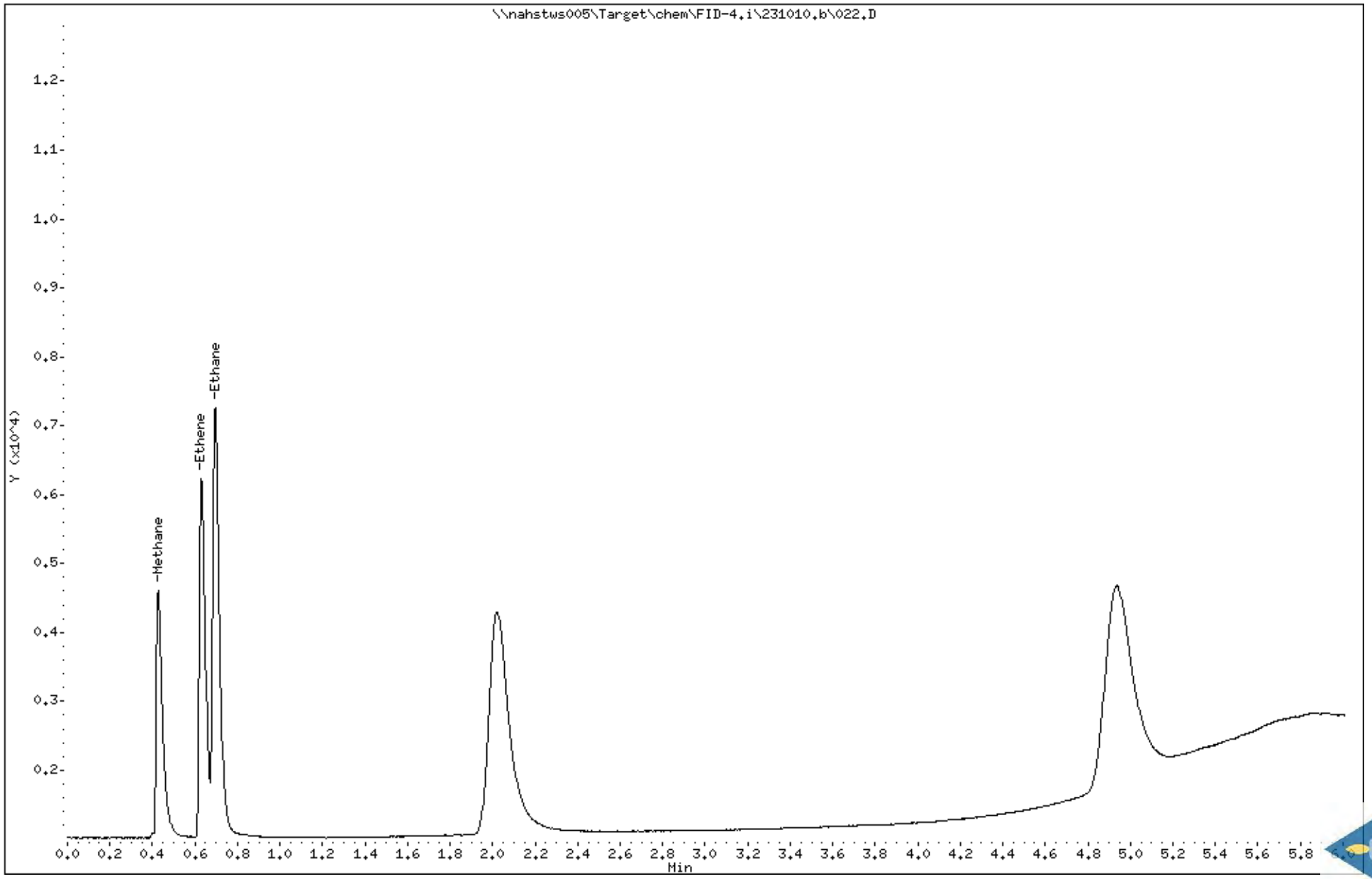
Instrument: FID-4.i

Sample Info: RSK-CCV;RSK-CCV;2;4

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



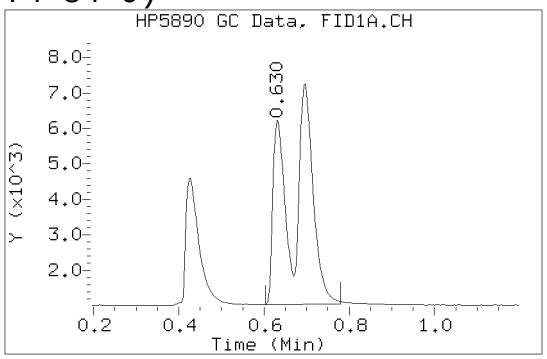
Data File : \\nahstws005\Target\chem\FID-4.i\231010.b\022.D
Inj Date : 10-OCT-2023 12:36
InstruID : FID-4.i
LabSampID : RSK-CCV

Ethane (74-84-0)

Reason Code:

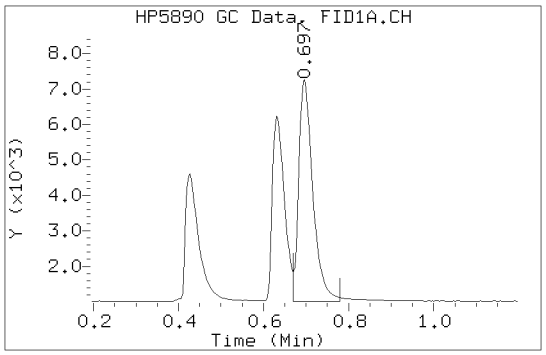
BEFORE

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44
AREA
24458
HEIGHT
5203
10-Oct-2023
12:45
ALSHS
Server



AFTER

MASS
44
AREA
14483
HEIGHT
6244
10-Oct-2023
12:56
ALSHS
Ser

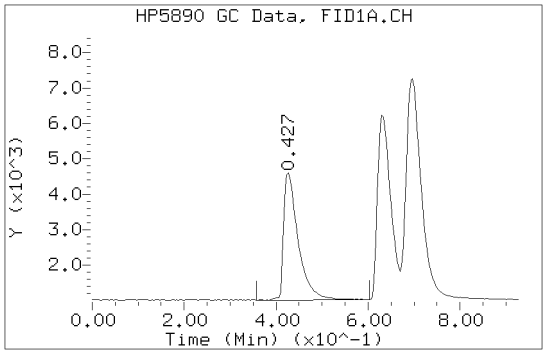


Ethene (74-85-1)

Reason Code:

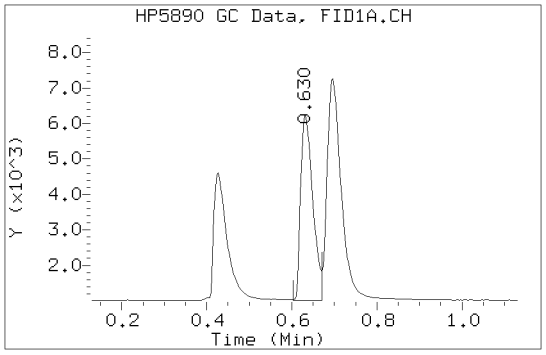
BEFORE

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100
AREA
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HEIGHT
0
10-Oct-2023
12:45
ALSHS
Server



AFTER

MASS
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AREA
10407
HEIGHT
5220
10-Oct-2023
12:56
ALSHS
Ser



Data File: \\NAHSTWS005\Target\chem\FID-4.i\231010.b\033.D Page 1
Report Date: 18-Oct-2023 13:38

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\NAHSTWS005\Target\chem\FID-4.i\231010.b\033.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 10-OCT-2023 15:26
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\231010.b\RSKNI3.m
Meth Date : 18-Oct-2023 13:38 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 33 Continuing Calibration Sample
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

					AMOUNTS	
					CAL-AMT	ON-COL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/L)	(ug/L)
1 Methane	0.426	0.426	0.000	7796	9.64700	7.995
2 Ethene	0.630	0.630	0.000	10402	16.8500	17.758(M)
3 Ethane	0.693	0.693	0.000	14295	18.0430	19.868(M)

QC Flag Legend

M - Compound response manually integrated.

01332403

Data File: \\NAHSTWS005\Target\chem\FID-4.i\231010.b\033.D

Date : 10-OCT-2023 15:26

Client ID: RSK-CCV

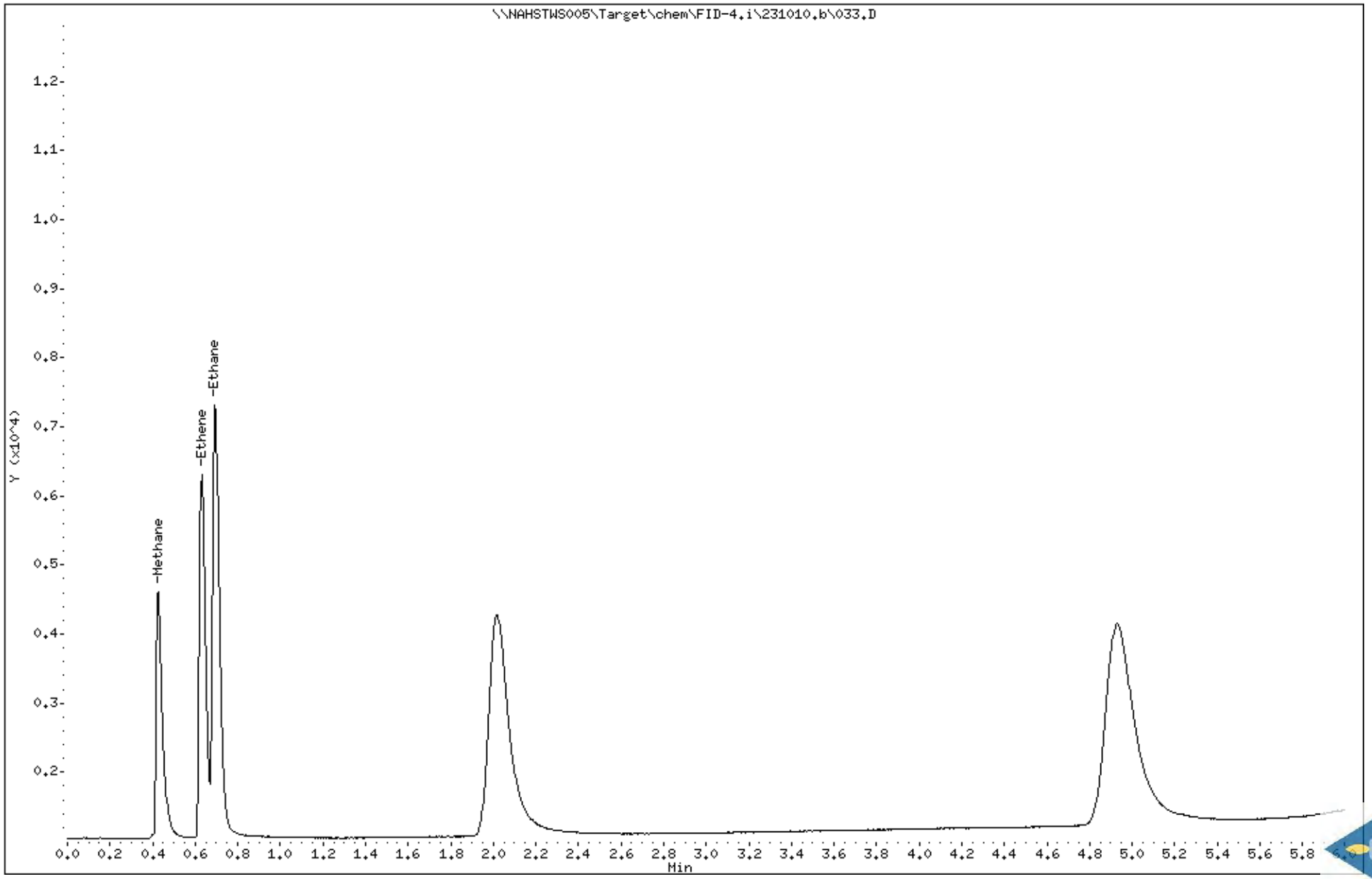
Instrument: FID-4.i

Sample Info: RSK-CCV;RSK-CCV;2;4

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



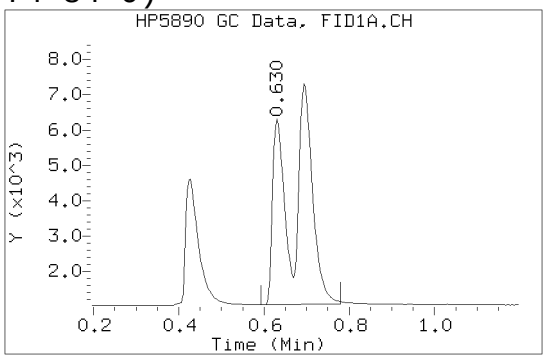
Data File : \\NAHSTWS005\Target\chem\FID-4.i\231010.b\033.D
Inj Date : 10-OCT-2023 15:26
InstruID : FID-4.i
LabSampID : RSK-CCV

Ethane (74-84-0)

Reason Code:

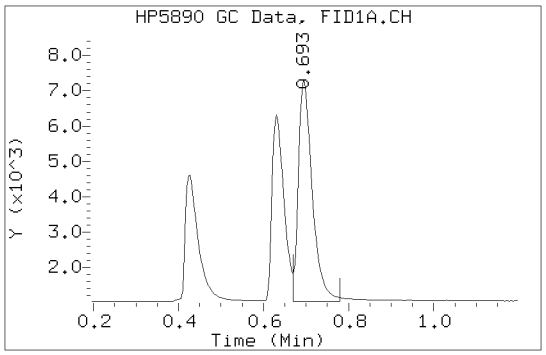
BEFORE

MASS
44
AREA
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HEIGHT
5259
10-Oct-2023
15:34
ALSHS
Server



AFTER

MASS
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AREA
14295
HEIGHT
6270
18-Oct-2023
13:38
ALSHS
Ser

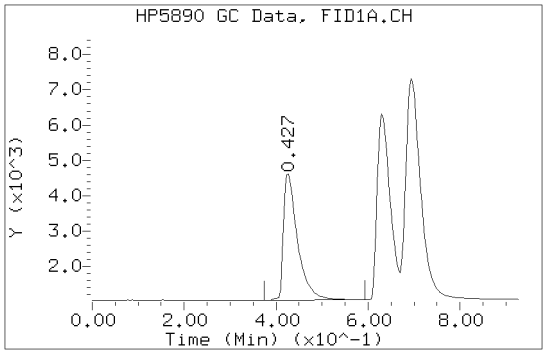


Ethene (74-85-1)

Reason Code:

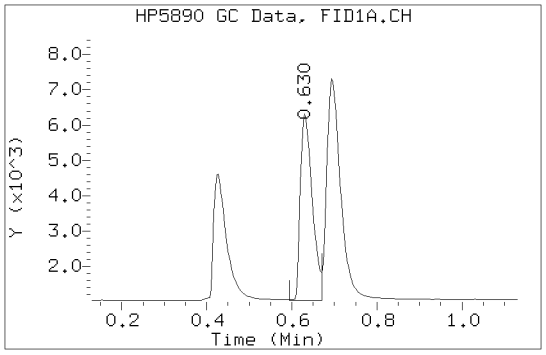
BEFORE

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HEIGHT
0
10-Oct-2023
15:34
ALSHS
Server



AFTER

MASS
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AREA
10402
HEIGHT
5276
18-Oct-2023
13:38
ALSHS
Ser



Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\040.D Page 1
Report Date: 10-Oct-2023 18:03

ALS Laboratory Group

Dissolved Gases Analysis

Data file : \\nahstws005\Target\chem\FID-4.i\231010.b\040.D
Lab Smp Id: RSK-CCV Client Smp ID: RSK-CCV
Inj Date : 10-OCT-2023 17:29
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\231010.b\RSKNI3.m
Meth Date : 10-Oct-2023 18:03 FID-4.i Quant Type: ESTD
Cal Date : 24-JAN-2017 10:15 Cal File: 004.D
Als bottle: 40 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	7593	9.64700	7.787
2 Ethene	0.630	0.630	0.000	10263	16.8500	17.520(M)
3 Ethane	0.696	0.696	0.000	14203	18.0430	19.740(M)

QC Flag Legend

M - Compound response manually integrated.

Data File: \\nahstws005\Target\chem\FID-4.i\231010.b\040.D

Page 1

Date : 10-OCT-2023 17:29

Client ID: RSK-CCV

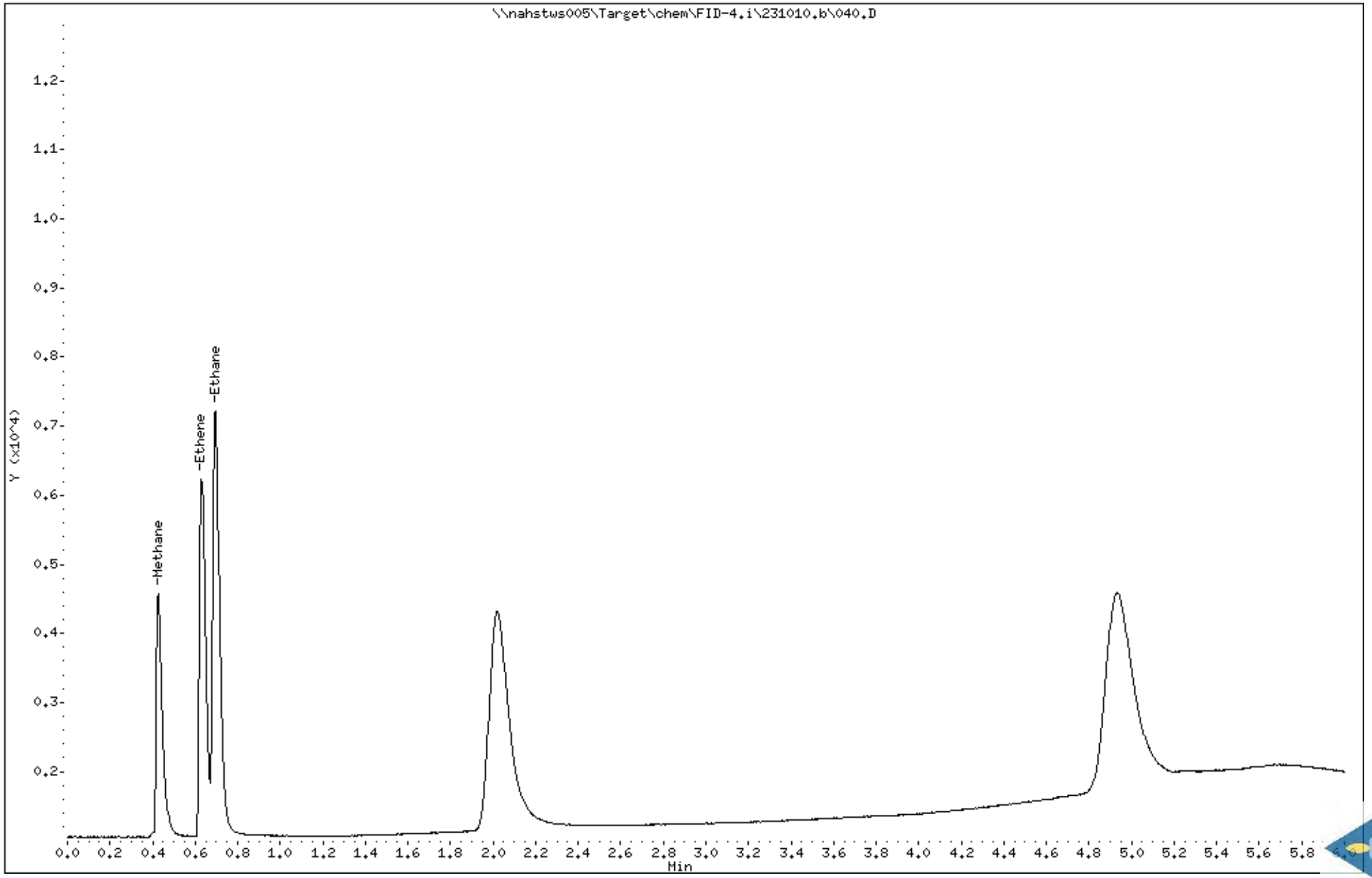
Instrument: FID-4.i

Sample Info: RSK-CCV;RSK-CCV;2;4

Operator: PL

Column phase: Rtx-PLOT

Column diameter: 0.53



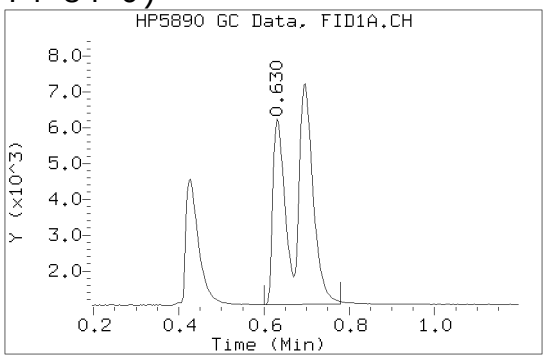
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LabSampID : RSK-CCV

Ethane (74-84-0)

Reason Code:

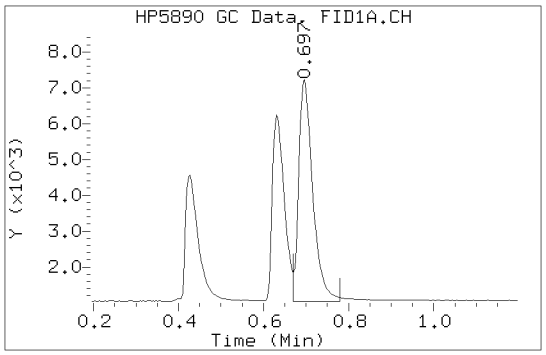
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10-Oct-2023
17:39
ALSHS
Server



AFTER

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10-Oct-2023
18:03
ALSHS
Ser

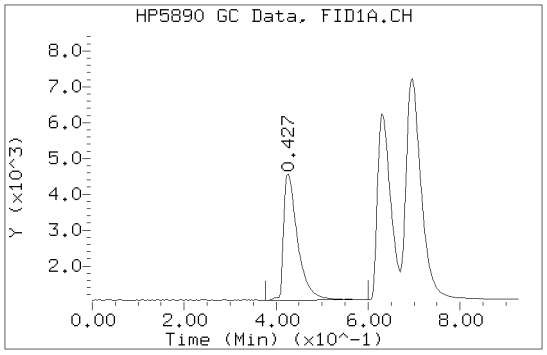


Ethene (74-85-1)

Reason Code:

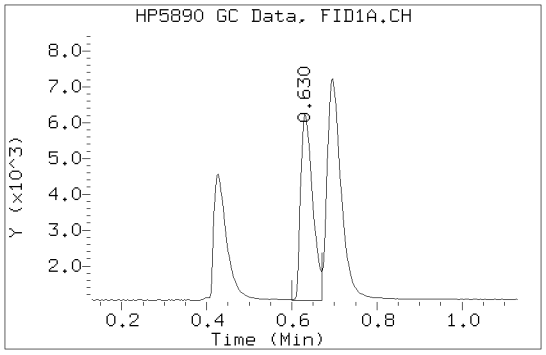
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10-Oct-2023
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AFTER

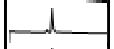
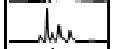
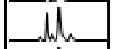
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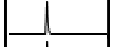
HS23100159 Wetchem 9056_W

ALS WO# HS23100159

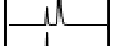
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Last Update Operator: alshs.nouser

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	R2	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
	HS23100095-01	REP	Unknown	RA1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100095-01DF10	REP	Unknown	RA2	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100095-01DF100	REP	Unknown	RA3	100.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100120-01DF200	REP	Unknown	RA4	200.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100120-02DF200	REP	Unknown	RA5	200.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100120-03DF200	REP	Unknown	RA6	200.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100120-04DF10	REP	Unknown	RA7	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100120-01DF500	REP	Unknown	RA8	500.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100120-02DF500	REP	Unknown	RB1	500.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100120-03DF500	REP	Unknown	RB2	500.00		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
	HS23091568-12DF10	REP	Unknown	RB3	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091568-12MSDF10	REP	Unknown	RB4	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091568-12MSDDF	REP	Unknown	RB5	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091568-13DF10	REP	Unknown	RB6	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
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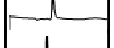
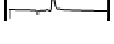
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Last Update Operator: alshs.nouser

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	HS23100120-02DF10	REP	Unknown	RC1	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100120-03DF10	REP	Unknown	RC2	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100120-04	REP	Unknown	RC3	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-201266	REP	Unknown	R5	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	LCS-201266	REP	Unknown	R2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091316-01DF5	REP	Unknown	RC4	5.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091316-02DF2	REP	Unknown	RC5	2.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091316-03DF5	REP	Unknown	RC6	5.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091316-05DF2	REP	Unknown	RC7	2.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-01	REP	Unknown	RC8	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-01MS	REP	Unknown	RD1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-01MSD	REP	Unknown	RD2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-02	REP	Unknown	RD3	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
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	CCB		Unknown	R7	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-03	REP	Unknown	RD4	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-04	REP	Unknown	RD5	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
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	HS23091345-08	REP	Unknown	RE1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-10DF2	REP	Unknown	RE2	2.00		Anions Program ISO37mM 150mm short 0.4 Constant current
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	HS23091345-12DF2	REP	Unknown	RE4	2.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-13DF2	REP	Unknown	RE5	2.00		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

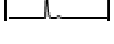
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Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method
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	HS23091345-15	REP	Unknown	RE7	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-16	REP	Unknown	RE8	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091345-17	REP	Unknown	GA1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	MBLK	300-W-SH	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
	HS23100168-01		Unknown	GA2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100168-02		Unknown	GA3	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100110-01DF20		Unknown	GA4	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	CCV1		Unknown	G3	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
	HS23091555-01DF2		Unknown	GA5	2.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-01MSDF2		Unknown	GA6	2.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-01MSDDF		Unknown	GA7	2.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-02		Unknown	GA8	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-03		Unknown	GB1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-04		Unknown	GB2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-05DF100		Unknown	GB3	100.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-06DF50		Unknown	GB4	50.00		Anions Program ISO37mM 150mm short 0.4 Constant current
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	HS23091555-09DF20		Unknown	GB7	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-11		Unknown	GB8	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-11MS		Unknown	GC1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-11MSD		Unknown	GC2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-12		Unknown	GC3	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-13		Unknown	GC4	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-14DF20		Unknown	GC5	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current

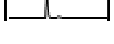
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CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method
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	HS23091555-16		Unknown	GC7	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091555-17	300-W-SH	Unknown	GC8	1.00		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-SH	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
	HS23100159-10		Unknown	GD1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-10DF20		Unknown	GD2	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-11		Unknown	GD3	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-11MS		Unknown	GD4	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-11MSD		Unknown	GD5	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-11DF20		Unknown	GD6	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-12		Unknown	GD7	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-12DF10		Unknown	GD8	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
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	HS23100159-13		Unknown	GE1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-13DF10		Unknown	GE2	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-14		Unknown	GE3	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100159-14DF20		Unknown	GE4	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
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	HS23100159-16DF20		Unknown	GE8	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
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	HS23100144-33DF50	9056-W-SH	Unknown	BA2	50.00		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	300-W-SH-1	Unknown	R5	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current

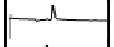
Sequence: 100423
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method
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	HS23100176-01		Unknown	BA3	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100176-01MS		Unknown	BA4	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100176-01MSD		Unknown	BA5	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100176-02		Unknown	BA6	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100175-01		Unknown	BA7	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100175-01DF10		Unknown	BA8	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100175-02		Unknown	BB1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100175-02DF20		Unknown	BB2	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	R6	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100112-03		Unknown	BA1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100175-03		Unknown	BB3	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100175-03DF10		Unknown	BB4	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23100185-01DF2		Unknown	BB5	2.00		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
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	HS23091305-01DF2		Unknown	BB6	2.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-01DF40		Unknown	BB7	40.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-02		Unknown	BB8	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-02MS		Unknown	BC1	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-02MSD		Unknown	BC2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
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	HS23091305-03DF50		Unknown	BC4	50.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-03DF1000		Unknown	BC5	1000.00		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
	HS23091305-04		Unknown	BC6	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current

Sequence: 100423
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method
	HS23091305-04DF20		Unknown	BC7	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-05		Unknown	BC8	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-05DF20		Unknown	BD1	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-06		Unknown	BD2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-06DF20		Unknown	BD3	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-07		Unknown	BD4	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-07DF20		Unknown	BD5	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-08		Unknown	BD6	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-08DF20		Unknown	BD7	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	R7	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-09DF2		Unknown	BD8	2.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-09DF40		Unknown	BE1	40.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-10		Unknown	BE2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-10DF20		Unknown	BE3	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-11		Unknown	BE4	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-11DF20		Unknown	BE5	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-12		Unknown	BE6	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-12DF10		Unknown	BE7	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-13		Unknown	BE8	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-13DF10		Unknown	RA1	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	R6	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-14		Unknown	RA2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-14DF20		Unknown	RA3	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-15		Unknown	RA4	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-15DF20		Unknown	RA5	20.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-16		Unknown	RA6	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-16DF10		Unknown	RA7	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-17		Unknown	RA8	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current

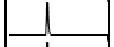
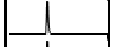
Sequence: 100423
Last Update Operator: alshs.nouser

CD	Name	Comment	Type	Position	Dilution	Level	Instrument Method
	HS23091305-17DF10		Unknown	RB1	10.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-18		Unknown	RB2	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-18DF10		Unknown	RB3	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
	HS23091305-19		Unknown	RB4	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current
	HS23091305-19DF20		Unknown	RB5	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	R6	1.00		Anions Program ISO37mM 150mm short 0.4 Constant current

Sequence: 100423
Last Update Operator: alshs.nouser

Processing Method	CD	Name	me	Status	Inject Time
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	10/4/2023 6:33:18 AM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 6:39:07 AM -05:00
Anions Processing Method ISO		MBLK	5.0	Finished	10/4/2023 6:50:37 AM -05:00
Anions Processing Method ISO		LCS	5.0	Finished	10/4/2023 7:02:09 AM -05:00
Anions Processing Method ISO		HS23100095-01	5.0	Finished	10/4/2023 7:13:41 AM -05:00
Anions Processing Method ISO		HS23100095-01DF10	5.0	Finished	10/4/2023 7:19:26 AM -05:00
Anions Processing Method ISO		HS23100095-01DF100	5.0	Finished	10/4/2023 7:25:12 AM -05:00
Anions Processing Method ISO		HS23100120-01DF200	5.0	Finished	10/4/2023 7:31:09 AM -05:00
Anions Processing Method ISO		HS23100120-02DF200	5.0	Finished	10/4/2023 7:37:06 AM -05:00
Anions Processing Method ISO		HS23100120-03DF200	5.0	Finished	10/4/2023 7:42:52 AM -05:00
Anions Processing Method ISO		HS23100120-04DF10	5.0	Finished	10/4/2023 7:48:38 AM -05:00
Anions Processing Method ISO		HS23100120-01DF500	5.0	Finished	10/4/2023 7:54:24 AM -05:00
Anions Processing Method ISO		HS23100120-02DF500	5.0	Finished	10/4/2023 8:00:09 AM -05:00
Anions Processing Method ISO		HS23100120-03DF500	5.0	Finished	10/4/2023 8:05:55 AM -05:00
Anions Processing Method ISO		CCV1	5.0	Finished	10/4/2023 8:17:40 AM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 8:34:58 AM -05:00
Anions Processing Method ISO		HS23091568-12DF10	5.0	Finished	10/4/2023 8:40:55 AM -05:00
Anions Processing Method ISO		HS23091568-12MSDF10	5.0	Finished	10/4/2023 8:46:41 AM -05:00
Anions Processing Method ISO		HS23091568-12MSDDF	5.0	Finished	10/4/2023 8:52:27 AM -05:00
Anions Processing Method ISO		HS23091568-13DF10	5.0	Finished	10/4/2023 8:58:13 AM -05:00
Anions Processing Method ISO		HS23091568-14DF10	5.0	Finished	10/4/2023 9:04:10 AM -05:00

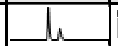
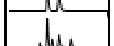
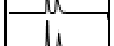
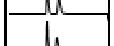
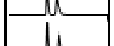
Sequence: 100423
Last Update Operator: alshs.nouser

Processing Method	CD	Name	me	Status	Inject Time
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Anions Processing Method ISO		HS23100120-02DF10	5.0	Finished	10/4/2023 9:15:42 AM -05:00
Anions Processing Method ISO		HS23100120-03DF10	5.0	Finished	10/4/2023 9:21:27 AM -05:00
Anions Processing Method ISO		HS23100120-04	5.0	Finished	10/4/2023 9:27:13 AM -05:00
Anions Processing Method ISO		CCV	5.0	Finished	10/4/2023 10:08:00 AM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 10:13:45 AM -05:00
Anions Processing Method ISO		MBLK-201266	5.0	Finished	10/4/2023 10:25:17 AM -05:00
Anions Processing Method ISO		LCS-201266	5.0	Finished	10/4/2023 10:36:49 AM -05:00
Anions Processing Method ISO		HS23091316-01DF5	5.0	Finished	10/4/2023 10:42:35 AM -05:00
Anions Processing Method ISO		HS23091316-02DF2	5.0	Finished	10/4/2023 10:48:21 AM -05:00
Anions Processing Method ISO		HS23091316-03DF5	5.0	Finished	10/4/2023 10:54:06 AM -05:00
Anions Processing Method ISO		HS23091316-05DF2	5.0	Finished	10/4/2023 10:59:52 AM -05:00
Anions Processing Method ISO		HS23091345-01	5.0	Finished	10/4/2023 11:05:38 AM -05:00
Anions Processing Method ISO		HS23091345-01MS	5.0	Finished	10/4/2023 11:11:24 AM -05:00
Anions Processing Method ISO		HS23091345-01MSD	5.0	Finished	10/4/2023 11:17:10 AM -05:00
Anions Processing Method ISO		HS23091345-02	5.0	Finished	10/4/2023 11:22:56 AM -05:00
Anions Processing Method ISO		CCV1	5.0	Finished	10/4/2023 11:34:28 AM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 11:46:00 AM -05:00
Anions Processing Method ISO		HS23091345-03	5.0	Finished	10/4/2023 11:57:31 AM -05:00
Anions Processing Method ISO		HS23091345-04	5.0	Finished	10/4/2023 12:03:17 PM -05:00
Anions Processing Method ISO		HS23091345-05	5.0	Finished	10/4/2023 12:09:03 PM -05:00
Anions Processing Method ISO		HS23091345-06	5.0	Finished	10/4/2023 12:14:49 PM -05:00
Anions Processing Method ISO		HS23091345-07	5.0	Finished	10/4/2023 12:20:35 PM -05:00
Anions Processing Method ISO		HS23091345-08	5.0	Finished	10/4/2023 12:26:21 PM -05:00
Anions Processing Method ISO		HS23091345-10DF2	5.0	Finished	10/4/2023 12:32:07 PM -05:00
Anions Processing Method ISO		HS23091345-11DF2	5.0	Finished	10/4/2023 12:38:04 PM -05:00
Anions Processing Method ISO		HS23091345-12DF2	5.0	Finished	10/4/2023 12:43:50 PM -05:00
Anions Processing Method ISO		HS23091345-13DF2	5.0	Finished	10/4/2023 12:49:34 PM -05:00
Anions Processing Method ISO		CCV	5.0	Finished	10/4/2023 1:07:03 PM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 1:12:49 PM -05:00

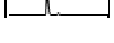
Sequence: 100423
Last Update Operator: alshs.nouser

Processing Method	CD	Name	me	Status	Inject Time
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Anions Processing Method ISO		HS23091345-16	5.0	Finished	10/4/2023 1:35:52 PM -05:00
Anions Processing Method ISO		HS23091345-17	5.0	Finished	10/4/2023 1:41:49 PM -05:00
Anions Processing Method ISO		MBLK	5.0	Finished	10/4/2023 1:59:18 PM -05:00
Anions Processing Method ISO		LCS	5.0	Finished	10/4/2023 2:10:50 PM -05:00
Anions Processing Method ISO		HS23100168-01	5.0	Finished	10/4/2023 2:16:42 PM -05:00
Anions Processing Method ISO		HS23100168-02	5.0	Finished	10/4/2023 2:22:33 PM -05:00
Anions Processing Method ISO		HS23100110-01DF20	5.0	Finished	10/4/2023 2:28:19 PM -05:00
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Anions Processing Method ISO		HS23091555-01DF2	5.0	Finished	10/4/2023 3:03:05 PM -05:00
Anions Processing Method ISO		HS23091555-01MSDF2	5.0	Finished	10/4/2023 3:08:51 PM -05:00
Anions Processing Method ISO		HS23091555-01MSDDF	5.0	Finished	10/4/2023 3:14:37 PM -05:00
Anions Processing Method ISO		HS23091555-02	5.0	Finished	10/4/2023 3:20:23 PM -05:00
Anions Processing Method ISO		HS23091555-03	5.0	Finished	10/4/2023 3:26:09 PM -05:00
Anions Processing Method ISO		HS23091555-04	5.0	Finished	10/4/2023 3:31:55 PM -05:00
Anions Processing Method ISO		HS23091555-05DF100	5.0	Finished	10/4/2023 3:37:40 PM -05:00
Anions Processing Method ISO		HS23091555-06DF50	5.0	Finished	10/4/2023 3:43:30 PM -05:00
Anions Processing Method ISO		HS23091555-07	5.0	Finished	10/4/2023 3:49:24 PM -05:00
Anions Processing Method ISO		HS23091555-08DF20	5.0	Finished	10/4/2023 3:55:21 PM -05:00
Anions Processing Method ISO		CCV	5.0	Finished	10/4/2023 4:12:49 PM -05:00
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Anions Processing Method ISO		HS23091555-13	5.0	Finished	10/4/2023 4:59:28 PM -05:00
Anions Processing Method ISO		HS23091555-14DF20	5.0	Finished	10/4/2023 5:05:14 PM -05:00

Sequence: 100423
Last Update Operator: alshs.nouser

Processing Method	CD	Name	me	Status	Inject Time
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Anions Processing Method ISO		HS23091555-16	5.0	Finished	10/4/2023 5:16:46 PM -05:00
Anions Processing Method ISO		HS23091555-17	5.0	Finished	10/4/2023 5:22:31 PM -05:00
Anions Processing Method ISO		CCV1	5.0	Finished	10/4/2023 5:34:14 PM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 5:45:49 PM -05:00
Anions Processing Method ISO		MBLK	5.0	Finished	10/4/2023 5:57:38 PM -05:00
Anions Processing Method ISO		LCS	5.0	Finished	10/4/2023 6:09:09 PM -05:00
Anions Processing Method ISO		HS23100159-10	5.0	Finished	10/4/2023 6:14:55 PM -05:00
Anions Processing Method ISO		HS23100159-10DF20	5.0	Finished	10/4/2023 6:20:41 PM -05:00
Anions Processing Method ISO		HS23100159-11	5.0	Finished	10/4/2023 6:26:27 PM -05:00
Anions Processing Method ISO		HS23100159-11MS	5.0	Finished	10/4/2023 6:32:12 PM -05:00
Anions Processing Method ISO		HS23100159-11MSD	5.0	Finished	10/4/2023 6:37:58 PM -05:00
Anions Processing Method ISO		HS23100159-11DF20	5.0	Finished	10/4/2023 6:43:43 PM -05:00
Anions Processing Method ISO		HS23100159-12	5.0	Finished	10/4/2023 6:49:29 PM -05:00
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Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 7:24:03 PM -05:00
Anions Processing Method ISO		HS23100159-13	5.0	Finished	10/4/2023 7:29:49 PM -05:00
Anions Processing Method ISO		HS23100159-13DF10	5.0	Finished	10/4/2023 7:35:35 PM -05:00
Anions Processing Method ISO		HS23100159-14	5.0	Finished	10/4/2023 7:41:20 PM -05:00
Anions Processing Method ISO		HS23100159-14DF20	5.0	Finished	10/4/2023 7:47:06 PM -05:00
Anions Processing Method ISO		HS23100159-15	5.0	Finished	10/4/2023 7:52:51 PM -05:00
Anions Processing Method ISO		HS23100159-15DF10	5.0	Finished	10/4/2023 7:58:40 PM -05:00
Anions Processing Method ISO		HS23100159-16	5.0	Finished	10/4/2023 8:04:34 PM -05:00
Anions Processing Method ISO		HS23100159-16DF20	5.0	Finished	10/4/2023 8:10:18 PM -05:00
Anions Processing Method ISO		HS23091904-10DF50	5.0	Finished	10/4/2023 8:16:14 PM -05:00
Anions Processing Method ISO		HS23100144-33DF50	5.0	Finished	10/4/2023 8:21:59 PM -05:00
Anions Processing Method ISO		CCV1	5.0	Finished	10/4/2023 8:39:37 PM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 8:45:22 PM -05:00
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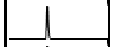
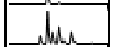
Sequence: 100423
Last Update Operator: alshs.nouser

Processing Method	CD	Name	me	Status	Inject Time
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Anions Processing Method ISO		HS23100176-01MS	5.0	Finished	10/4/2023 9:20:06 PM -05:00
Anions Processing Method ISO		HS23100176-01MSD	5.0	Finished	10/4/2023 9:25:51 PM -05:00
Anions Processing Method ISO		HS23100176-02	5.0	Finished	10/4/2023 9:31:37 PM -05:00
Anions Processing Method ISO		HS23100175-01	5.0	Finished	10/4/2023 9:37:22 PM -05:00
Anions Processing Method ISO		HS23100175-01DF10	5.0	Finished	10/4/2023 9:43:08 PM -05:00
Anions Processing Method ISO		HS23100175-02	5.0	Finished	10/4/2023 9:48:53 PM -05:00
Anions Processing Method ISO		HS23100175-02DF20	5.0	Finished	10/4/2023 9:54:39 PM -05:00
Anions Processing Method ISO		CCV	5.0	Finished	10/4/2023 10:12:17 PM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 10:18:03 PM -05:00
Anions Processing Method ISO		HS23100112-03	5.0	Finished	10/4/2023 10:35:20 PM -05:00
Anions Processing Method ISO		HS23100175-03	5.0	Finished	10/4/2023 10:41:05 PM -05:00
Anions Processing Method ISO		HS23100175-03DF10	5.0	Finished	10/4/2023 10:46:51 PM -05:00
Anions Processing Method ISO		HS23100185-01DF2	5.0	Finished	10/4/2023 10:52:36 PM -05:00
Anions Processing Method ISO		CCV1	5.0	Finished	10/4/2023 11:10:04 PM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/4/2023 11:15:50 PM -05:00
Anions Processing Method ISO		MBLK	5.0	Finished	10/4/2023 11:27:21 PM -05:00
Anions Processing Method ISO		LCS	5.0	Finished	10/4/2023 11:38:52 PM -05:00
Anions Processing Method ISO		HS23091305-01DF2	5.0	Finished	10/4/2023 11:50:34 PM -05:00
Anions Processing Method ISO		HS23091305-01DF40	5.0	Finished	10/4/2023 11:56:20 PM -05:00
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Anions Processing Method ISO		HS23091305-02MS	5.0	Finished	10/5/2023 12:07:51 AM -05:00
Anions Processing Method ISO		HS23091305-02MSD	5.0	Finished	10/5/2023 12:13:37 AM -05:00
Anions Processing Method ISO		HS23091305-02DF10	5.0	Finished	10/5/2023 12:19:22 AM -05:00
Anions Processing Method ISO		HS23091305-03DF50	5.0	Finished	10/5/2023 12:25:08 AM -05:00
Anions Processing Method ISO		HS23091305-03DF1000	5.0	Finished	10/5/2023 12:30:54 AM -05:00
Anions Processing Method ISO		CCV	5.0	Finished	10/5/2023 12:36:39 AM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/5/2023 12:48:11 AM -05:00
Anions Processing Method ISO		HS23091305-04	5.0	Finished	10/5/2023 12:59:42 AM -05:00

Sequence: 100423
Last Update Operator: alshs.nouser

Processing Method	CD	Name	me	Status	Inject Time
Anions Processing Method ISO		HS23091305-04DF20	5.0	Finished	10/5/2023 1:05:27 AM -05:00
Anions Processing Method ISO		HS23091305-05	5.0	Finished	10/5/2023 1:11:13 AM -05:00
Anions Processing Method ISO		HS23091305-05DF20	5.0	Finished	10/5/2023 1:16:59 AM -05:00
Anions Processing Method ISO		HS23091305-06	5.0	Finished	10/5/2023 1:22:44 AM -05:00
Anions Processing Method ISO		HS23091305-06DF20	5.0	Finished	10/5/2023 1:28:29 AM -05:00
Anions Processing Method ISO		HS23091305-07	5.0	Finished	10/5/2023 1:34:15 AM -05:00
Anions Processing Method ISO		HS23091305-07DF20	5.0	Finished	10/5/2023 1:40:00 AM -05:00
Anions Processing Method ISO		HS23091305-08	5.0	Finished	10/5/2023 1:45:46 AM -05:00
Anions Processing Method ISO		HS23091305-08DF20	5.0	Finished	10/5/2023 1:51:31 AM -05:00
Anions Processing Method ISO		CCV1	5.0	Finished	10/5/2023 2:08:59 AM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/5/2023 2:14:45 AM -05:00
Anions Processing Method ISO		HS23091305-09DF2	5.0	Finished	10/5/2023 2:26:22 AM -05:00
Anions Processing Method ISO		HS23091305-09DF40	5.0	Finished	10/5/2023 2:32:11 AM -05:00
Anions Processing Method ISO		HS23091305-10	5.0	Finished	10/5/2023 2:37:56 AM -05:00
Anions Processing Method ISO		HS23091305-10DF20	5.0	Finished	10/5/2023 2:43:42 AM -05:00
Anions Processing Method ISO		HS23091305-11	5.0	Finished	10/5/2023 2:49:27 AM -05:00
Anions Processing Method ISO		HS23091305-11DF20	5.0	Finished	10/5/2023 2:55:20 AM -05:00
Anions Processing Method ISO		HS23091305-12	5.0	Finished	10/5/2023 3:01:08 AM -05:00
Anions Processing Method ISO		HS23091305-12DF10	5.0	Finished	10/5/2023 3:06:53 AM -05:00
Anions Processing Method ISO		HS23091305-13	5.0	Finished	10/5/2023 3:12:39 AM -05:00
Anions Processing Method ISO		HS23091305-13DF10	5.0	Finished	10/5/2023 3:18:35 AM -05:00
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Anions Processing Method ISO		HS23091305-14DF20	5.0	Finished	10/5/2023 3:59:17 AM -05:00
Anions Processing Method ISO		HS23091305-15	5.0	Finished	10/5/2023 4:05:02 AM -05:00
Anions Processing Method ISO		HS23091305-15DF20	5.0	Finished	10/5/2023 4:10:48 AM -05:00
Anions Processing Method ISO		HS23091305-16	5.0	Finished	10/5/2023 4:16:33 AM -05:00
Anions Processing Method ISO		HS23091305-16DF10	5.0	Finished	10/5/2023 4:22:18 AM -05:00
Anions Processing Method ISO		HS23091305-17	5.0	Finished	10/5/2023 4:28:04 AM -05:00

Sequence: 100423
Last Update Operator: alshs.nouser

Processing Method	CD	Name	me	Status	Inject Time
Anions Processing Method ISO		HS23091305-17DF10	5.0	Finished	10/5/2023 4:33:49 AM -05:00
Anions Processing Method ISO		HS23091305-18	5.0	Finished	10/5/2023 4:39:35 AM -05:00
Anions Processing Method ISO		HS23091305-18DF10	5.0	Finished	10/5/2023 4:45:20 AM -05:00
Anions Processing Method ISO		CCV1	5.0	Finished	10/5/2023 5:02:52 AM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/5/2023 5:14:22 AM -05:00
Anions Processing Method ISO		HS23091305-19	5.0	Finished	10/5/2023 5:20:07 AM -05:00
Anions Processing Method ISO		HS23091305-19DF20	5.0	Finished	10/5/2023 5:25:52 AM -05:00
Anions Processing Method ISO		CCV	5.0	Finished	10/5/2023 5:37:30 AM -05:00
Anions Processing Method ISO		CCB	5.0	Finished	10/5/2023 5:49:15 AM -05:00

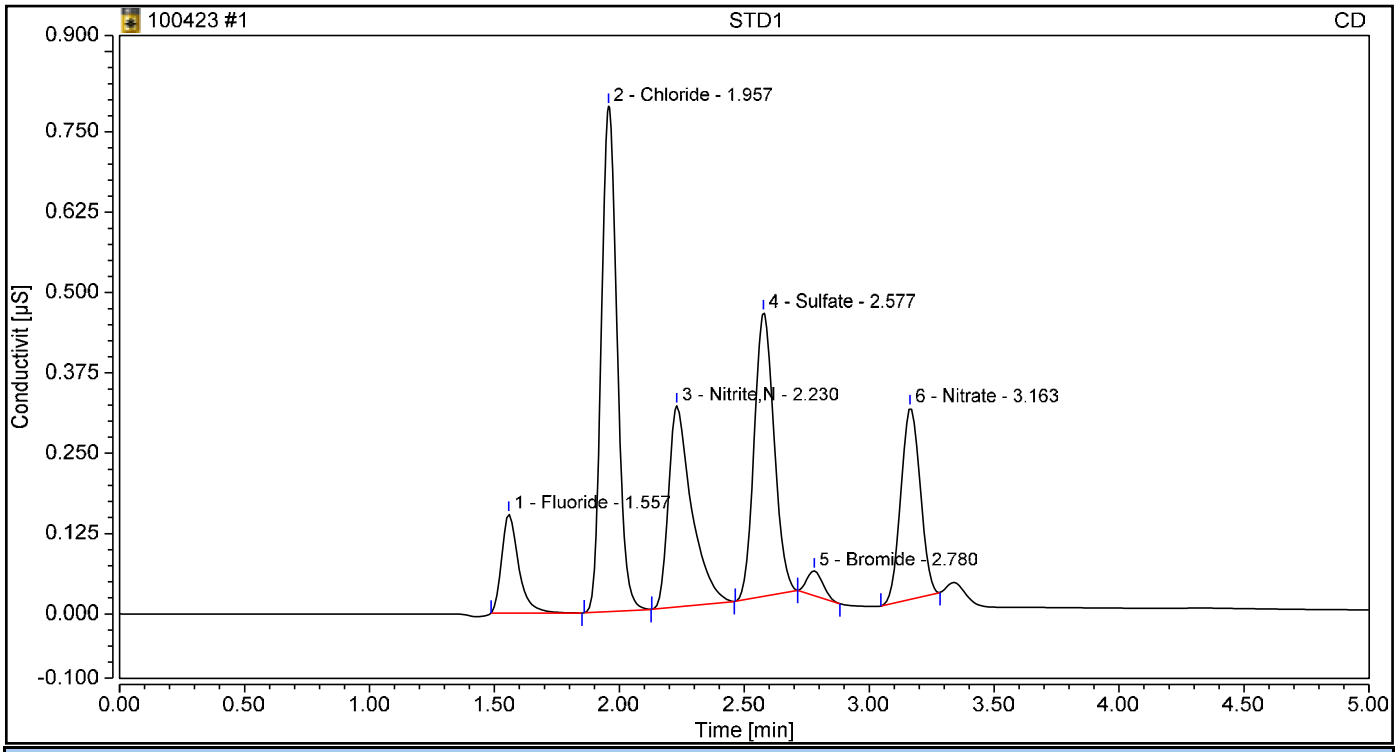
Peak No.	Peak Name	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	Fluoride	Quad, WithOffset, 1/A	Area	6	15.8030	0.99925	-0.0156	0.2362	-0.0006
2	Chloride	Lin, WithOffset, 1/A	Area	6	5.3728	0.99987	-0.0255	0.1591	0.0000
3	***Nitrite,N***	***Quad, 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

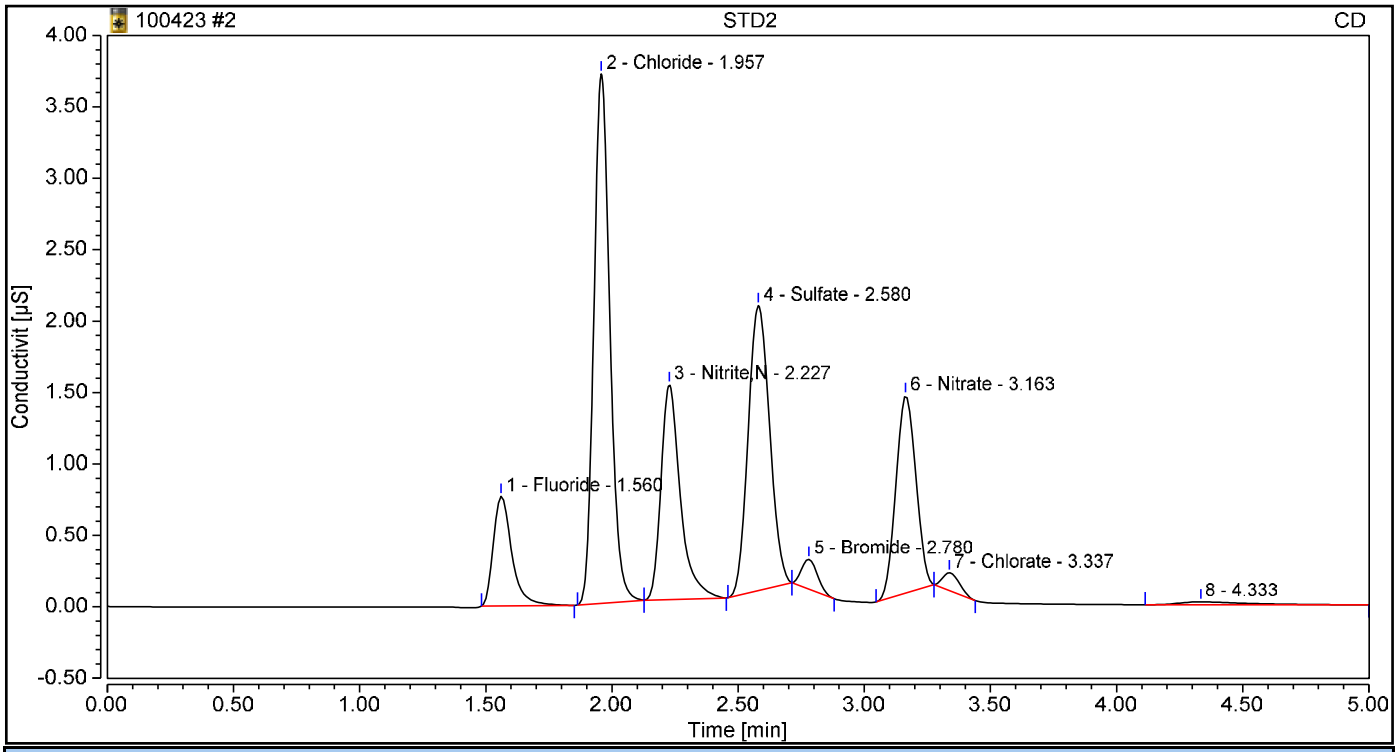
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.557	0.012	0.154	6.96	7.57	0.1174
2	Chloride	1.957	0.058	0.786	33.19	38.71	0.5224
3	Nitrite,N	2.230	0.034	0.313	19.33	15.41	0.1016
4	Sulfate	2.577	0.041	0.441	23.41	21.73	0.5194
5	Bromide	2.780	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

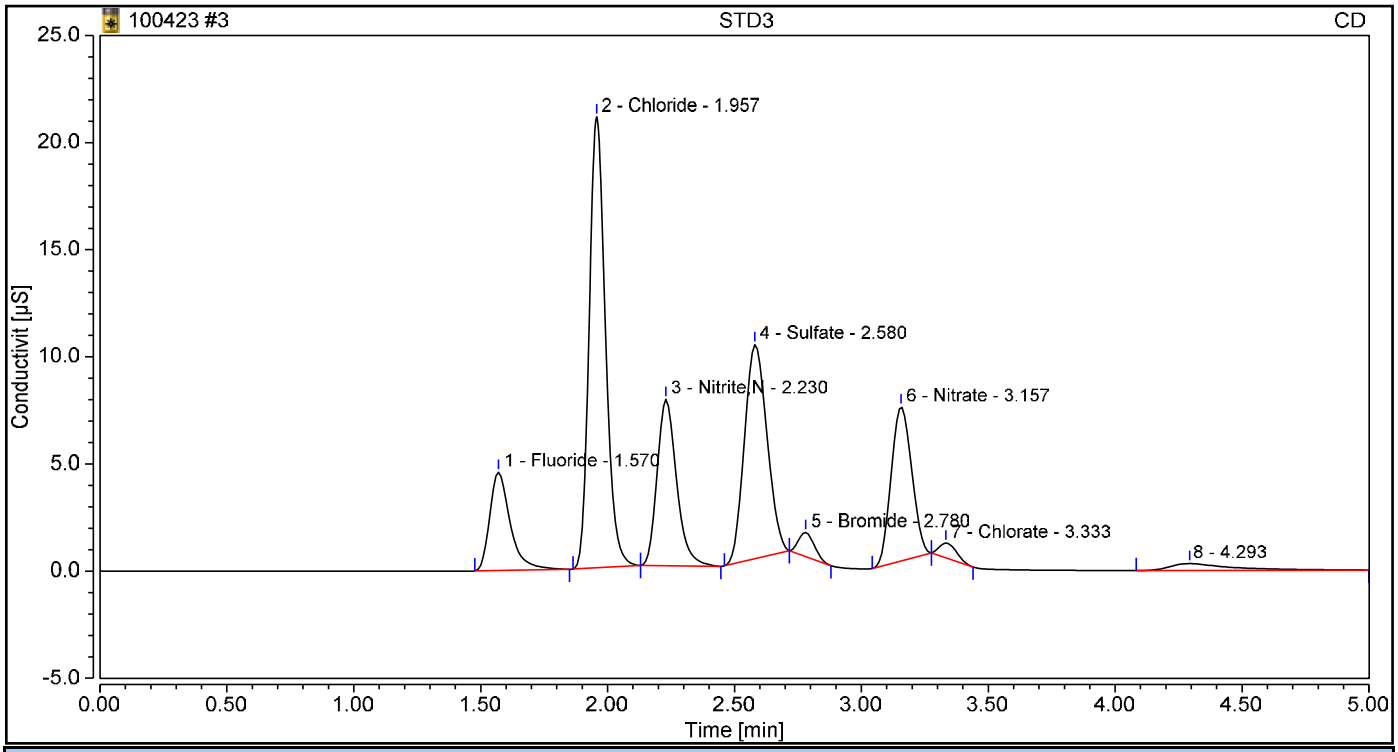
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.560	0.065	0.767	7.87	7.89	0.3421
2	Chloride	1.957	0.273	3.706	33.01	38.17	1.8754
3	Nitrite,N	2.227	0.133	1.504	16.11	15.49	0.3865
4	Sulfate	2.580	0.197	1.995	23.77	20.55	1.9680
5	Bromide	2.780	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

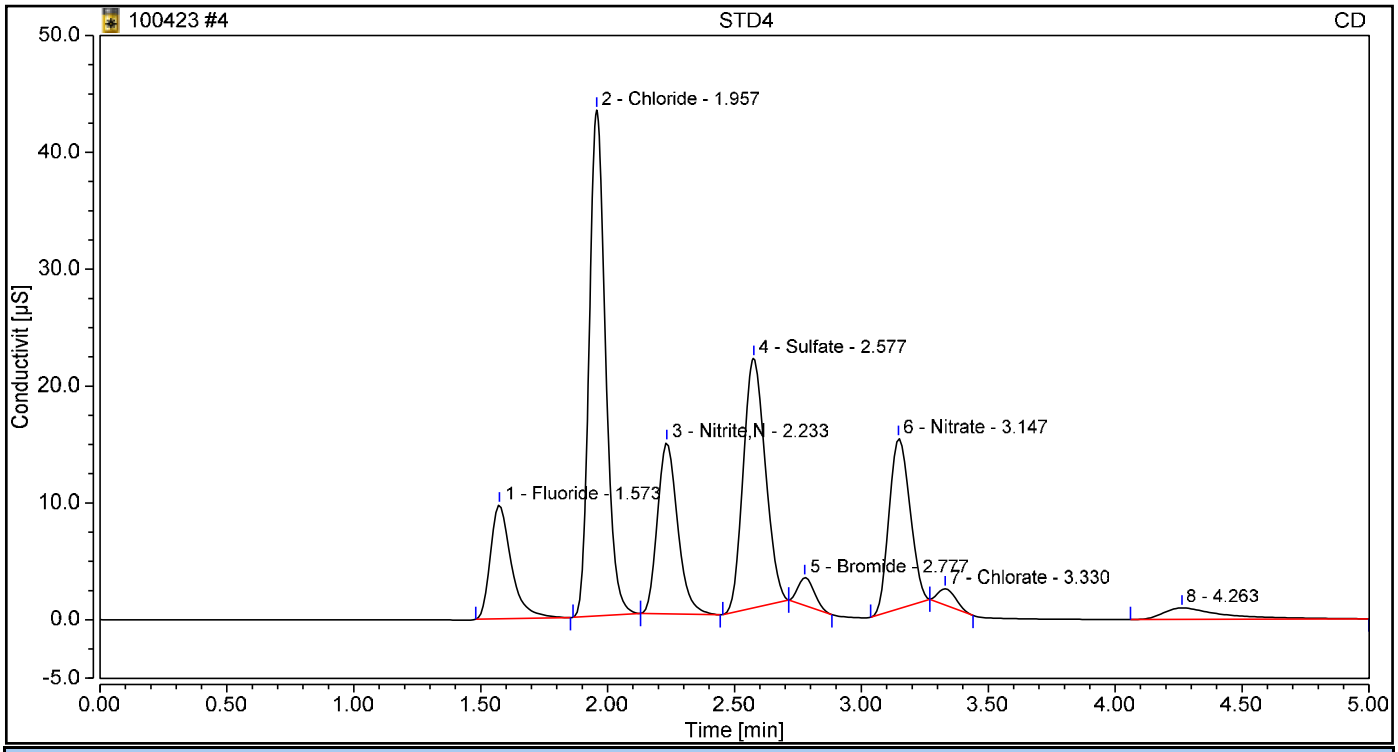
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.570	0.427	4.589	9.26	8.70	1.8834
2	Chloride	1.957	1.559	21.045	33.82	39.92	9.9624
3	Nitrite,N	2.230	0.693	7.766	15.03	14.73	2.0223
4	Sulfate	2.580	1.027	10.001	22.28	18.97	9.6884
5	Bromide	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

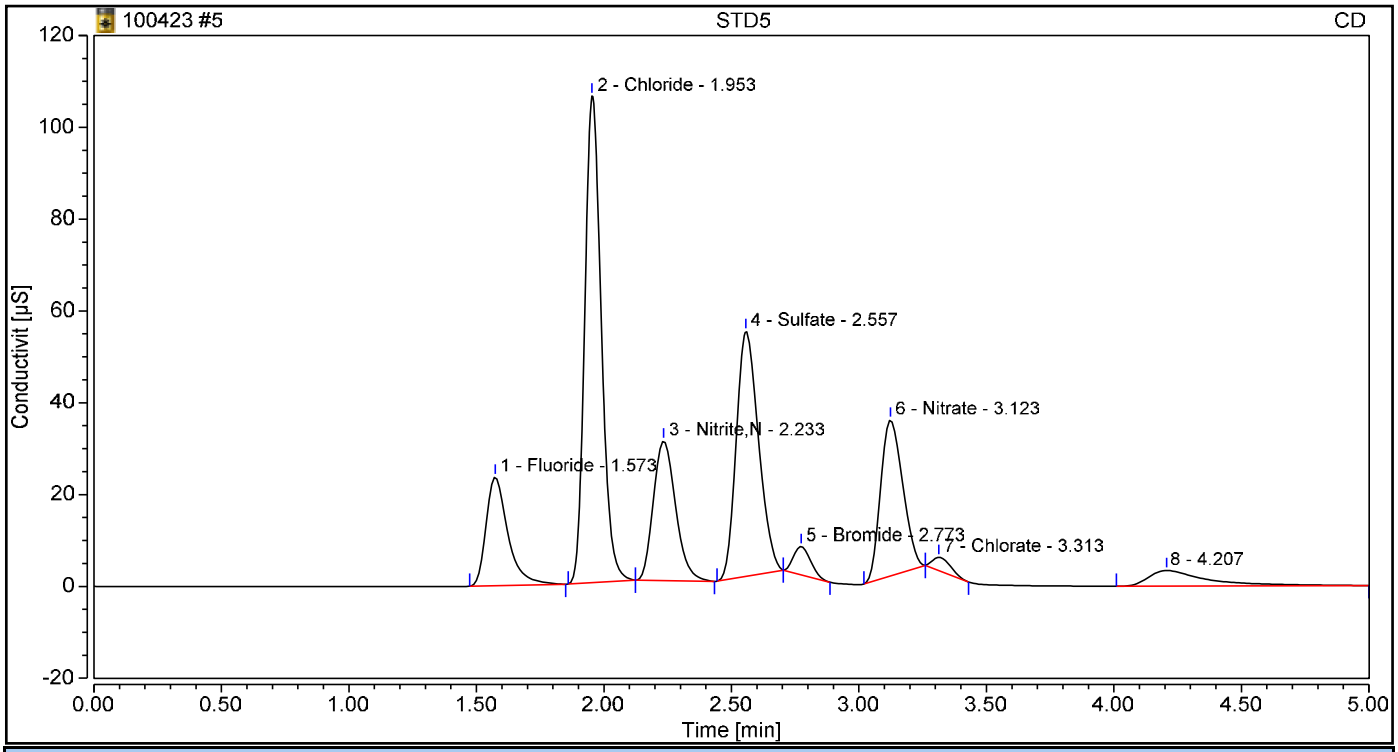
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.573	0.931	9.759	9.68	9.01	4.0504
2	Chloride	1.957	3.227	43.285	33.54	39.95	20.4428
3	Nitrite,N	2.233	1.364	14.668	14.17	13.54	4.0731
4	Sulfate	2.577	2.148	21.332	22.33	19.69	20.1055
5	Bromide	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

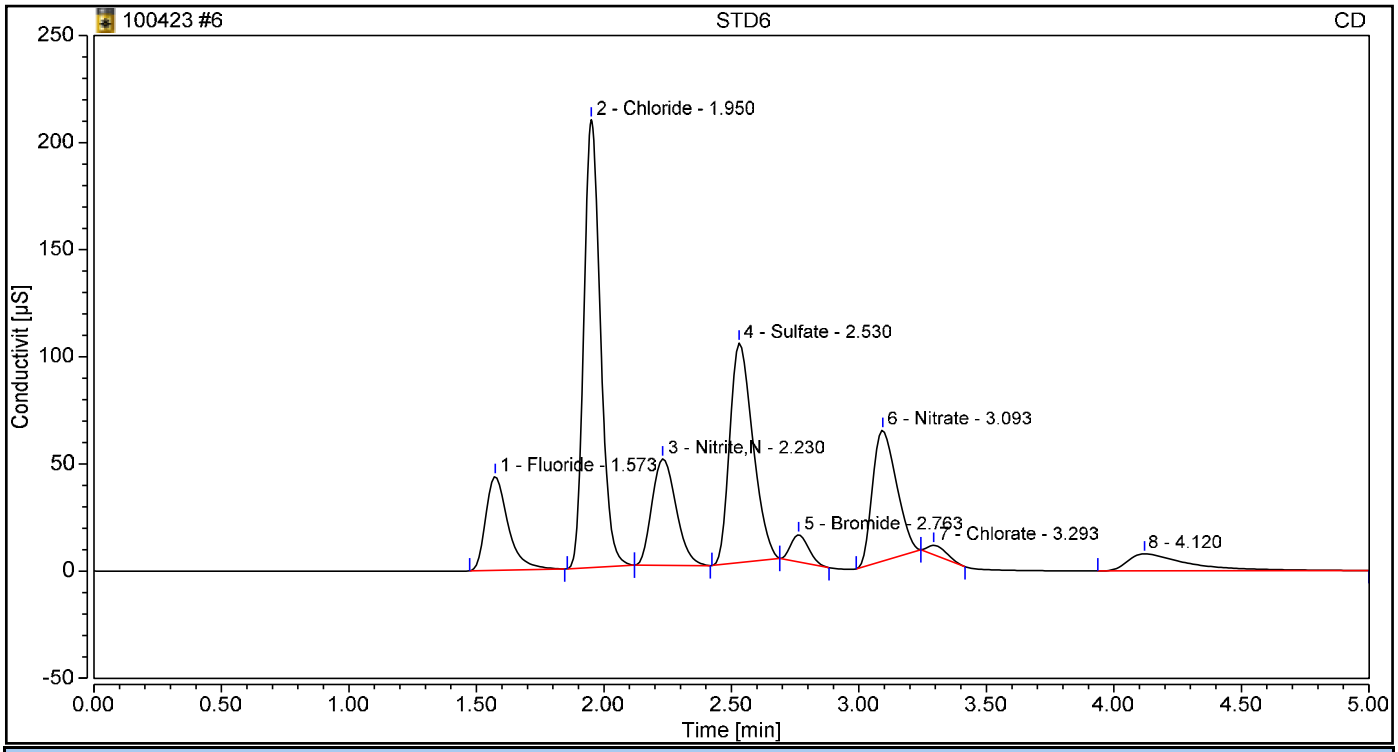
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.573	2.337	23.654	9.83	9.10	10.2185
2	Chloride	1.953	7.963	105.986	33.48	40.79	50.2135
3	Nitrite,N	2.233	3.069	30.441	12.91	11.72	9.8430
4	Sulfate	2.557	5.375	53.357	22.60	20.54	50.0975
5	Bromide	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

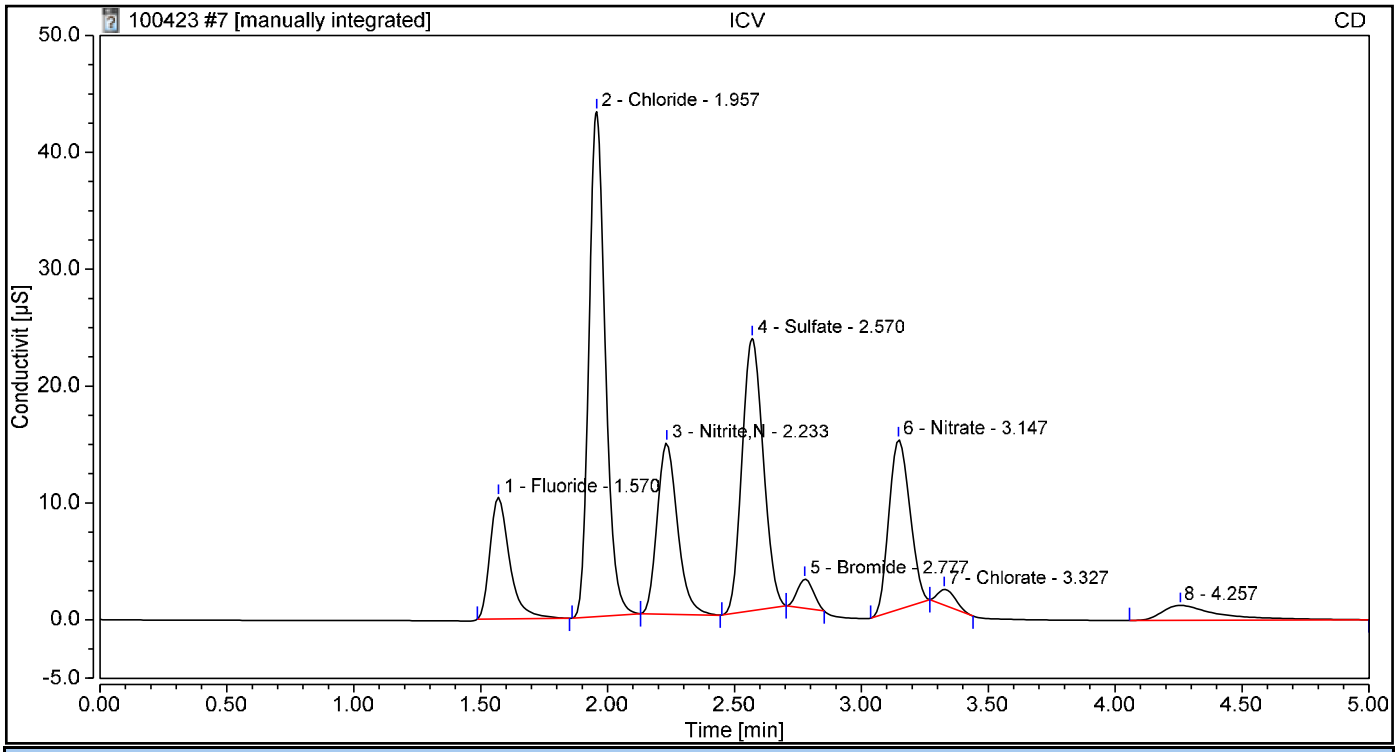
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.573	4.451	43.796	9.53	8.92	19.8879
2	Chloride	1.950	15.800	208.984	33.84	42.57	99.4835
3	Nitrite,N	2.230	5.436	49.707	11.64	10.13	20.0842
4	Sulfate	2.530	10.757	102.465	23.04	20.87	100.1213
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

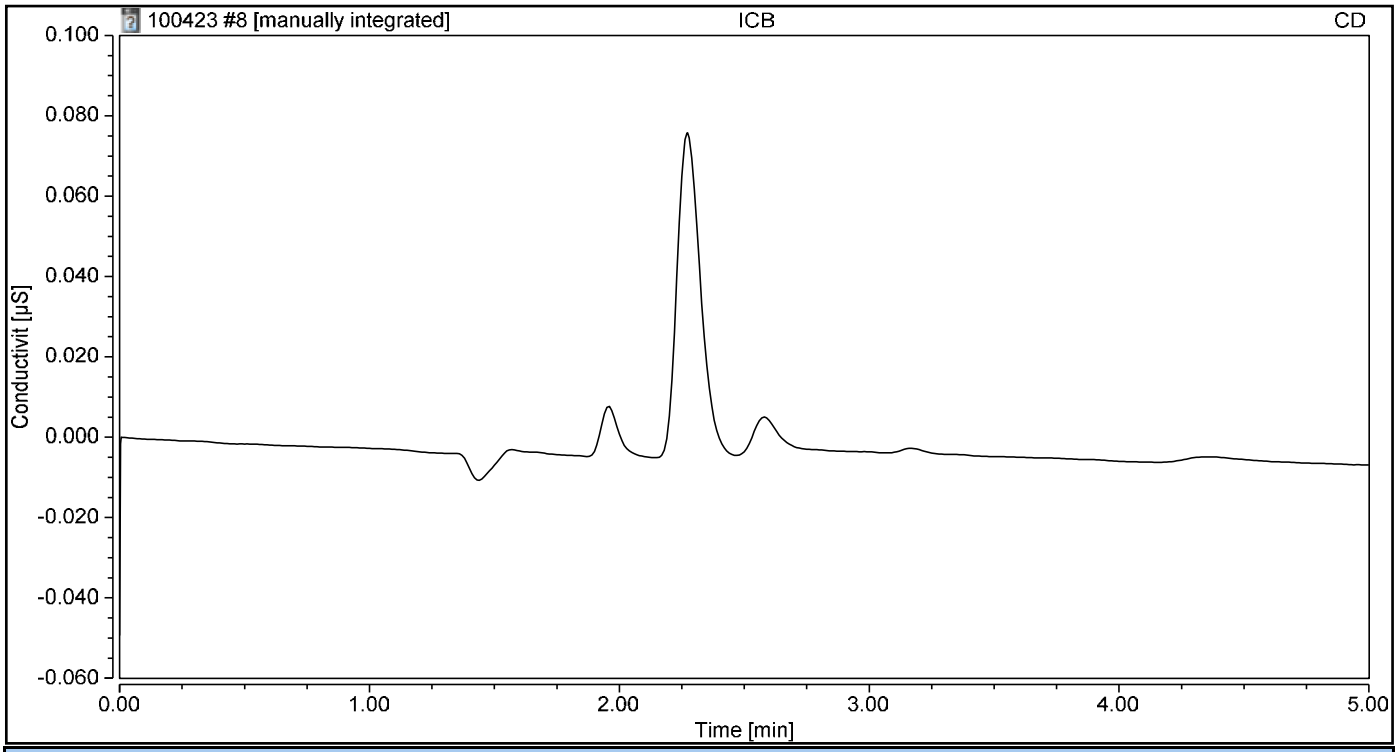
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.570	0.928	10.403	9.49	9.36	4.0367
2	Chloride	1.957	3.228	43.208	33.00	38.86	20.4498
3	Nitrite,N	2.233	1.366	14.652	13.96	13.18	4.0794
4	Sulfate	2.570	2.245	23.287	22.95	20.94	21.0047
5	Bromide	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

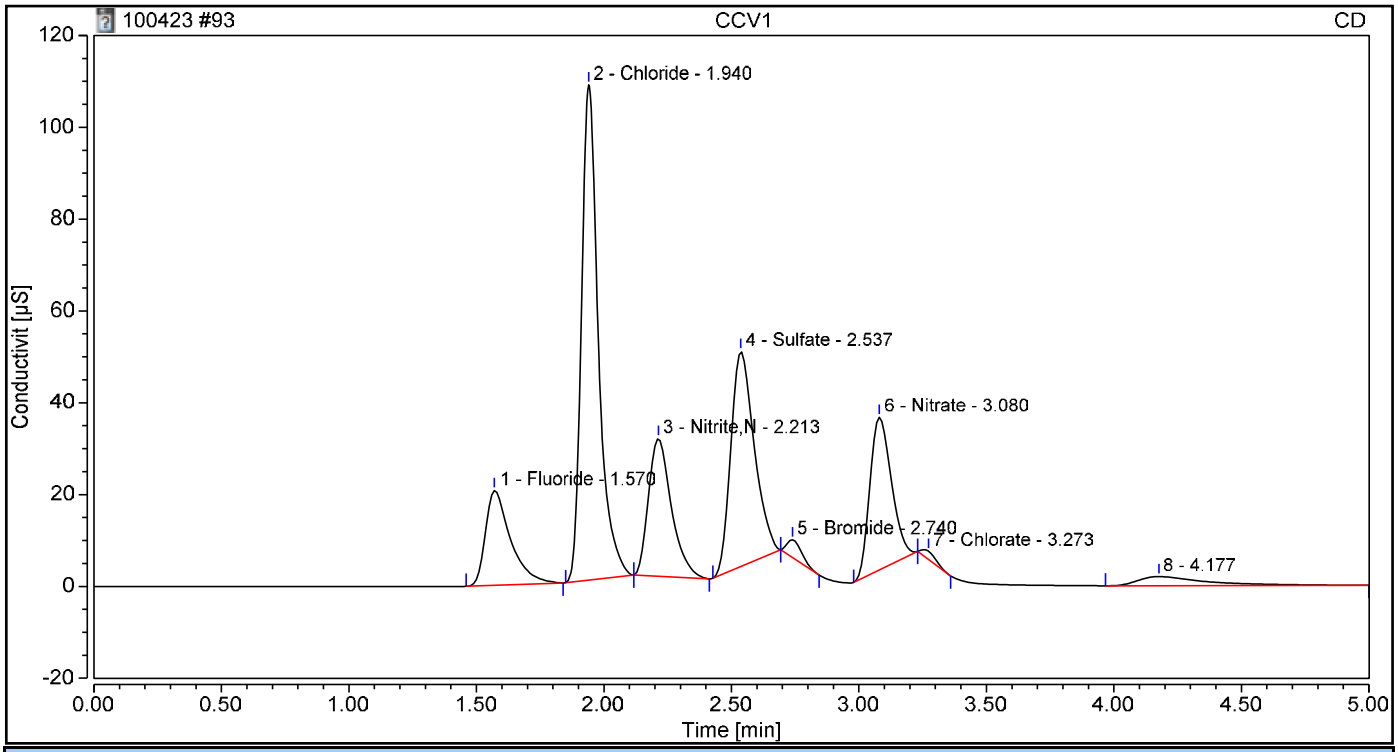
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Bromide	n.a.	n.a.	n.a.	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:	**04/Oct/23 17:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

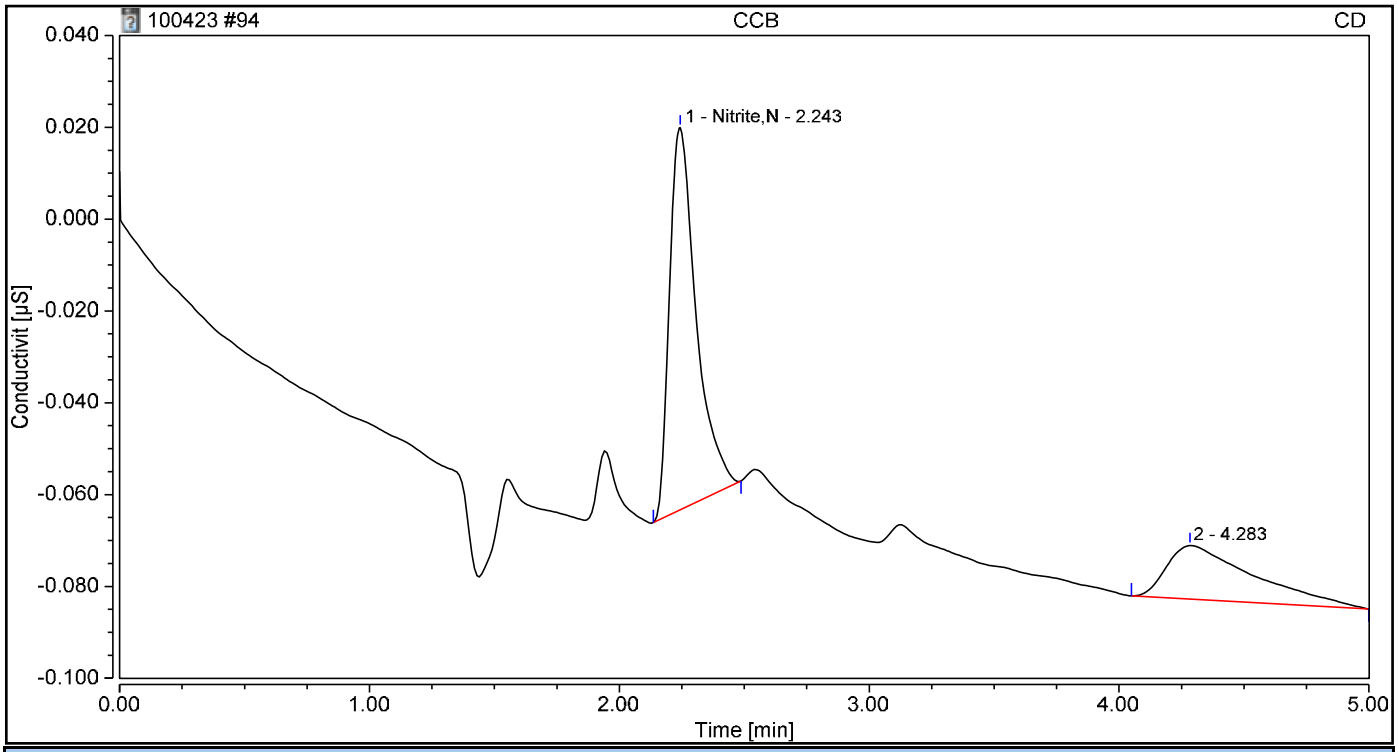
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.570	2.346	20.645	10.21	8.38	10.2587
2	Chloride	1.940	8.299	107.872	36.12	43.80	52.3266
3	Nitrite,N	2.213	3.124	30.038	13.60	12.20	10.0429
4	Sulfate	2.537	4.974	46.843	21.65	19.02	46.3674
5	Bromide	2.740	0.263	3.870	1.14	1.57	5.7720
6	Nitrate	3.080	3.241	33.268	14.11	13.51	9.6211
7	Chlorate	3.273	0.111	1.759	0.48	0.71	3.9813
n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8		4.177	0.620	1.979	2.70	0.80	n.a.
Total:			**22.976**	**246.274**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**5.00**
Vial Number:	**R7**	*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:	**04/Oct/23 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

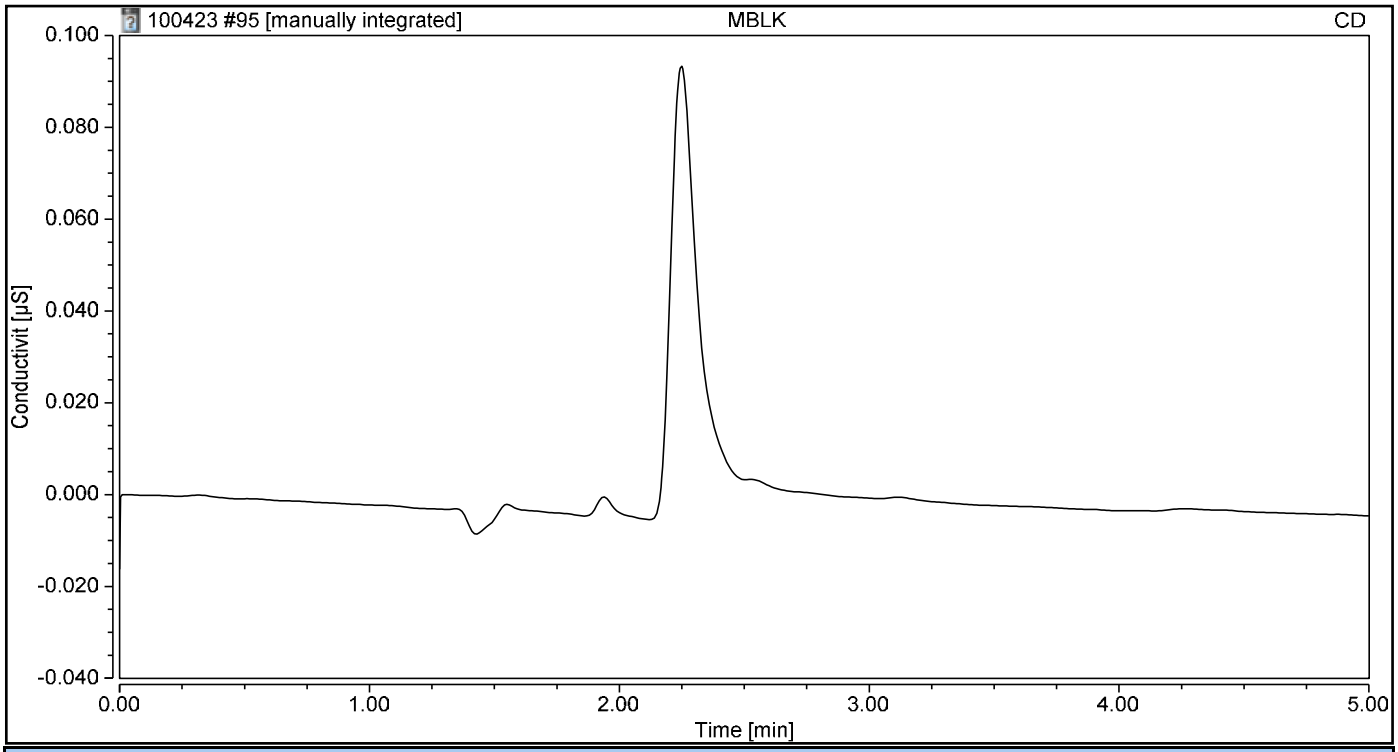
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Nitrite,N	2.243	0.010	0.083	68.67	87.73	0.0355
n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Bromide	n.a.	n.a.	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.
2		4.283	0.005	0.012	31.33	12.27	n.a.
Total:			**0.015**	**0.095**	**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:	**04/Oct/23 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

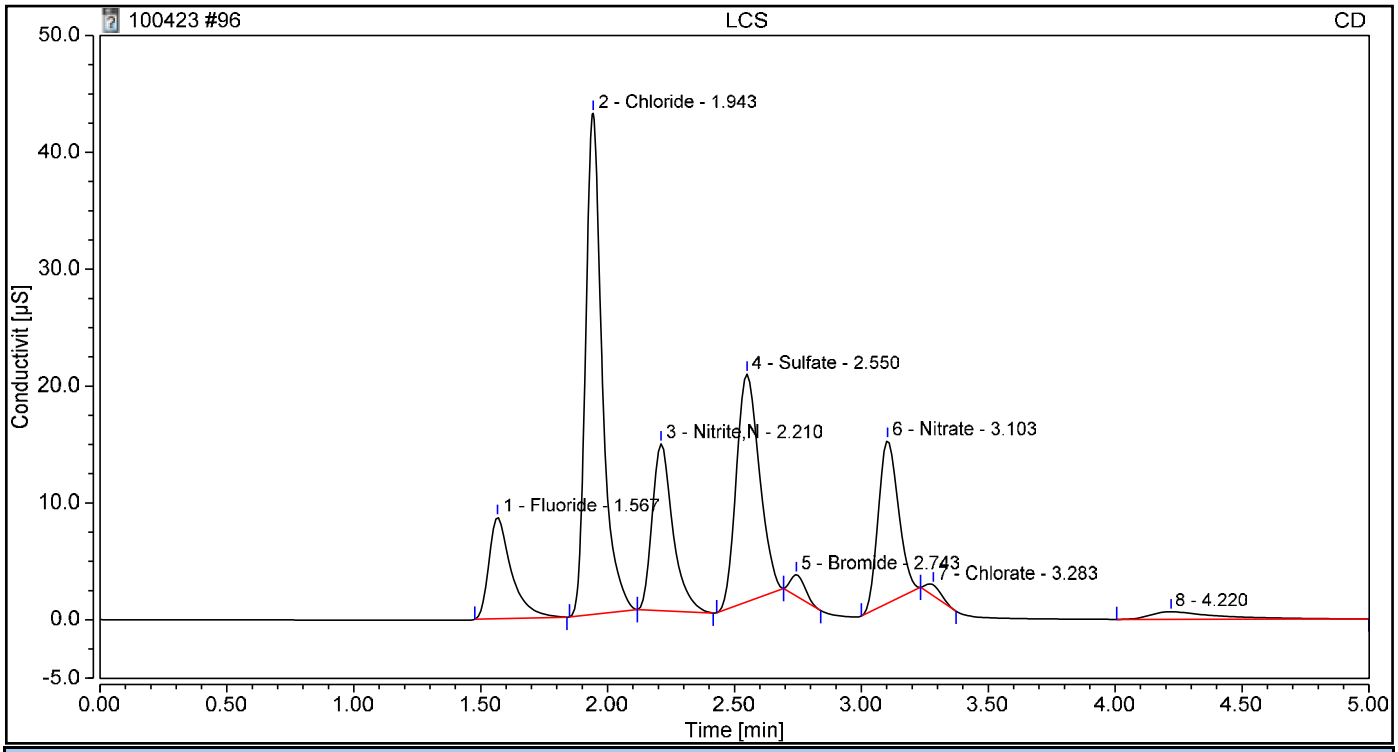
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Bromide	n.a.	n.a.	n.a.	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:	**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:	**04/Oct/23 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

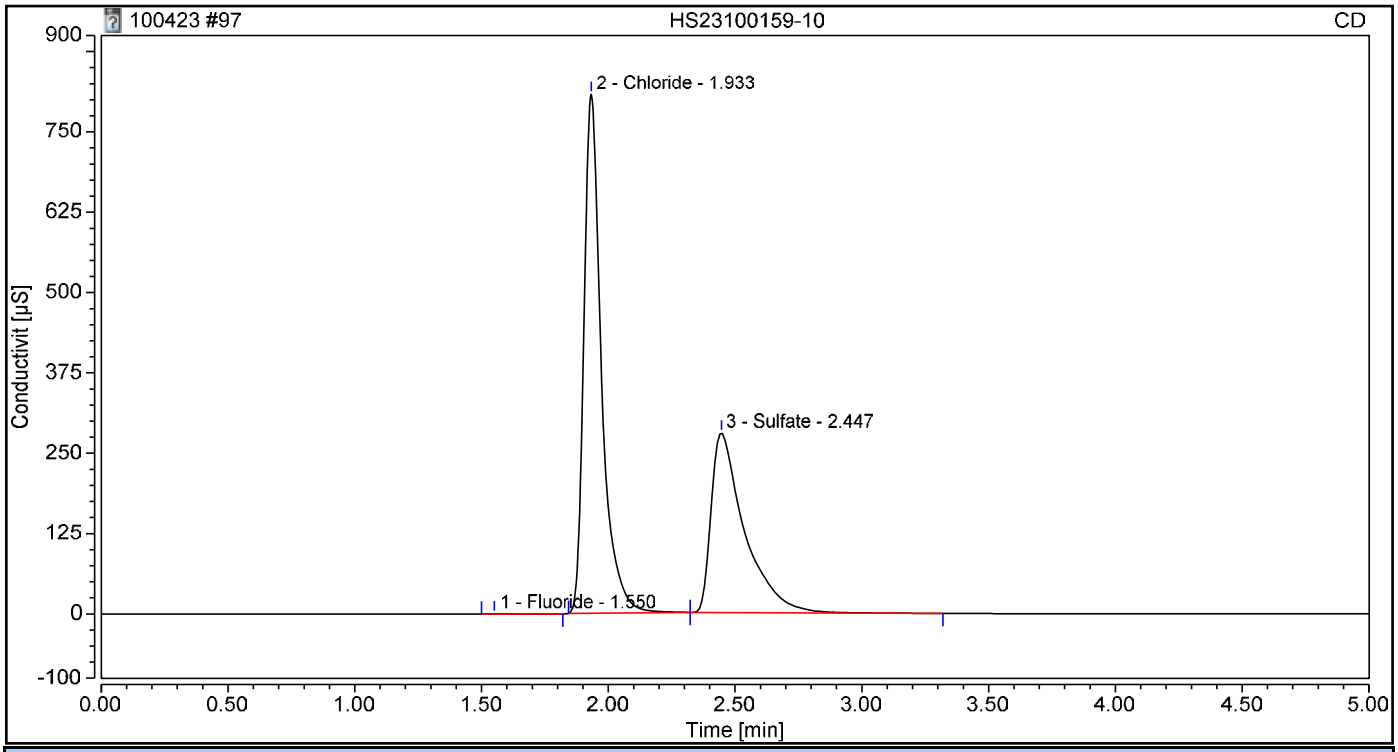
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.567	0.886	8.683	9.58	8.46	3.8539
2	Chloride	1.943	3.262	42.872	35.29	41.76	20.6641
3	Nitrite,N	2.210	1.358	14.292	14.69	13.92	4.0548
4	Sulfate	2.550	2.058	19.468	22.26	18.96	19.2681
5	Bromide	2.743	0.123	1.828	1.33	1.78	2.7817
6	Nitrate	3.103	1.293	13.938	13.99	13.58	3.8493
7	Chlorate	3.283	0.065	0.949	0.70	0.92	2.2889
n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8		4.220	0.200	0.644	2.16	0.63	n.a.
Total:			**9.244**	**102.672**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-10**	*Run Time (min):*	**5.00**
Vial Number:	**GD1**	*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:	**04/Oct/23 18:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

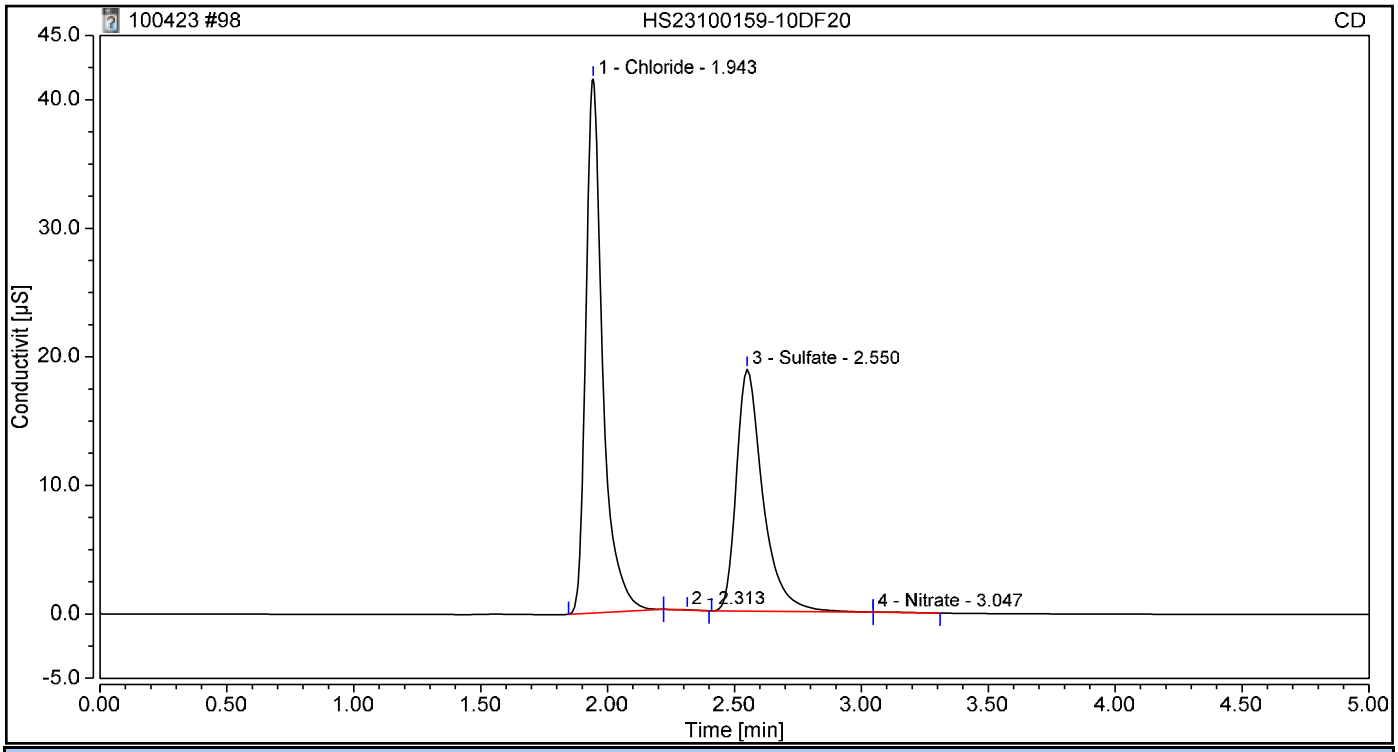
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.550	0.021	0.284	0.02	0.03	0.1570
2	Chloride	1.933	64.797	807.359	60.47	74.27	407.4857
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	Sulfate	2.447	42.333	279.461	39.51	25.71	393.5939
n.a.	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:			**107.152**	**1087.104**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-10DF20**	*Run Time (min):*	**5.00**
Vial Number:	**GD2**	*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:	**04/Oct/23 18:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

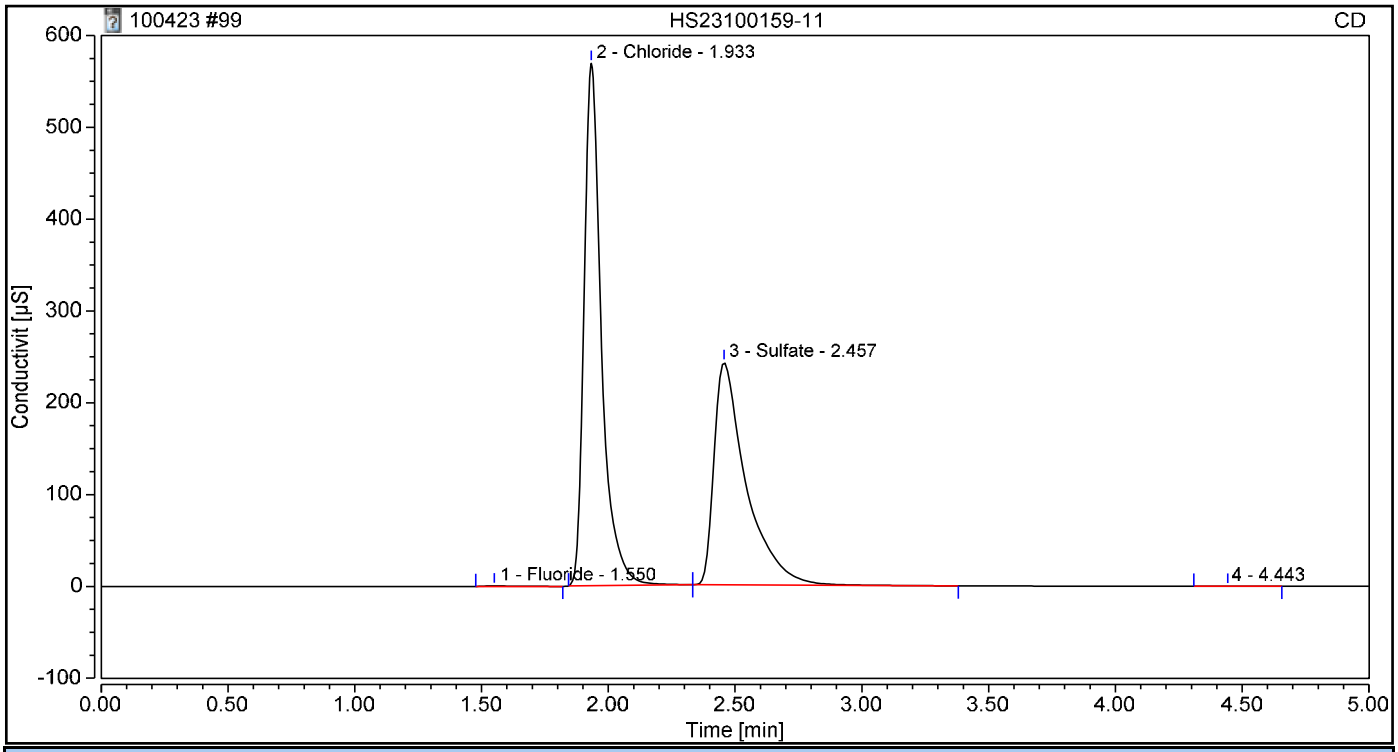
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Chloride	1.943	3.216	41.548	58.60	68.80	407.4971
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		2.313	0.002	0.021	0.04	0.03	n.a.
3	Sulfate	2.550	2.268	18.819	41.33	31.16	424.4648
n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	Nitrate	3.047	0.002	0.000	0.04	0.00	0.4682
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:			**5.488**	**60.388**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-11**	*Run Time (min):*	**5.00**
Vial Number:	**GD3**	*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:	**04/Oct/23 18:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

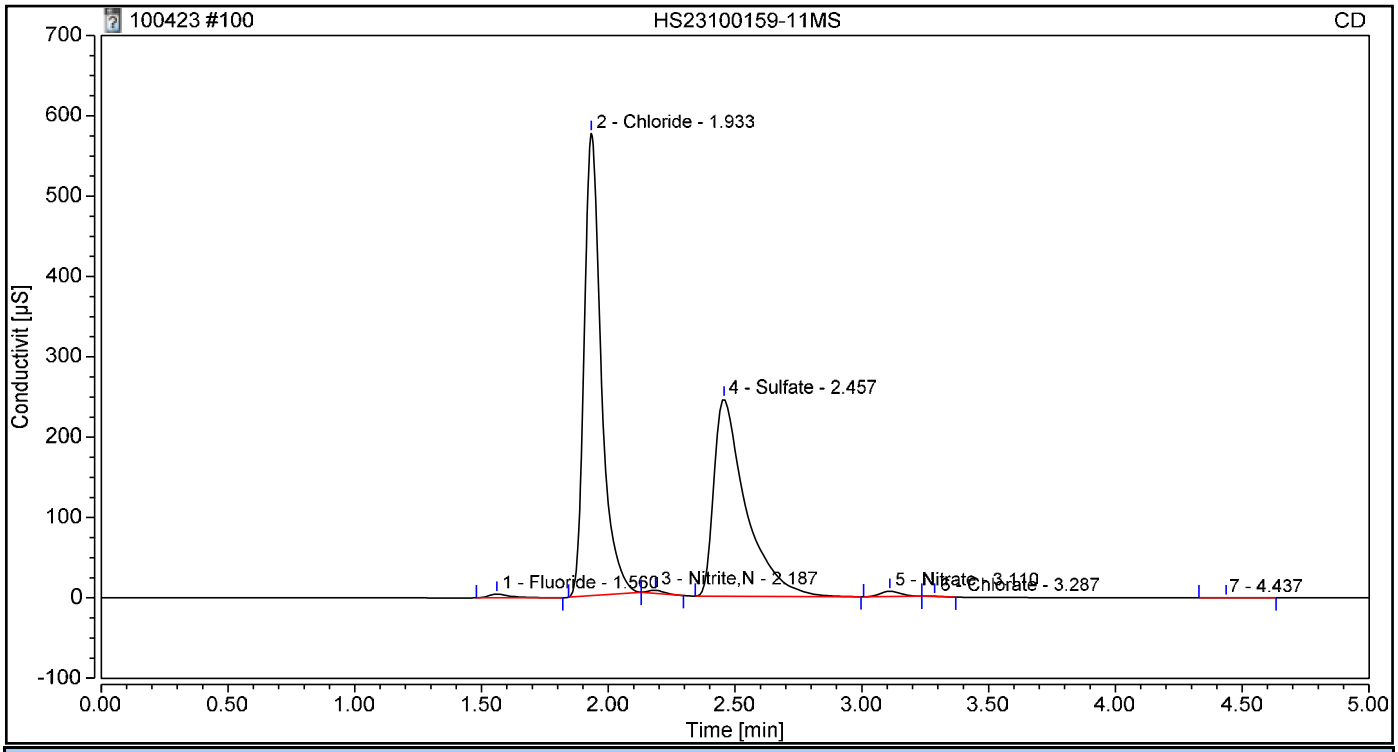
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.550	0.063	0.666	0.08	0.08	0.3322
2	Chloride	1.933	45.206	568.723	56.01	70.07	284.3340
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	Sulfate	2.457	35.435	242.191	43.91	29.84	329.4823
n.a.	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		4.443	0.003	0.019	0.00	0.00	n.a.
Total:			**80.707**	**811.599**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-11MS**	*Run Time (min):*	**5.00**
Vial Number:	**GD4**	*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:	**04/Oct/23 18:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

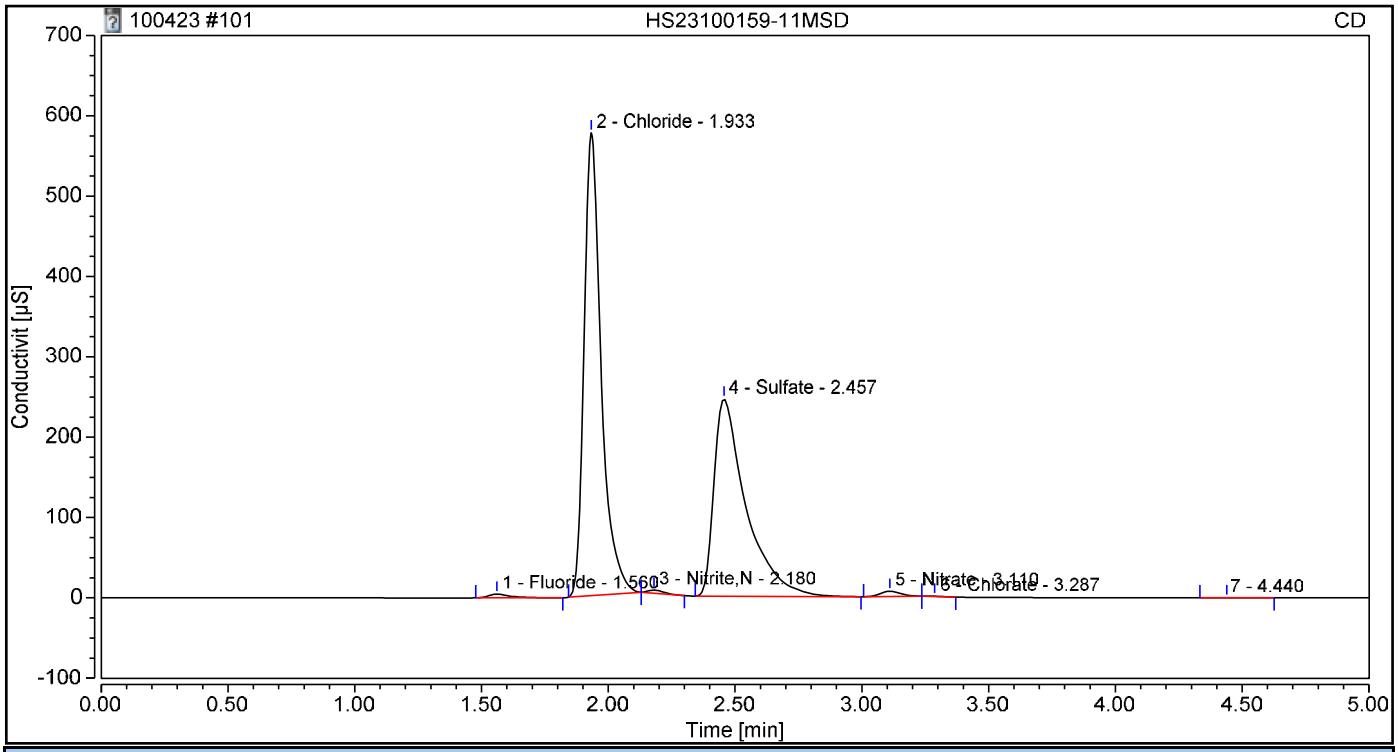
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.560	0.460	4.565	0.56	0.55	2.0229
2	Chloride	1.933	44.968	575.451	54.76	68.81	282.8339
3	Nitrite,N	2.187	0.274	3.867	0.33	0.46	0.7926
4	Sulfate	2.457	35.784	245.427	43.58	29.35	332.7300
n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	Nitrate	3.110	0.604	6.493	0.74	0.78	1.8075
6	Chlorate	3.287	0.028	0.423	0.03	0.05	1.0255
n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7		4.437	0.002	0.015	0.00	0.00	n.a.
Total:			**82.121**	**836.241**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-11MSD**	*Run Time (min):*	**5.00**
Vial Number:	**GD5**	*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:	**04/Oct/23 18:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

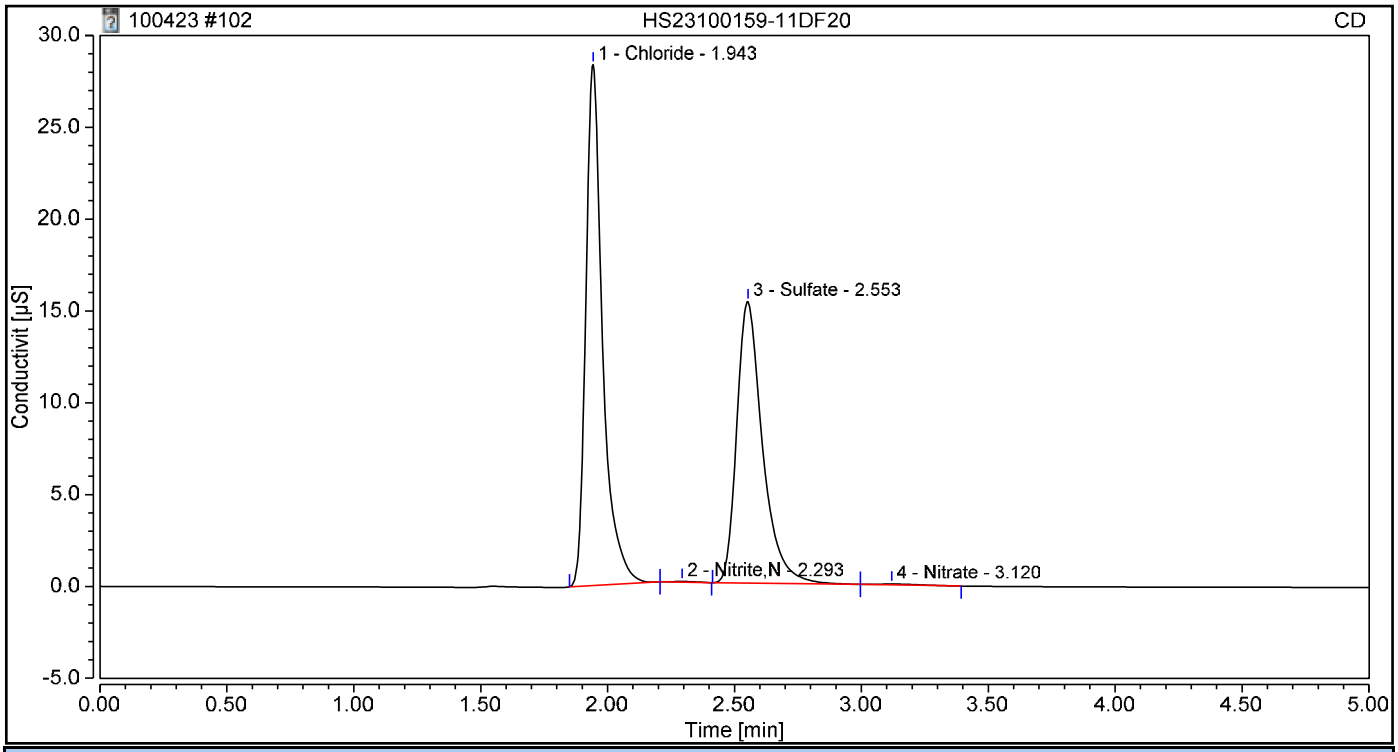
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.560	0.467	4.633	0.57	0.55	2.0527
2	Chloride	1.933	45.026	575.971	54.78	68.84	283.1988
3	Nitrite,N	2.180	0.275	3.797	0.34	0.45	0.7962
4	Sulfate	2.457	35.795	245.308	43.55	29.32	332.8289
n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	Nitrate	3.110	0.605	6.499	0.74	0.78	1.8117
6	Chlorate	3.287	0.029	0.427	0.03	0.05	1.0388
n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
7		4.440	0.002	0.015	0.00	0.00	n.a.
Total:			**82.199**	**836.649**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-11DF20**	*Run Time (min):*	**5.00**
Vial Number:	**GD6**	*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:	**04/Oct/23 18:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

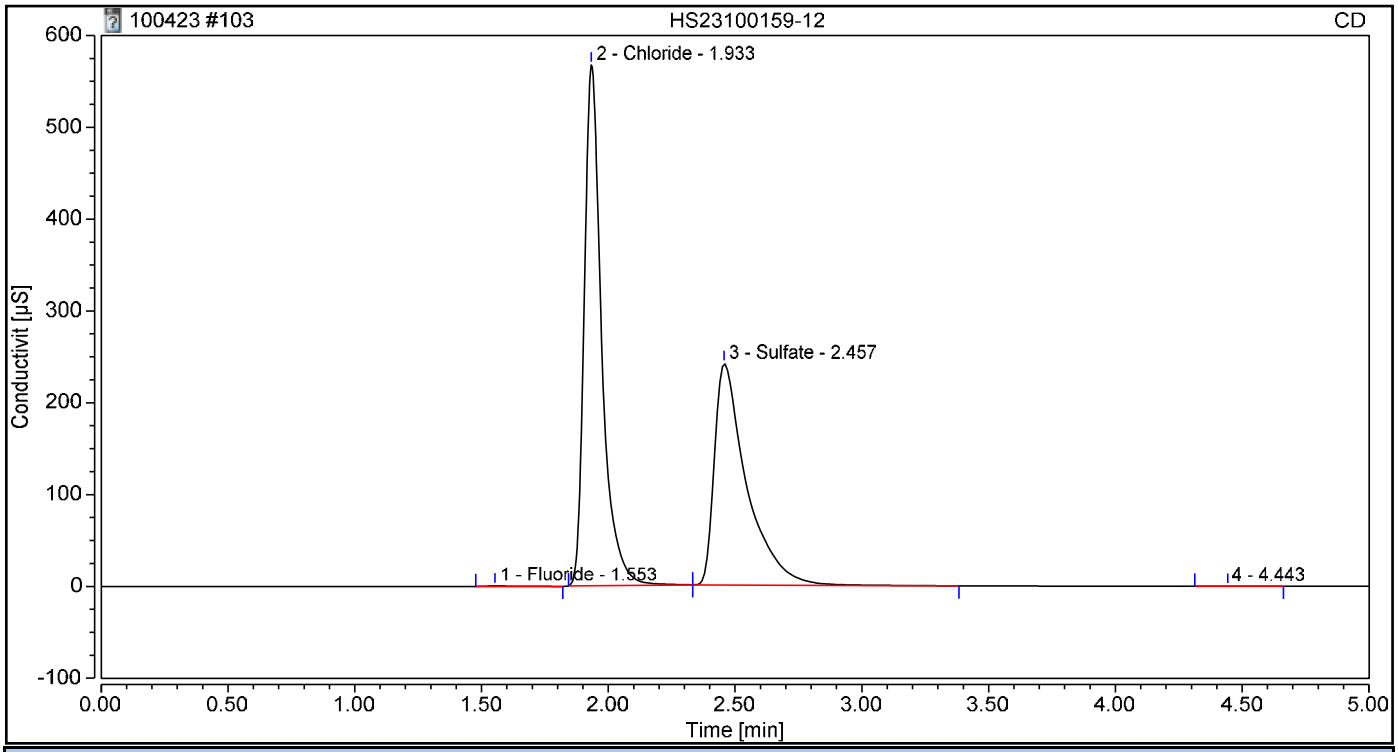
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Chloride	1.943	2.179	28.360	54.57	64.79	277.1314
2	Nitrite,N	2.293	0.004	0.037	0.11	0.08	0.3764
3	Sulfate	2.553	1.801	15.324	45.10	35.01	337.5639
n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	Nitrate	3.120	0.009	0.051	0.23	0.12	0.8853
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:			**3.993**	**43.772**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-12**	*Run Time (min):*	**5.00**
Vial Number:	**GD7**	*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:	**04/Oct/23 18:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

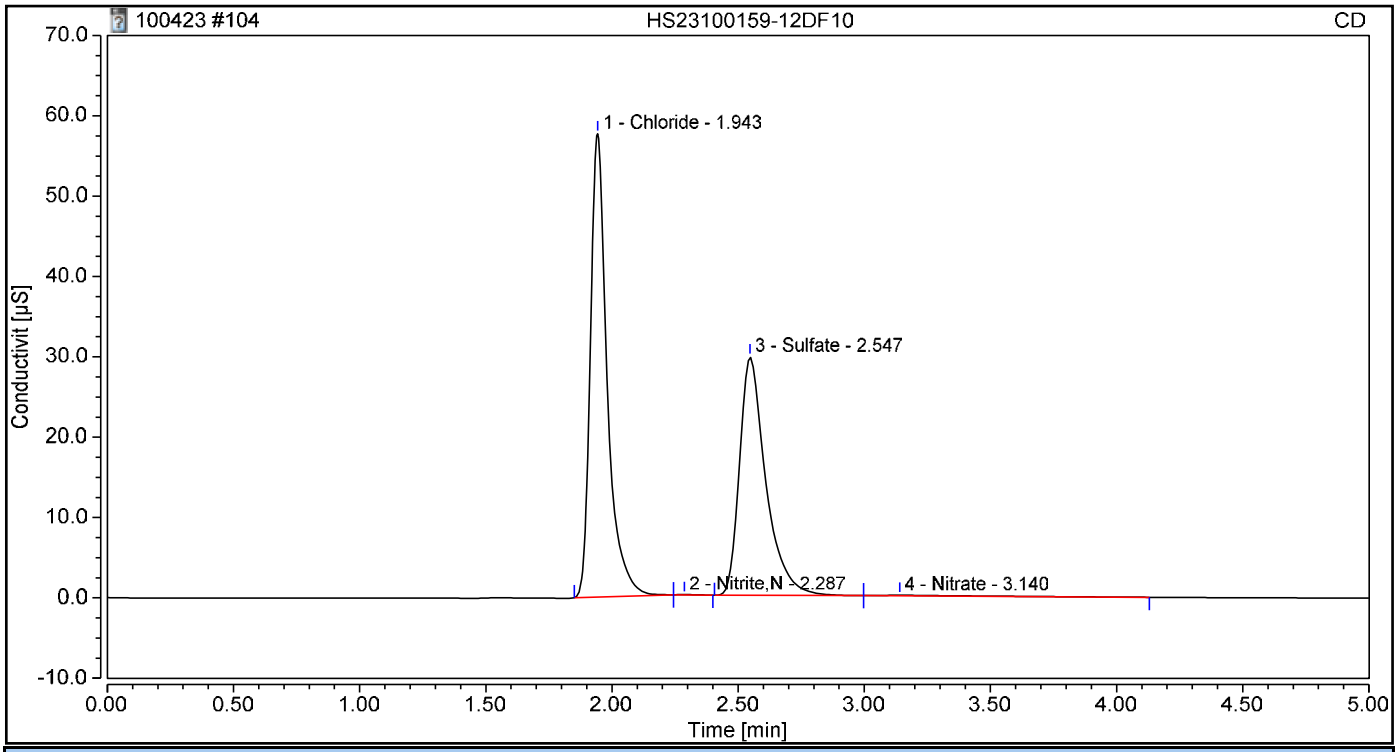
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.553	0.067	0.699	0.08	0.09	0.3490
2	Chloride	1.933	45.228	567.170	56.09	70.11	284.4712
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	Sulfate	2.457	35.332	241.106	43.82	29.80	328.5279
n.a.	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		4.443	0.003	0.020	0.00	0.00	n.a.
Total:			**80.630**	**808.995**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-12DF10**	*Run Time (min):*	**5.00**
Vial Number:	**GD8**	*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:*	**10.0000**
Injection Date/Time:	**04/Oct/23 18:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

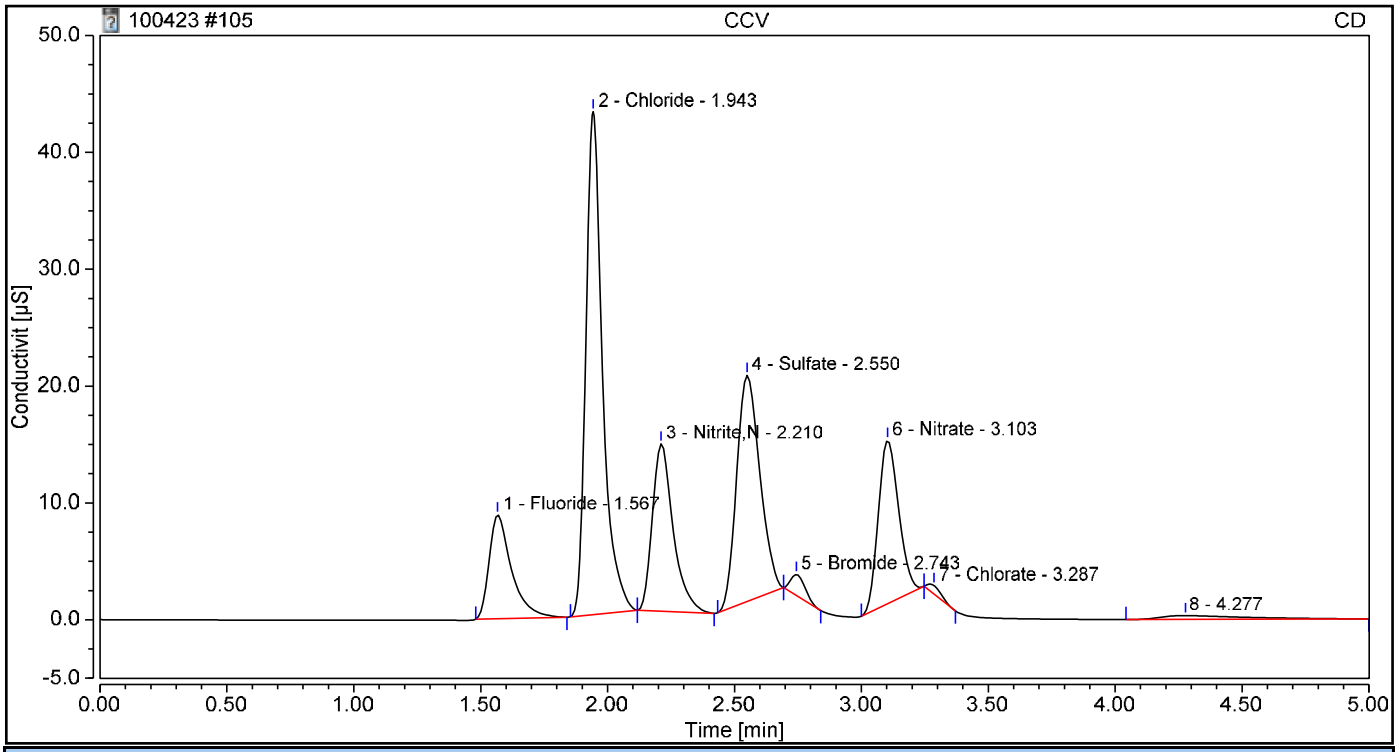
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Chloride	1.943	4.458	57.663	55.21	65.93	281.8147
2	Nitrite,N	2.287	0.003	0.030	0.04	0.03	0.1578
3	Sulfate	2.547	3.581	29.693	44.35	33.95	334.2103
n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	Nitrate	3.140	0.032	0.077	0.40	0.09	1.1236
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:			**8.074**	**87.464**	**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:	**04/Oct/23 19:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

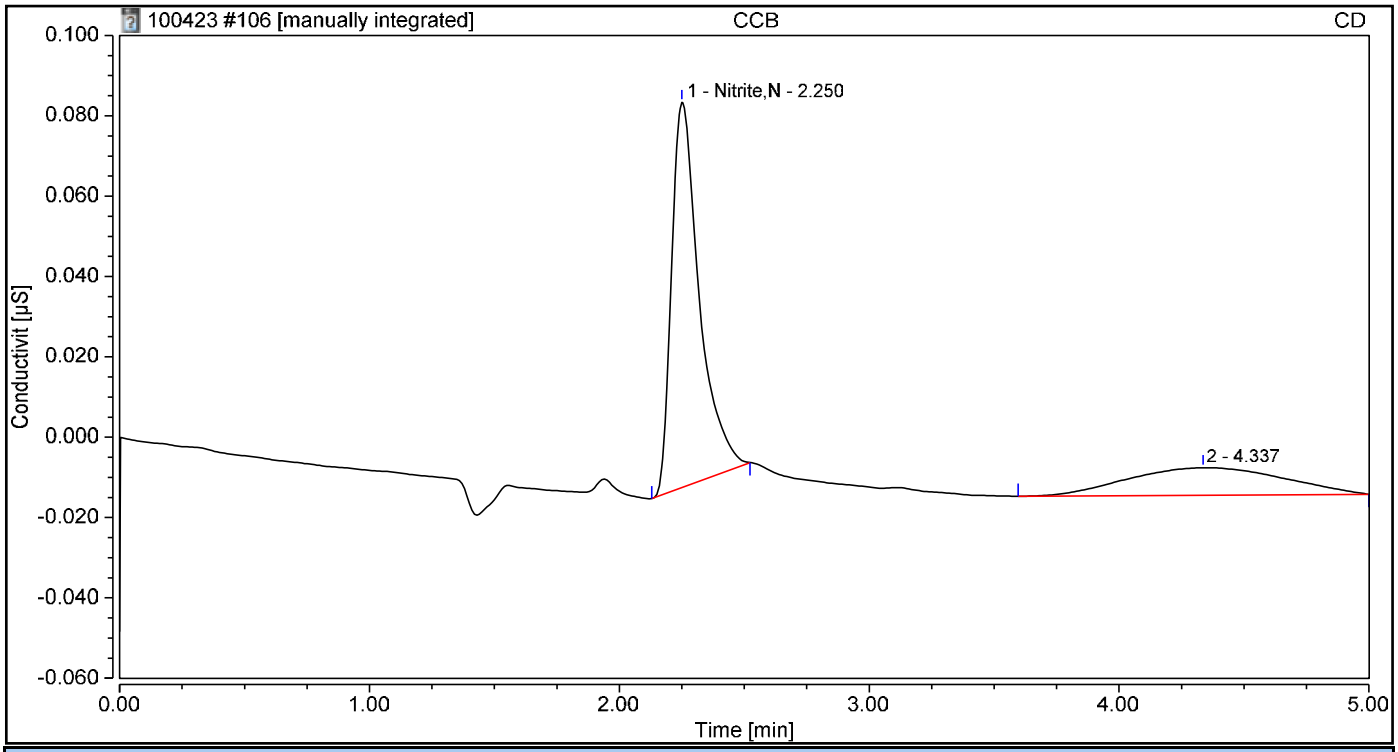
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.567	0.904	8.879	9.84	8.67	3.9333
2	Chloride	1.943	3.280	43.021	35.68	42.02	20.7761
3	Nitrite,N	2.210	1.365	14.311	14.85	13.98	4.0778
4	Sulfate	2.550	2.046	19.351	22.26	18.90	19.1615
5	Bromide	2.743	0.120	1.790	1.31	1.75	2.7277
6	Nitrate	3.103	1.304	13.972	14.18	13.65	3.8811
7	Chlorate	3.287	0.043	0.733	0.47	0.72	1.5458
n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8		4.277	0.129	0.325	1.40	0.32	n.a.
Total:			**9.192**	**102.381**	**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:	**04/Oct/23 19:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

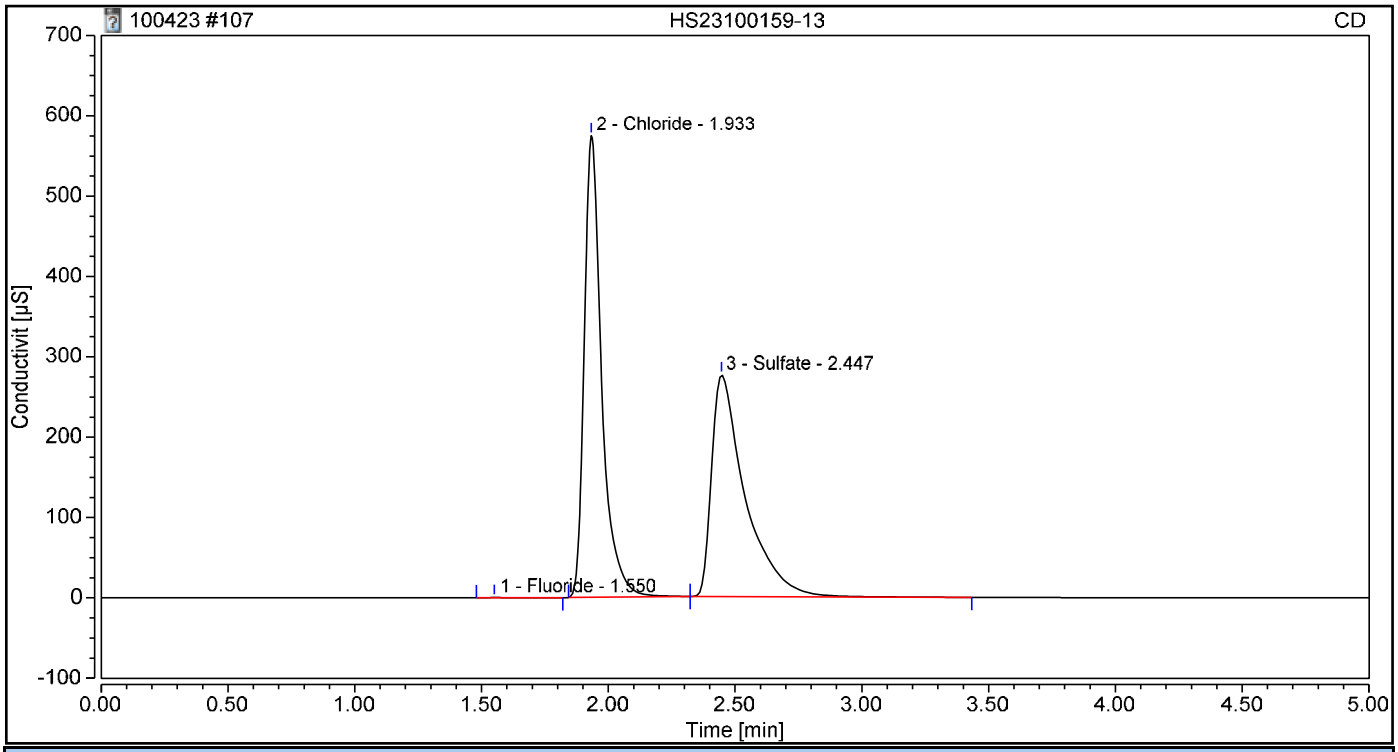
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Chloride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Nitrite,N	2.250	0.012	0.096	71.38	93.33	0.0412
n.a.	Sulfate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
n.a.	Bromide	n.a.	n.a.	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.
2		4.337	0.005	0.007	28.62	6.67	n.a.
Total:			**0.017**	**0.103**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-13**	*Run Time (min):*	**5.00**
Vial Number:	**GE1**	*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:	**04/Oct/23 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

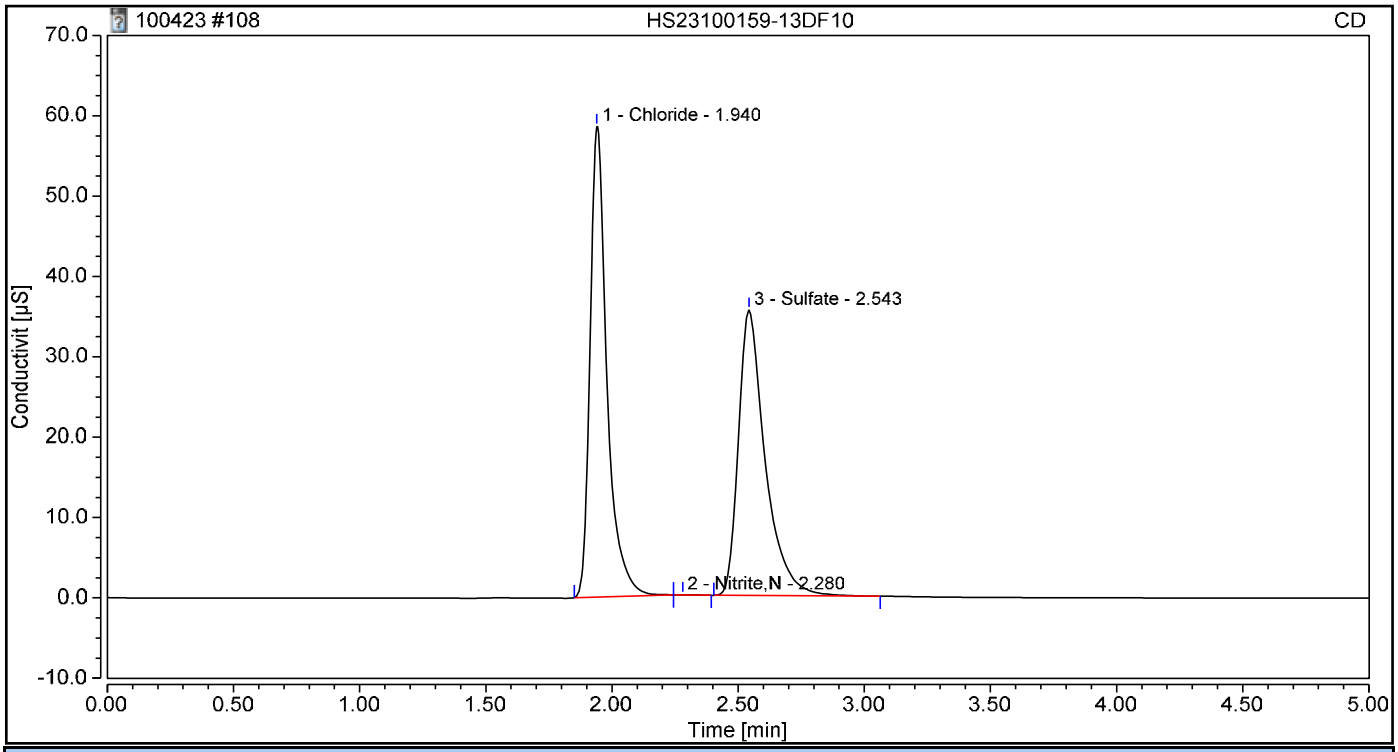
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.550	0.041	0.450	0.05	0.05	0.2409
2	Chloride	1.933	45.799	574.521	52.10	67.51	288.0584
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	Sulfate	2.447	42.065	276.076	47.85	32.44	391.1052
n.a.	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:			**87.905**	**851.047**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-13DF10**	*Run Time (min):*	**5.00**
Vial Number:	**GE2**	*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:*	**10.0000**
Injection Date/Time:	**04/Oct/23 19:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

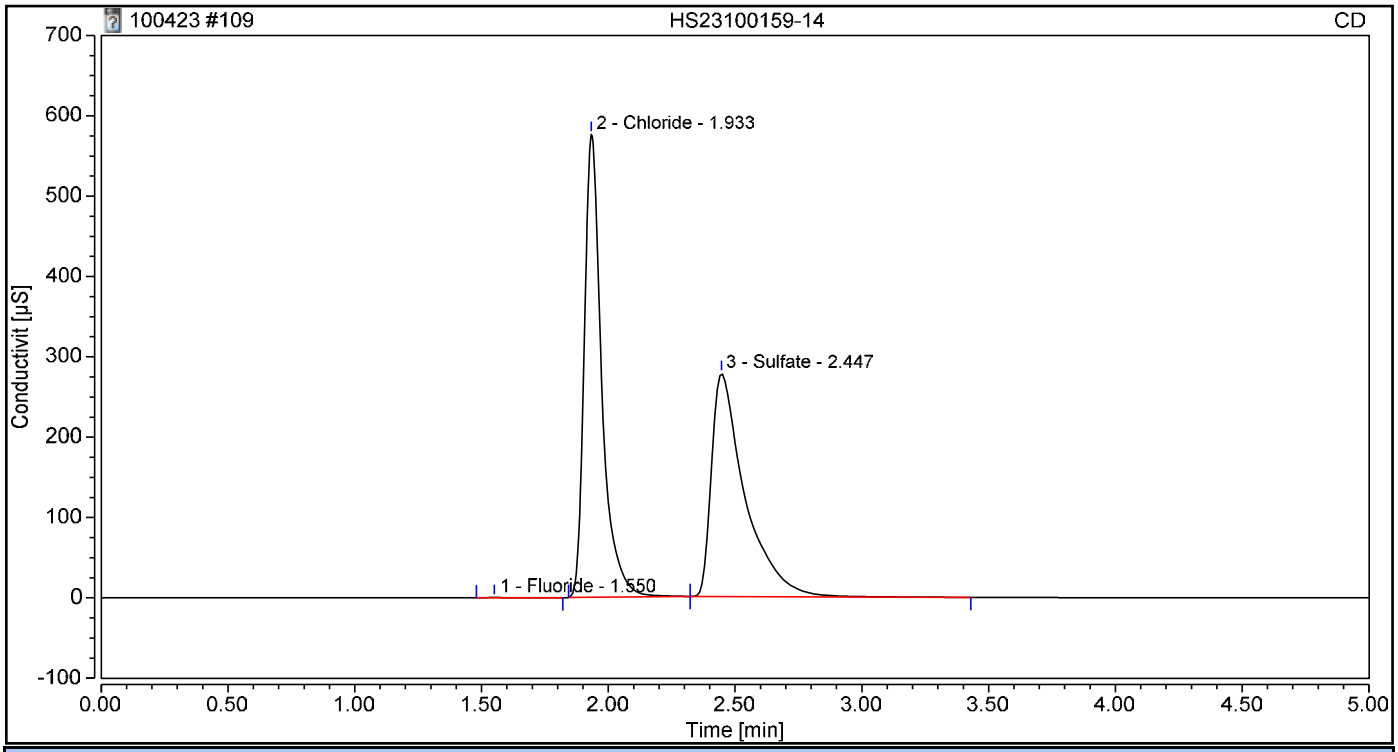
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Chloride	1.940	4.535	58.560	51.01	62.24	286.6504
2	Nitrite,N	2.280	0.003	0.022	0.03	0.02	0.1386
3	Sulfate	2.543	4.351	35.513	48.95	37.74	405.8540
n.a.	Bromide	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:			**8.889**	**94.095**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-14**	*Run Time (min):*	**5.00**
Vial Number:	**GE3**	*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:	**04/Oct/23 19:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

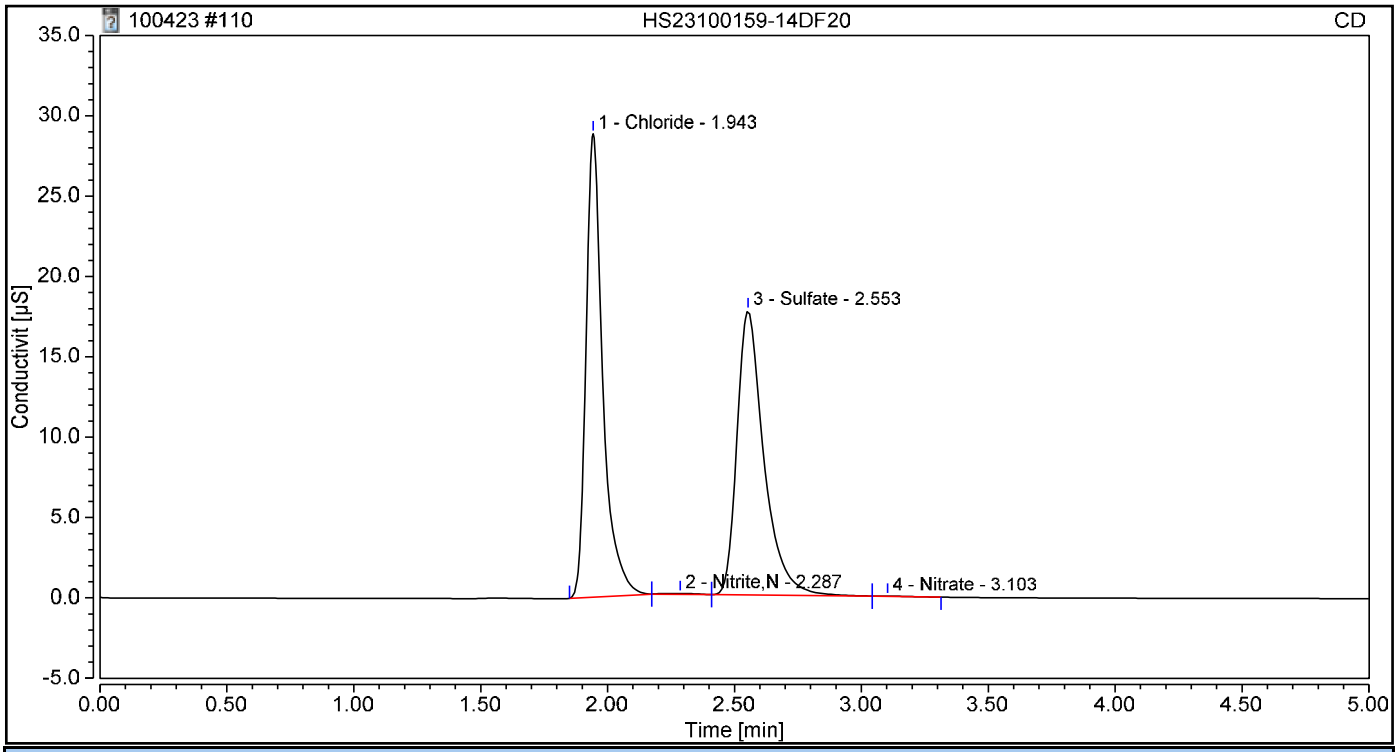
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.550	0.046	0.498	0.05	0.06	0.2617
2	Chloride	1.933	45.992	575.997	52.11	67.45	289.2738
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	Sulfate	2.447	42.218	277.500	47.84	32.49	392.5291
n.a.	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:			**88.257**	**853.996**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-14DF20**	*Run Time (min):*	**5.00**
Vial Number:	**GE4**	*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:	**04/Oct/23 19:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

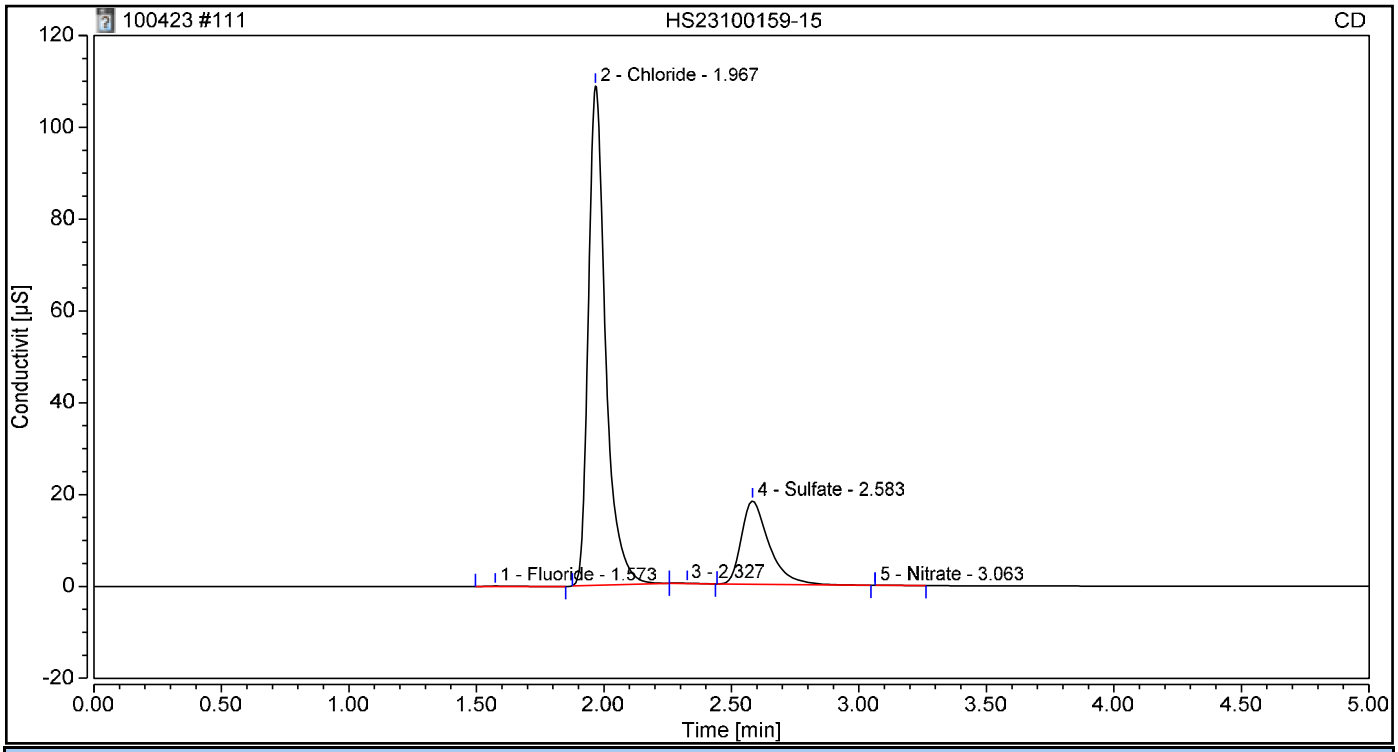
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Chloride	1.943	2.214	28.825	50.44	61.88	281.6024
2	Nitrite,N	2.287	0.008	0.052	0.18	0.11	0.5737
3	Sulfate	2.553	2.166	17.688	49.33	37.97	405.4326
n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	Nitrate	3.103	0.002	0.016	0.05	0.03	0.4762
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:			**4.390**	**46.581**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-15**	*Run Time (min):*	**5.00**
Vial Number:	**GE5**	*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:	**04/Oct/23 19:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

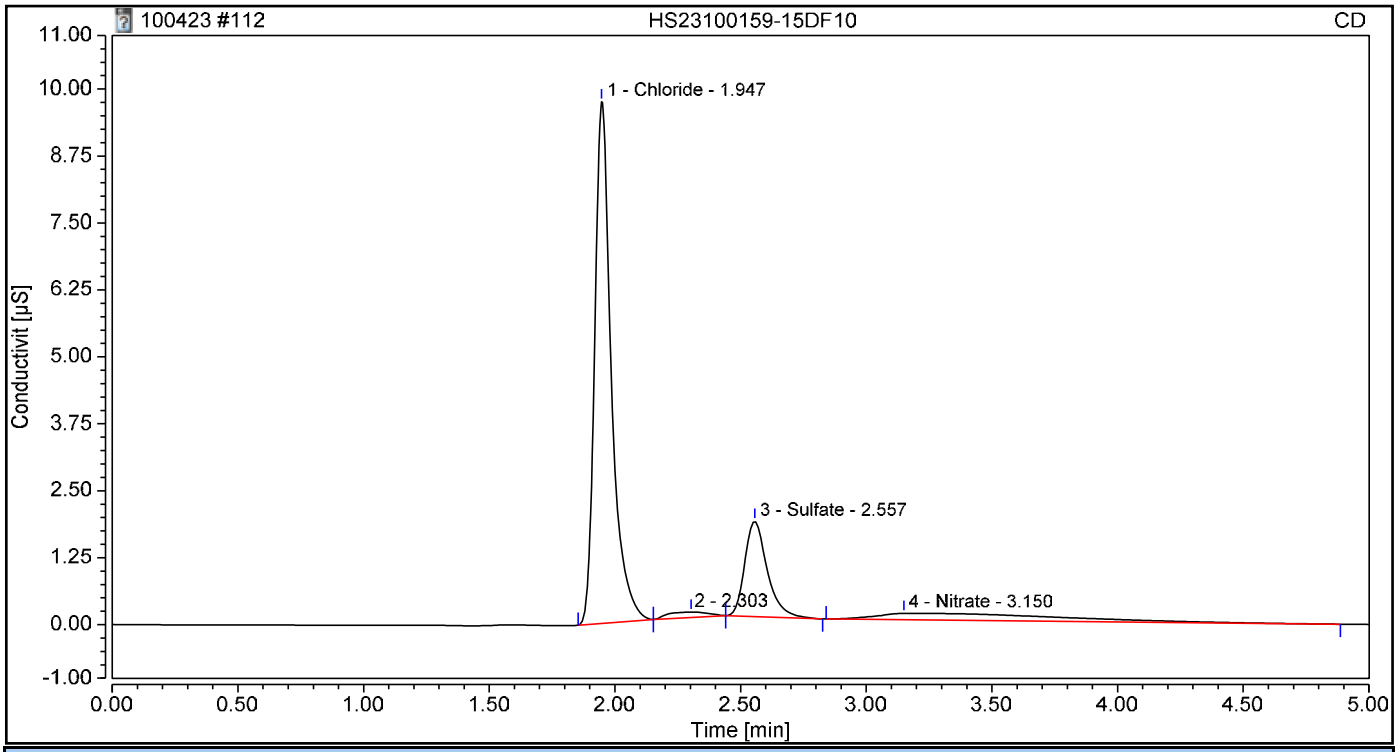
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.573	0.010	0.092	0.09	0.07	0.1077
2	Chloride	1.967	8.500	108.702	78.72	85.58	53.5926
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3		2.327	0.006	0.055	0.05	0.04	n.a.
4	Sulfate	2.583	2.280	18.162	21.12	14.30	21.3353
n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
5	Nitrate	3.063	0.002	0.000	0.02	0.00	0.0236
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:			**10.798**	**127.011**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-15DF10**	*Run Time (min):*	**5.00**
Vial Number:	**GE6**	*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:*	**10.0000**
Injection Date/Time:	**04/Oct/23 19:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

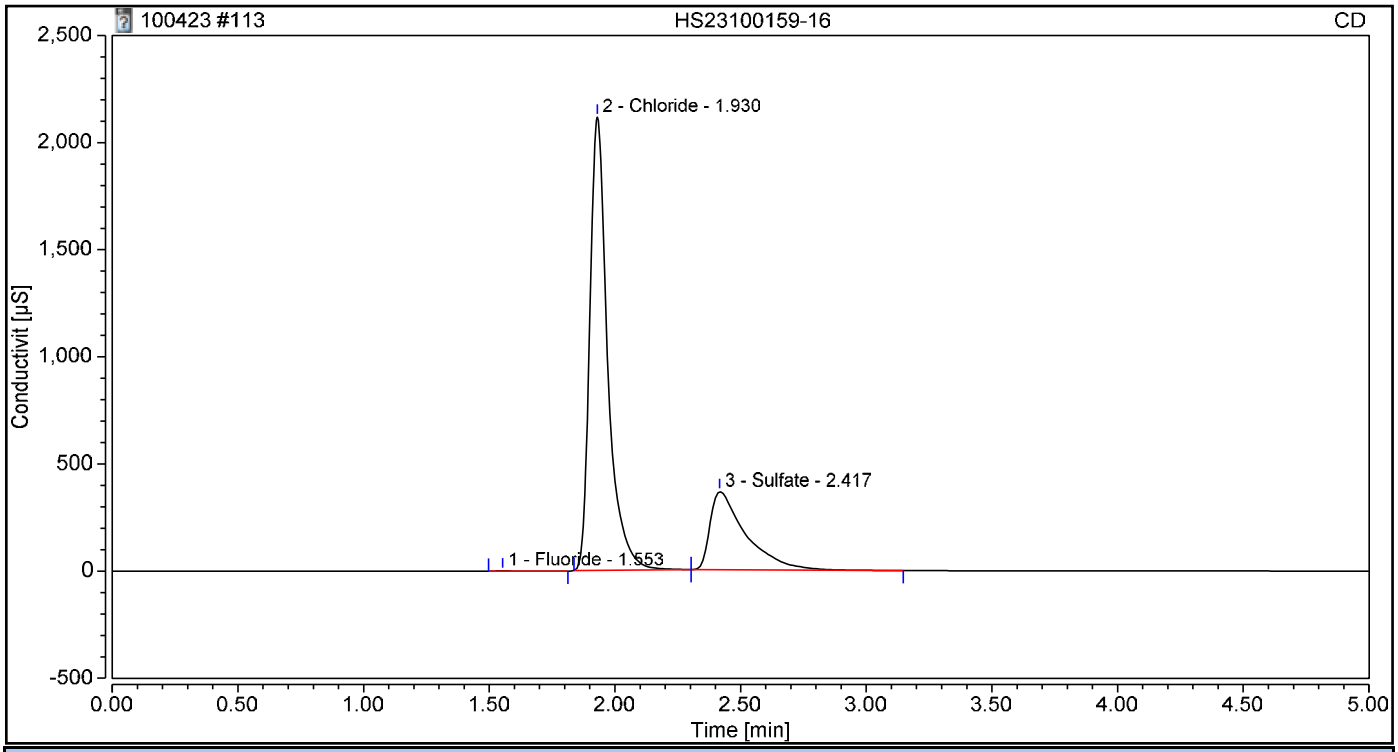
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Chloride	1.947	0.747	9.740	70.44	82.97	48.5596
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2		2.303	0.019	0.100	1.79	0.85	n.a.
3	Sulfate	2.557	0.185	1.779	17.44	15.15	18.6020
n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
4	Nitrate	3.150	0.110	0.120	10.33	1.02	3.4216
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:			**1.061**	**11.739**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-16**	*Run Time (min):*	**5.00**
Vial Number:	**GE7**	*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:	**04/Oct/23 20:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

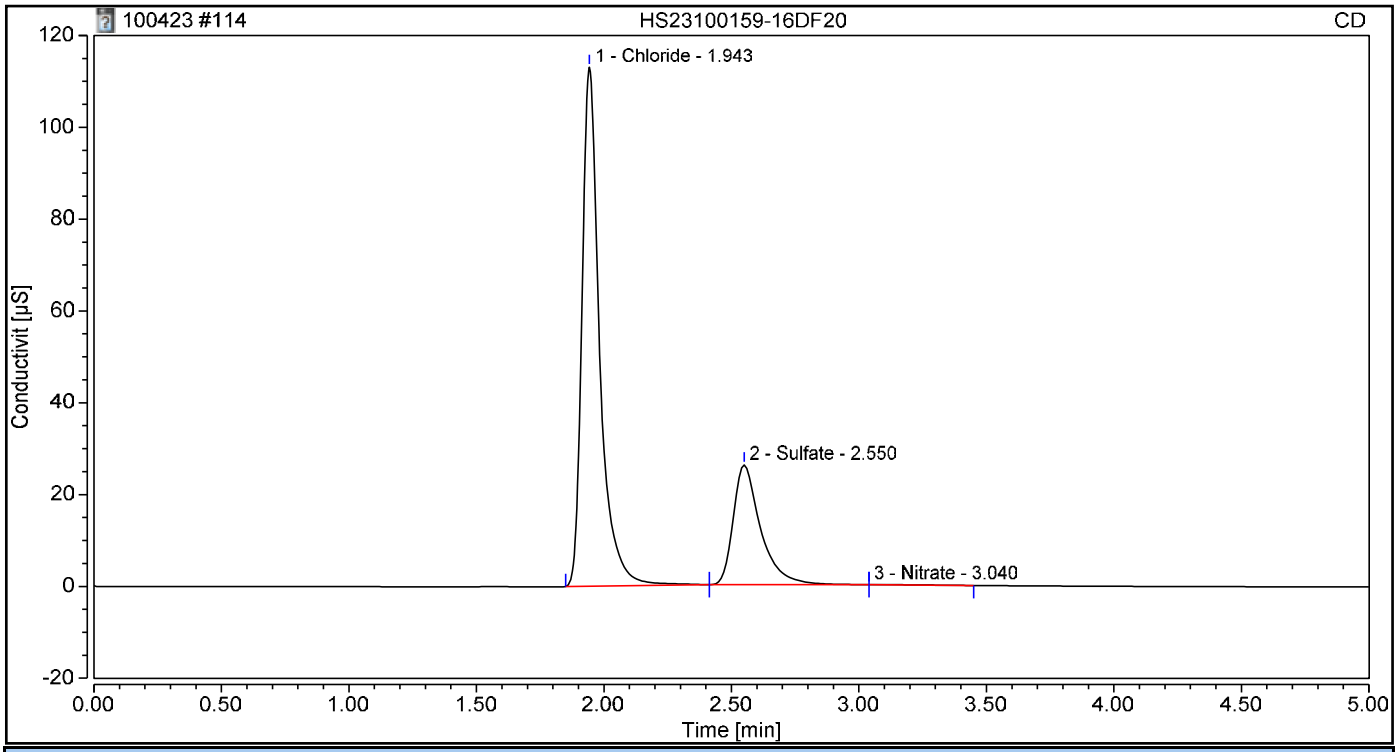
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.553	0.035	0.427	0.01	0.02	0.2126
2	Chloride	1.930	174.331	2115.668	74.45	85.29	1096.0281
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	Sulfate	2.417	59.785	364.468	25.53	14.69	555.7998
n.a.	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:			**234.151**	**2480.563**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**HS23100159-16DF20**	*Run Time (min):*	**5.00**
Vial Number:	**GE8**	*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:	**04/Oct/23 20:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

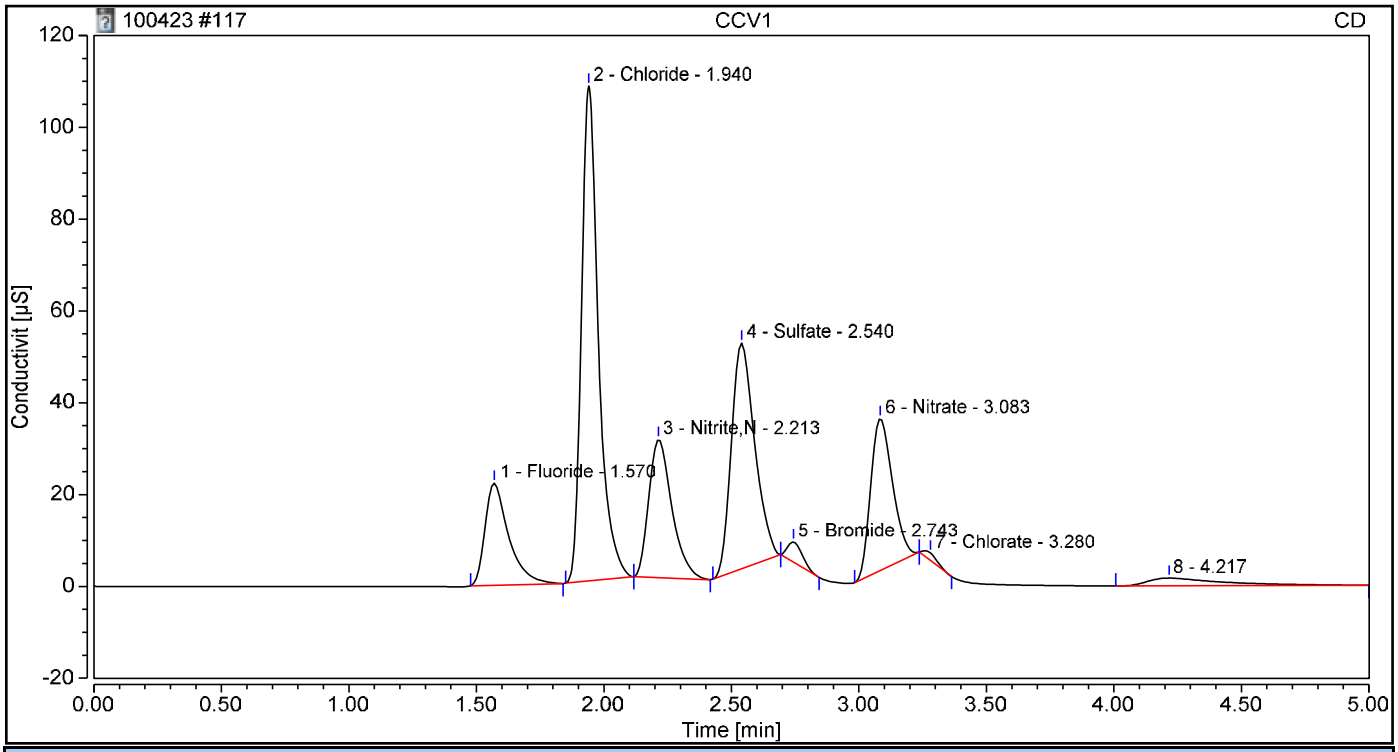
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
n.a.	Fluoride	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1	Chloride	1.943	9.063	113.021	73.67	81.24	1142.6311
n.a.	Nitrite,N	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	Sulfate	2.550	3.233	26.100	26.28	18.76	603.7635
n.a.	Bromide	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	Nitrate	3.040	0.006	0.000	0.04	0.00	0.6784
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:			**12.301**	**139.122**	**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:	**04/Oct/23 20:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

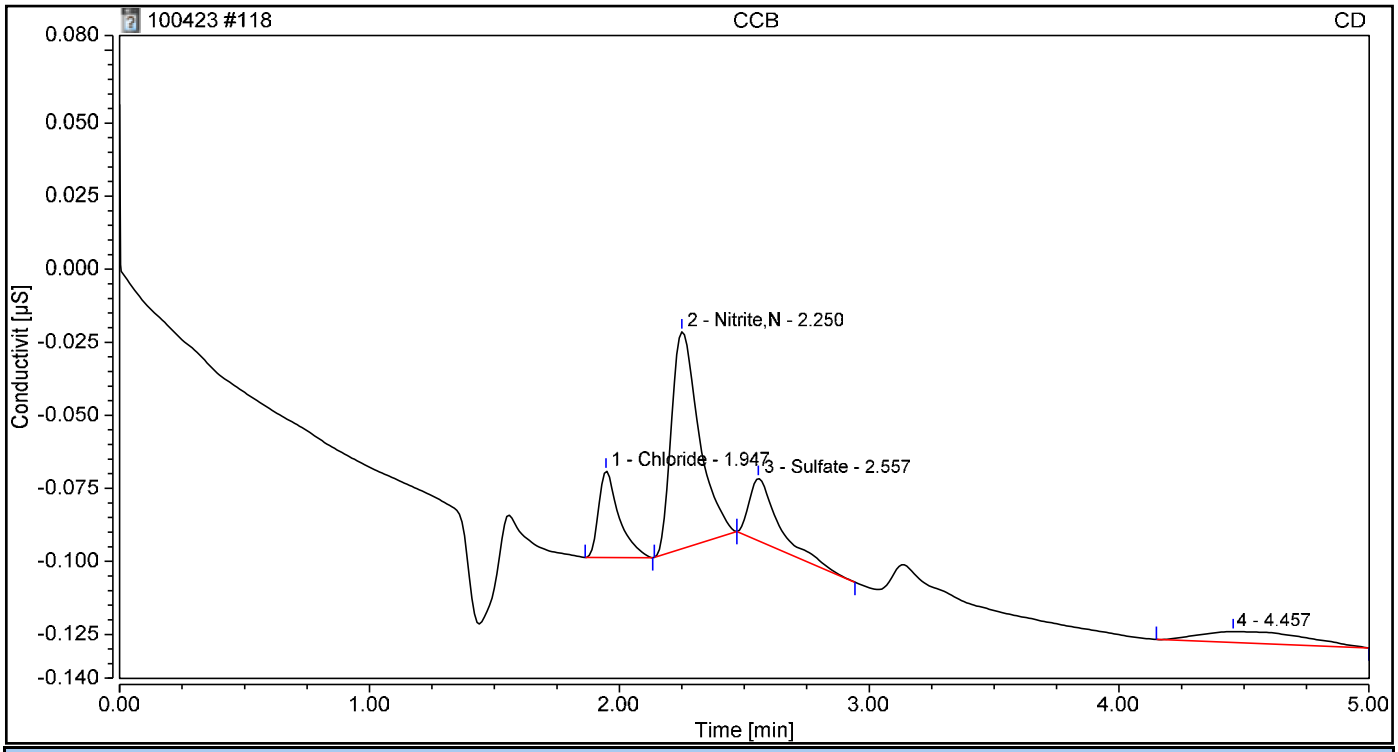
No.	Peak Name	Retention Time min	Area µS*min	Height µS	Relative Area %	Relative Height %	Amount ppm
1	Fluoride	1.570	2.384	22.229	10.23	8.88	10.4300
2	Chloride	1.940	8.310	107.830	35.66	43.09	52.3998
3	Nitrite,N	2.213	3.153	30.109	13.53	12.03	10.1496
4	Sulfate	2.540	5.195	49.186	22.29	19.65	48.4243
5	Bromide	2.743	0.303	4.432	1.30	1.77	6.6020
6	Nitrate	3.083	3.270	33.157	14.03	13.25	9.7082
7	Chlorate	3.280	0.098	1.604	0.42	0.64	3.5152
n.a.	Phosphate	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
8		4.217	0.587	1.701	2.52	0.68	n.a.
Total:			**23.301**	**250.247**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB**	*Run Time (min):*	**5.00**
Vial Number:	**R7**	*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:	**04/Oct/23 20:45**	*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	1.947	0.003	0.030	16.24	23.00	0.1777
2	Nitrite,N	2.250	0.010	0.074	55.62	57.57	0.0334
3	Sulfate	2.557	0.003	0.021	16.83	16.54	0.1686
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		4.457	0.002	0.004	11.31	2.90	n.a.
Total:			**0.017**	**0.129**	**100.00**	**100.00**	

HS23100159 Wetchem TOC_W 5310B

ALS WO# HS23100159

	Type	Analysis	Sam	Sample ID	Origin	Manual Diluti	Result	Notes 01332457	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

	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

01332458

TOC-Control L Report

Instr.Information

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

Cal. Curve

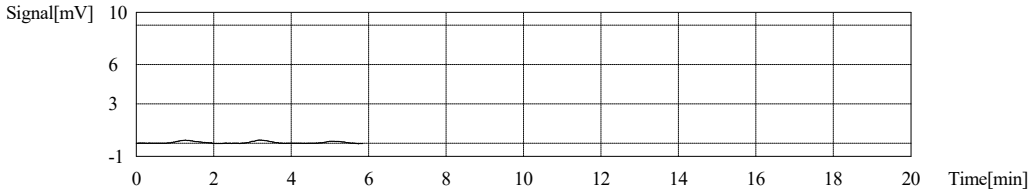
Sample Name:	CAL
Sample ID:	3100607917
Cal. Curve:	09.20.2023.1.2023_09_20_12_39_24.cal
Status	Completed

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

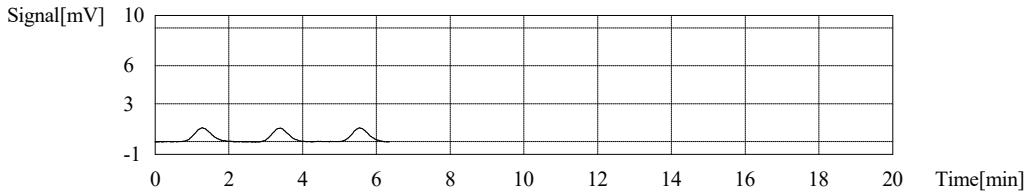
Acid Add.	1.500%
Sparge Gas Flow	80mL/min
Sp. Time	120.0sec
Mean Area	0.6049



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

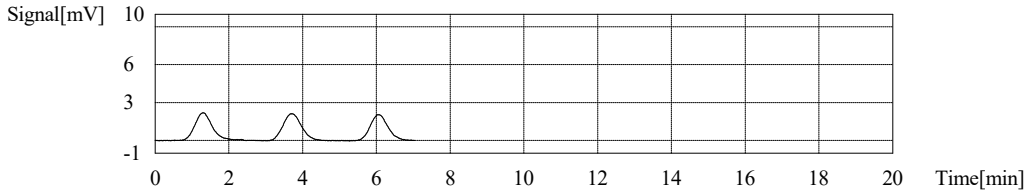
Acid Add.	1.500%
Sparge Gas Flow	80mL/min
Sp. Time	120.0sec
Mean Area	3.458



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

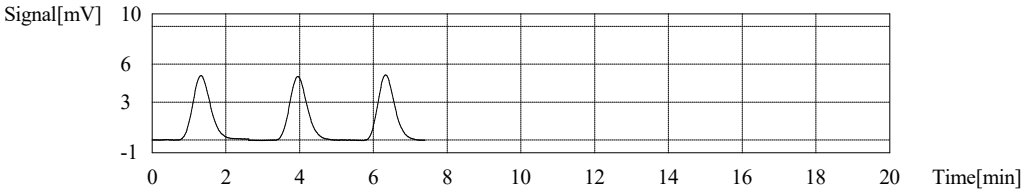
Acid Add.	1.500%
Sparge Gas Flow	80mL/min
Sp. Time	120.0sec
Mean Area	7.184



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

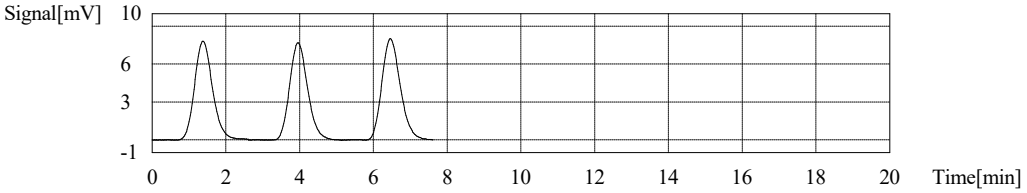
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 16.90



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

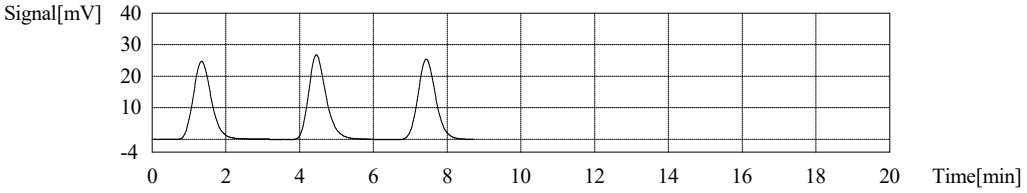
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 27.11



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

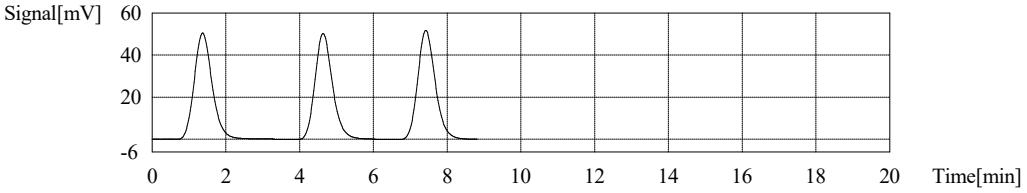
Acid Add. 1.500%
Sparge Gas Flow 80mL/min
Sp. Time 120.0sec
Mean Area 86.93



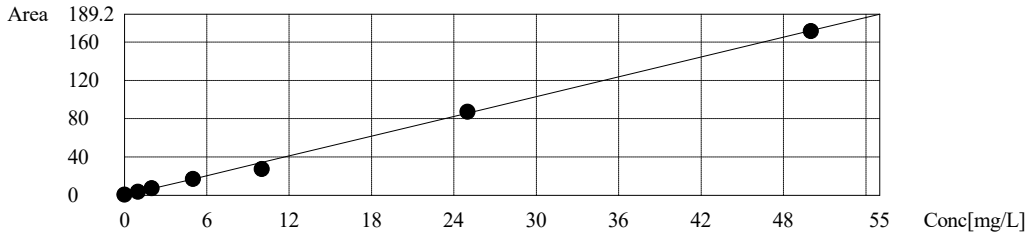
Conc: 50.00mg/L

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



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	

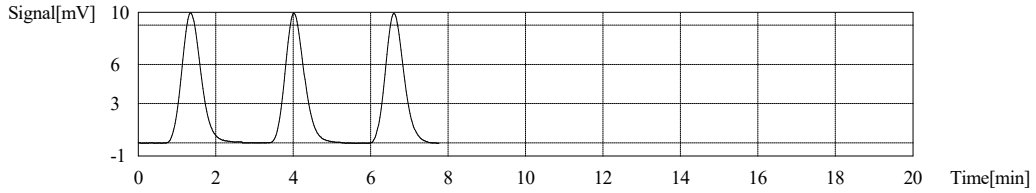
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:9.917mg/L

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	

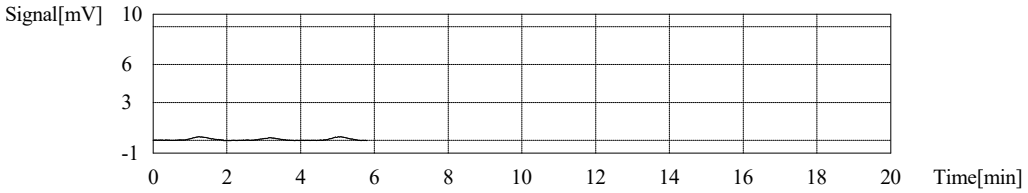
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.2114mg/L

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

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

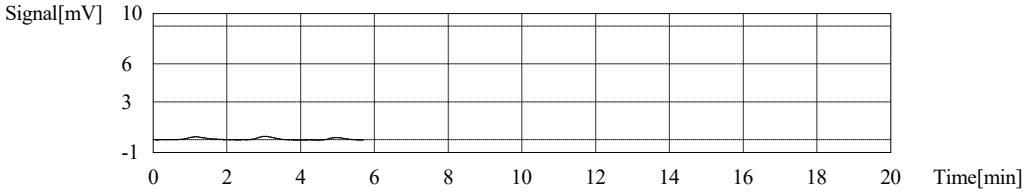
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1916mg/L

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

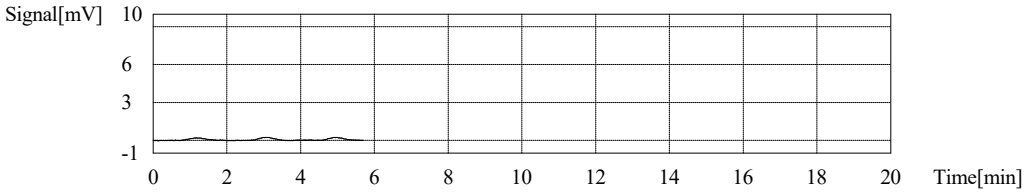
Anal.: NPOC

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



	Sample Name	Sample ID	Origin	Result	Notes	Date / Time	01332464 Vial
1	CCV	324060503	09.20.2023.	NPOC:26.14mg/L		10/11/2023 8:02:1	1
2	CCB		09.20.2023.	NPOC:0.1197mg/L		10/11/2023 8:14:3	2
3	MBLK-10112023	3100607901	09.20.2023.	NPOC:0.09298mg/		10/11/2023 8:26:5	3
4	LCS-10112023		09.20.2023.	NPOC:10.10mg/L		10/11/2023 8:41:3	4
5	LCSD-10112023		09.20.2023.	NPOC:10.03mg/L		10/11/2023 8:55:4	5
6	HS23100402-04DF10	TOC_W 5310B	09.20.2023.	NPOC:32.49mg/L		10/11/2023 9:11:1	6
7	HS23100402-05DF20		09.20.2023.	NPOC:8.750mg/L		10/11/2023 9:25:3	7
8	HS23100402-06DF10		09.20.2023.	NPOC:3.630mg/L		10/11/2023 9:39:1	8
9	HS23100402-07DF10		09.20.2023.	NPOC:27.49mg/L		10/11/2023 9:54:2	9
10	HS23100402-08DF10		09.20.2023.	NPOC:5.549mg/L		10/12/2023 9:56:4	10
11	HS23100402-09DF20		09.20.2023.	NPOC:21.67mg/L		10/11/2023 10:26:	11
12	HS23100402-10DF20		09.20.2023.	NPOC:9.681mg/L		10/11/2023 10:40:	12
13	CCV	324060503	09.20.2023.	NPOC:26.91mg/L		10/11/2023 10:56:	1
14	CCB		09.20.2023.	NPOC:0.1318mg/L		10/11/2023 11:08:	2
15	HS23100182-01		09.20.2023.	NPOC:6.903mg/L		10/11/2023 11:23:	13
16	HS23100182-01MS		09.20.2023.	NPOC:16.99mg/L		10/11/2023 11:38:	14
17	HS23100193-01		09.20.2023.	NPOC:13.25mg/L		10/11/2023 11:52:	15
18	HS23100193-02		09.20.2023.	NPOC:10.39mg/L		10/12/2023 12:07:	16
19	CCV	324060503	09.20.2023.	NPOC:26.85mg/L		10/12/2023 12:22:	1
20	CCB		09.20.2023.	NPOC:0.1330mg/L		10/12/2023 12:34:	2
21	MBLK-10112023	3100607901	09.20.2023.	NPOC:0.05287mg/		10/12/2023 12:46:	3
22	LCS-10112023		09.20.2023.	NPOC:10.55mg/L		10/12/2023 1:01:2	4
23	LCSD-10112023		09.20.2023.	NPOC:10.58mg/L		10/12/2023 1:15:5	5
24	HS23100193-03	TOC_W 5310B	09.20.2023.	NPOC:6.515mg/L		10/12/2023 1:30:0	17
25	HS23100193-04		09.20.2023.	NPOC:3.067mg/L		10/12/2023 1:43:5	18
26	HS23100415-01		09.20.2023.	NPOC:11.01mg/L		10/12/2023 1:58:2	19
27	HS23100415-01MS		09.20.2023.	NPOC:20.35mg/L		10/12/2023 2:13:3	20
28	HS23100466-01		09.20.2023.	NPOC:15.42mg/L		10/12/2023 2:28:5	21
29	HS23100478-01		09.20.2023.	NPOC:0.5612mg/L		10/12/2023 2:41:2	22
30	HS23100478-02		09.20.2023.	NPOC:0.6682mg/L		10/12/2023 2:54:1	23
31	CCV	324060503	09.20.2023.	NPOC:26.38mg/L		10/12/2023 3:09:3	1
32	CCB		09.20.2023.	NPOC:0.1365mg/L		10/12/2023 3:21:5	2
33	HS23100606-01		09.20.2023.	NPOC:1.287mg/L		10/12/2023 3:35:0	24
34	HS23100606-04		09.20.2023.	NPOC:0.000mg/L		10/12/2023 3:47:2	25
35	HS23100551-03		09.20.2023.	NPOC:10.54mg/L		10/12/2023 4:01:4	26
36	HS23100092-03		09.20.2023.	NPOC:20.40mg/L		10/12/2023 4:17:1	27
37	CCV	324060503	09.20.2023.	NPOC:27.12mg/L		10/12/2023 4:32:3	39
38	CCB		09.20.2023.	NPOC:0.09852mg/		10/12/2023 4:44:5	40
39	MBLK-10112023	3100607901	09.20.2023.	NPOC:0.06854mg/		10/12/2023 4:57:2	3
40	LCS-10112023		09.20.2023.	NPOC:10.49mg/L		10/12/2023 5:11:4	4
41	LCSD-10112023		09.20.2023.	NPOC:10.59mg/L		10/12/2023 5:26:0	5
42	HS23100092-04	TOC_W 5310B	09.20.2023.	NPOC:5.702mg/L		10/12/2023 5:40:3	28
43	HS23100159-10		09.20.2023.	NPOC:1.217mg/L		10/12/2023 5:53:4	29
44	HS23100159-11		09.20.2023.	NPOC:2.317mg/L		10/12/2023 6:07:0	30
45	HS23100159-12		09.20.2023.	NPOC:2.533mg/L		10/12/2023 6:20:3	31
46	HS23100159-13		09.20.2023.	NPOC:1.882mg/L		10/12/2023 6:33:4	32
47	HS23100159-14		09.20.2023.	NPOC:2.061mg/L		10/12/2023 6:46:4	33
48	HS23100159-15		09.20.2023.	NPOC:3.266mg/L		10/12/2023 7:00:2	34
49	CCV	324060503	09.20.2023.	NPOC:24.90mg/L		10/12/2023 7:15:2	39
50	CCB		09.20.2023.	NPOC:0.1422mg/L		10/12/2023 7:27:4	40
51	HS23100159-16		09.20.2023.	NPOC:1.364mg/L		10/12/2023 7:40:3	35
52	HS23100291-01		09.20.2023.	NPOC:0.5168mg/L		10/12/2023 7:52:5	36
53	HS23100291-02		09.20.2023.	NPOC:1.140mg/L		10/12/2023 8:05:4	37

	Sample Name	Sample ID	Origin	Result	Notes	Date / Time	01332465 Vial
54	HS23100291-02MS		09.20.2023.	NPOC:10.57mg/L		10/12/2023 8:20:1	38
55	CCV	324060503	09.20.2023.	NPOC:23.48mg/L		10/12/2023 8:34:5	39
56	CCB		09.20.2023.	NPOC:0.2176mg/L		10/12/2023 8:47:2	40

Instr.Information

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

Sample

Sample Name: CCV
Sample ID: 324060503
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

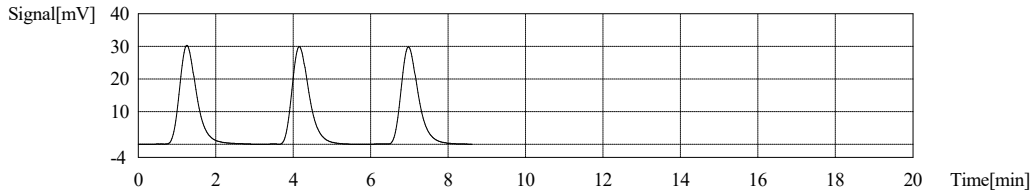
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:27.12mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	93.59	27.21mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 4:26:24 AM
2	93.34	27.13mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 4:29:28 AM
3	92.98	27.03mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 4:32:36 AM

Mean Area 93.30
Mean Conc. 27.12mg/L



Sample

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

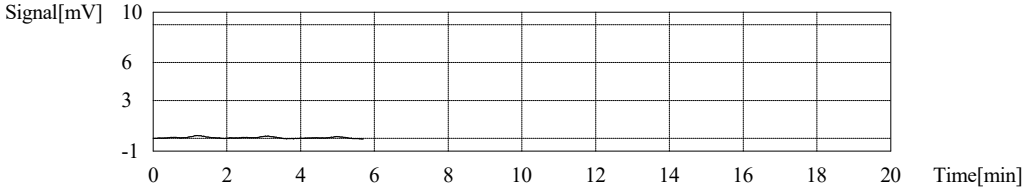
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.09852mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4370	0.1270mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 4:40:41 AM
2	0.3295	0.09578mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 4:42:49 AM
3	0.2502	0.07273mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 4:44:57 AM

Mean Area 0.3389
Mean Conc. 0.09852mg/L



Sample

Sample Name: MBLK-10112023
Sample ID: 3100607901
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

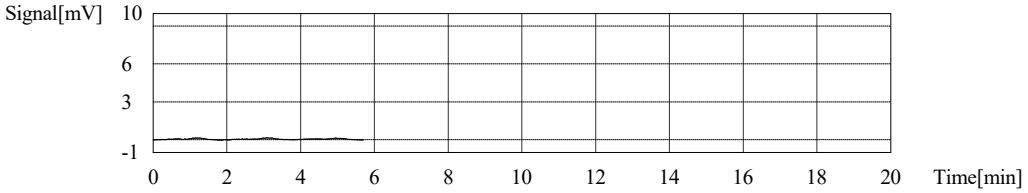
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.06854mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.2810	0.08169mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 4:53:08 AM
2	0.2557	0.07433mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 4:55:16 AM
3	0.1706	0.04959mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 4:57:24 AM

Mean Area 0.2358
Mean Conc. 0.06854mg/L



Sample

Sample Name: LCS-10112023
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

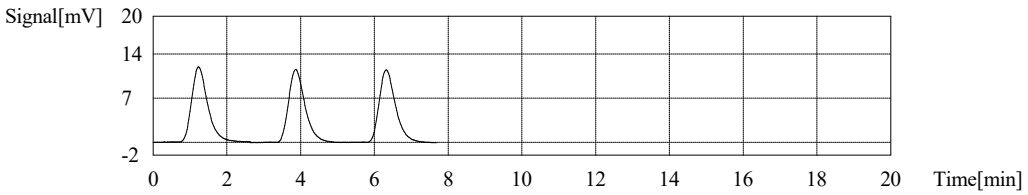
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:10.49mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	36.26	10.54mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 5:06:12 AM
2	36.16	10.51mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 5:08:55 AM
3	35.87	10.43mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 5:11:44 AM

Mean Area 36.10
Mean Conc. 10.49mg/L



Sample

Sample Name: LCSD-10112023
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

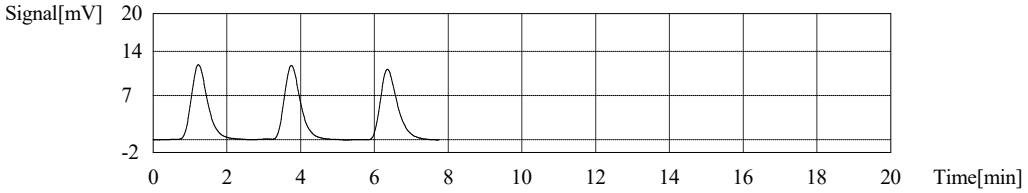
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:10.59mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	36.59	10.64mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 5:20:26 AM
2	36.37	10.57mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 5:23:18 AM
3	36.38	10.58mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 5:26:08 AM

Mean Area 36.45
Mean Conc. 10.59mg/L



Sample

Sample Name: HS23100159-10
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

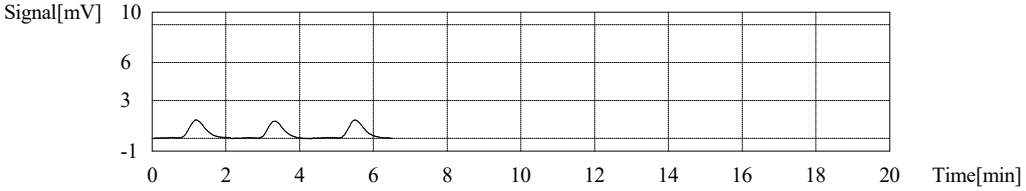
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.217mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.224	1.228mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 5:48:51 AM
2	4.042	1.175mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 5:51:17 AM
3	4.296	1.249mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 5:53:44 AM

Mean Area 4.187
Mean Conc. 1.217mg/L



Sample

Sample Name: HS23100159-11
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

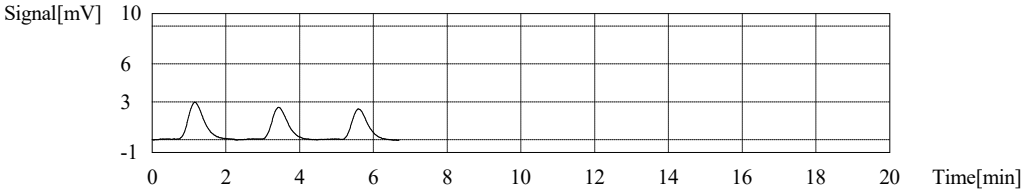
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.317mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.096	2.644mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:02:10 AM
2	7.457	2.168mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:04:35 AM
3	7.355	2.138mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:07:05 AM

Mean Area 7.969
Mean Conc. 2.317mg/L



Sample

Sample Name: HS23100159-12
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

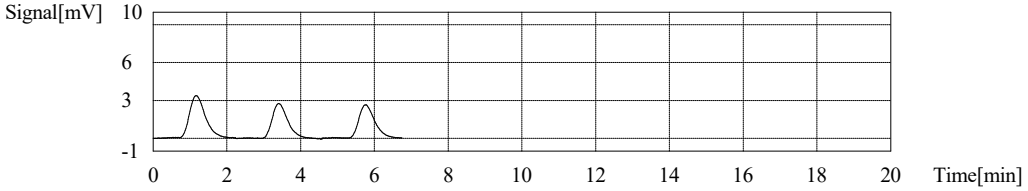
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.533mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.880	2.872mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:15:30 AM
2	8.375	2.435mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:18:06 AM
3	7.887	2.293mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:20:30 AM

Mean Area 8.714
Mean Conc. 2.533mg/L



Sample

Sample Name: HS23100159-13
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

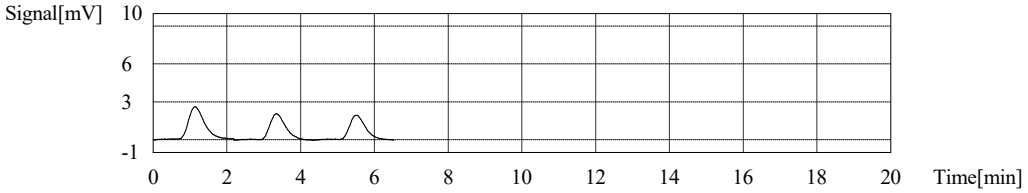
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.882mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.607	2.211mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:28:52 AM
2	6.106	1.775mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:31:18 AM
3	5.706	1.659mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:33:43 AM

Mean Area 6.473
Mean Conc. 1.882mg/L



Sample

Sample Name: HS23100159-14
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

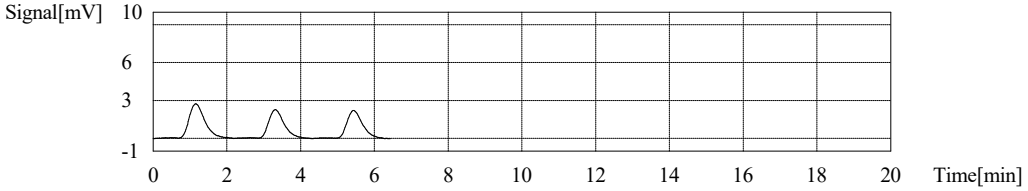
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:2.061mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.043	2.338mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:42:03 AM
2	6.637	1.929mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:44:24 AM
3	6.591	1.916mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:46:48 AM

Mean Area 7.090
Mean Conc. 2.061mg/L



Sample

Sample Name: HS23100159-15
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

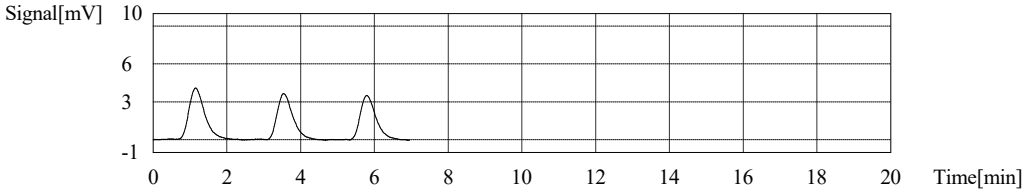
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.266mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.26	3.564mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:55:22 AM
2	10.91	3.172mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 6:57:53 AM
3	10.54	3.064mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:00:24 AM

Mean Area 11.24
Mean Conc. 3.266mg/L



Sample

Sample Name: CCV
Sample ID: 324060503
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

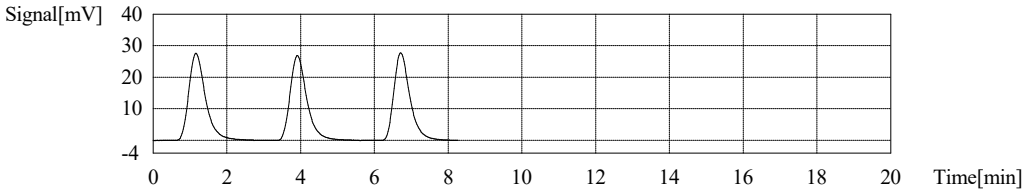
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.90mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	87.12	25.33mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:09:21 AM
2	85.04	24.72mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:12:27 AM
3	84.79	24.65mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:15:24 AM

Mean Area 85.65
Mean Conc. 24.90mg/L



Sample

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

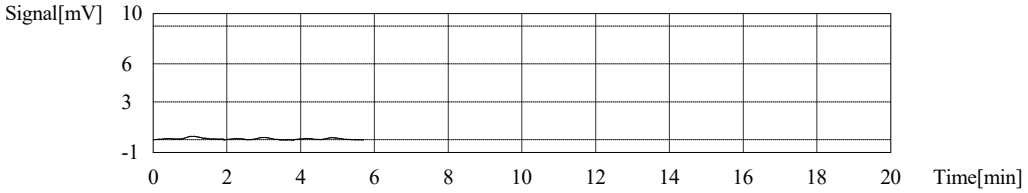
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1422mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.5227	0.1519mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:23:29 AM
2	0.6185	0.1798mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:25:38 AM
3	0.3259	0.09474mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:27:46 AM

Mean Area 0.4890
Mean Conc. 0.1422mg/L



Sample

Sample Name: HS23100159-16
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

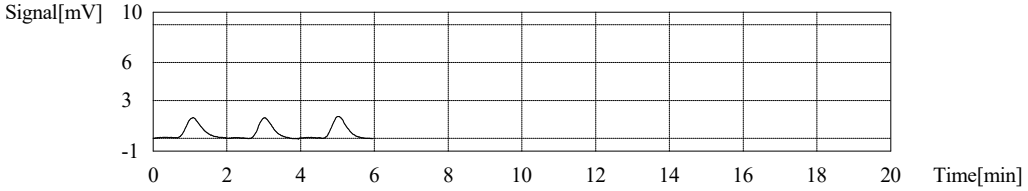
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.364mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.568	1.328mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:36:07 AM
2	4.617	1.342mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:38:20 AM
3	4.887	1.421mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 7:40:34 AM

Mean Area 4.691
Mean Conc. 1.364mg/L



Sample

Sample Name: HS23100291-02
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

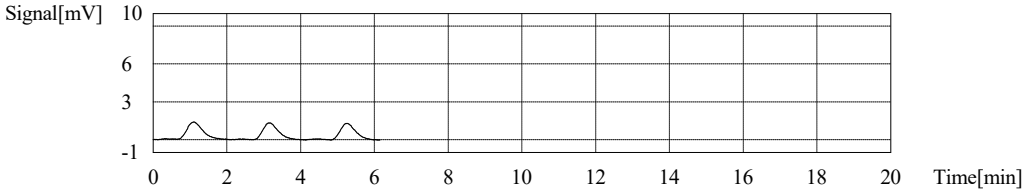
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:1.140mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	4.086	1.188mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:01:08 AM
2	3.908	1.136mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:03:27 AM
3	3.773	1.097mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:05:41 AM

Mean Area 3.922
Mean Conc. 1.140mg/L



Sample

Sample Name: HS23100291-02MS
Sample ID:
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

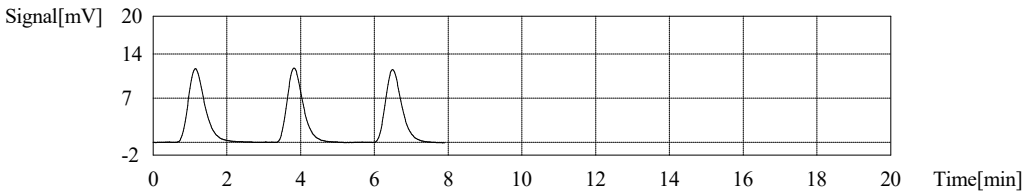
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:10.57mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	37.04	10.77mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:14:32 AM
2	36.08	10.49mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:17:27 AM
3	35.93	10.44mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:20:15 AM

Mean Area 36.35
Mean Conc. 10.57mg/L



Sample

Sample Name: CCV
Sample ID: 324060503
Origin: 09.20.2023.1.cal
Status Completed
Chk. Result

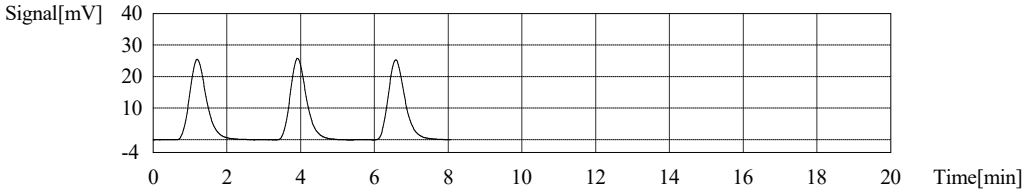
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:23.48mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	81.65	23.74mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:29:10 AM
2	80.13	23.29mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:32:06 AM
3	80.49	23.40mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:34:59 AM

Mean Area 80.76
Mean Conc. 23.48mg/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:0.2176mg/L

1. Det

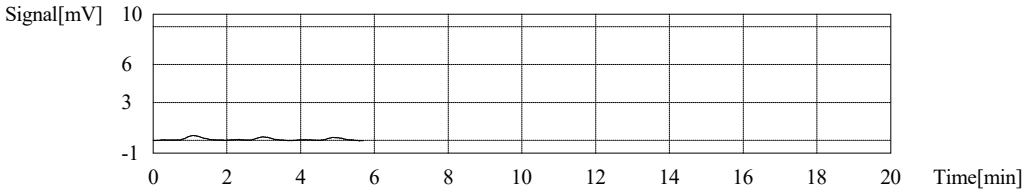
Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9340	0.2715mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:43:04 AM
2	0.7167	0.2083mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:45:12 AM
3	0.5951	0.1730mg/L	50uL	1.000		09.20.2023.1.2023_09_20_12_39_24.cal	10/12/2023 8:47:20 AM

TOC-Control L Report

2023_10_11_002.tlx

Mean Area	0.7486
Mean Conc.	0.2176mg/L



HS23100159 - J145740-1 Std_Tal_L4 Eurofins Revised Report

ALS WO# HS23100159

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Jumoke Lawal
ALS Group USA, Corp
10450 Stancliff Rd.
Suite 210
Houston TX 77099

Generated 10/18/2023 2:30 PM Revision 1

JOB DESCRIPTION

HS23100159

JOB NUMBER

410-145740-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.

Eurofins Lancaster Laboratories Environment Testing, LLC

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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
10/18/2023 2:30 PM
Revision 1

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.

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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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Qualifiers

GC VOA

Qualifier	Qualifier Description
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
410-145740-1

REVISION

The report being provided is a revision of the original report sent on 10/16/2023. The report (revision 1) is being revised due to the raw data did not pull into the report correctly.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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 may be 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.

Receipt
The samples were received on 10/5/2023 10:15 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 1.1°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: HS23100159

Job ID: 410-145740-1

Client Sample ID: 50WW14_100323 — Lab Sample ID: 410-145740-1

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	51000		12000		2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW13_100323 — Lab Sample ID: 410-145740-2

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	72000		12000		2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW13_100323-a — Lab Sample ID: 410-145740-3

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	73000		12000		2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW11_100323 — Lab Sample ID: 410-145740-4

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: 50WW11_100323-a — Lab Sample ID: 410-145740-5

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	53000		12000		2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW06_100323 — Lab Sample ID: 410-145740-6

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	56000		12000		2600	ug/L	1		RSK-175	Total/NA

Client Sample ID: 50WW12_100323 — Lab Sample ID: 410-145740-7

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	56000		12000		2600	ug/L	1		RSK-175	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: 50WW14_100323
Lab Sample ID: 410-145740-1
Date Collected: 10/03/23 07:40
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Carbon dioxide	51000		12000		2600	ug/L		10/13/23 11:23	1

Client Sample ID: 50WW13_100323
Lab Sample ID: 410-145740-2
Date Collected: 10/03/23 08:25
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Carbon dioxide	72000		12000		2600	ug/L		10/13/23 11:30	1

Client Sample ID: 50WW13_100323-a
Lab Sample ID: 410-145740-3
Date Collected: 10/03/23 08:25
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Carbon dioxide	73000		12000		2600	ug/L		10/13/23 11:38	1

Client Sample ID: 50WW11_100323
Lab Sample ID: 410-145740-4
Date Collected: 10/03/23 09:15
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Carbon dioxide	54000		12000		2600	ug/L		10/13/23 11:46	1

Client Sample ID: 50WW11_100323-a
Lab Sample ID: 410-145740-5
Date Collected: 10/03/23 09:15
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Carbon dioxide	53000		12000		2600	ug/L		10/13/23 11:54	1

Client Sample ID: 50WW06_100323
Lab Sample ID: 410-145740-6
Date Collected: 10/03/23 10:10
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Carbon dioxide	56000		12000		2600	ug/L		10/13/23 12:01	1

Client Sample ID: 50WW12_100323
Lab Sample ID: 410-145740-7
Date Collected: 10/03/23 10:55
Matrix: Water
Date Received: 10/05/23 10:15

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Carbon dioxide	56000		12000		2600	ug/L		10/13/23 12:09	1

Default Detection Limits

Client: ALS Group USA, Corp
Project/Site: HS23100159

Method: RSK-175 - Dissolved Gases (GC)

Prep: RSK-175

Analyte	LOQ	DL	Units
Carbon dioxide	12000	2600	ug/L

Client: ALS Group USA, Corp
Project/Site: HS23100159

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 410-430977/1-A
Matrix: Water
Analysis Batch: 430924

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430977

Analyte	MB Result	MB Qualifier	LOQ	LOD	DL	Unit	D	Analyzed	Dil Fac
Carbon dioxide	2600	U	12000		2600	ug/L		10/13/23 10:49	1

Lab Sample ID: LCS 410-430977/2-A
Matrix: Water
Analysis Batch: 430924

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430977

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon dioxide			35800	38200		ug/L		107	80 - 122		

Client: ALS Group USA, Corp
Project/Site: HS23100159

GC VOA

Analysis Batch: 430924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145740-1	50WW14_100323	Total/NA	Water	RSK-175	430977
410-145740-2	50WW13_100323	Total/NA	Water	RSK-175	430977
410-145740-3	50WW13_100323-a	Total/NA	Water	RSK-175	430977
410-145740-4	50WW11_100323	Total/NA	Water	RSK-175	430977
410-145740-5	50WW11_100323-a	Total/NA	Water	RSK-175	430977
410-145740-6	50WW06_100323	Total/NA	Water	RSK-175	430977
410-145740-7	50WW12_100323	Total/NA	Water	RSK-175	430977
MB 410-430977/1-A	Method Blank	Total/NA	Water	RSK-175	430977
LCS 410-430977/2-A	Lab Control Sample	Total/NA	Water	RSK-175	430977

Prep Batch: 430977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-145740-1	50WW14_100323	Total/NA	Water	RSK-175	
410-145740-2	50WW13_100323	Total/NA	Water	RSK-175	
410-145740-3	50WW13_100323-a	Total/NA	Water	RSK-175	
410-145740-4	50WW11_100323	Total/NA	Water	RSK-175	
410-145740-5	50WW11_100323-a	Total/NA	Water	RSK-175	
410-145740-6	50WW06_100323	Total/NA	Water	RSK-175	
410-145740-7	50WW12_100323	Total/NA	Water	RSK-175	
MB 410-430977/1-A	Method Blank	Total/NA	Water	RSK-175	
LCS 410-430977/2-A	Lab Control Sample	Total/NA	Water	RSK-175	

Client Sample ID: 50WW14_100323
Lab Sample ID: 410-145740-1
Date Collected: 10/03/23 07:40
Matrix: Water
Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:23

Client Sample ID: 50WW13_100323
Lab Sample ID: 410-145740-2
Date Collected: 10/03/23 08:25
Matrix: Water
Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:30

Client Sample ID: 50WW13_100323-a
Lab Sample ID: 410-145740-3
Date Collected: 10/03/23 08:25
Matrix: Water
Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:38

Client Sample ID: 50WW11_100323
Lab Sample ID: 410-145740-4
Date Collected: 10/03/23 09:15
Matrix: Water
Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:46

Client Sample ID: 50WW11_100323-a
Lab Sample ID: 410-145740-5
Date Collected: 10/03/23 09:15
Matrix: Water
Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 11:54

Client Sample ID: 50WW06_100323
Lab Sample ID: 410-145740-6
Date Collected: 10/03/23 10:10
Matrix: Water
Date Received: 10/05/23 10:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 12:01

Client: ALS Group USA, Corp
Project/Site: HS23100159

Client Sample ID: 50WW12_100323
Date Collected: 10/03/23 10:55
Date Received: 10/05/23 10:15

Lab Sample ID: 410-145740-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	RSK-175			430977	HQR6	ELLE	10/13/23 10:44
Total/NA	Analysis	RSK-175		1	430924	LXF2	ELLE	10/13/23 12:09

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

01332490

Client: ALS Group USA, Corp
Job ID: 410-145740-1
Project/Site: HS23100159

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: HS23100159

Job ID: 410-145740-1

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

01332492

Client: ALS Group USA, Corp
Job ID: 410-145740-1
Project/Site: HS23100159

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-145740-1	50WW14_100323	Water	10/03/23 07:40	10/05/23 10:15
410-145740-2	50WW13_100323	Water	10/03/23 08:25	10/05/23 10:15
410-145740-3	50WW13_100323-a	Water	10/03/23 08:25	10/05/23 10:15
410-145740-4	50WW11_100323	Water	10/03/23 09:15	10/05/23 10:15
410-145740-5	50WW11_100323-a	Water	10/03/23 09:15	10/05/23 10:15
410-145740-6	50WW06_100323	Water	10/03/23 10:10	10/05/23 10:15
410-145740-7	50WW12_100323	Water	10/03/23 10:55	10/05/23 10:15

GC VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Instrument ID: 19506-B Analysis Batch Number: 369251

Lab Sample ID: IC 410-369251/5 Client Sample ID:

Date Analyzed: 04/27/23 09:59 Lab File ID: 312023_04_27BB.0005.d GC Column: HP Plot ID: 0.53(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Carbon dioxide	2.06	Baseline Smoothing	WN7O	04/28/23 07:18

Lab Sample ID: IC 410-369251/10 Client Sample ID:

Date Analyzed: 04/27/23 10:37 Lab File ID: 312023_04_27BB.0010.d GC Column: HP Plot ID: 0.53(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Carbon dioxide	1.98	Baseline Smoothing	WN7O	04/28/23 07:17

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

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 %
EPH_CO2MS_00006	07/18/24	07/18/23	DI Water, Lot In House	1 g	EPH_CO2CRV_00003	0.0018 g	Carbon dioxide	1791000 ppb
.EPH_CO2CRV_00003	07/18/24	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.: 410-145740-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 312023_10_13BB.0004.d

Lab ID: LCS 410-430977/2-A Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Carbon dioxide	35800	38200	107	80-122	

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.: 410-145740-1

SDG No.:

Lab File ID: 312023_10_13BB.0003.d Lab Sample ID: MB 410-430977/1-A

Matrix: Water Heated Purge:(Y/N) N

Instrument ID: 19506-B Date Analyzed: 10/13/2023 10:49

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 410-430977/2-A	312023_10_13BB.0004.d	10/13/2023 10:56
50WW14_100323	410-145740-1	312023_10_13BB.0005.d	10/13/2023 11:23
50WW13_100323	410-145740-2	312023_10_13BB.0006.d	10/13/2023 11:30
50WW13_100323-a	410-145740-3	312023_10_13BB.0007.d	10/13/2023 11:38
50WW11_100323	410-145740-4	312023_10_13BB.0008.d	10/13/2023 11:46
50WW11_100323-a	410-145740-5	312023_10_13BB.0009.d	10/13/2023 11:54
50WW06_100323	410-145740-6	312023_10_13BB.0010.d	10/13/2023 12:01
50WW12_100323	410-145740-7	312023_10_13BB.0011.d	10/13/2023 12:09

FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Client Sample ID: 50WW14_100323 Lab Sample ID: 410-145740-1

Matrix: Water Lab File ID: 312023_10_13BB.0005.d

Analysis Method: RSK-175 Date Collected: 10/03/2023 07:40

Sample wt/vol: 5(mL) Date Analyzed: 10/13/2023 11:23

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.: 430924 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
124-38-9	Carbon dioxide	51000		12000	2600

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0005.d				
Lims ID:	410-145740-A-1-A				
Client ID:	50WW14_100323				
Sample Type:	Client				
Inject. Date:	13-Oct-2023 11:23:00	ALS Bottle#:	0	Worklist Smp#:	5
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-005				
Operator ID:		Instrument ID:	19506-B		
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.064	2.068	-0.004	169320944	51463	H

Report Date: 16-Oct-2023 03:29:20 Chrom Revision: 2.3 03-Oct-2023 18:39:10

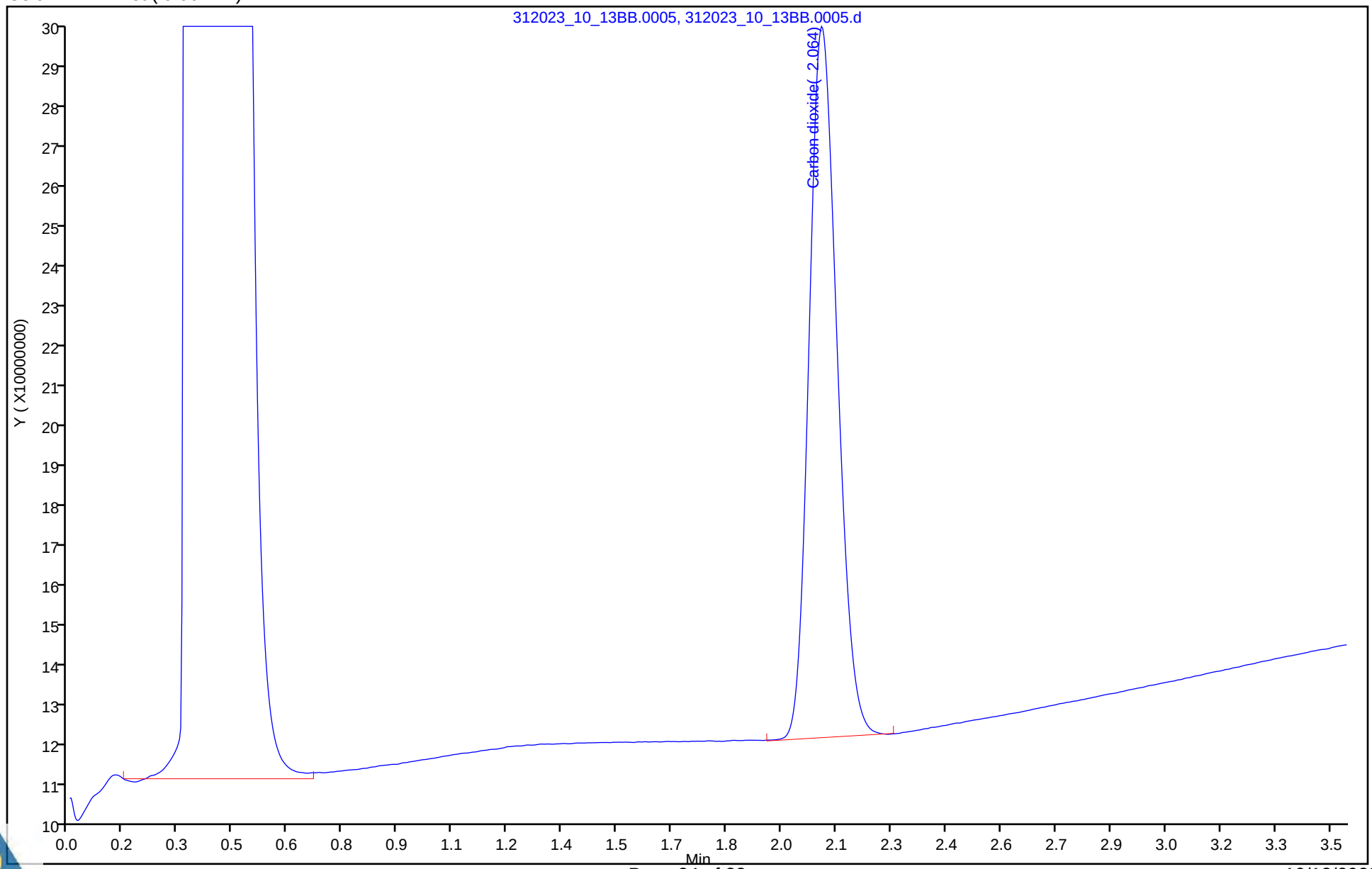
01332500

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0005.d

Injection Date:	13-Oct-2023 11:23:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	410-145740-A-1-A	Lab Sample ID:	410-145740-1	Worklist Smp#:	5
Client ID:	50WW14_100323				
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 I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Client Sample ID: 50WW13_100323 Lab Sample ID: 410-145740-2

Matrix: Water Lab File ID: 312023_10_13BB.0006.d

Analysis Method: RSK-175 Date Collected: 10/03/2023 08:25

Sample wt/vol: 5(mL) Date Analyzed: 10/13/2023 11:30

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.: 430924 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
124-38-9	Carbon dioxide	72000		12000	2600

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0006.d				
Lims ID:	410-145740-A-2-A				
Client ID:	50WW13_100323				
Sample Type:	Client				
Inject. Date:	13-Oct-2023 11:30:00	ALS Bottle#:	0	Worklist Smp#:	6
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-006				
Operator ID:		Instrument ID:	19506-B		
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.060	2.068	-0.008	235346221	71531	H

Report Date: 16-Oct-2023 03:29:21 Chrom Revision: 2.3 03-Oct-2023 18:39:10

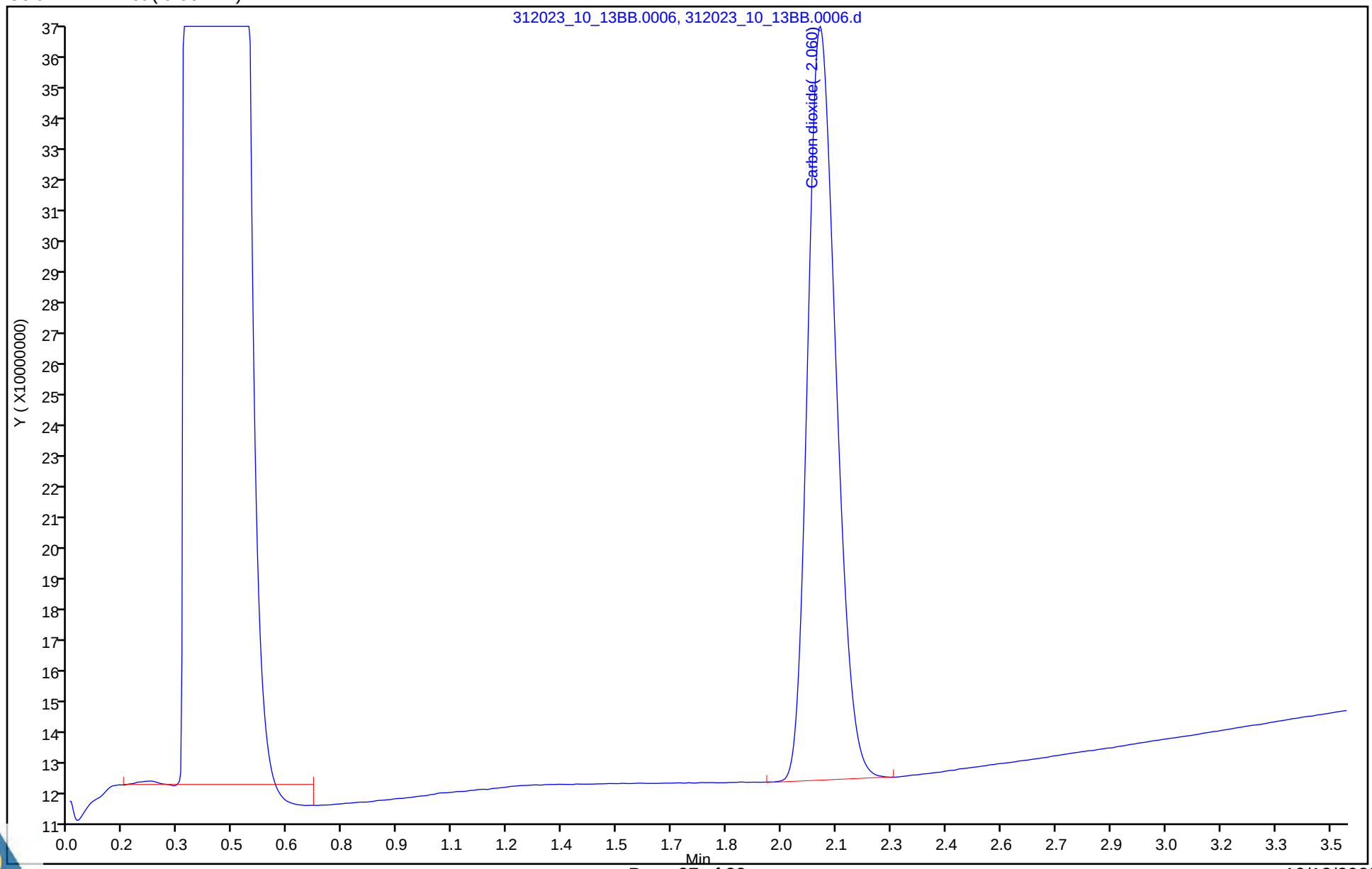
01332503

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0006.d

Injection Date:	13-Oct-2023 11:30:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	410-145740-A-2-A	Lab Sample ID:	410-145740-2	Worklist Smp#:	6
Client ID:	50WW13_100323				
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 I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Client Sample ID: 50WW13_100323-a Lab Sample ID: 410-145740-3

Matrix: Water Lab File ID: 312023_10_13BB.0007.d

Analysis Method: RSK-175 Date Collected: 10/03/2023 08:25

Sample wt/vol: 5(mL) Date Analyzed: 10/13/2023 11:38

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.: 430924 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
124-38-9	Carbon dioxide	73000		12000	2600

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0007.d				
Lims ID:	410-145740-A-3-A				
Client ID:	50WW13_100323-a				
Sample Type:	Client				
Inject. Date:	13-Oct-2023 11:38:00	ALS Bottle#:	0	Worklist Smp#:	7
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-007				
Operator ID:		Instrument ID:	19506-B		
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.059	2.068	-0.009	238908746	H 72614	

Report Date: 16-Oct-2023 03:29:21 Chrom Revision: 2.3 03-Oct-2023 18:39:10

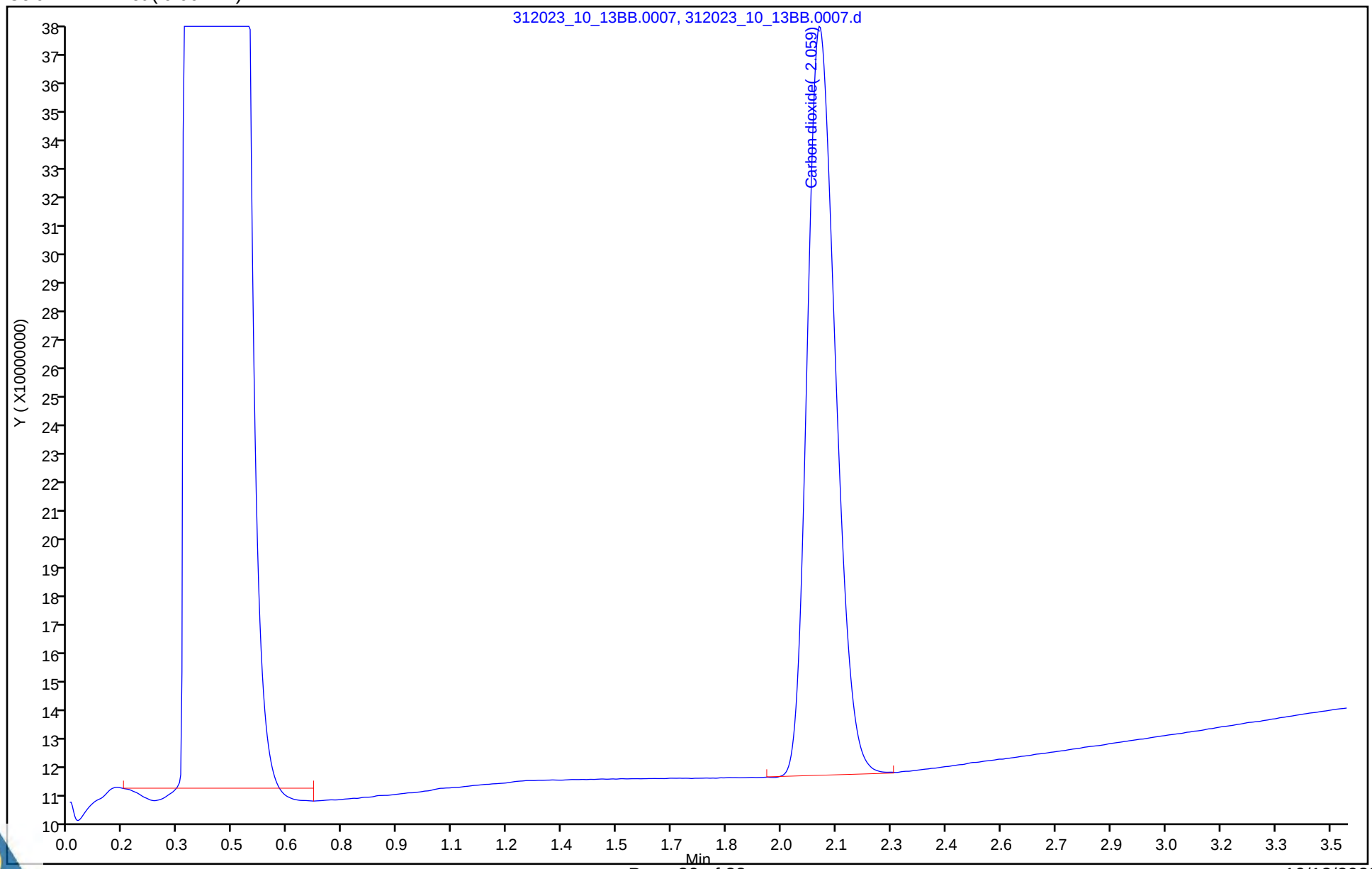
01332506

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0007.d

Injection Date:	13-Oct-2023 11:38:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	410-145740-A-3-A	Lab Sample ID:	410-145740-3	Worklist Smp#:	7
Client ID:	50WW13_100323-a				
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 I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Client Sample ID: 50WW11_100323 Lab Sample ID: 410-145740-4

Matrix: Water Lab File ID: 312023_10_13BB.0008.d

Analysis Method: RSK-175 Date Collected: 10/03/2023 09:15

Sample wt/vol: 5(mL) Date Analyzed: 10/13/2023 11:46

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.: 430924 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
124-38-9	Carbon dioxide	54000		12000	2600

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0008.d				
Lims ID:	410-145740-A-4-A				
Client ID:	50WW11_100323				
Sample Type:	Client				
Inject. Date:	13-Oct-2023 11:46:00	ALS Bottle#:	0	Worklist Smp#:	8
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-008				
Operator ID:		Instrument ID:	19506-B		
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

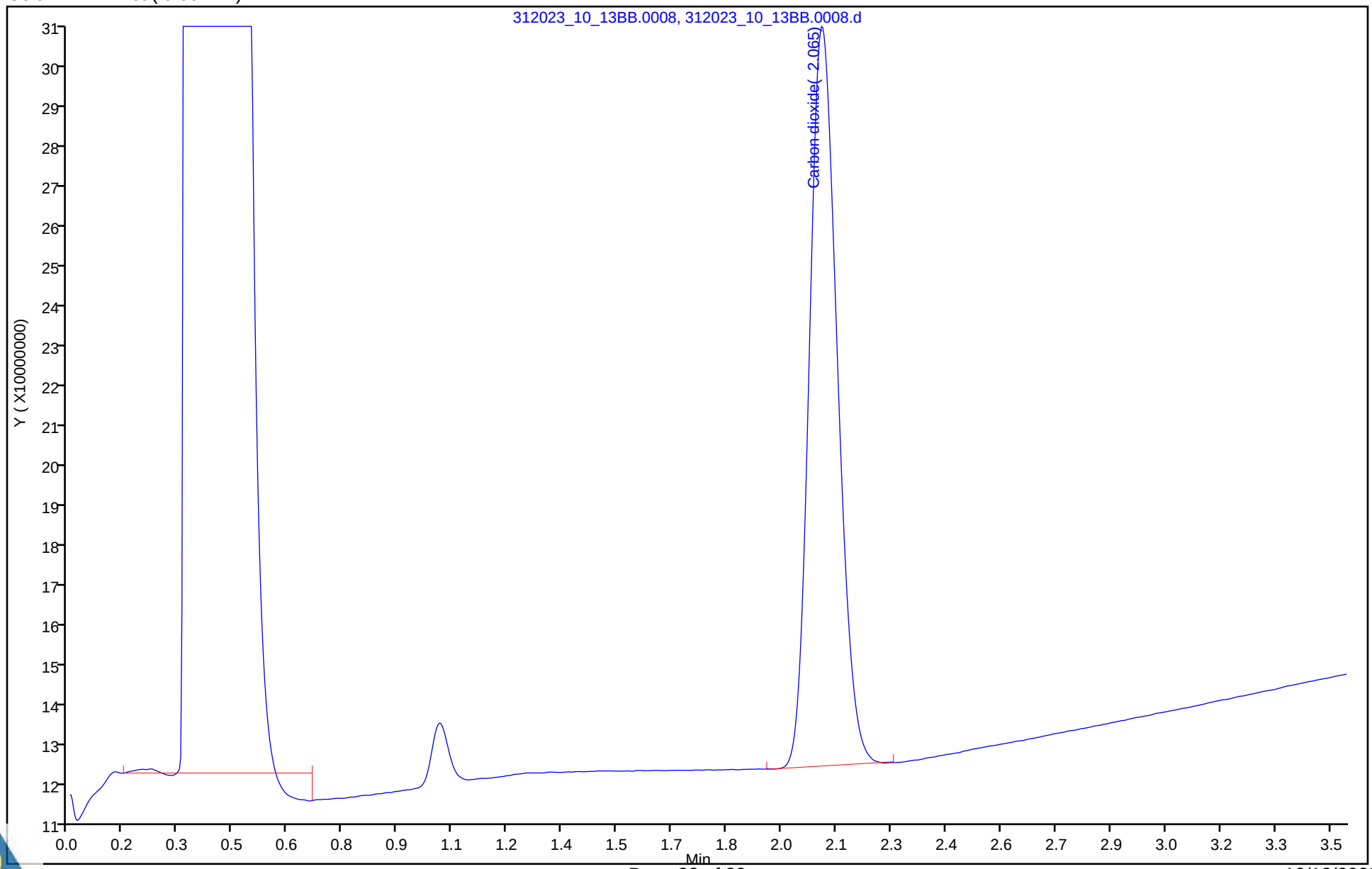
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.065	2.068	-0.003	177727076	54018	H

Report Date: 16-Oct-2023 03:29:21 Chrom Revision: 2.3 03-Oct-2023 18:39:10

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0008.d				
Injection Date:	13-Oct-2023 11:46:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	410-145740-A-4-A	Lab Sample ID:	410-145740-4	Worklist Smp#:	8
Client ID:	50WW11_100323				
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 I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Client Sample ID: 50WW11_100323-a Lab Sample ID: 410-145740-5

Matrix: Water Lab File ID: 312023_10_13BB.0009.d

Analysis Method: RSK-175 Date Collected: 10/03/2023 09:15

Sample wt/vol: 5(mL) Date Analyzed: 10/13/2023 11:54

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.: 430924 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
124-38-9	Carbon dioxide	53000		12000	2600

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0009.d				
Lims ID:	410-145740-A-5-A				
Client ID:	50WW11_100323-a				
Sample Type:	Client				
Inject. Date:	13-Oct-2023 11:54:00	ALS Bottle#:	0	Worklist Smp#:	9
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-009				
Operator ID:		Instrument ID:	19506-B		
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

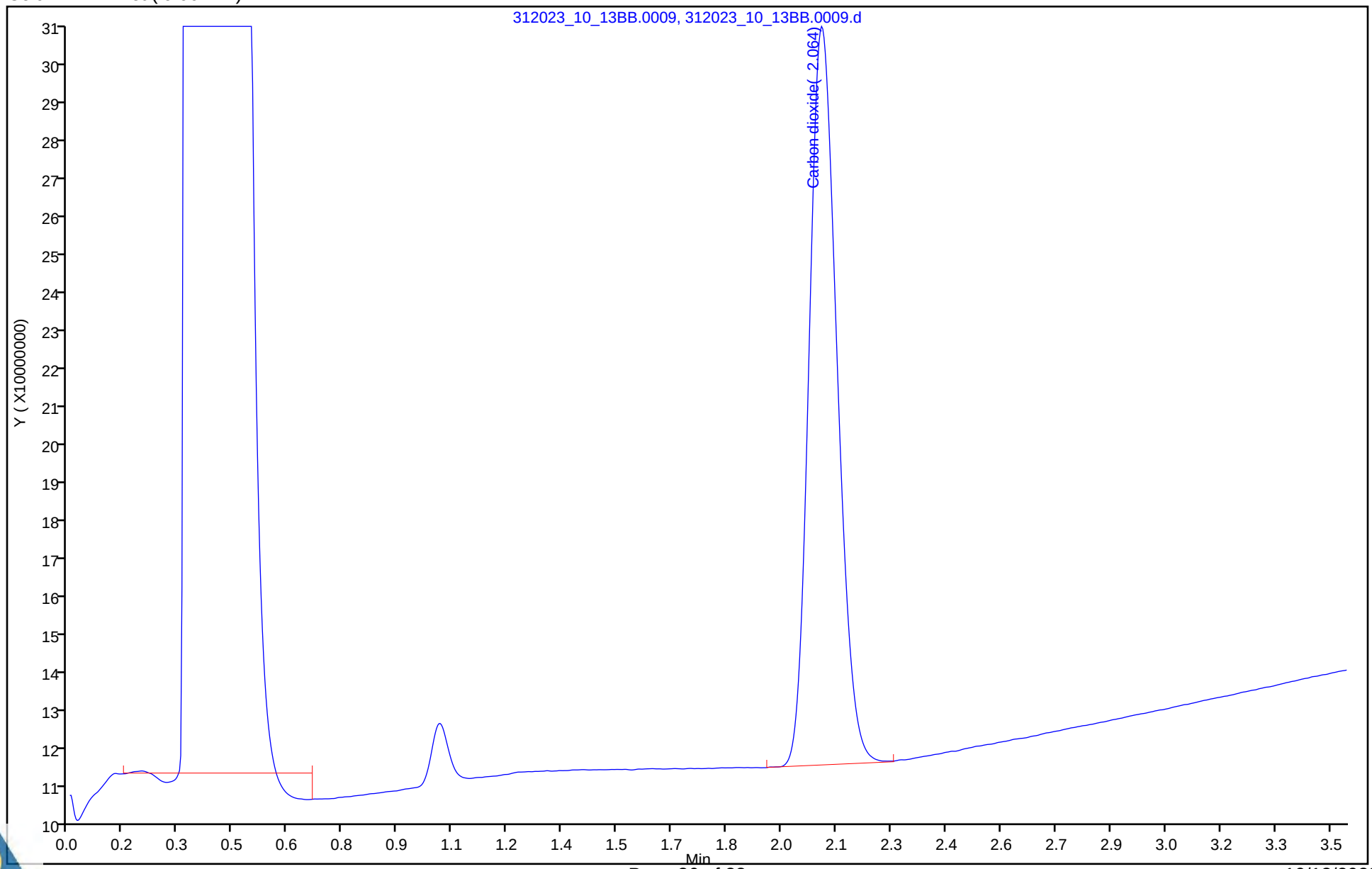
Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.064	2.068	-0.004	173142020	52625	H

Report Date: 16-Oct-2023 03:29:22 Chrom Revision: 2.3 03-Oct-2023 18:39:10

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0009.d				
Injection Date:	13-Oct-2023 11:54:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	410-145740-A-5-A	Lab Sample ID:	410-145740-5	Worklist Smp#:	9
Client ID:	50WW11_100323-a				
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 I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Client Sample ID: 50WW06_100323 Lab Sample ID: 410-145740-6

Matrix: Water Lab File ID: 312023_10_13BB.0010.d

Analysis Method: RSK-175 Date Collected: 10/03/2023 10:10

Sample wt/vol: 5(mL) Date Analyzed: 10/13/2023 12:01

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.: 430924 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
124-38-9	Carbon dioxide	56000		12000	2600

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0010.d				
Lims ID:	410-145740-A-6-A				
Client ID:	50WW06_100323				
Sample Type:	Client				
Inject. Date:	13-Oct-2023 12:01:00	ALS Bottle#:	0	Worklist Smp#:	10
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-010				
Operator ID:		Instrument ID:	19506-B		
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.063	2.068	-0.005	185595794	56410	H

Report Date: 16-Oct-2023 03:29:22 Chrom Revision: 2.3 03-Oct-2023 18:39:10

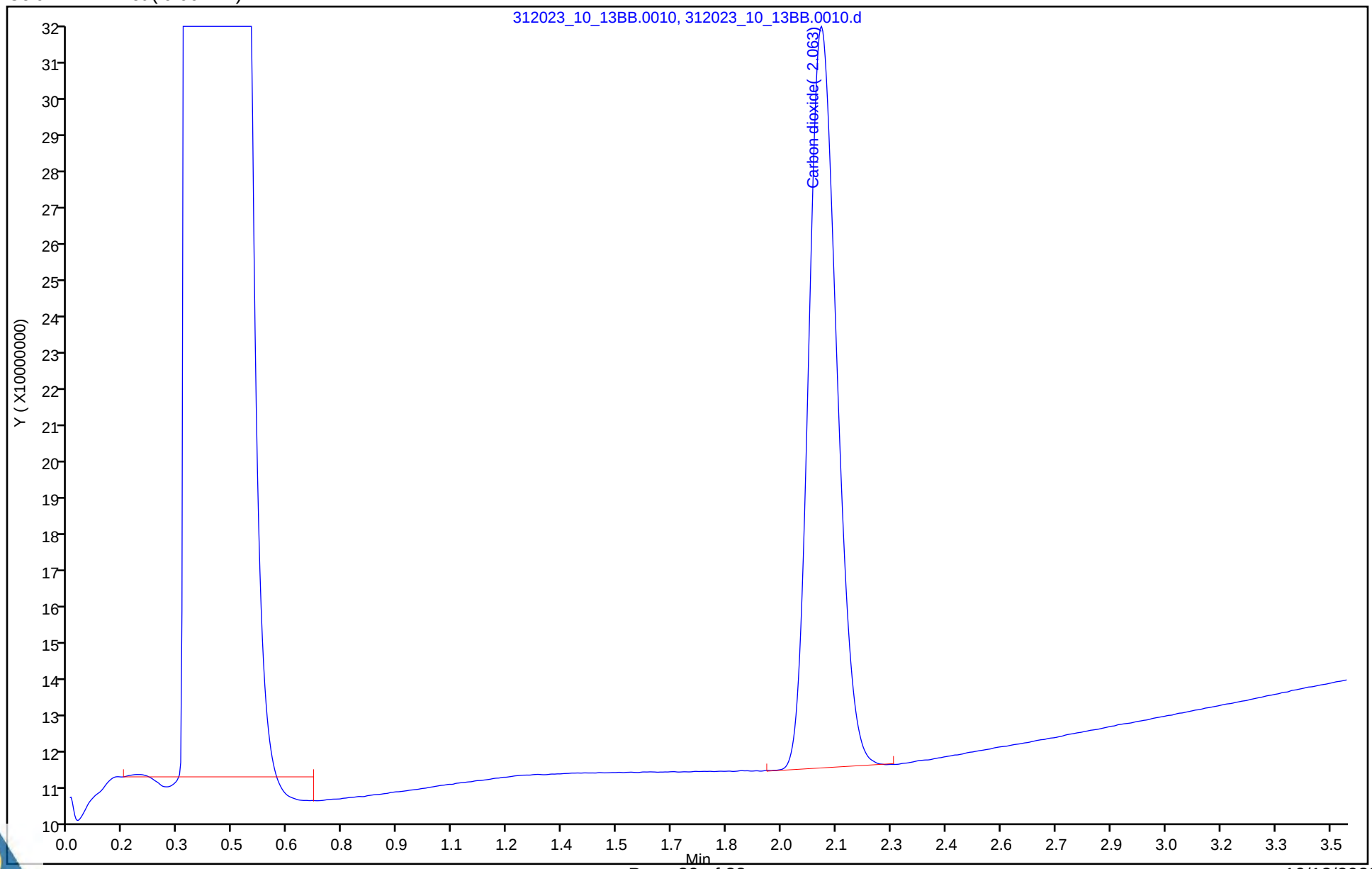
01332515

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0010.d

Injection Date:	13-Oct-2023 12:01:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	410-145740-A-6-A	Lab Sample ID:	410-145740-6	Worklist Smp#:	10
Client ID:	50WW06_100323				
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 I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Client Sample ID: 50WW12_100323 Lab Sample ID: 410-145740-7

Matrix: Water Lab File ID: 312023_10_13BB.0011.d

Analysis Method: RSK-175 Date Collected: 10/03/2023 10:55

Sample wt/vol: 5(mL) Date Analyzed: 10/13/2023 12:09

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.: 430924 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
124-38-9	Carbon dioxide	56000		12000	2600

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0011.d				
Lims ID:	410-145740-A-7-A				
Client ID:	50WW12_100323				
Sample Type:	Client				
Inject. Date:	13-Oct-2023 12:09:00	ALS Bottle#:	0	Worklist Smp#:	11
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-011				
Operator ID:		Instrument ID:	19506-B		
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.063	2.068	-0.005	185833093	56482	H

Report Date: 16-Oct-2023 03:29:22 Chrom Revision: 2.3 03-Oct-2023 18:39:10

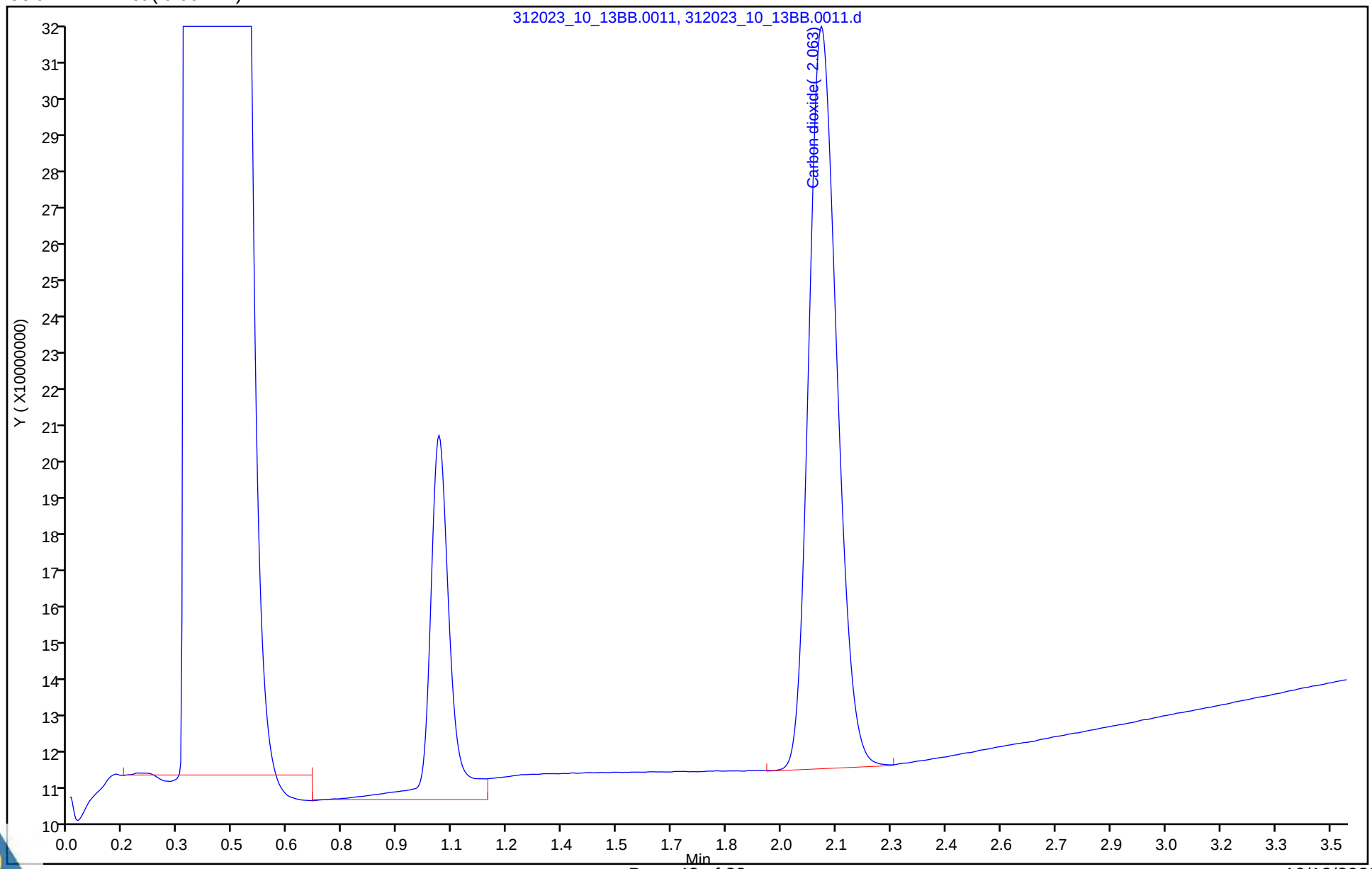
01332518

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0011.d

Injection Date:	13-Oct-2023 12:09:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	410-145740-A-7-A	Lab Sample ID:	410-145740-7	Worklist Smp#:	11
Client ID:	50WW12_100323				
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)



Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1 Analy Batch No.: 369251

SDG No.:

Instrument ID: 19506-B GC Column: HP Plot ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/27/2023 09:59 Calibration End Date: 04/27/2023 10:37 Calibration ID: 49603

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-369251/5	312023_04_27BB.0005.d
Level 2	IC 410-369251/6	312023_04_27BB.0006.d
Level 3	ICRT 410-369251/7	312023_04_27BB.0007.d
Level 4	IC 410-369251/8	312023_04_27BB.0008.d
Level 5	IC 410-369251/9	312023_04_27BB.0009.d
Level 6	IC 410-369251/10	312023_04_27BB.0010.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6					RT WINDOW	AVG RT
Carbon dioxide	2.060	2.059	2.054	2.043	2.024	1.983					2.024 - 2.084	2.037

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1 Analy Batch No.: 369251

SDG No.:

Instrument ID: 19506-B GC Column: HP Plot ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/27/2023 09:59 Calibration End Date: 04/27/2023 10:37 Calibration ID: 49603

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-369251/5	312023_04_27BB.0005.d
Level 2	IC 410-369251/6	312023_04_27BB.0006.d
Level 3	ICRT 410-369251/7	312023_04_27BB.0007.d
Level 4	IC 410-369251/8	312023_04_27BB.0008.d
Level 5	IC 410-369251/9	312023_04_27BB.0009.d
Level 6	IC 410-369251/10	312023_04_27BB.0010.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 6	LVL 3	LVL 4		B	M1	M2								
Carbon dioxide	3853.7 3132.6	3271.4 2761.6	3403.0	3318.5	Ave		3290.12214				10.8		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.

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1 Analy Batch No.: 369251

SDG No.:

Instrument ID: 19506-B GC Column: HP Plot ID: 0.53(mm) Heated Purge: (Y/N) N

Calibration Start Date: 04/27/2023 09:59 Calibration End Date: 04/27/2023 10:37 Calibration ID: 49603

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-369251/5	312023_04_27BB.0005.d
Level 2	IC 410-369251/6	312023_04_27BB.0006.d
Level 3	ICRT 410-369251/7	312023_04_27BB.0007.d
Level 4	IC 410-369251/8	312023_04_27BB.0008.d
Level 5	IC 410-369251/9	312023_04_27BB.0009.d
Level 6	IC 410-369251/10	312023_04_27BB.0010.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
		LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2	LVL 3	LVL 4	LVL 5
Carbon dioxide	Ave	41411686 989211697	70308888	121893696	297170647	561047460	10746 358200	21492	35820	89550	179100

Curve Type Legend:
Ave = Average by Height

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0005.d				
Lims ID:	ic				
Client ID:					
Sample Type:	IC	Calib Level:	1		
Inject. Date:	27-Apr-2023 09:59:00	ALS Bottle#:	0	Worklist Smp#:	5
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0082537-005				
Operator ID:		Instrument ID:	19506-B		
Sublist:	chrom-RSK_CO2_19506B*sub1				
Method:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	28-Apr-2023 07:19:05	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1628				
First Level Reviewer: WN7O		Date:	28-Apr-2023 07:18:31		

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.060	2.054	0.006	41411686H	10746	12587	M

QC Flag Legend

Processing Flags

H - Response Measured by Height

Review Flags

M - Manually Integrated

Reagents:

EPH_CO2MS_00004 Amount Added: 30.00 Units: uL

Report Date: 28-Apr-2023 07:19:05 Chrom Revision: 2.3 20-Apr-2023 08:27:48

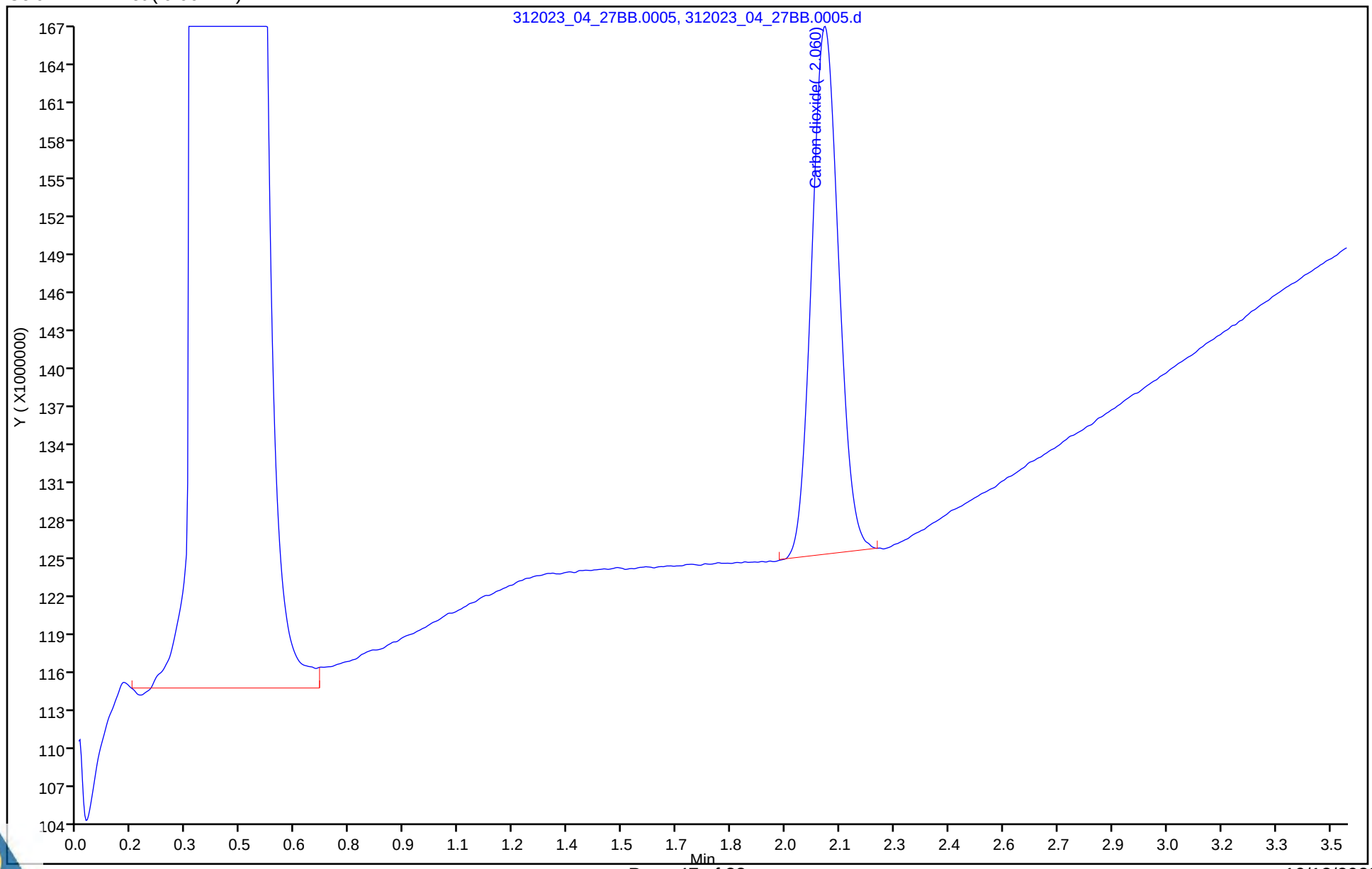
01332523

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0005.d

Injection Date:	27-Apr-2023 09:59:00	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)



Eurofins Lancaster Laboratories Environment Testing, LLC

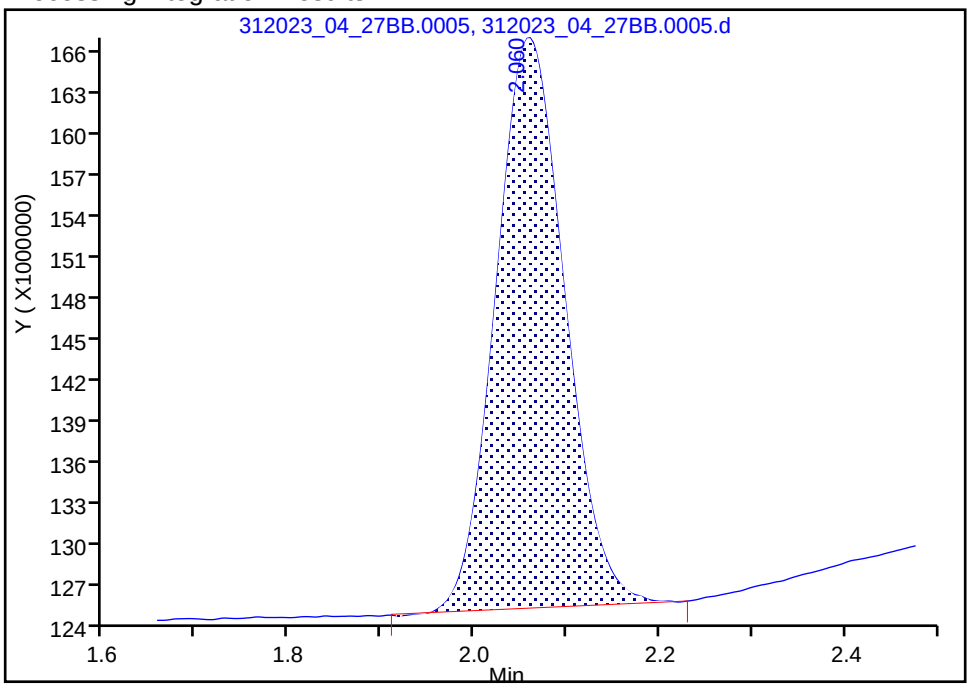
Data File: \\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0005.d
Injection Date: 27-Apr-2023 09:59:00 Instrument ID: 19506-B
Lims ID: ic
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 5
Purge Vol: 1.000 mL Dil. Factor: 1.0000
Method: RSK_CO2_19506B Limit Group: GCV - RSK175 CO2
Column: HP Plot (0.00 mm) Detector 0FIDA

1 Carbon dioxide, CAS: 124-38-9

Signal: 1

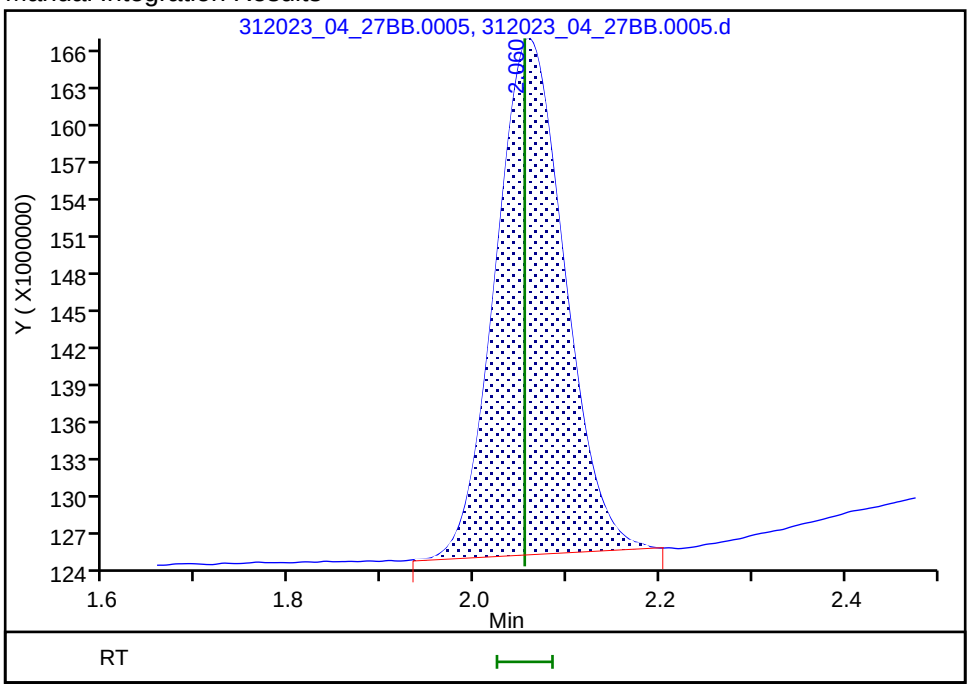
Processing Integration Results

RT: 2.06
Height: 40493056
Amount: 12361
Amount Units: ug/l



Manual Integration Results

RT: 2.06
Height: 41411686
Amount: 12587
Amount Units: ug/l



Reviewer: WN7O, 28-Apr-2023 07:18:28
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0006.d				
Lims ID:	ic				
Client ID:					
Sample Type:	IC	Calib Level:	2		
Inject. Date:	27-Apr-2023 10:06:00	ALS Bottle#:	0	Worklist Smp#:	6
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0082537-006				
Operator ID:		Instrument ID:	19506-B		
Sublist:	chrom-RSK_CO2_19506B*sub1				
Method:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	28-Apr-2023 07:19:06	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1628				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.059	2.054	0.005	70308888H	21492	21370	

Reagents:

EPH_CO2MS_00004 Amount Added: 60.00 Units: uL

Report Date: 28-Apr-2023 07:19:06 Chrom Revision: 2.3 20-Apr-2023 08:27:48

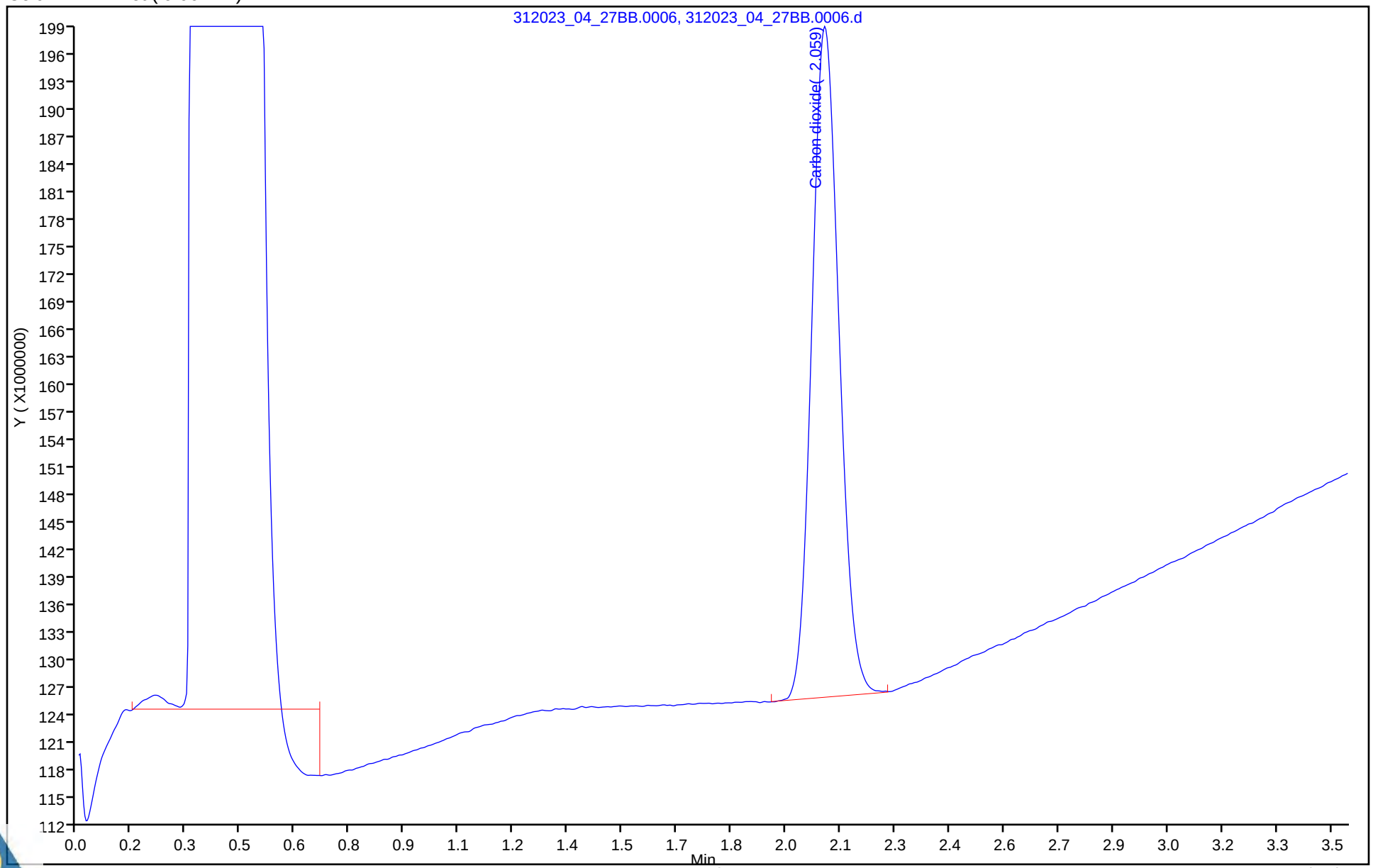
01332526

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0006.d

Injection Date:	27-Apr-2023 10:06:00	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)



Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0007.d				
Lims ID:	icrt				
Client ID:					
Sample Type:	ICRT	Calib Level:	3		
Inject. Date:	27-Apr-2023 10:14:00	ALS Bottle#:	0	Worklist Smp#:	7
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0082537-007				
Operator ID:		Instrument ID:	19506-B		
Sublist:	chrom-RSK_CO2_19506B*sub1				
Method:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	28-Apr-2023 07:19:08	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1628				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.054	2.054	0.000	121893696	H 35820	37048	

Reagents:

EPH_CO2MS_00004 Amount Added: 100.00 Units: uL

Report Date: 28-Apr-2023 07:19:08 Chrom Revision: 2.3 20-Apr-2023 08:27:48

01332528

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0007.d

Injection Date: 27-Apr-2023 10:14:00 Instrument ID: 19506-B Operator ID:

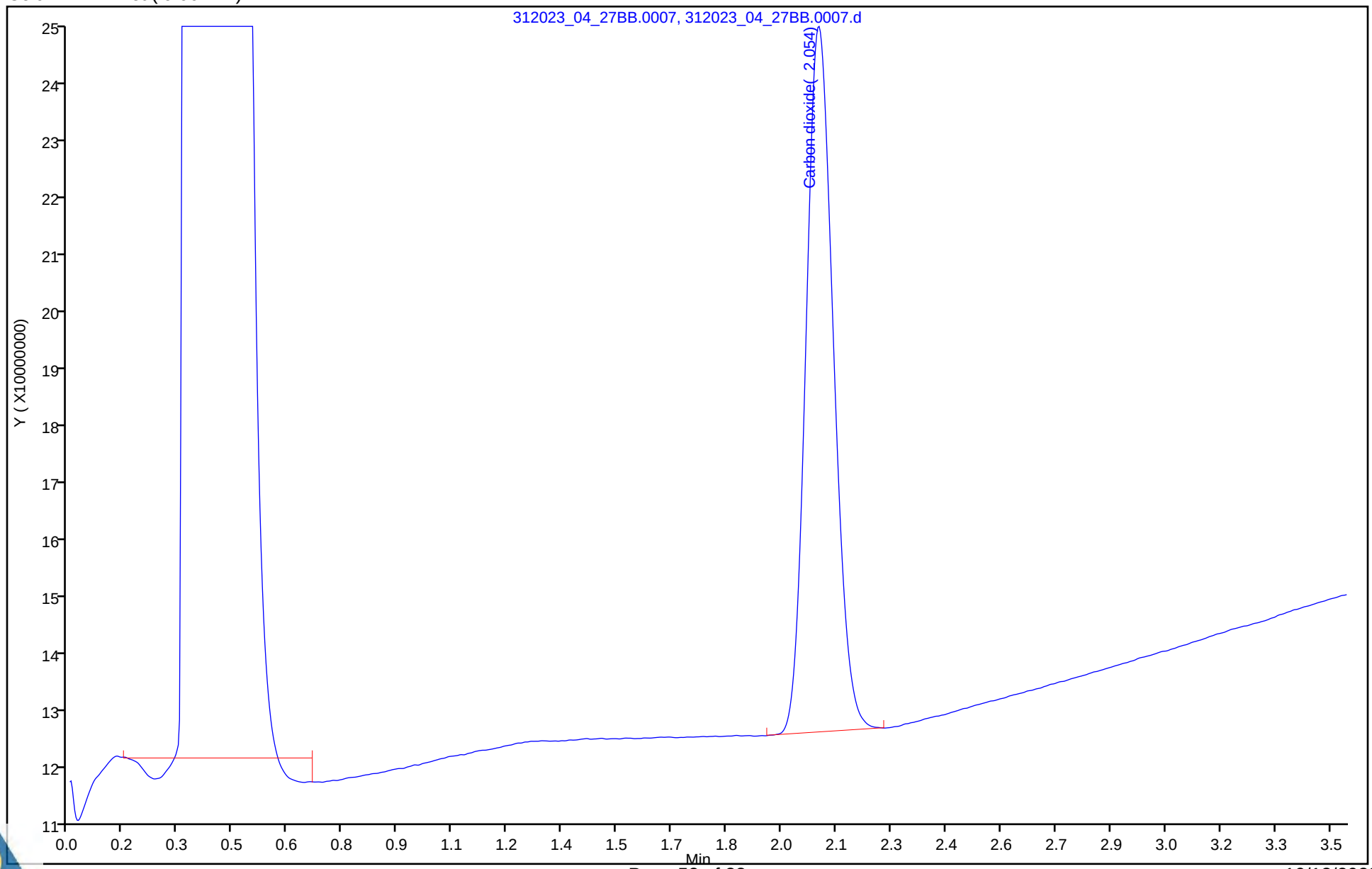
Lims ID: icrt Worklist Smp#: 7

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)



Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0008.d				
Lims ID:	ic				
Client ID:					
Sample Type:	IC	Calib Level:	4		
Inject. Date:	27-Apr-2023 10:22:00	ALS Bottle#:	0	Worklist Smp#:	8
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0082537-008				
Operator ID:		Instrument ID:	19506-B		
Sublist:	chrom-RSK_CO2_19506B*sub1				
Method:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	28-Apr-2023 07:19:09	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1628				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.043	2.054	-0.011	297170647	H 89550	90322	

Reagents:

EPH_CO2MS_00004 Amount Added: 250.00 Units: uL

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0008.d

Injection Date: 27-Apr-2023 10:22:00 Instrument ID: 19506-B Operator ID:

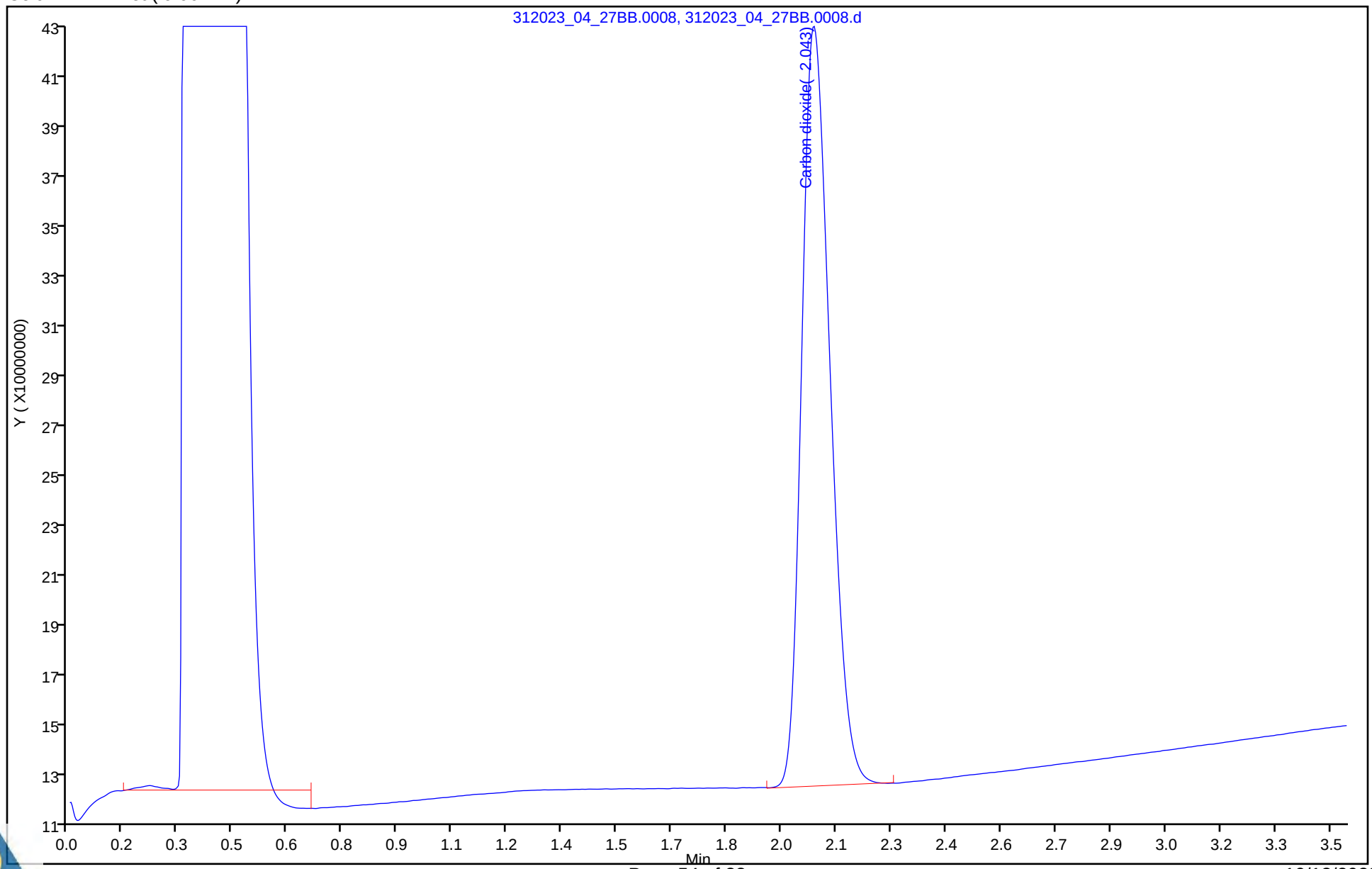
Lims ID: ic Worklist Smp#: 8

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)



Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0009.d				
Lims ID:	ic				
Client ID:					
Sample Type:	IC	Calib Level:	5		
Inject. Date:	27-Apr-2023 10:30:00	ALS Bottle#:	0	Worklist Smp#:	9
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0082537-009				
Operator ID:		Instrument ID:	19506-B		
Sublist:	chrom-RSK_CO2_19506B*sub1				
Method:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	28-Apr-2023 07:19:10	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1628				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.024	2.054	-0.030	561047460	H 179100	170525	

Reagents:

EPH_CO2MS_00004 Amount Added: 500.00 Units: uL

Report Date: 28-Apr-2023 07:19:10 Chrom Revision: 2.3 20-Apr-2023 08:27:48

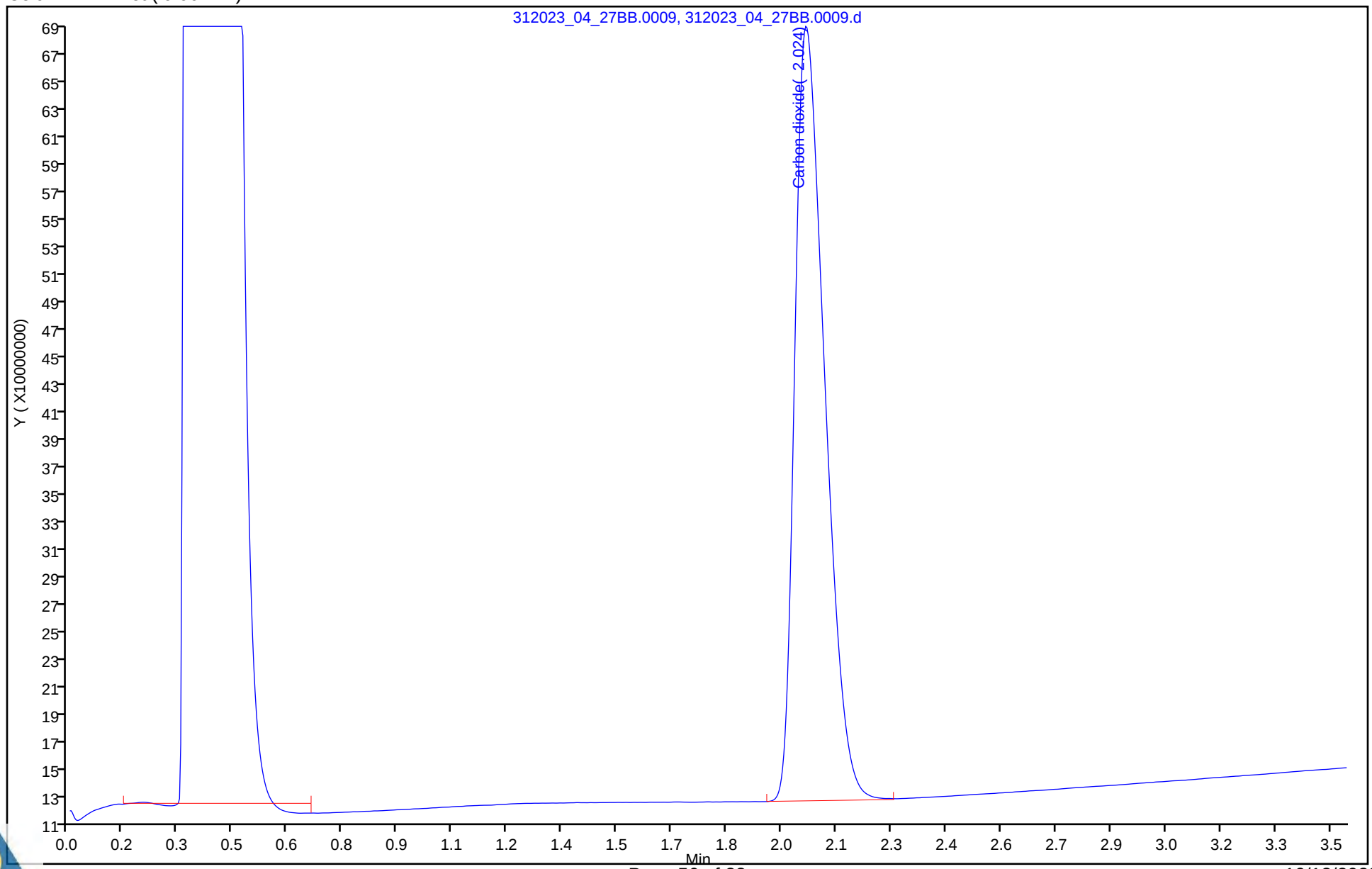
01332532

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0009.d

Injection Date:	27-Apr-2023 10:30:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	ic			Worklist Smp#:	9
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)



Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Lims ID:	ic				
Client ID:					
Sample Type:	IC	Calib Level:	6		
Inject. Date:	27-Apr-2023 10:37:00	ALS Bottle#:	0	Worklist Smp#:	10
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0082537-010				
Operator ID:		Instrument ID:	19506-B		
Sublist:	chrom-RSK_CO2_19506B*sub1				
Method:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	28-Apr-2023 07:19:11	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1628				
First Level Reviewer: WN7O		Date:	28-Apr-2023 07:17:52		

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	1.983	2.054	-0.071	989211697H	358200	300661	Ma

QC Flag Legend

Processing Flags

H - Response Measured by Height

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

EPH_CO2MS_00004 Amount Added: 1000.00 Units: uL

Report Date: 28-Apr-2023 07:19:12 Chrom Revision: 2.3 20-Apr-2023 08:27:48

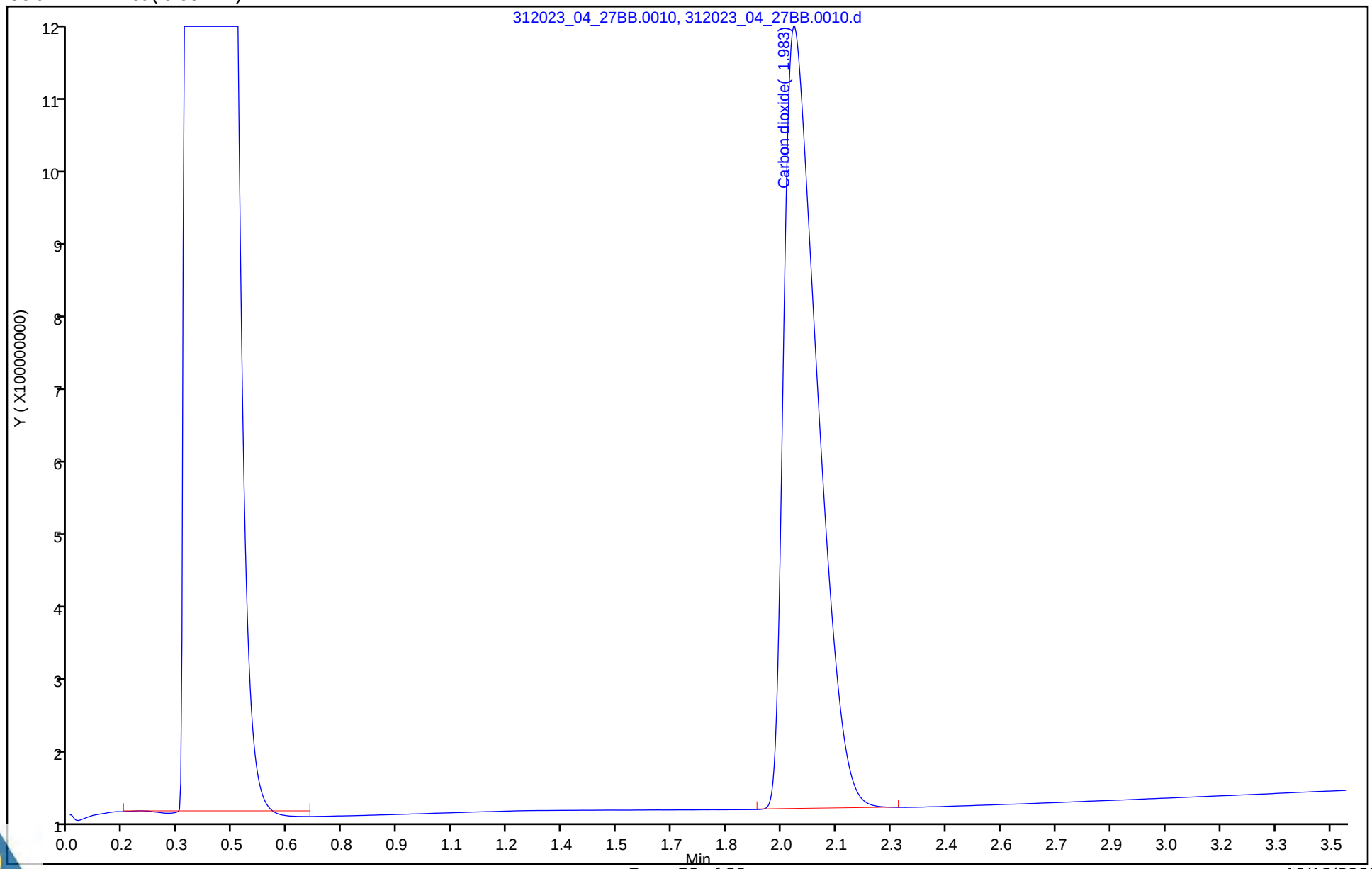
01332534

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d

Injection Date:	27-Apr-2023 10:37:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	ic			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)



Eurofins Lancaster Laboratories Environment Testing, LLC

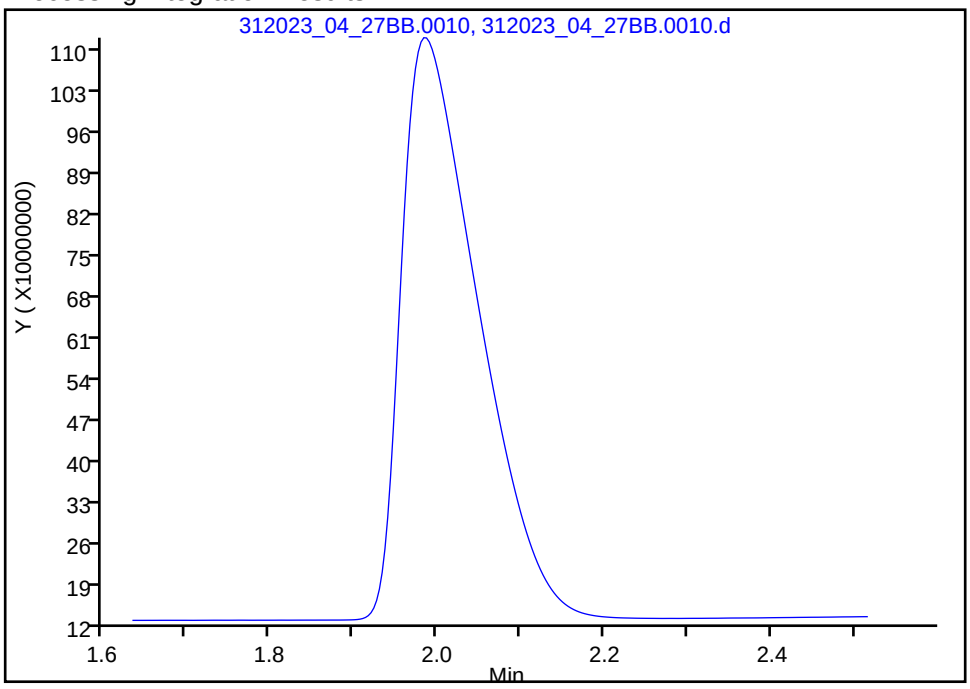
Data File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d		
Injection Date:	27-Apr-2023 10:37:00	Instrument ID:	19506-B
Lims ID:	ic		
Client ID:			
Operator ID:		ALS Bottle#:	0 Worklist Smp#: 10
Purge Vol:	1.000 mL	Dil. Factor:	1.0000
Method:	RSK_CO2_19506B	Limit Group:	GCV - RSK175 CO2
Column:	HP Plot (0.00 mm)	Detector	0FIDA

1 Carbon dioxide, CAS: 124-38-9

Signal: 1

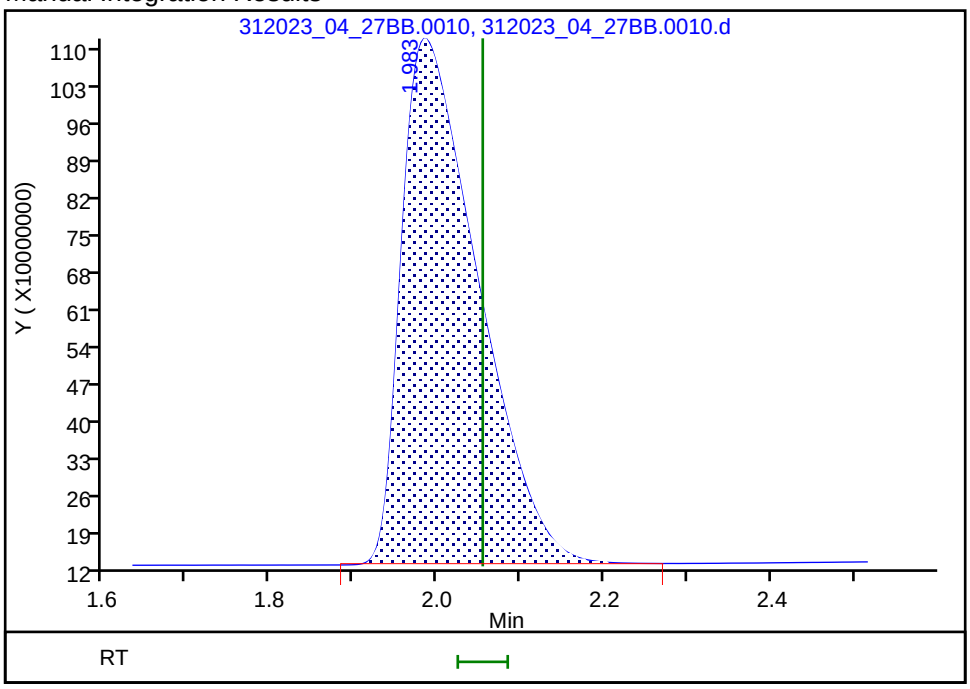
Not Detected
Expected RT: 2.05

Processing Integration Results



Manual Integration Results

RT: 1.98
Height: 989211697
Amount: 300661
Amount Units: ug/l



Reviewer: WN7O, 28-Apr-2023 07:17:41
Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

Calibration / Carbon dioxide

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ESTD
Response Base:	HEIGHT
RF Rounding:	0

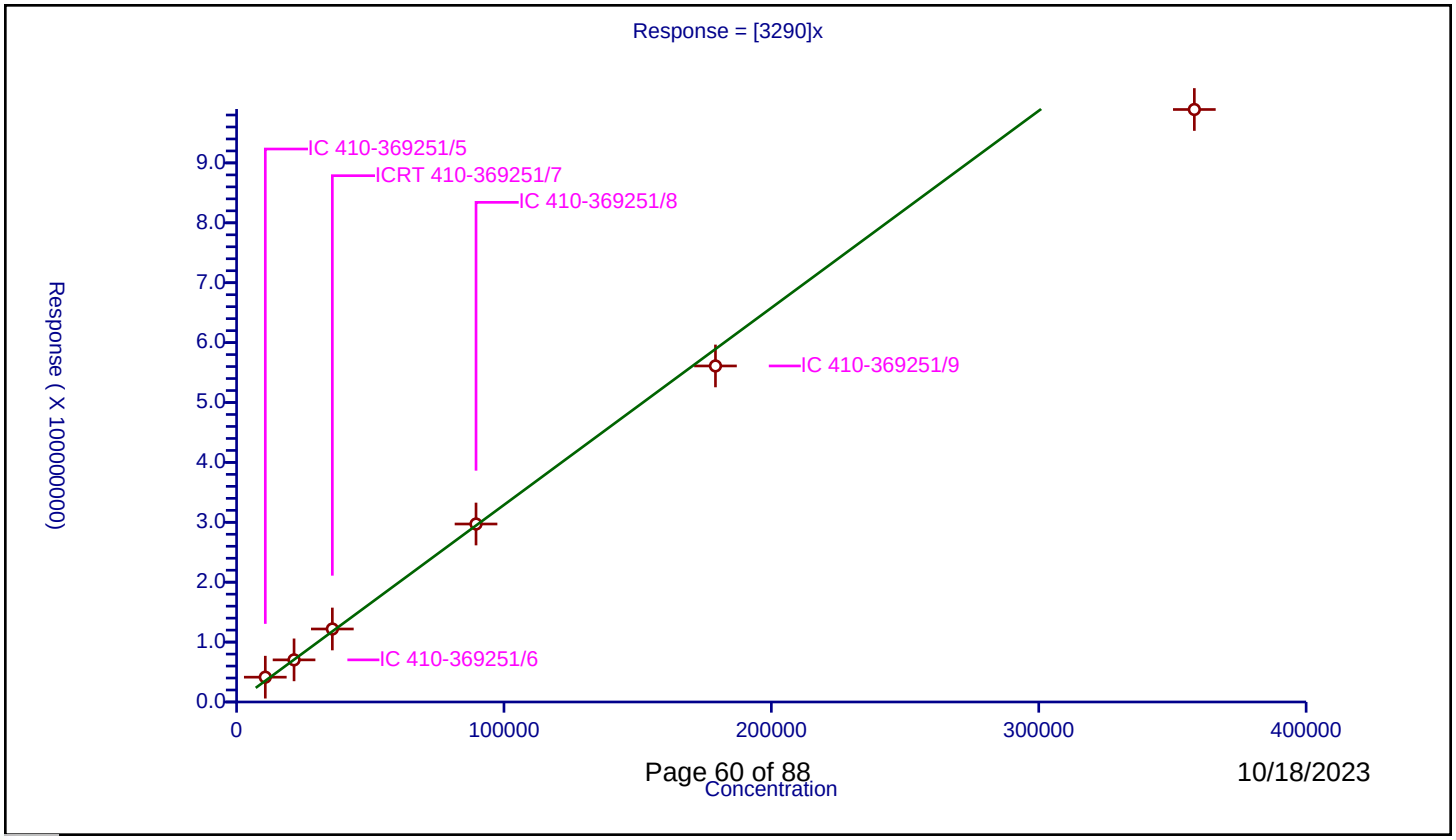
Curve Coefficients

Intercept:	0
Slope:	3290

Error Coefficients

Standard Error:	85700000
Relative Standard Error:	10.8
Correlation Coefficient:	0.995
Coefficient of Determination (Adjusted):	0.977

ID	Level	Concentration	Response	IS Amount	IS Response	RF	Used
1	IC 410-369251/5	10746.0	41411686.0			3853.683789	Y
2	IC 410-369251/6	21492.0	70308888.0			3271.398102	Y
3	ICRT 410-369251/7	35820.0	121893696.0			3402.950754	Y
4	IC 410-369251/8	89550.0	297170647.0			3318.48852	Y
5	IC 410-369251/9	179100.0	561047460.0			3132.5933	Y
6	IC 410-369251/10	358200.0	989211697.0			2761.618361	Y



FORM VII
GC VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Lab Sample ID: ICV 410-369251/13 Calibration Date: 04/27/2023 11:01

Instrument ID: 19506-B Calib Start Date: 04/27/2023 09:59

GC Column: HP Plot ID: 0.53(mm) Calib End Date: 04/27/2023 10:37

Lab File ID: 312023_04_27BB.0013.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	3290	3122		33200	35000	-5.1	15.0

FORM VII
GC VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Lab Sample ID: ICV 410-369251/13 Calibration Date: 04/27/2023 11:01

Instrument ID: 19506-B Calib Start Date: 04/27/2023 09:59

GC Column: HP Plot ID: 0.53(mm) Calib End Date: 04/27/2023 10:37

Lab File ID: 312023_04_27BB.0013.d Heated Purge: (Y/N) N

Analyte	RT	RT WINDOW	
		FROM	TO
Carbon dioxide	2.06	2.02	2.08

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0013.d				
Lims ID:	icv				
Client ID:					
Sample Type:	ICV				
Inject. Date:	27-Apr-2023 11:01:00	ALS Bottle#:	0	Worklist Smp#:	13
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0082537-013				
Operator ID:		Instrument ID:	19506-B		
Sublist:					
Method:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	28-Apr-2023 08:50:24	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1654				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.057	2.054	0.003	109307674	H 35008	33223	

Reagents:

EPH_CO2ICV_00002 Amount Added: 320.00 Units: uL

Report Date: 28-Apr-2023 08:51:00 Chrom Revision: 2.3 20-Apr-2023 08:27:48

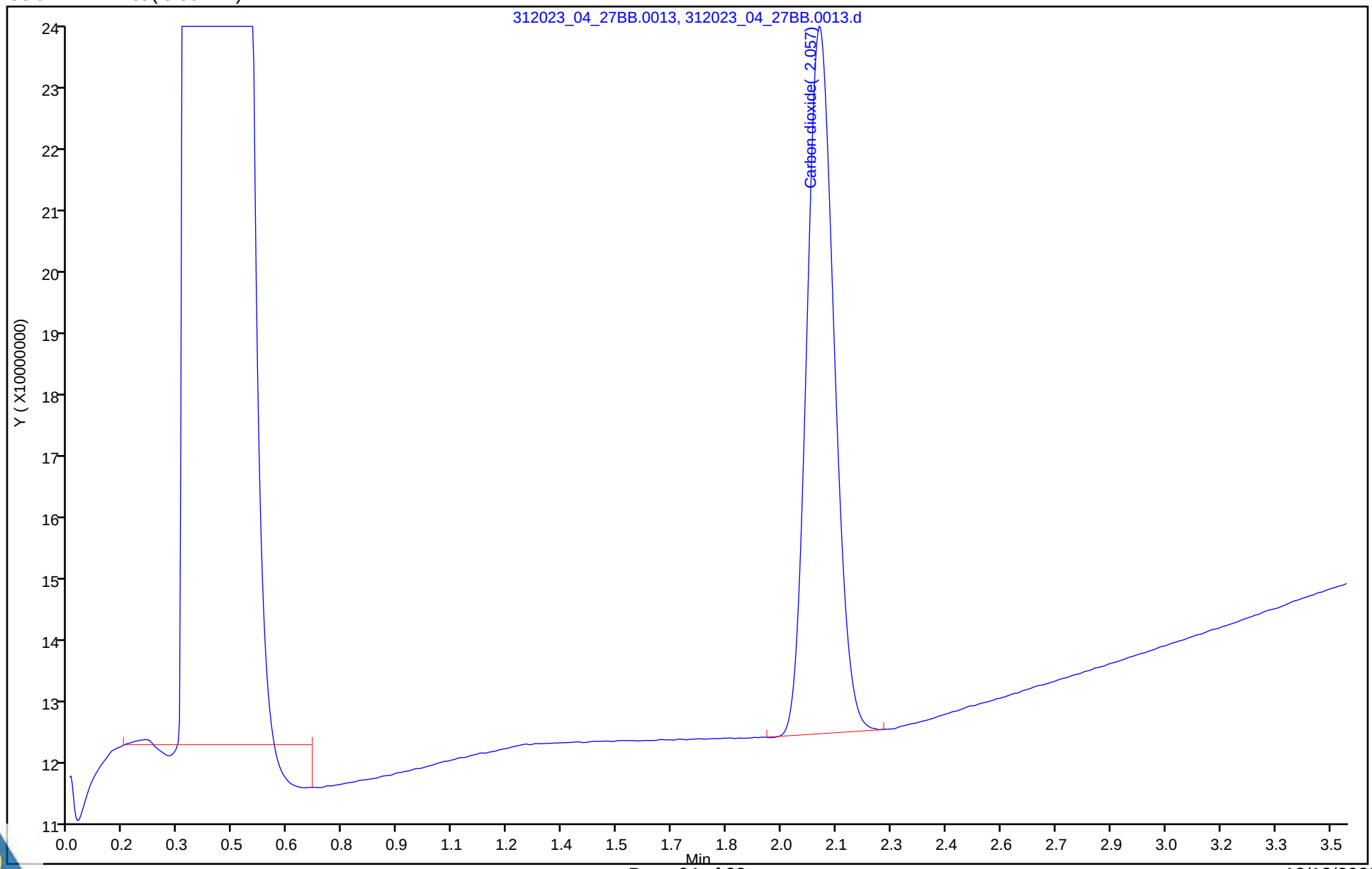
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Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0013.d

Injection Date:	27-Apr-2023 11:01:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	icv			Worklist Smp#:	13
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 Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Lab Sample ID: CCVRT 410-430924/2 Calibration Date: 10/13/2023 10:14

Instrument ID: 19506-B Calib Start Date: 04/27/2023 09:59

GC Column: HP Plot ID: 0.53(mm) Calib End Date: 04/27/2023 10:37

Lab File ID: 312023_10_13BB.0002.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	3290	3676		40000	35800	11.7	15.0

FORM VII
GC VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC
Job No.: 410-145740-1

SDG No.:

Lab Sample ID: CCVRT 410-430924/2
Calibration Date: 10/13/2023 10:14

Instrument ID: 19506-B
Calib Start Date: 04/27/2023 09:59

GC Column: HP Plot ID: 0.53(mm)
Calib End Date: 04/27/2023 10:37

Lab File ID: 312023_10_13BB.0002.d
Heated Purge: (Y/N) N

Analyte	RT	RT WINDOW	
		FROM	TO
Carbon dioxide	2.07	2.04	2.10

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0002.d				
Lims ID:	ccvrt				
Client ID:					
Sample Type:	CCVRT				
Inject. Date:	13-Oct-2023 10:14:00	ALS Bottle#:	0	Worklist Smp#:	2
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:	ccvrt				
Misc. Info.:	410-0096567-002				
Operator ID:		Instrument ID:	19506-B		
Sublist:	chrom-RSK_CO2_19506B*sub1				
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.068	2.068	0.000	131678091	H 35820	40022	

Reagents:

EPH_CO2MS_00006 Amount Added: 100.00 Units: uL

Report Date: 16-Oct-2023 03:29:19 Chrom Revision: 2.3 03-Oct-2023 18:39:10

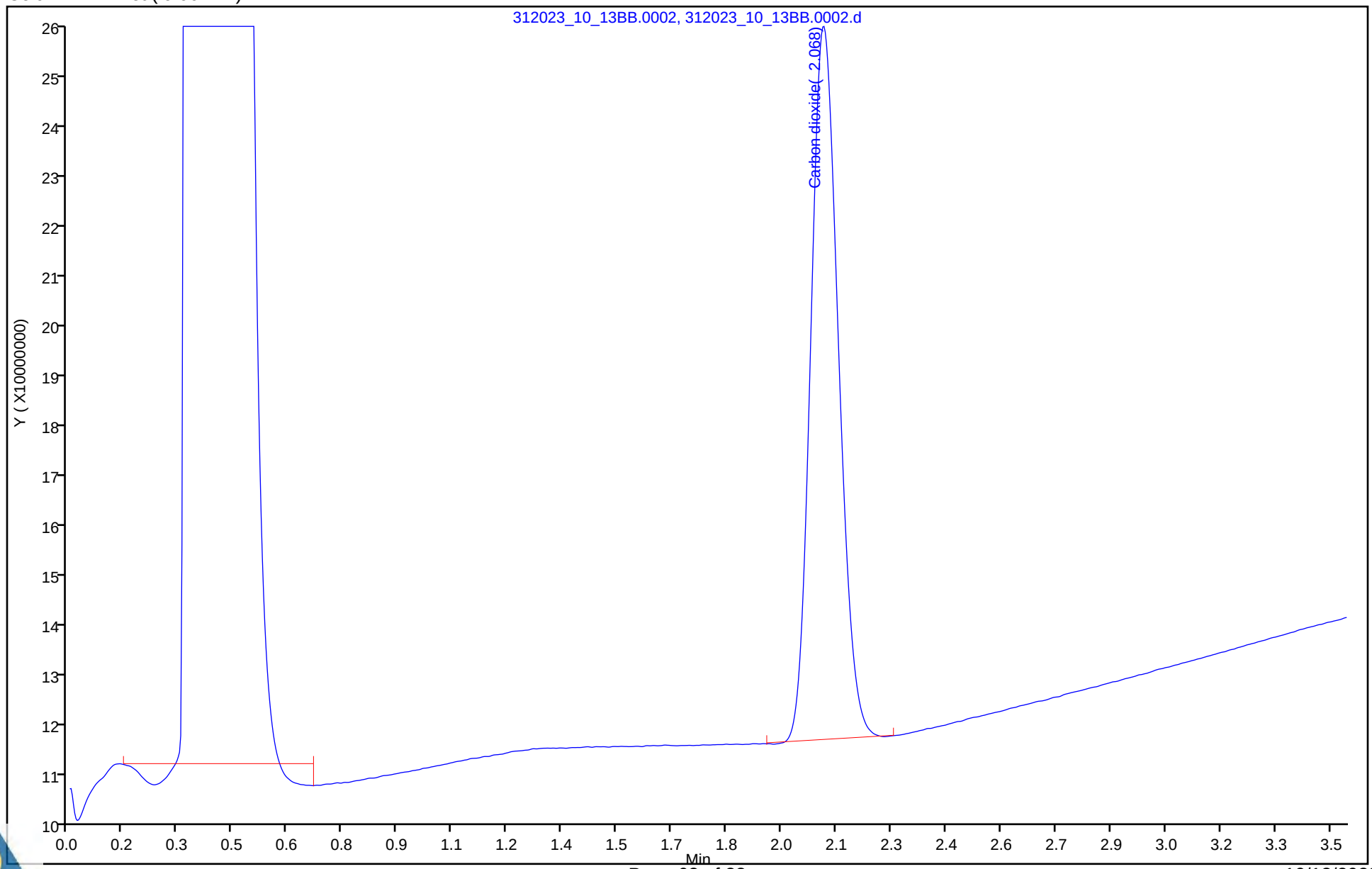
01332544

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0002.d

Injection Date:	13-Oct-2023 10:14:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	ccvrt			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)



FORM VII
GC VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Lab Sample ID: CCV 410-430924/13 Calibration Date: 10/13/2023 12:25

Instrument ID: 19506-B Calib Start Date: 04/27/2023 09:59

GC Column: HP Plot ID: 0.53(mm) Calib End Date: 04/27/2023 10:37

Lab File ID: 312023_10_13BB.0013.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	3290	3448		37500	35800	4.8	15.0

FORM VII
GC VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Lab Sample ID: CCV 410-430924/13 Calibration Date: 10/13/2023 12:25

Instrument ID: 19506-B Calib Start Date: 04/27/2023 09:59

GC Column: HP Plot ID: 0.53(mm) Calib End Date: 04/27/2023 10:37

Lab File ID: 312023_10_13BB.0013.d Heated Purge: (Y/N) N

Analyte	RT	RT WINDOW	
		FROM	TO
Carbon dioxide	2.07	2.04	2.10

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0013.d				
Lims ID:	ccv				
Client ID:					
Sample Type:	CCV				
Inject. Date:	13-Oct-2023 12:25:00	ALS Bottle#:	0	Worklist Smp#:	13
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-013				
Operator ID:		Instrument ID:	19506-B		
Sublist:	chrom-RSK_CO2_19506B*sub1				
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:23	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.067	2.068	-0.001	123503205H	35820	37538	

Reagents:

EPH_CO2MS_00006 Amount Added: 100.00 Units: uL

Report Date: 16-Oct-2023 03:29:23 Chrom Revision: 2.3 03-Oct-2023 18:39:10

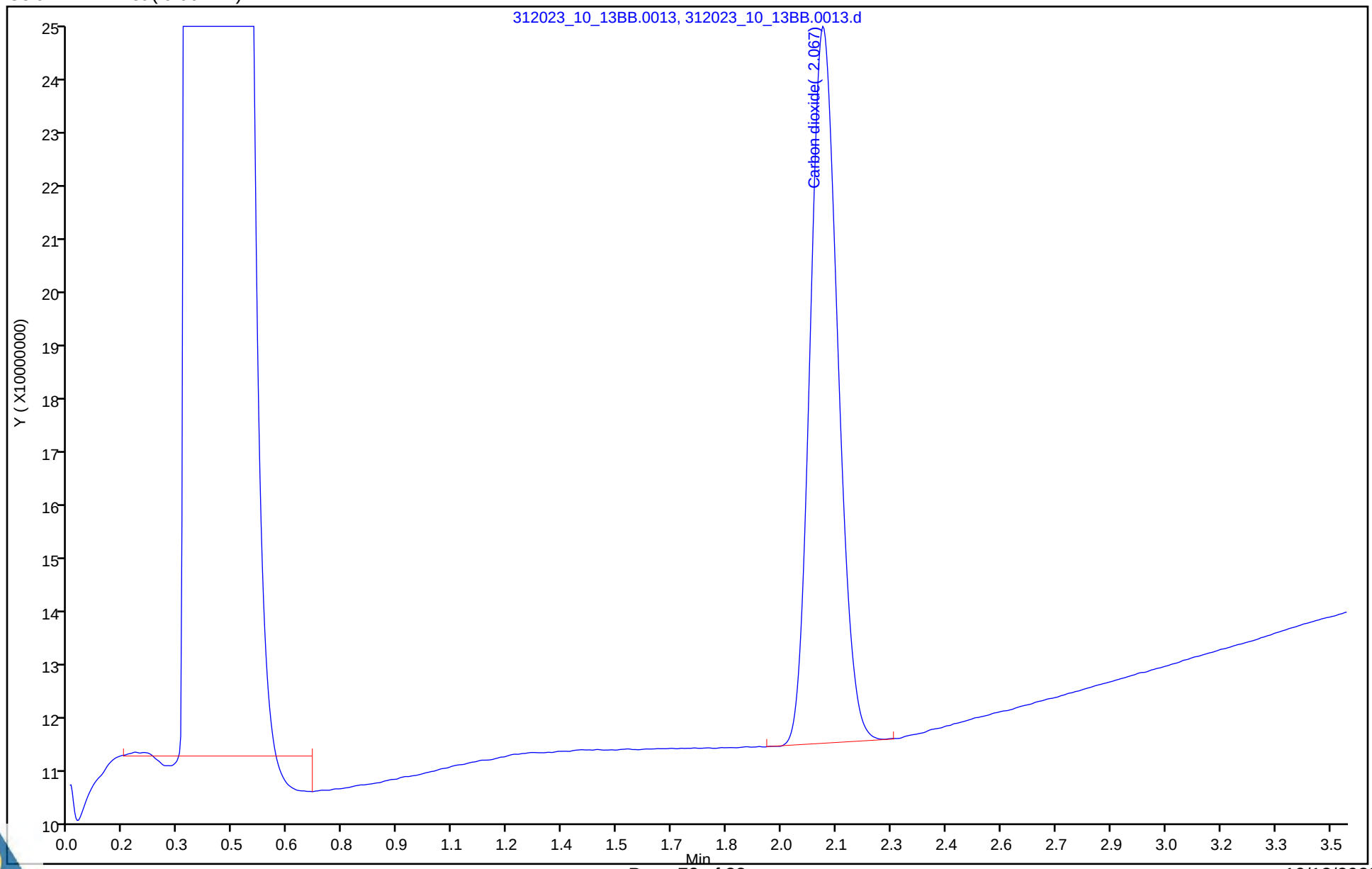
01332548

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0013.d

Injection Date:	13-Oct-2023 12:25:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	ccv			Worklist Smp#:	13
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 I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 410-430977/1-A

Matrix: Water Lab File ID: 312023_10_13BB.0003.d

Analysis Method: RSK-175 Date Collected:

Sample wt/vol: 5(mL) Date Analyzed: 10/13/2023 10:49

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.: 430924 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
124-38-9	Carbon dioxide	2600	U	12000	2600

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0003.d				
Lims ID:	MB 410-430977/1-A				
Client ID:					
Sample Type:	MB				
Inject. Date:	13-Oct-2023 10:49:00	ALS Bottle#:	0	Worklist Smp#:	3
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-003				
Operator ID:		Instrument ID:	19506-B		
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.077	2.068	0.009	1703303H		517.7	

Report Date: 16-Oct-2023 03:29:20 Chrom Revision: 2.3 03-Oct-2023 18:39:10

01332551

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0003.d

Injection Date: 13-Oct-2023 10:49:00 Instrument ID: 19506-B Operator ID:

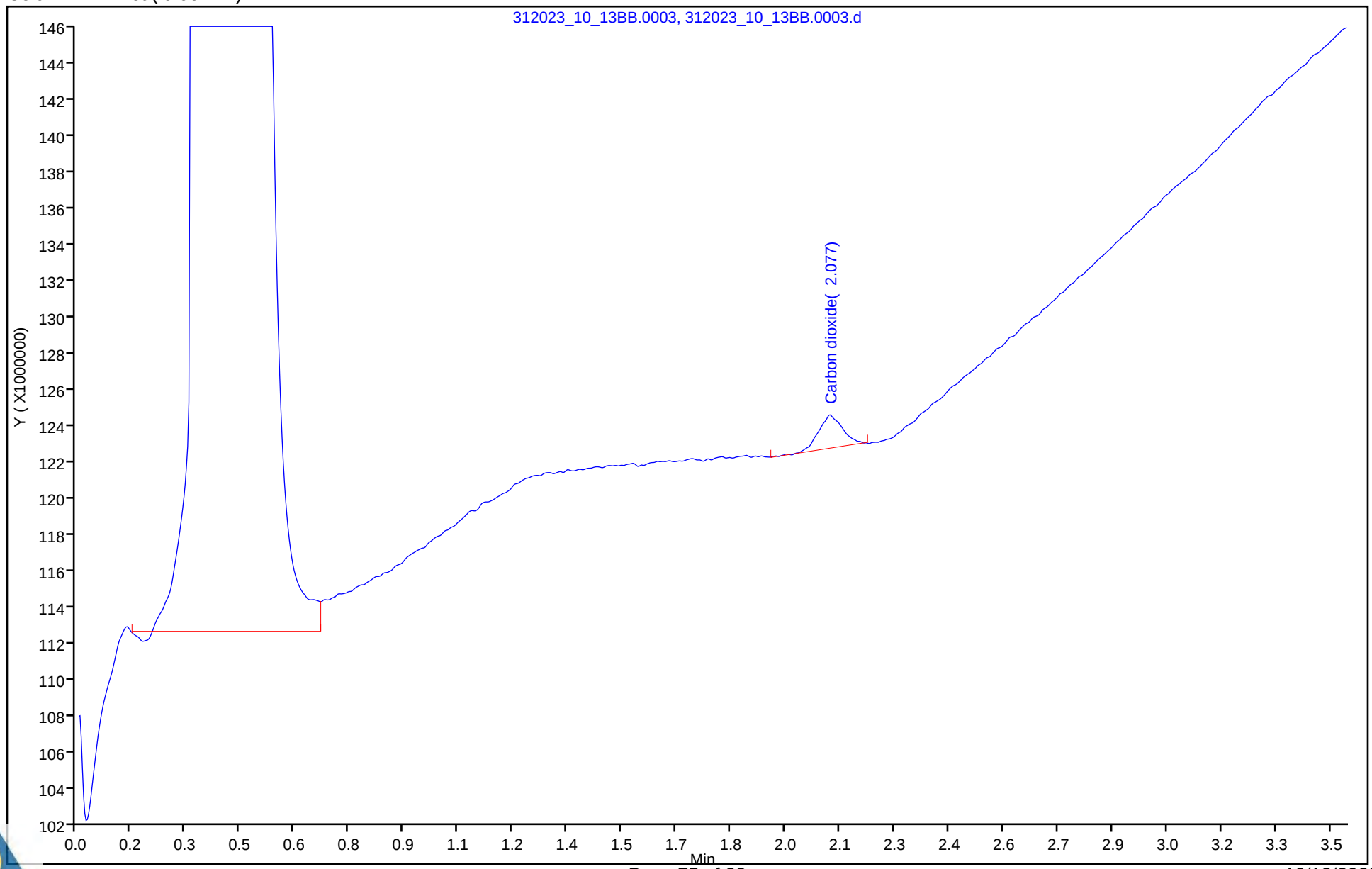
Lims ID: MB 410-430977/1-A Worklist Smp#: 3

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)



FORM I
GC VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 410-430977/2-A

Matrix: Water Lab File ID: 312023_10_13BB.0004.d

Analysis Method: RSK-175 Date Collected:

Sample wt/vol: 5(mL) Date Analyzed: 10/13/2023 10:56

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:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 430924 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	DL
124-38-9	Carbon dioxide	38200		12000	2600

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0004.d				
Lims ID:	LCS 410-430977/2-A				
Client ID:					
Sample Type:	LCS				
Inject. Date:	13-Oct-2023 10:56:00	ALS Bottle#:	0	Worklist Smp#:	4
Purge Vol:	1.000 mL	Dil. Factor:	1.0000		
Sample Info:					
Misc. Info.:	410-0096567-004				
Operator ID:		Instrument ID:	19506-B		
Method:	\\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\RSK_CO2_19506B.m				
Limit Group:	GCV - RSK175 CO2				
Last Update:	16-Oct-2023 03:29:19	Calib Date:	27-Apr-2023 10:37:00		
Integrator:	Genie				
Quant Method:	External Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\19506-B\20230427-82537.b\312023_04_27BB.0010.d				
Column 1 :	HP Plot (0.00 mm)		Det: 0FIDA		
Process Host:	CTX1605				

Compound	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1 Carbon dioxide	2.067	2.068	-0.001	125559862	H 35820	38163	

Report Date: 16-Oct-2023 03:29:20 Chrom Revision: 2.3 03-Oct-2023 18:39:10

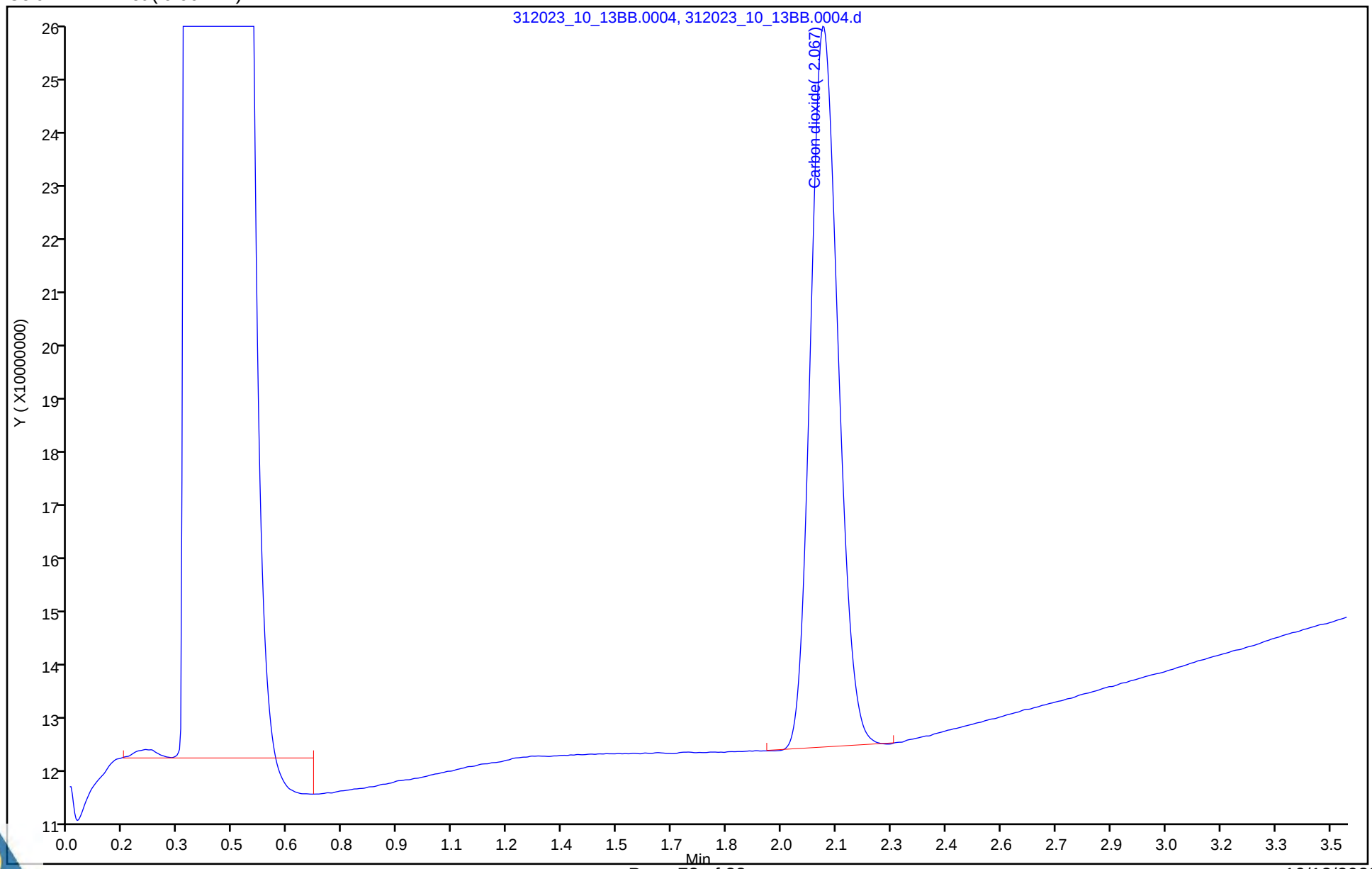
01332554

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\19506-B\20231013-96567.b\312023_10_13BB.0004.d

Injection Date:	13-Oct-2023 10:56:00	Instrument ID:	19506-B	Operator ID:	
Lims ID:	LCS 410-430977/2-A			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)



GC VOA ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Instrument ID: 19506-B Start Date: 04/27/2023 09:16

Analysis Batch Number: 369251 End Date: 04/27/2023 17:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
PIBLK 410-369251/3		04/27/2023 09:16	1		HP Plot 0.53(mm)
IC 410-369251/5		04/27/2023 09:59	1	312023_04_27BB.0005.d	HP Plot 0.53(mm)
IC 410-369251/6		04/27/2023 10:06	1	312023_04_27BB.0006.d	HP Plot 0.53(mm)
ICRT 410-369251/7		04/27/2023 10:14	1	312023_04_27BB.0007.d	HP Plot 0.53(mm)
IC 410-369251/8		04/27/2023 10:22	1	312023_04_27BB.0008.d	HP Plot 0.53(mm)
IC 410-369251/9		04/27/2023 10:30	1	312023_04_27BB.0009.d	HP Plot 0.53(mm)
IC 410-369251/10		04/27/2023 10:37	1	312023_04_27BB.0010.d	HP Plot 0.53(mm)
PIBLK 410-369251/11		04/27/2023 10:45	1		HP Plot 0.53(mm)
ICVL 410-369251/12		04/27/2023 10:53	1		HP Plot 0.53(mm)
ICV 410-369251/13		04/27/2023 11:01	1	312023_04_27BB.0013.d	HP Plot 0.53(mm)
ZZZZZ		04/27/2023 11:45	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 11:52	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 12:01	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 12:08	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 12:16	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 12:24	1		HP Plot 0.53(mm)
CCV 410-369251/20		04/27/2023 12:31	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 13:03	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 13:10	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 13:18	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 13:26	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 13:33	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 13:41	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 13:49	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 13:57	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 14:04	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 14:12	1		HP Plot 0.53(mm)
CCV 410-369251/31		04/27/2023 14:20	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 14:38	1		HP Plot 0.53(mm)
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ZZZZZ		04/27/2023 14:58	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 15:06	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 15:15	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 15:23	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 15:31	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 15:39	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 15:47	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 15:56	1		HP Plot 0.53(mm)
CCV 410-369251/42		04/27/2023 16:04	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 16:12	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 16:20	1		HP Plot 0.53(mm)

GC VOA ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC

Job No.: 410-145740-1

SDG No.:

Instrument ID: 19506-B

Start Date: 04/27/2023 09:16

Analysis Batch Number: 369251

End Date: 04/27/2023 17:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		04/27/2023 16:28	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 16:37	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 16:45	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 16:53	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 17:01	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 17:09	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 17:18	1		HP Plot 0.53(mm)
ZZZZZ		04/27/2023 17:26	1		HP Plot 0.53(mm)
CCV 410-369251/53		04/27/2023 17:34	1		HP Plot 0.53(mm)

GC VOA ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-145740-1

SDG No.:

Instrument ID: 19506-B Start Date: 10/13/2023 10:14

Analysis Batch Number: 430924 End Date: 10/13/2023 17:02

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVRT 410-430924/2		10/13/2023 10:14	1	312023_10_13BB.0002.d	HP Plot 0.53(mm)
MB 410-430977/1-A		10/13/2023 10:49	1	312023_10_13BB.0003.d	HP Plot 0.53(mm)
LCS 410-430977/2-A		10/13/2023 10:56	1	312023_10_13BB.0004.d	HP Plot 0.53(mm)
410-145740-1	50WW14_100323	10/13/2023 11:23	1	312023_10_13BB.0005.d	HP Plot 0.53(mm)
410-145740-2	50WW13_100323	10/13/2023 11:30	1	312023_10_13BB.0006.d	HP Plot 0.53(mm)
410-145740-3	50WW13_100323-a	10/13/2023 11:38	1	312023_10_13BB.0007.d	HP Plot 0.53(mm)
410-145740-4	50WW11_100323	10/13/2023 11:46	1	312023_10_13BB.0008.d	HP Plot 0.53(mm)
410-145740-5	50WW11_100323-a	10/13/2023 11:54	1	312023_10_13BB.0009.d	HP Plot 0.53(mm)
410-145740-6	50WW06_100323	10/13/2023 12:01	1	312023_10_13BB.0010.d	HP Plot 0.53(mm)
410-145740-7	50WW12_100323	10/13/2023 12:09	1	312023_10_13BB.0011.d	HP Plot 0.53(mm)
ZZZZZ		10/13/2023 12:17	1		HP Plot 0.53(mm)
CCV 410-430924/13		10/13/2023 12:25	1	312023_10_13BB.0013.d	HP Plot 0.53(mm)
ZZZZZ		10/13/2023 12:32	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 12:40	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 12:48	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 12:56	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 13:04	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 13:11	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 13:19	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 13:27	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 13:35	1		HP Plot 0.53(mm)
CCV 410-430924/23		10/13/2023 13:42	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 14:51	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 14:58	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 15:06	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 15:14	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 15:21	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 15:29	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 15:37	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 15:45	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 15:52	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 16:05	1		HP Plot 0.53(mm)
CCV 410-430924/34		10/13/2023 16:13	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 16:21	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 16:29	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 16:38	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 16:46	1		HP Plot 0.53(mm)
ZZZZZ		10/13/2023 16:54	1		HP Plot 0.53(mm)
CCV 410-430924/40		10/13/2023 17:02	1		HP Plot 0.53(mm)

GC VOA BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-145740-1

SDG No.:

Batch Number: 369251 Batch Start Date: 04/27/23 09:16 Batch Analyst: Kennedy, Johanna C

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 410-369251/5		RSK-175		5 mL	5 mL		30 uL		
IC 410-369251/6		RSK-175		5 mL	5 mL		60 uL		
ICRT 410-369251/7		RSK-175		5 mL	5 mL		100 uL		
IC 410-369251/8		RSK-175		5 mL	5 mL		250 uL		
IC 410-369251/9		RSK-175		5 mL	5 mL		500 uL		
IC 410-369251/10		RSK-175		5 mL	5 mL		1000 uL		
ICV 410-369251/13		RSK-175		5 mL	5 mL	320 uL			

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.: 410-145740-1

SDG No.:

Batch Number: 430977 Batch Start Date: 10/13/23 10:44 Batch Analyst: Omorogbe, Malachi

Batch Method: RSK-175 Batch End Date: 10/13/23 11:12

Lab Sample ID	Client Sample ID	Method Chain	Basis	Initial pH	InitialAmount	FinalAmount	Headspace	EPH_CO2MS 00006	
MB 410-430977/1		RSK-175, RSK-175			5 mL	5 mL			
LCS 410-430977/2		RSK-175, RSK-175			5 mL	5 mL		0.1 mL	
410-145740-A-1	50WW14_100323	RSK-175, RSK-175	T	7 SU	5 mL	5 mL	No		
410-145740-A-2	50WW13_100323	RSK-175, RSK-175	T	7 SU	5 mL	5 mL	No		
410-145740-A-3	50WW13_100323-a	RSK-175, RSK-175	T	7 SU	5 mL	5 mL	No		
410-145740-A-4	50WW11_100323	RSK-175, RSK-175	T	7 SU	5 mL	5 mL	No		
410-145740-A-5	50WW11_100323-a	RSK-175, RSK-175	T	7 SU	5 mL	5 mL	No		
410-145740-A-6	50WW06_100323	RSK-175, RSK-175	T	7 SU	5 mL	5 mL	No		
410-145740-A-7	50WW12_100323	RSK-175, RSK-175	T	7 SU	5 mL	5 mL	No		

Batch Notes	
Pipette/Syringe/Dispenser ID	7105
pH Indicator ID	10BDH1131

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

410-145740-01 Chain of Custody

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: **Colorado** **COC ID:** **23403**

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:	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:	HS23100159
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS23100159-10**	**50WW14_100323**	**Water**	**03 Oct 2023 07:40**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
2.	**HS23100159-11**	**50WW13_100323**	**Water**	**03 Oct 2023 08:25**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
3.	**HS23100159-12**	**50WW13_100323-a**	**Water**	**03 Oct 2023 08:25**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
4.	**HS23100159-13**	**50WW11_100323**	**Water**	**03 Oct 2023 09:15**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
5.	**HS23100159-14**	**50WW11_100323-a**	**Water**	**03 Oct 2023 09:15**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
6.	**HS23100159-15**	**50WW06_100323**	**Water**	**03 Oct 2023 10:10**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023
7.	**HS23100159-16**	**50WW12_100323**	**Water**	**03 Oct 2023 10:55**
	RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey			18 Oct 2023

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

RIGHT SOLUTIONS | RIGHT PARTNER

Subcontract Chain of Custody

SAMPLING STATE: **Colorado** **COC ID:** **23403**

QC Level: DOD IV (DoD Data Package)

Relinquished By:	CH	Date/Time:	10-4-23 1800
Received By:	Deborah A. Byrne	Date/Time:	10-5-23 10:15
Cooler ID(s):		Temperature(s):	

R: 1.4
C: 1.1



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

Purchase Order

PO: HS23100159

VENDOR:

Eurofins Lancaster Laboratories Envt Testing
2425 New Holland Pike
Lancaster, PA 17601

Phone: +1 717 656 2300

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:	23403
TSR:	Holly Tignac

Item	Catalog No	Unit Price	Quantity	Ext Price
1. RSK-CO2; DoD Level II & IV, Equ_APTIM_GISKey	NA		7	

Order Total:

Login Sample Receipt Checklist

Client: ALS Group USA, Corp

Job Number: 410-145740-1

Login Number: 145740
List Number: 1
Creator: Arroyo, Haley

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 acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=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	

HS23100159 E2300897 Perch Level IV Report

ALS WO# HS23100159

October 11, 2023 Service Request No:E2300897

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

Laboratory Results for: HS23100159

Dear James,

Enclosed are the results of the sample(s) submitted to our laboratory October 04, 2023
For your reference, these analyses have been assigned our service request number **E2300897.**

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.:**	E2300897
Project:	HS23100159	**Date Received:**	10/04/23
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

Sixteen samples were received for analysis at ALS Environmental in Houston on 10/04/23.

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:

EQ2300488: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and 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:**E2300897

Project: HS23100159

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E2300897-001	50WW09_100223	10/2/2023	0740
E2300897-002	50WW08_100223	10/2/2023	0820
E2300897-003	50WW22_100223	10/2/2023	0905
E2300897-004	50WW23_100223	10/2/2023	0955
E2300897-005	50WW29_100223	10/2/2023	1040
E2300897-006	50WW05_100223	10/2/2023	1125
E2300897-007	50WW15_100223	10/2/2023	1210
E2300897-008	50WW16_100223	10/2/2023	1250
E2300897-009	50WW18_100223	10/2/2023	1335
E2300897-010	50WW14_100323	10/3/2023	0740
E2300897-011	50WW13_100323	10/3/2023	0825
E2300897-012	50WW13_100323_a	10/3/2023	0825
E2300897-013	50WW11_100323	10/3/2023	0915
E2300897-014	50WW11_100323_a	10/3/2023	0915
E2300897-015	50WW06_100323	10/3/2023	1010
E2300897-016	50WW12_100323	10/3/2023	1055

Service Request Summary

01332570

18 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Folder #: **E2300897**
Client Name: ALS Environmental - US
Project Name: HS23100159
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: 10/04/23
Internal Due Date: 10/18/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23100159
EDD: BASIC_WQC_CASNo_LOD

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON ClO4 DOD/6850
E2300897-001	50WW09_100223	Water	10/02/23 0740	**IV**
E2300897-002	50WW08_100223	Water	10/02/23 0820	**IV**
E2300897-003	50WW22_100223	Water	10/02/23 0905	**IV**
E2300897-004	50WW23_100223	Water	10/02/23 0955	**IV**
E2300897-005	50WW29_100223	Water	10/02/23 1040	**IV**
E2300897-006	50WW05_100223	Water	10/02/23 1125	**IV**
E2300897-007	50WW15_100223	Water	10/02/23 1210	**IV**
E2300897-008	50WW16_100223	Water	10/02/23 1250	**IV**
E2300897-009	50WW18_100223	Water	10/02/23 1335	**IV**
E2300897-010	50WW14_100323	Water	10/03/23 0740	**IV**
E2300897-011	50WW13_100323	Water	10/03/23 0825	**IV**
E2300897-012	50WW13_100323_a	Water	10/03/23 0825	**IV**
E2300897-013	50WW11_100323	Water	10/03/23 0915	**IV**
E2300897-014	50WW11_100323_a	Water	10/03/23 0915	**IV**
E2300897-015	50WW06_100323	Water	10/03/23 1010	**IV**
E2300897-016	50WW12_100323	Water	10/03/23 1055	**IV**

Service Request Summary

01332571

18 120 mL-Plastic Bottle Natural WM Unpreserved

Location: EHRMS-AirArch 1

Pressure Gas:

Folder #: **E2300897**
Client Name: ALS Environmental - US
Project Name: HS23100159
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: 10/04/23
Internal Due Date: 10/18/2023
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y
Report to MDL?: Y
P.O. Number: HS23100159
EDD: BASIC_WQC_CASNo_LOD

Test Comments:

Group	Test/Method	Samples	Comments
Semivoa GCMS	ClO4 DOD/6850	1	MS/MSD

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

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	L22-90	3/31/2024
Department of Defense	L23-358	5/31/2025
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
Oklahoma Department of Environmental Quality	2023-140	8/31/2024
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
www.alsglobal.com

Subcontract Chain of Custody

SAMPLING STATE: Colorado **COC ID:** 23402

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:	HS23100159
TSR:	Holly Tignac

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS23100159-01**	**50WW09_100223**	**Water**	**02 Oct 2023 07:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
2.	**HS23100159-02**	**50WW08_100223**	**Water**	**02 Oct 2023 08:20**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
3.	**HS23100159-03**	**50WW22_100223**	**Water**	**02 Oct 2023 09:05**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
4.	**HS23100159-04**	**50WW23_100223**	**Water**	**02 Oct 2023 09:55**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
5.	**HS23100159-05**	**50WW29_100223**	**Water**	**02 Oct 2023 10:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
6.	**HS23100159-06**	**50WW05_100223**	**Water**	**02 Oct 2023 11:25**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
7.	**HS23100159-07**	**50WW15_100223**	**Water**	**02 Oct 2023 12:10**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
8.	**HS23100159-08**	**50WW16_100223**	**Water**	**02 Oct 2023 12:50**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
9.	**HS23100159-09**	**50WW18_100223**	**Water**	**02 Oct 2023 13:35**

Subcontract Chain of Custody

SAMPLING STATE: Colorado **COC ID:** 23402

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
10.	**HS23100159-10**	**50WW14_100323**	**Water**	**03 Oct 2023 07:40**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
11.	**HS23100159-11**	**50WW13_100323**	**Water**	**03 Oct 2023 08:25**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
12.	**HS23100159-12**	**50WW13_100323-a**	**Water**	**03 Oct 2023 08:25**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
13.	**HS23100159-13**	**50WW11_100323**	**Water**	**03 Oct 2023 09:15**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
14.	**HS23100159-14**	**50WW11_100323-a**	**Water**	**03 Oct 2023 09:15**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
15.	**HS23100159-15**	**50WW06_100323**	**Water**	**03 Oct 2023 10:10**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 2023
16.	**HS23100159-16**	**50WW12_100323**	**Water**	**03 Oct 2023 10:55**
	6850 DOD Level II & Level IV PDF, LHAAP EQUIS EDD			18 Oct 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: PG Date/Time:

Received By: Date/Time: 10-4-23 2044

Cooler ID(s): Temperature(s):

ALS Environmental

Cooler Receipt Form

Project Chemist H

Client/Project ALS

Thermometer ID IR1

Date/Time Received: 10-4-23 Initials: LY

Date/Time Logged in: 10-4-23 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

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?
—		10-4-23	2049	LY	1.5	☒
						☐
						☐
						☐

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:

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
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Phone (281)530-5656 Fax (281)530-5887
www.alsglobal.com

Preparation Information Benchsheet

01332582

Prep Run#: 427721 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 10/5/23 15:28

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2300894-015	MW-5	.01	6850/ClO4			Water	10mL	
2	E2300894-016	MW-14	.01	6850/ClO4			Water	10mL	
3	E2300897-001	50WW09_100223	.01	6850/ClO4 DOD			Water	10mL	
4	E2300897-002	50WW08_100223	.01	6850/ClO4 DOD			Water	10mL	
5	E2300897-003	50WW22_100223	.02	6850/ClO4 DOD			Water	10mL	
6	E2300897-004	50WW23_100223	.01	6850/ClO4 DOD			Water	10mL	
7	E2300897-005	50WW29_100223	.01	6850/ClO4 DOD			Water	10mL	
8	E2300897-006	50WW05_100223	.01	6850/ClO4 DOD			Water	10mL	
9	E2300897-007	50WW15_100223	.01	6850/ClO4 DOD			Water	10mL	
10	E2300897-008	50WW16_100223	.01	6850/ClO4 DOD			Water	10mL	
11	E2300897-009	50WW18_100223	.01	6850/ClO4 DOD			Water	10mL	
12	E2300897-010	50WW14_100323	.01	6850/ClO4 DOD			Water	10mL	
13	E2300897-011	50WW13_100323	.01	6850/ClO4 DOD			Water	10mL	
14	E2300897-012	50WW13_100323_a	.01	6850/ClO4 DOD			Water	10mL	
15	E2300897-013	50WW11_100323	.01	6850/ClO4 DOD			Water	10mL	
16	E2300897-014	50WW11_100323_a	.01	6850/ClO4 DOD			Water	10mL	
17	E2300897-015	50WW06_100323	.01	6850/ClO4 DOD			Water	10mL	
18	E2300897-016	50WW12_100323	.01	6850/ClO4 DOD			Water	10mL	
19	EQ2300488-01	MB		6850/ClO4			Liquid	10mL	
20	EQ2300488-02	LCS		6850/ClO4			Liquid	10mL	
21	EQ2300488-03	DLCS		6850/ClO4			Liquid	10mL	
22	EQ2300488-04	50WW22_100223 MS	.02	6850/ClO4 DOD			Liquid	10mL	
23	EQ2300488-05	50WW22_100223 DMS	.02	6850/ClO4 DOD			Liquid	10mL	

Spiking Solutions

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

EQ2300488-02	1.00µL	EQ2300488-02	1.00µL	EQ2300488-03	1.00µL	EQ2300488-03	1.00µL	EQ2300488-04	1.00µL	EQ2300488-05	1.00µL

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

E2300894-015	100.00µL	E2300894-016	100.00µL	E2300897-001	100.00µL	E2300897-002	100.00µL	E2300897-003	100.00µL	E2300897-004	100.00µL
E2300897-005	100.00µL	E2300897-006	100.00µL	E2300897-007	100.00µL	E2300897-008	100.00µL	E2300897-009	100.00µL	E2300897-010	100.00µL
E2300897-011	100.00µL	E2300897-012	100.00µL	E2300897-013	100.00µL	E2300897-014	100.00µL	E2300897-015	100.00µL	E2300897-016	100.00µL
EQ2300488-01	100.00µL	EQ2300488-01	100.00µL	EQ2300488-02	100.00µL	EQ2300488-02	100.00µL	EQ2300488-03	100.00µL	EQ2300488-03	100.00µL
EQ2300488-04	100.00µL	EQ2300488-05	100.00µL								

Preparation Information Benchsheet

01332583

Prep Run#: 427721 **Prep WorkFlow:** GenExt28Day **Status:** Prepped
Team: Semivoa GCMS/XMI **Prep Method:** Method **Prep Date/Time:** 10/5/23 15:28

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 Luer-Lok Syringes	luer-lock syringes (228116)				

Preparation Steps

Step: Preparation
Started: 10/5/23 15:28
Finished: 10/5/23 17:00
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

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0740
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW09_100223	**Units:**	µg/L
Lab Code:	E2300897-001	**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	**0.194**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:14	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0820
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW08_100223	**Units:**	µg/L
Lab Code:	E2300897-002	**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	**62.9**		0.500	0.250	0.125	5	10/ 5/23	10/6/23 14:15	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0905
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	E2300897-003	**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	**0.337**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 11:58	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0955
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW23_100223	**Units:**	µg/L
Lab Code:	E2300897-004	**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	**0.159**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:03	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1040
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW29_100223	**Units:**	µg/L
Lab Code:	E2300897-005	**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	**0.252**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:09	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1125
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW05_100223	**Units:**	µg/L
Lab Code:	E2300897-006	**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	**0.273**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:25	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1210
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW15_100223	**Units:**	µg/L
Lab Code:	E2300897-007	**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	**0.161**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:36	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1250
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW16_100223	**Units:**	µg/L
Lab Code:	E2300897-008	**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	**0.174**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:41	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 1335
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW18_100223	**Units:**	µg/L
Lab Code:	E2300897-009	**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	**0.237**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:47	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0740
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW14_100323	**Units:**	µg/L
Lab Code:	E2300897-010	**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	**0.274**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 12:52	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0825
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW13_100323	**Units:**	µg/L
Lab Code:	E2300897-011	**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	**4170**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:41	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0825
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW13_100323_a	**Units:**	µg/L
Lab Code:	E2300897-012	**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	**4270**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:47	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0915
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW11_100323	**Units:**	µg/L
Lab Code:	E2300897-013	**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	**4690**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:52	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 0915
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW11_100323_a	**Units:**	µg/L
Lab Code:	E2300897-014	**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	**5110**		20.0	10.0	5.00	200	10/ 5/23	10/6/23 13:58	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 1010
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW06_100323	**Units:**	µg/L
Lab Code:	E2300897-015	**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	**554**		5.00	2.50	1.25	50	10/ 5/23	10/6/23 14:03	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 3/23 1055
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW12_100323	**Units:**	µg/L
Lab Code:	E2300897-016	**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	**17900**		100	50.0	25.0	1000	10/ 5/23	10/6/23 14:09	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/L
Lab Code:	EQ2300488-01	**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	10/ 5/23	10/6/23 11:35	427721	819653	

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

Client: ALS Environmental - US
Project: HS23100159
Sample Matrix: Water

Service Request: E2300897
Date Analyzed: 10/ 6/23

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: 427721

	Lab Control Sample EQ2300488-02			Duplicate Lab Control Sample EQ2300488-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.0985	0.100	99	0.0984	0.100	98	84 - 119	<1	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.

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300488-02	**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	**0.0985**	J	0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 11:41	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	µg/L
Lab Code:	EQ2300488-03	**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	**0.0984**	J	0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 11:47	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/2/23
Sample Matrix:	Water	**Date Received:**	10/4/23
		Date Analyzed:	10/ 6/23

Matrix Spike Summary

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

Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	E2300897-003	**Basis:**	NA

Analytical Method: 6850
Prep Method: Method

		50WW22_100223MS				50WW22_100223DMS					
		Matrix Spike				**Duplicate Matrix Spike**					
		EQ2300488-04				EQ2300488-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perchlorate	0.337	0.425	0.100	88	0.424	0.100	87	84 - 119	<1	15

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

Results flagged with a pound (#) indicate the control criteria is not applicable.

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

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0905
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	EQ2300488-04	**Basis:**	NA
Run Type:	Matrix Spike		

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	**0.425**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 14:26	427721	819653	

Client:	ALS Environmental - US	**Service Request:**	E2300897
Project:	HS23100159	**Date Collected:**	10/ 2/23 0905
Sample Matrix:	Water	**Date Received:**	10/ 4/23
Sample Name:	50WW22_100223	**Units:**	µg/L
Lab Code:	EQ2300488-05	**Basis:**	NA
Run Type:	Duplicate Matrix Spike		

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	**0.424**		0.100	0.0500	0.0250	1	10/ 5/23	10/6/23 14:31	427721	819653	

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

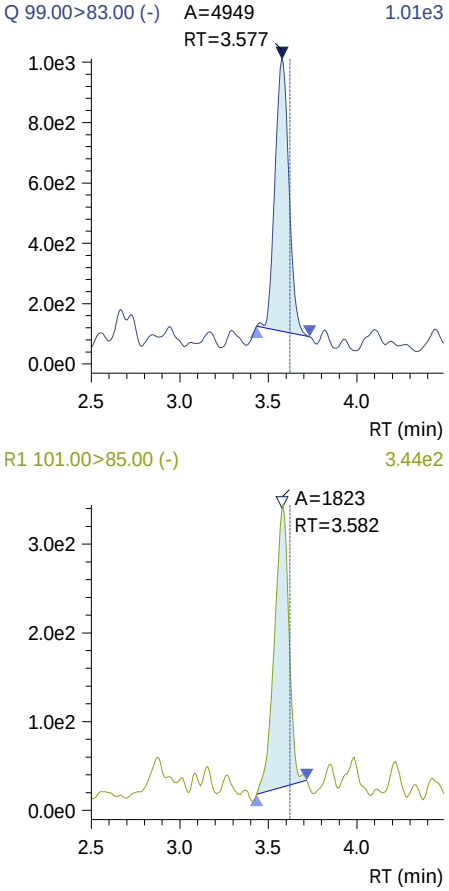
Perchlorate ICAL 1

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	----	----	

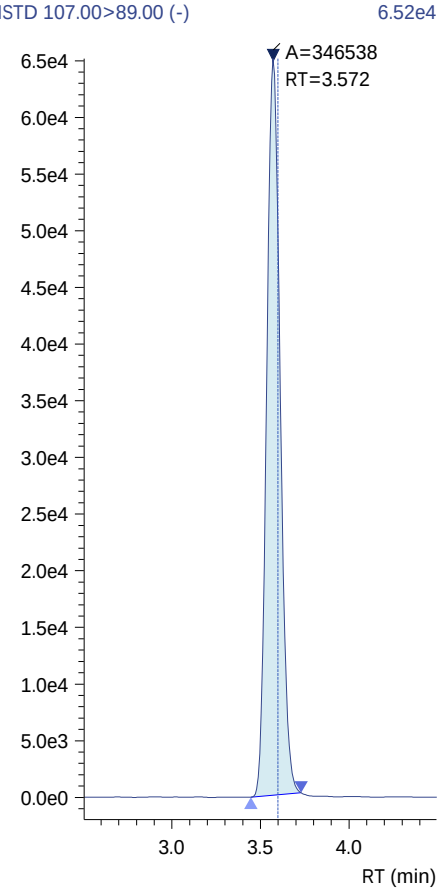
Perchlorate

Conc 0.0968
R#1 36.83 (30.41)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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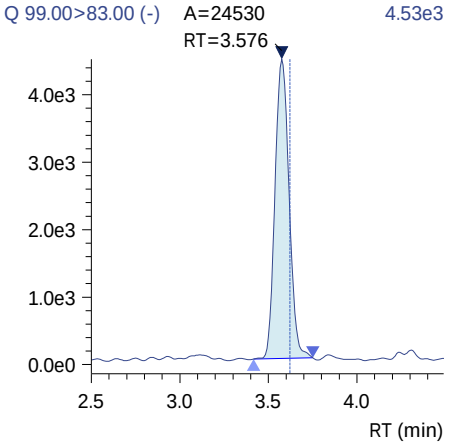
Perchlorate ICAL 2

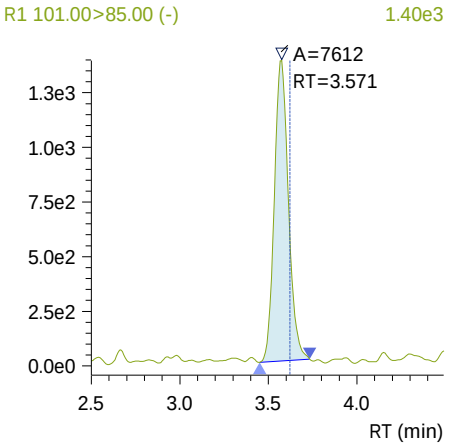
Sample ID: Perchlorate ICAL 2
Date Acquired: 8/2/2023 1:23:13 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-004.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 1

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

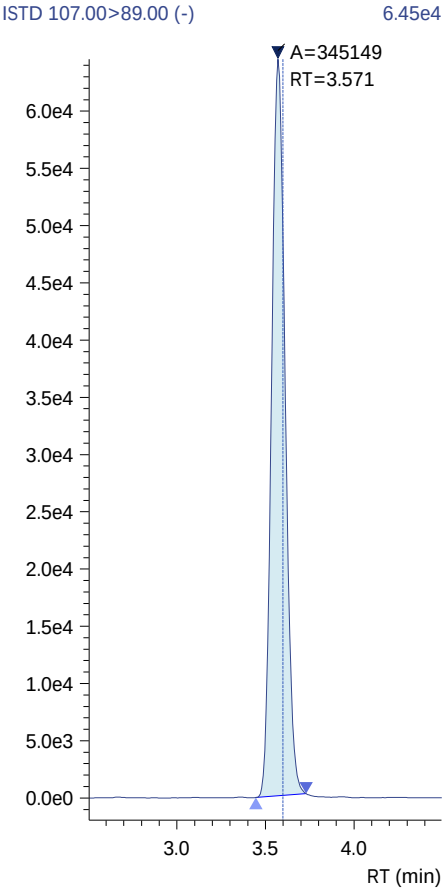
Conc 0.4820
R#1 31.03 (30.41)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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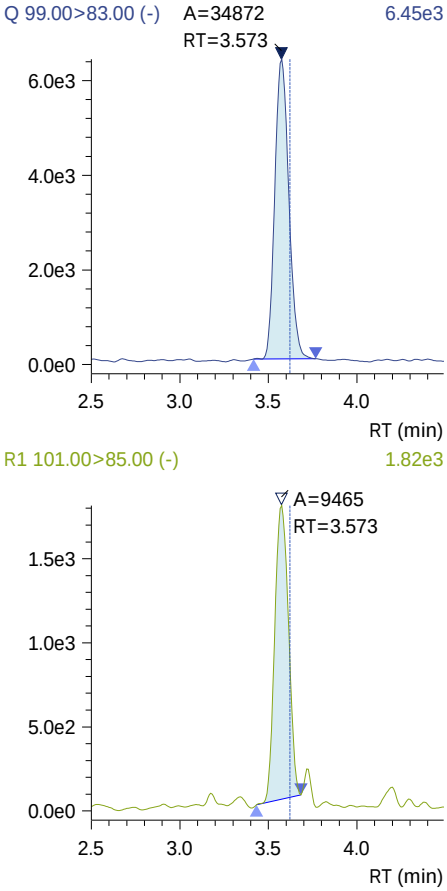
Perchlorate ICAL 3

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	----	----	

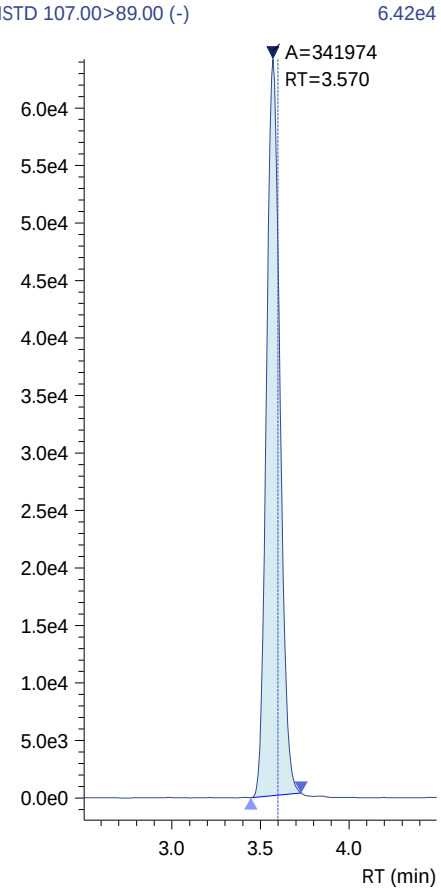
Perchlorate

Conc 0.6915
R#1 27.14 (30.41)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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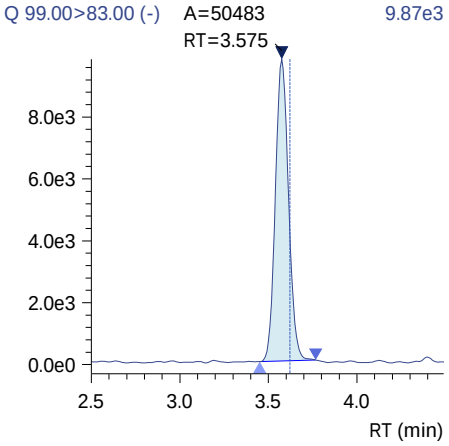
Perchlorate ICAL 4

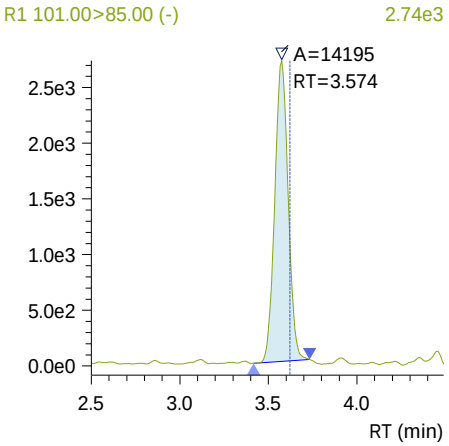
Sample ID: Perchlorate ICAL 4
Date Acquired: 8/2/2023 1:34:20 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-006.lcd
Vial: 4 | Inj. Volume: 10.0000uL | Tray: 1

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

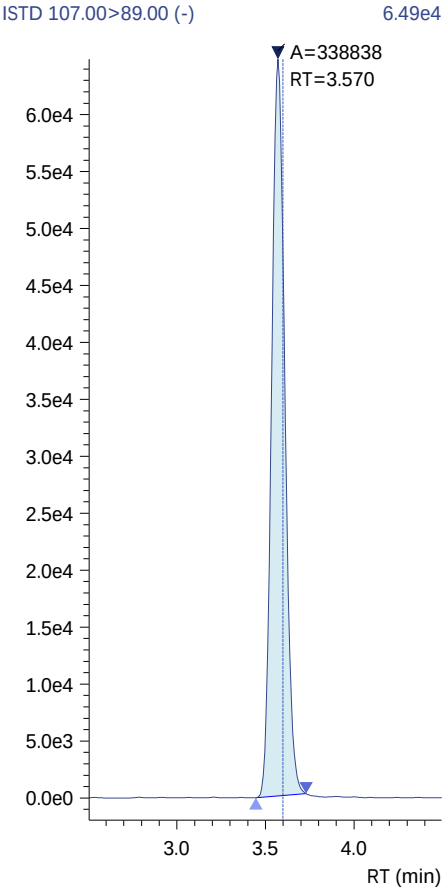
Conc 1.0104
R#1 28.12 (30.41)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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Perchlorate ICAL 5

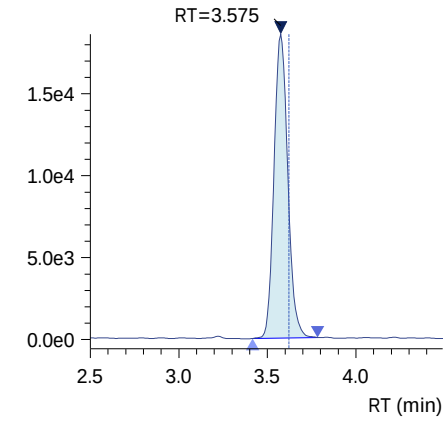
Sample ID: Perchlorate ICAL 5
Date Acquired: 8/2/2023 1:39:51 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-007.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 1

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	----	----	

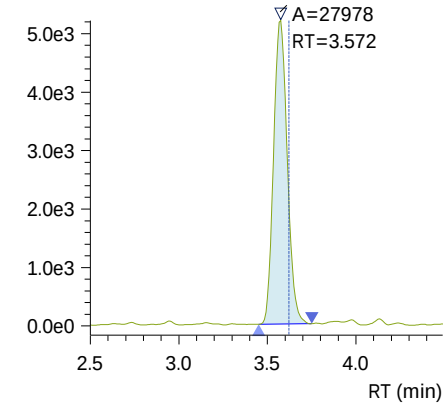
Perchlorate

Conc 2.0545
R#1 27.89 (30.41)

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



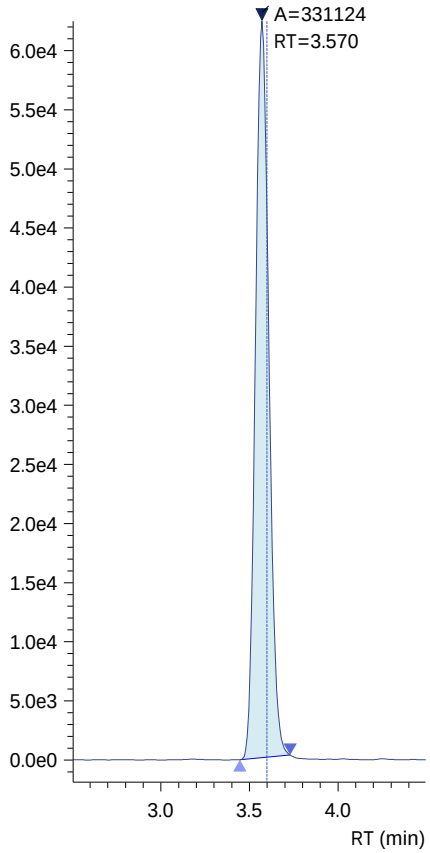
R1 101.00>85.00 (-) 5.22e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.25e4



Insight Report

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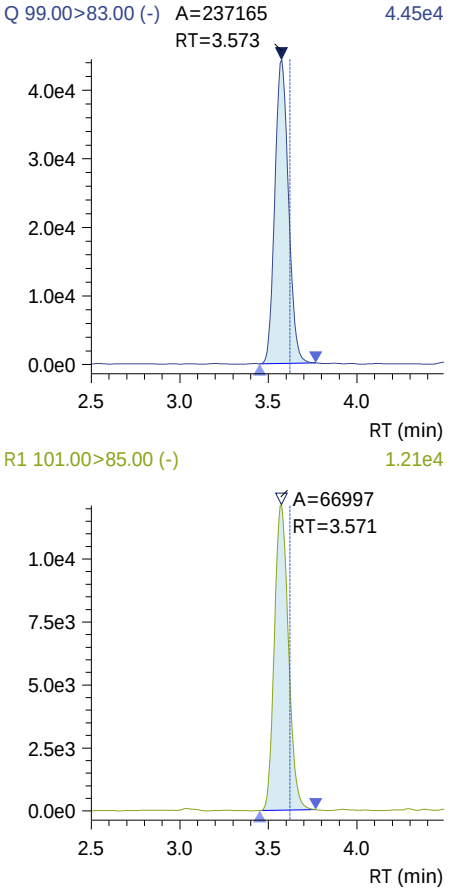
Perchlorate ICAL 6

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	----	----	

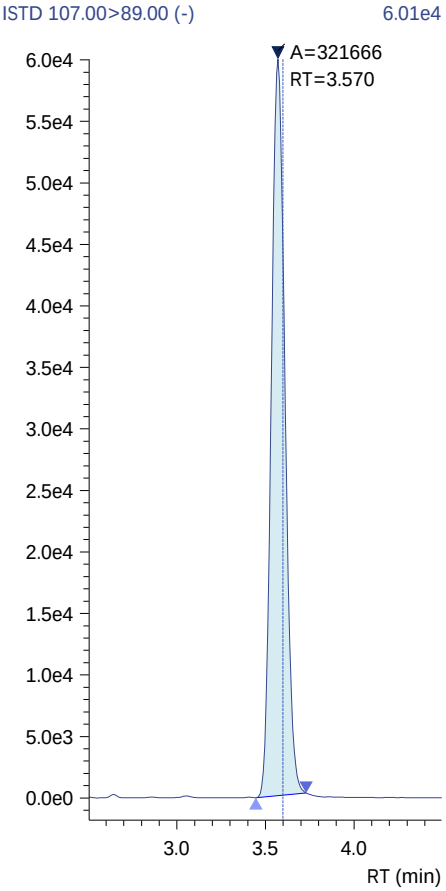
Perchlorate

Conc 5.0000
R#1 28.25 (30.41)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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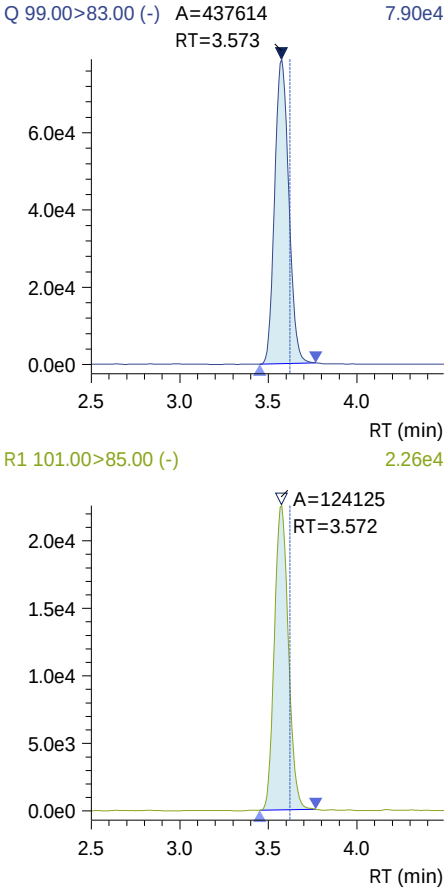
Perchlorate ICAL 7

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	----	----	

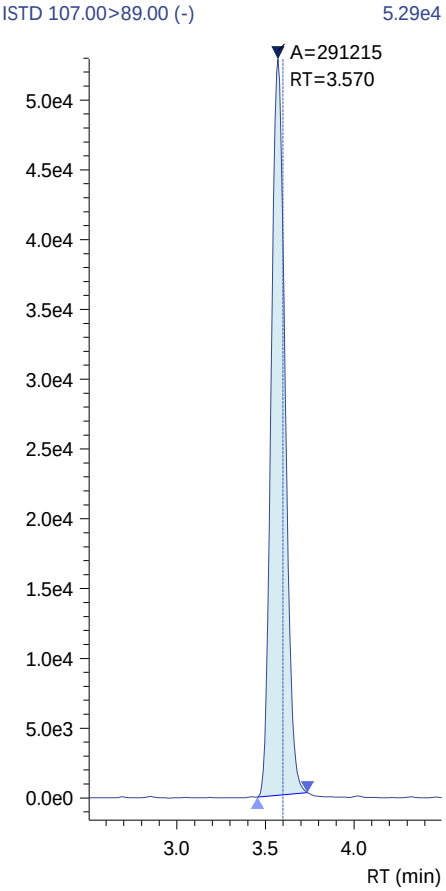
Perchlorate

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

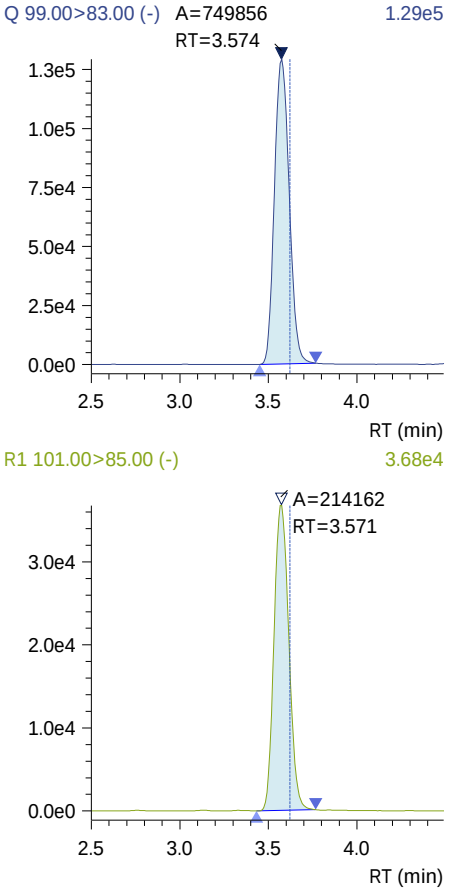
Perchlorate ICAL 8

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	20.0336	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	----	----	

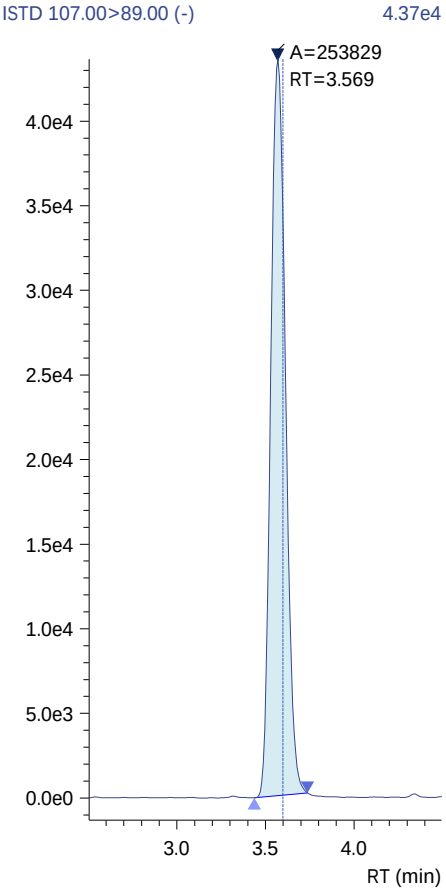
Perchlorate

Conc 20.0336
R#1 28.56 (30.41)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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

Perchlorate ICAL 9

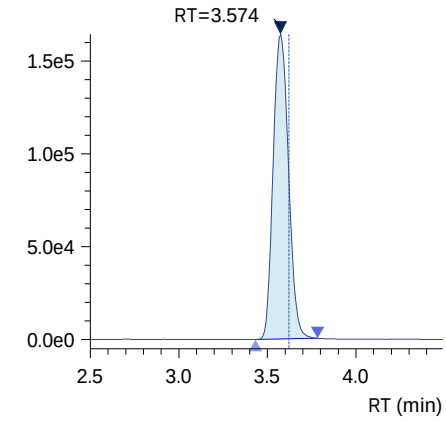
Sample ID: Perchlorate ICAL 9
Date Acquired: 8/2/2023 2:02:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-011.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 1

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	----	----	

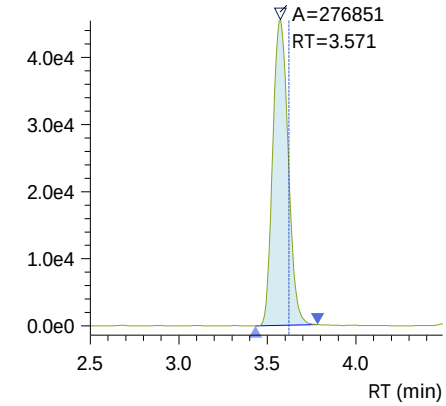
Perchlorate

Conc 30.2105
R#1 27.95 (30.41)

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



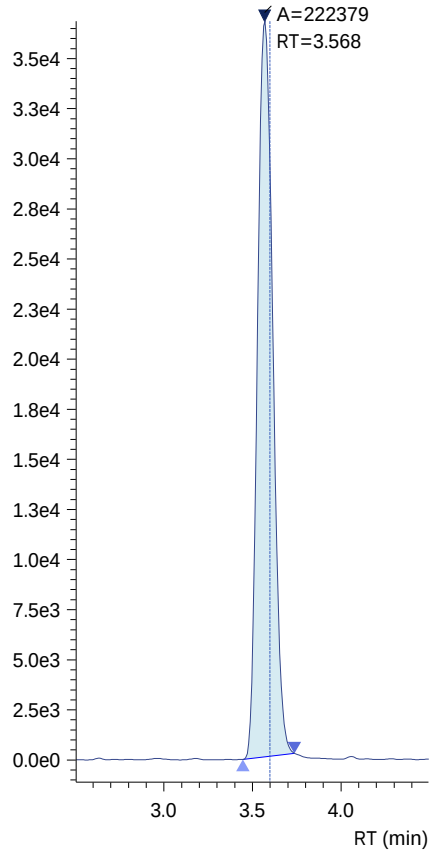
R1 101.00>85.00 (-) 4.55e4



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

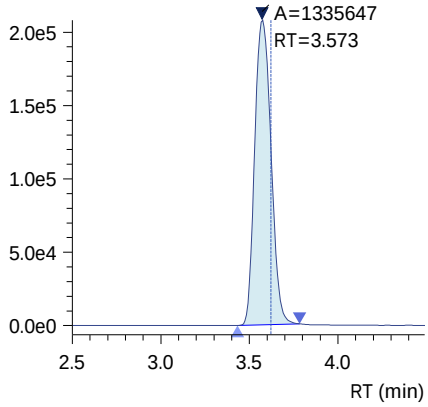
Sample ID: Perchlorate ICAL 10
Date Acquired: 8/2/2023 2:07:39 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-012.lcd
Vial: 10 | Inj. Volume: 10.0000uL | Tray: 1

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 20	ng/mL	101.00 >85.00	28.04	21.29-39.54
Sodium Perchlorate-18O4_IS	Auto	3.567	178573	178573	1.0000	ng/mL	----	----	

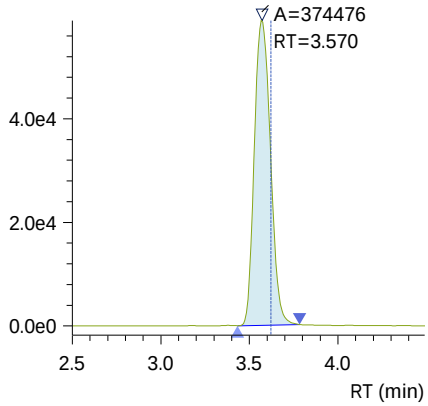
Perchlorate

Conc 50.7220
R#1 28.04 (30.41)

Q 99.00>83.00 (-) 2.08e5



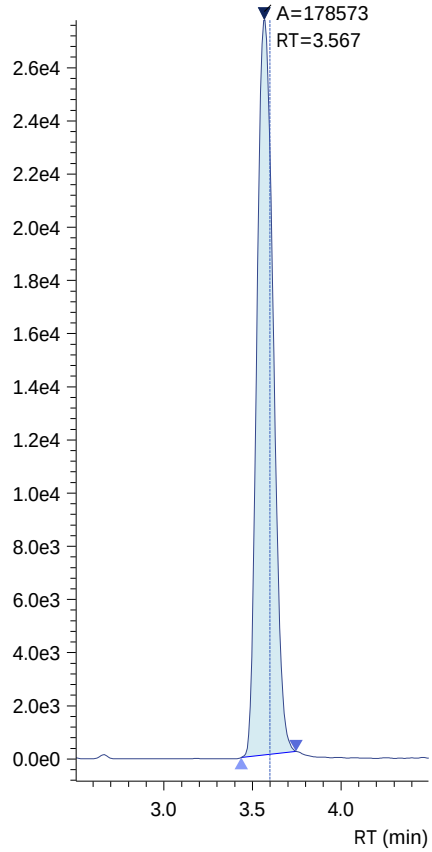
R1 101.00>85.00 (-) 5.90e4



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

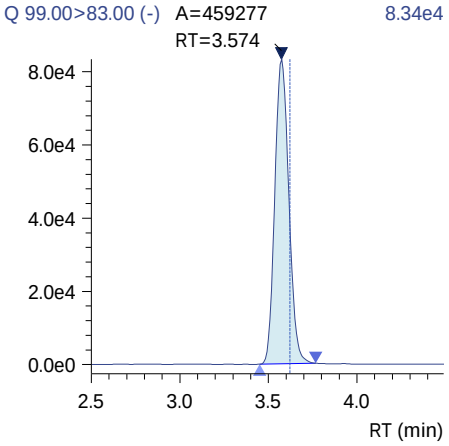
PerchlorateICV

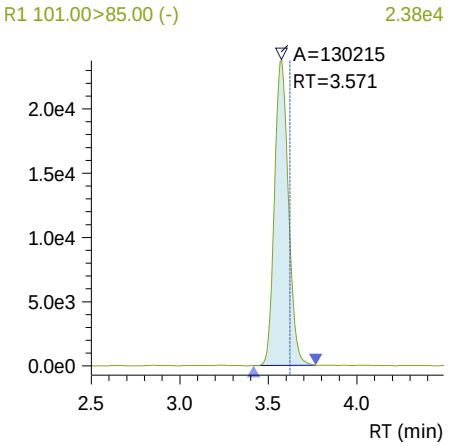
Sample ID: PerchlorateICV
Date Acquired: 8/2/2023 2:19:46 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20230802\2230802-013.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 1

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

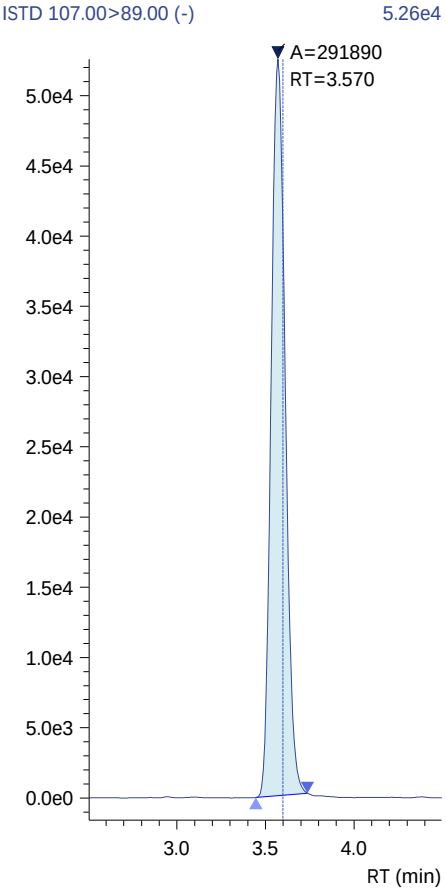
Conc 10.6703
R#1 28.35 (30.41)





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

20231006-819653

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 231679 **B:**Acetonitrile 229152

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
1	IB		20231006-001	Perchlorate6850c.lcm	1x		10/6/2023 9:17
2	LODV		20231006-002	Perchlorate6850c.lcm	1x	230386	10/6/2023 9:22
3	ICS		20231006-003	Perchlorate6850c.lcm	1x	32103051	10/6/2023 9:34
4	CCV		20231006-004	Perchlorate6850c.lcm	1x	230380	10/6/2023 9:44
5	E2300894-001		20231006-005	Perchlorate6850c.lcm	1x		10/6/2023 9:50
6	E2300894-002		20231006-006	Perchlorate6850c.lcm	1x		10/6/2023 9:56
7	E2300894-003		20231006-007	Perchlorate6850c.lcm	1x		10/6/2023 10:01
8	E2300894-004		20231006-008	Perchlorate6850c.lcm	1x		10/6/2023 10:07
9	E2300894-005		20231006-009	Perchlorate6850c.lcm	1x		10/6/2023 10:12
10	E2300894-006		20231006-010	Perchlorate6850c.lcm	1x		10/6/2023 10:24
11	E2300894-007		20231006-011	Perchlorate6850c.lcm	1x		10/6/2023 10:29
12	E2300894-008		20231006-012	Perchlorate6850c.lcm	1x		10/6/2023 10:35
13	E2300894-009		20231006-013	Perchlorate6850c.lcm	1x		10/6/2023 10:40
14	E2300894-010		20231006-014	Perchlorate6850c.lcm	1x		10/6/2023 10:46
15	CCV		20231006-015	Perchlorate6850c.lcm	1x	230380	10/6/2023 10:57
16	E2300894-011		20231006-016	Perchlorate6850c.lcm	1x		10/6/2023 11:02
17	E2300894-012		20231006-017	Perchlorate6850c.lcm	1x		10/6/2023 11:08
18	E2300894-013		20231006-018	Perchlorate6850c.lcm	1x		10/6/2023 11:13
19	E2300894-014		20231006-019	Perchlorate6850c.lcm	1x		10/6/2023 11:19
20	E2300894-015		20231006-020	Perchlorate6850c.lcm	1x		10/6/2023 11:24
21	E2300894-016		20231006-021	Perchlorate6850c.lcm	1x		10/6/2023 11:30
22	EQ2300488-01		20231006-022	Perchlorate6850c.lcm	1x		10/6/2023 11:35
23	EQ2300488-02		20231006-023	Perchlorate6850c.lcm	1x		10/6/2023 11:41
24	EQ2300488-03		20231006-024	Perchlorate6850c.lcm	1x		10/6/2023 11:47
25	CCV		20231006-025	Perchlorate6850c.lcm	1x	230380	10/6/2023 11:52
26	E2300897-003		20231006-026	Perchlorate6850c.lcm	1x		10/6/2023 11:58
27	E2300897-004		20231006-027	Perchlorate6850c.lcm	1x		10/6/2023 12:03
28	E2300897-005		20231006-028	Perchlorate6850c.lcm	1x		10/6/2023 12:09
29	E2300897-001		20231006-029	Perchlorate6850c.lcm	1x		10/6/2023 12:14
30	E2300897-002		20231006-030	Perchlorate6850c.lcm	1x	DNU-DILUTE NEEDED	10/6/2023 12:20
31	E2300897-006		20231006-031	Perchlorate6850c.lcm	1x		10/6/2023 12:25
32	E2300897-007		20231006-032	Perchlorate6850c.lcm	1x		10/6/2023 12:36
33	E2300897-008		20231006-033	Perchlorate6850c.lcm	1x		10/6/2023 12:41
34	E2300897-009		20231006-034	Perchlorate6850c.lcm	1x		10/6/2023 12:47
35	E2300897-010		20231006-035	Perchlorate6850c.lcm	1x		10/6/2023 12:52
36	CCV		20231006-036	Perchlorate6850c.lcm	1x	230380	10/6/2023 12:58
37	E2300897-011		20231006-037	Perchlorate6850c.lcm	200x		10/6/2023 13:41

20231006-819653

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 231679 **B:**Acetonitrile 229152

	Sample Name		File Name	Acquisition Method	Dilution	Comments	Date/Time
38	E2300897-012		20231006-038	Perchlorate6850c.lcm	200x		10/6/2023 13:47
39	E2300897-013		20231006-039	Perchlorate6850c.lcm	200x		10/6/2023 13:52
40	E2300897-014		20231006-040	Perchlorate6850c.lcm	200x		10/6/2023 13:58
41	E2300897-015		20231006-041	Perchlorate6850c.lcm	50x		10/6/2023 14:03
42	E2300897-016		20231006-042	Perchlorate6850c.lcm	1000x		10/6/2023 14:09
43	E2300897-002		20231006-043	Perchlorate6850c.lcm	5x		10/6/2023 14:15
44	IB		20231006-044	Perchlorate6850c.lcm	1x		10/6/2023 14:20
45	EQ2300488-04		20231006-045	Perchlorate6850c.lcm	1x		10/6/2023 14:26
46	EQ2300488-05		20231006-046	Perchlorate6850c.lcm	1x		10/6/2023 14:31
47	CCV		20231006-047	Perchlorate6850c.lcm	1x	230380	10/6/2023 14:37

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/ 6/23

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\20231006\20231006-004

Calibration Date: 8/2/23
Calibration ID: EC2300012
Analysis Lot: 819653
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.89	0.1475	0.1459	-1.1	NA	± 15 %	Average RF

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/ 6/23

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\20231006\20231006-015

Calibration Date: 8/2/23
Calibration ID: EC2300012
Analysis Lot: 819653
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.94	0.1475	0.1466	-0.6	NA	± 15 %	Average RF

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/ 6/23

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\20231006\20231006-025

Calibration Date: 8/2/23
Calibration ID: EC2300012
Analysis Lot: 819653
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

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/ 6/23

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\20231006\20231006-036

Calibration Date: 8/2/23
Calibration ID: EC2300012
Analysis Lot: 819653
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	10.1	0.1475	0.1486	0.7	NA	± 15 %	Average RF

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/ 6/23

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\20231006\20231006-047

Calibration Date: 8/2/23
Calibration ID: EC2300012
Analysis Lot: 819653
Units: ng/mL

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Perchlorate	10.0	9.60	0.1475	0.1415	-4.0	NA	± 15 %	Average RF

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/6/23 09:44

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

File ID: I:\LCMS01\DATA\20231006\20231006-004
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2300489-01
Analysis Lot: 819653
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	EQ2300489-01	339,973	3.57

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

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/6/23 10:57

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

File ID: I:\LCMS01\DATA\20231006\20231006-015
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2300489-02
Analysis Lot: 819653
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	EQ2300489-02	311,460	3.57
Method Blank	EQ2300488-01	334,023	3.56
Lab Control Sample	EQ2300488-02	329,146	3.56
Duplicate Lab Control Sample	EQ2300488-03	328,329	3.56

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

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/6/23 11:52

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

File ID: I:\LCMS01\DATA\20231006\20231006-025
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2300489-03
Analysis Lot: 819653
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	EQ2300489-03	301,137	3.56
50WW22_100223	E2300897-003	350,659	3.56
50WW23_100223	E2300897-004	347,958	3.56
50WW29_100223	E2300897-005	345,406	3.56
50WW09_100223	E2300897-001	342,970	3.56
50WW05_100223	E2300897-006	345,054	3.56
50WW15_100223	E2300897-007	341,840	3.57
50WW16_100223	E2300897-008	338,089	3.56
50WW18_100223	E2300897-009	321,447	3.56
50WW14_100323	E2300897-010	330,747	3.56

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

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/6/23 12:58

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

File ID: I:\LCMS01\DATA\20231006\20231006-036
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2300489-04
Analysis Lot: 819653
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	EQ2300489-04	280,928	3.56
50WW13_100323	E2300897-011	250,328	3.56
50WW13_100323_a	E2300897-012	249,254	3.56
50WW11_100323	E2300897-013	246,824	3.56
50WW11_100323_a	E2300897-014	238,761	3.56
50WW06_100323	E2300897-015	300,260	3.56
50WW12_100323	E2300897-016	267,150	3.56
50WW08_100223	E2300897-002	291,892	3.56
50WW22_100223MS	EQ2300488-04	341,839	3.56
50WW22_100223DMS	EQ2300488-05	341,719	3.56

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

Client: ALS Environmental - US
Project: HS23100159

Service Request: E2300897
Date Analyzed: 10/6/23 14:37

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

File ID: I:\LCMS01\DATA\20231006\20231006-047
Instrument ID: E-LCMS-01
Analytical Method: 6850

Lab Code: EQ2300489-05
Analysis Lot: 819653
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	EQ2300489-05	290,425	3.56

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

Insight Report

Printed at 10/9/2023 9:34:14 AM

Method File: I:\LCMS01\DATA\20231006\20231006.lcm
Project File: I:\LCMS01\DATA\20231006\20231006.damlp

IB

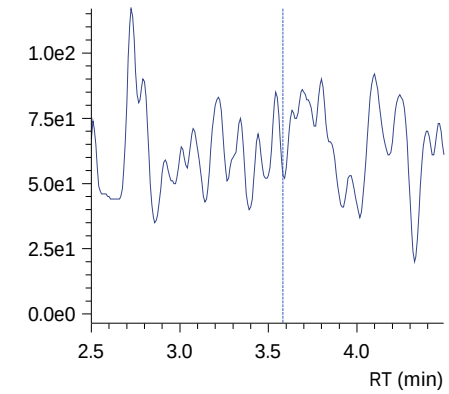
Sample ID: IB
Date Acquired: 10/6/2023 9:17:01 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-001.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	351738	----	ng/mL	101.00 >85.00	0.00	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.575	351738	351738	1.0000	ng/mL	----	----	

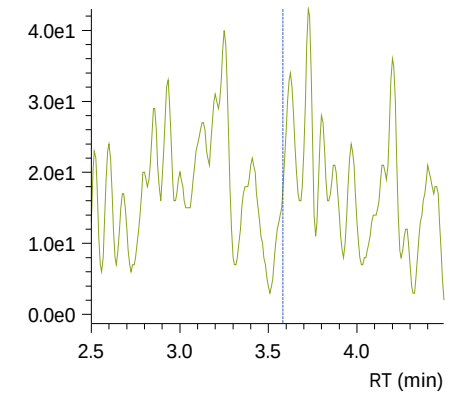
Perchlorate

Conc ----
R#1 0.00 (27.33)

Q 99.00>83.00 (-) 1.17e2



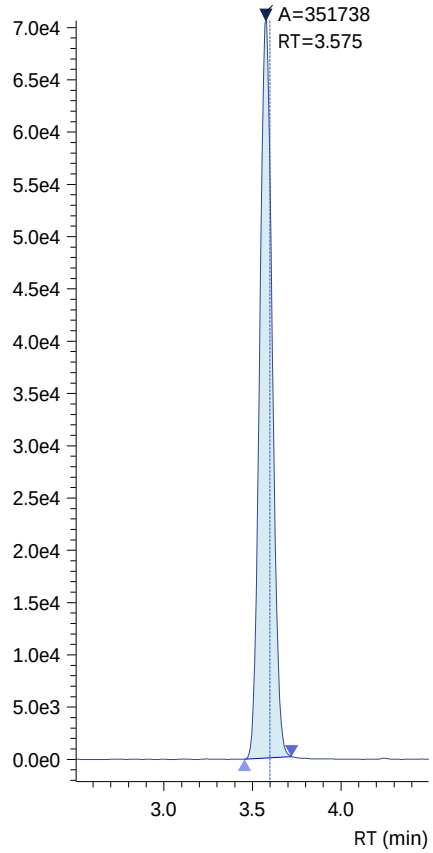
R1 101.00>85.00 (-) 4.30e1



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 7.07e4



Insight Report

Printed at 10/9/2023 9:34:14 AM

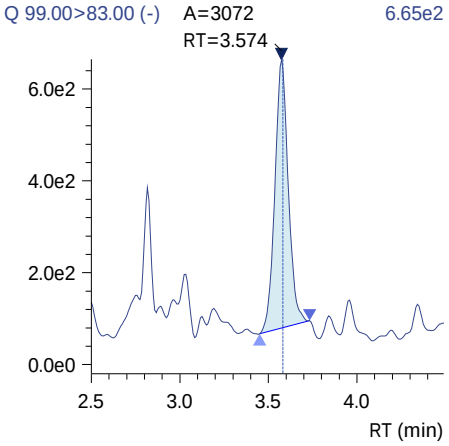
LODV

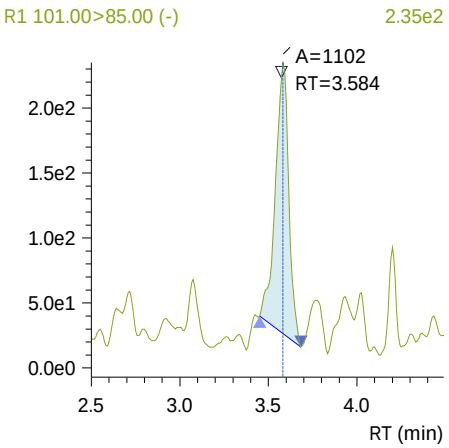
Sample ID: LODV
Date Acquired: 10/6/2023 9:22:31 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-002.lcd
Vial: 2 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.574	3072	367933	0.0566	ng/mL	101.00 >85.00	35.87	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.571	367933	367933	1.0000	ng/mL	----	----	

Perchlorate

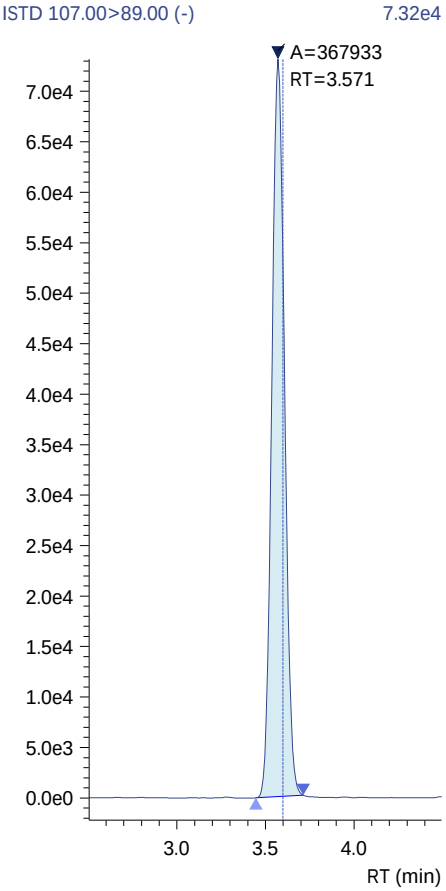
Conc 0.0566
R#1 35.87 (27.33)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 10/9/2023 9:34:14 AM

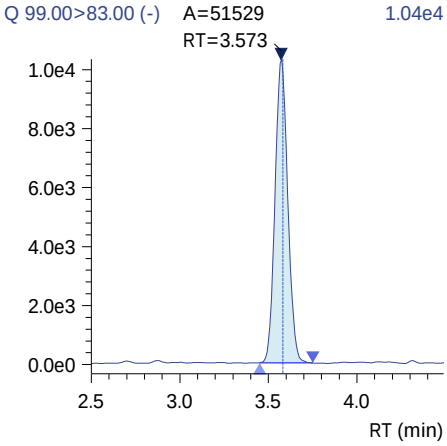
ICS

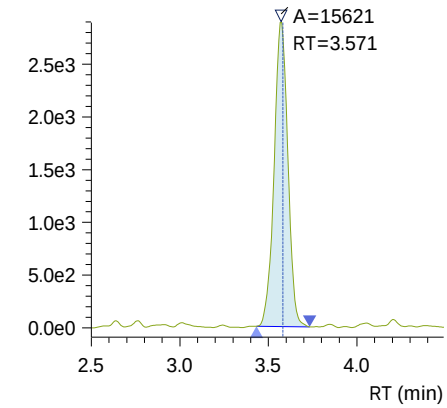
Sample ID: ICS
Date Acquired: 10/6/2023 9:34:06 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-003.lcd
Vial: 3 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.573	51529	320144	1.0915	ng/mL	101.00 >85.00	30.32	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.569	320144	320144	1.0000	ng/mL	----	----	

Perchlorate

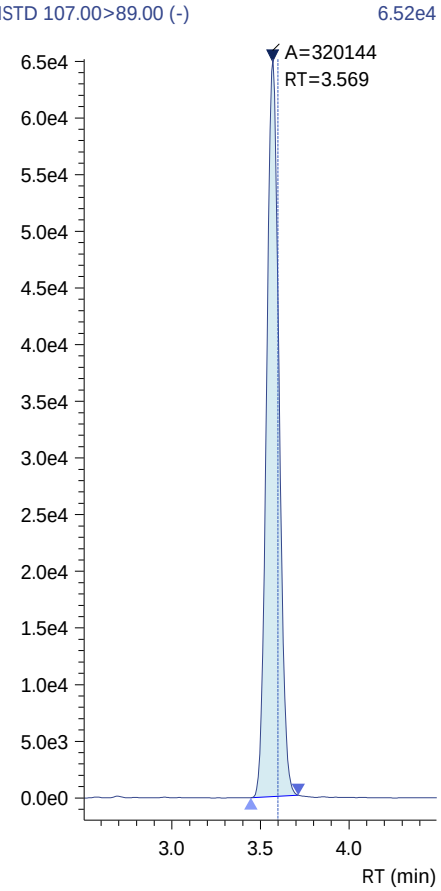
Conc 1.0915
R#1 30.32 (27.33)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 10/9/2023 9:34:14 AM

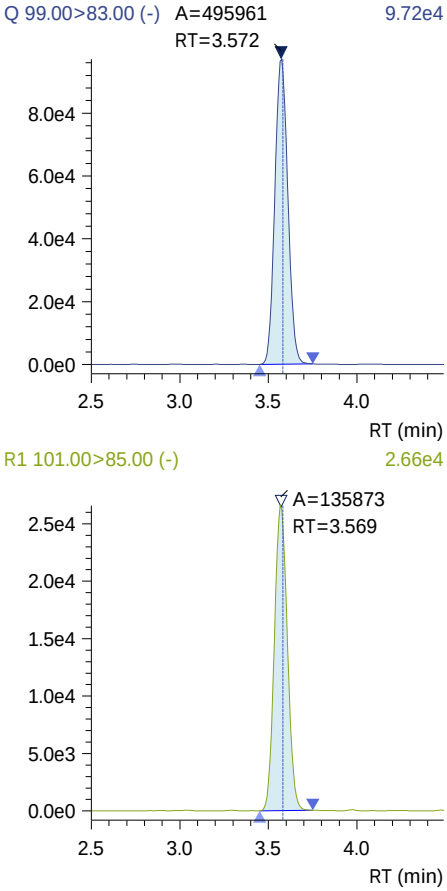
CCV

Sample ID: CCV
Date Acquired: 10/6/2023 9:44:58 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-004.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	3.572	495961	339973	9.8929	ng/mL	101.00 >85.00	27.40	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.569	339973	339973	1.0000	ng/mL	----	----	

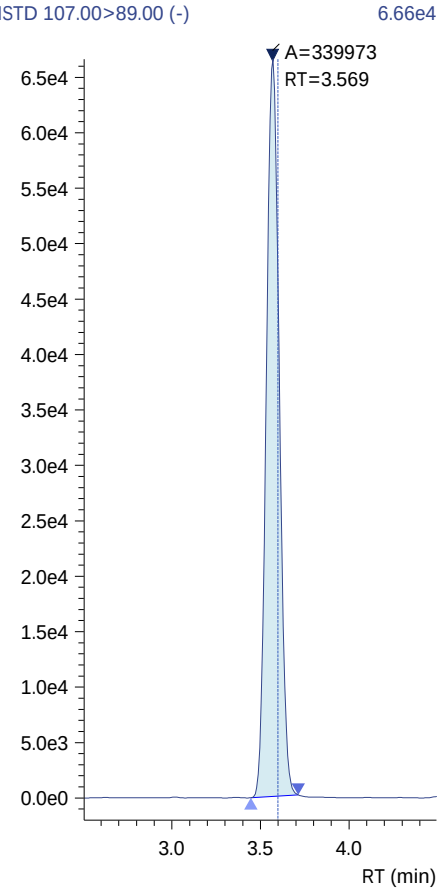
Perchlorate

Conc 9.8929
R#1 27.40 (27.33)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 10/9/2023 9:34:14 AM

CCV

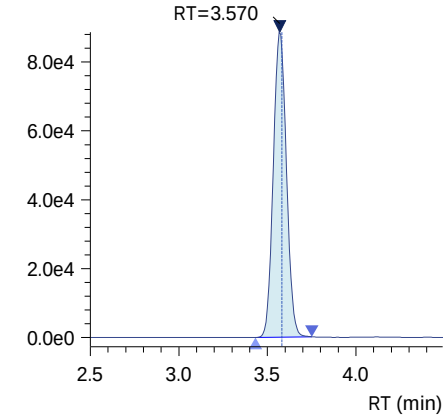
Sample ID: CCV
Date Acquired: 10/6/2023 10:57:04 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-015.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.570	456688	311460	9.9435	ng/mL	101.00 >85.00	27.47	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.566	311460	311460	1.0000	ng/mL	----	----	

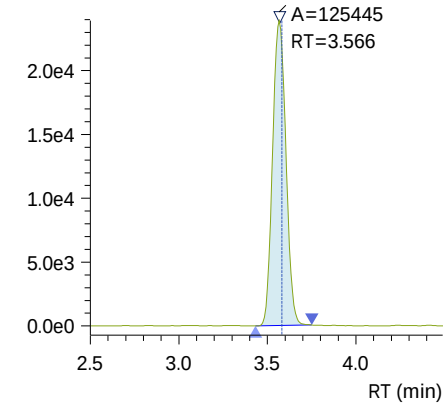
Perchlorate

Conc 9.9435
R#1 27.47 (27.33)

Q 99.00>83.00 (-) A=456688 8.87e4



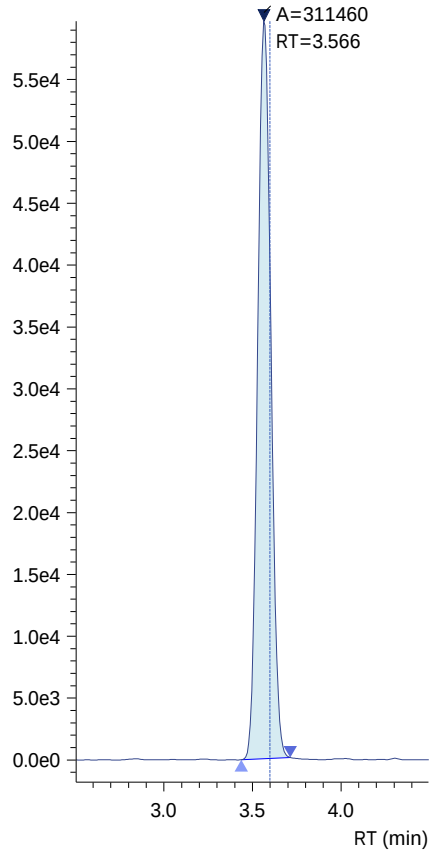
R1 101.00>85.00 (-) 2.39e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.97e4



Insight Report

Printed at 10/9/2023 9:34:14 AM

EQ2300488-01

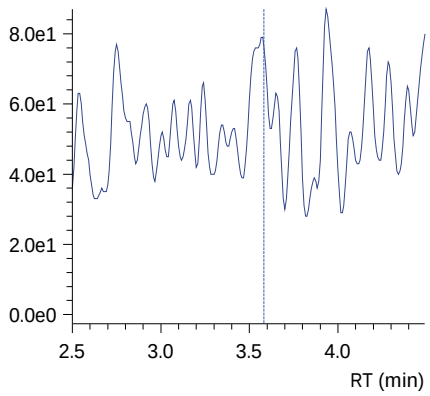
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Date Acquired: 10/6/2023 11:35:59 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-022.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	334023	----	ng/mL	101.00 >85.00	0.00	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.563	334023	334023	1.0000	ng/mL	----	----	

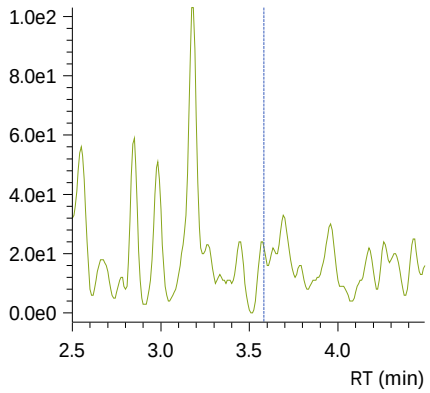
Perchlorate

Conc ----
R#1 0.00 (27.33)

Q 99.00>83.00 (-) 8.70e1



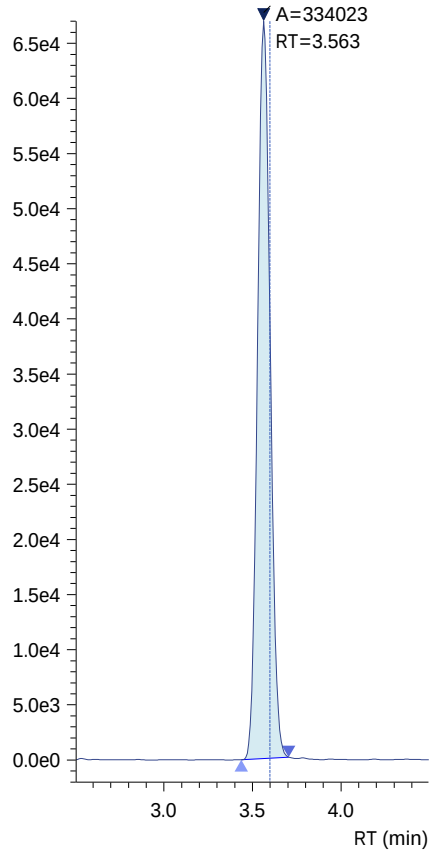
R1 101.00>85.00 (-) 1.03e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.70e4



Insight Report

Printed at 10/9/2023 9:34:14 AM

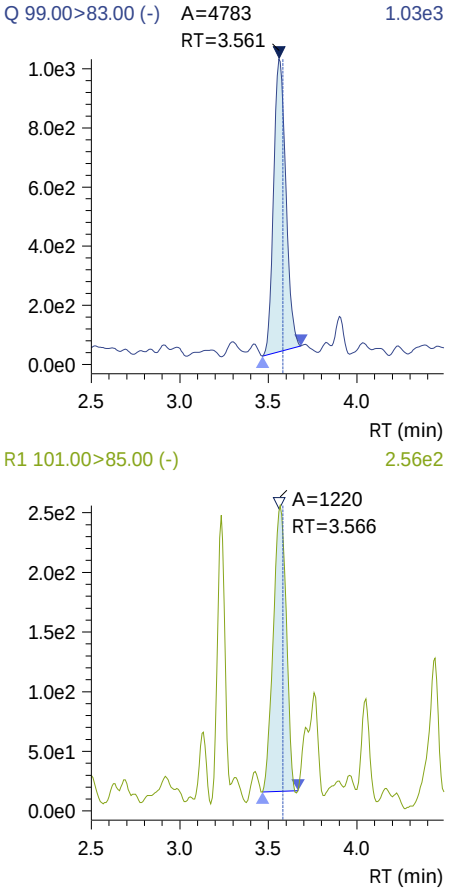
EQ2300488-02

Sample ID: EQ2300488-02
Date Acquired: 10/6/2023 11:41:31 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-023.lcd
Vial: 2 | 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	3.561	4783	329146	0.0985	ng/mL	101.00 >85.00	25.50	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.563	329146	329146	1.0000	ng/mL	----	----	

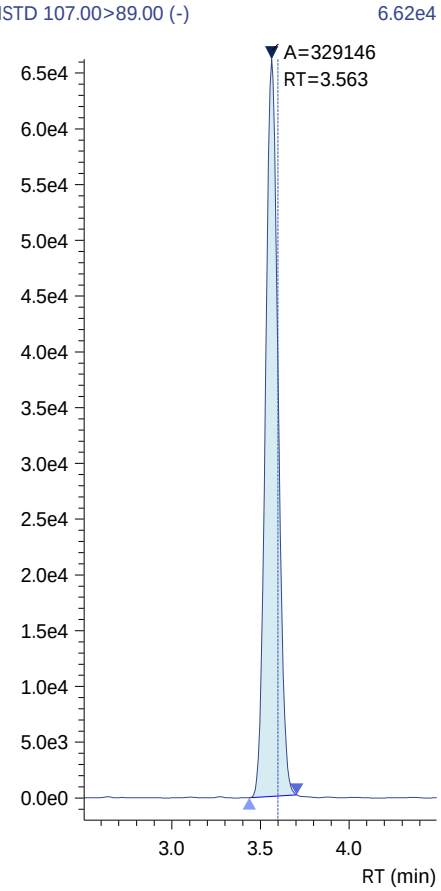
Perchlorate

Conc 0.0985
R#1 25.50 (27.33)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 10/9/2023 9:34:14 AM

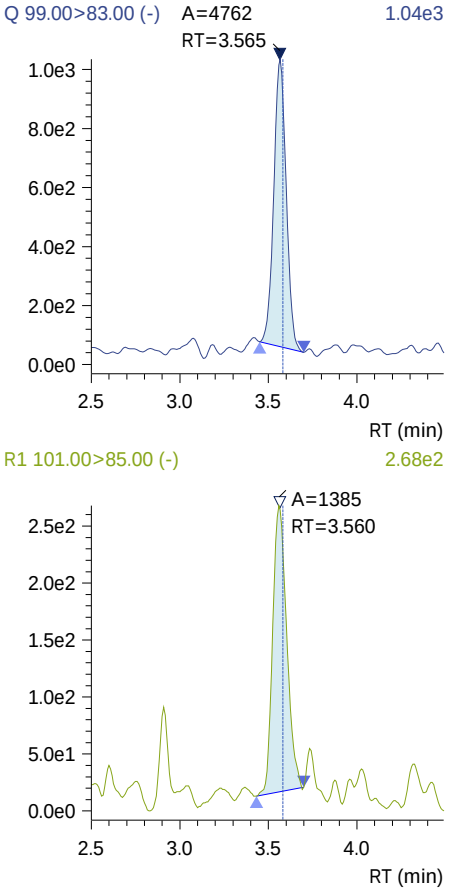
EQ2300488-03

Sample ID: EQ2300488-03
Date Acquired: 10/6/2023 11:47:01 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-024.lcd
Vial: 3 | 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	3.565	4762	328329	0.0984	ng/mL	101.00 >85.00	29.07	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.563	328329	328329	1.0000	ng/mL	----	----	

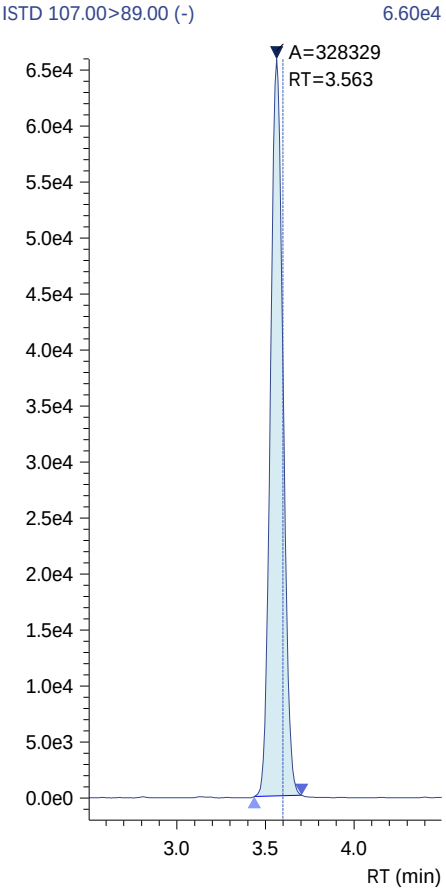
Perchlorate

Conc 0.0984
R#1 29.07 (27.33)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 10/9/2023 9:34:14 AM

CCV

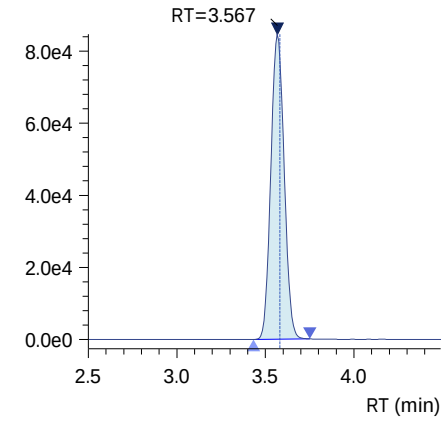
Sample ID: CCV
Date Acquired: 10/6/2023 11:52:34 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-025.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.567	441900	301137	9.9513	ng/mL	101.00 >85.00	26.63	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.563	301137	301137	1.0000	ng/mL	----	----	

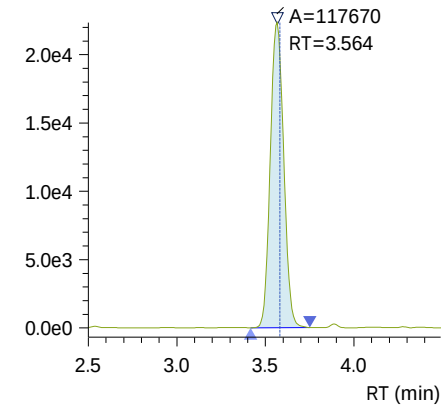
Perchlorate

Conc 9.9513
R#1 26.63 (27.33)

Q 99.00>83.00 (-) A=441900 8.47e4



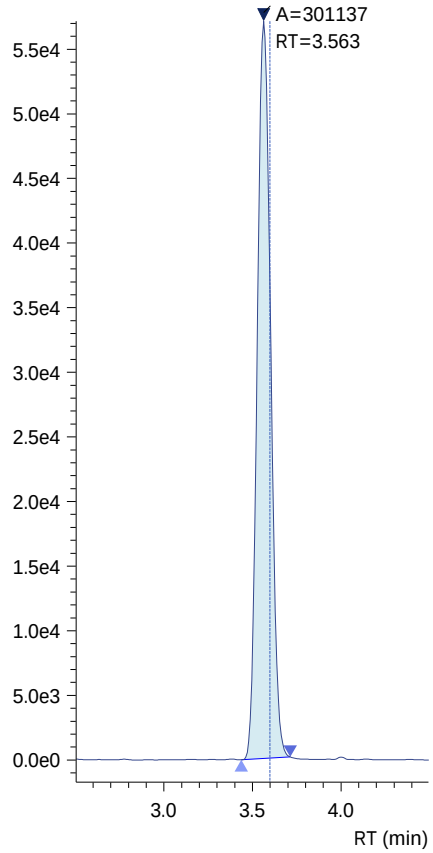
R1 101.00>85.00 (-) 2.24e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.72e4



Insight Report

Printed at 10/9/2023 9:34:14 AM

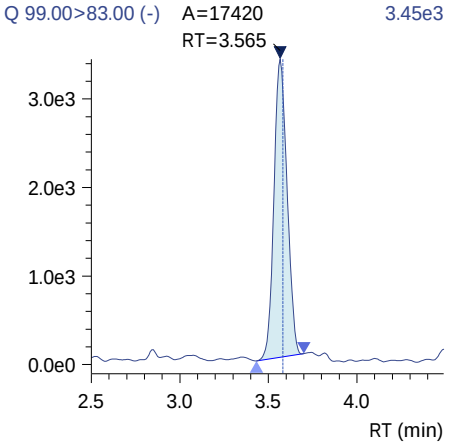
E2300897-003

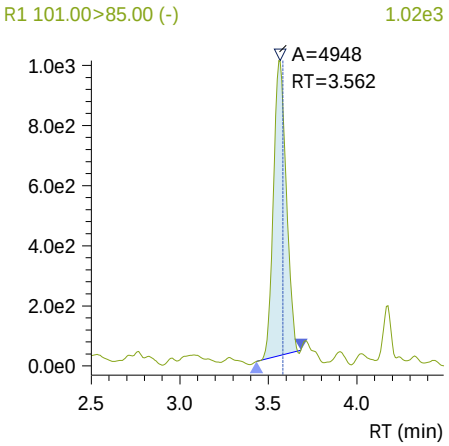
Sample ID: E2300897-003
Date Acquired: 10/6/2023 11:58:04 AM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-026.lcd
Vial: 6 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.565	17420	350659	0.3369	ng/mL	101.00 >85.00	28.40	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.564	350659	350659	1.0000	ng/mL	----	----	

Perchlorate

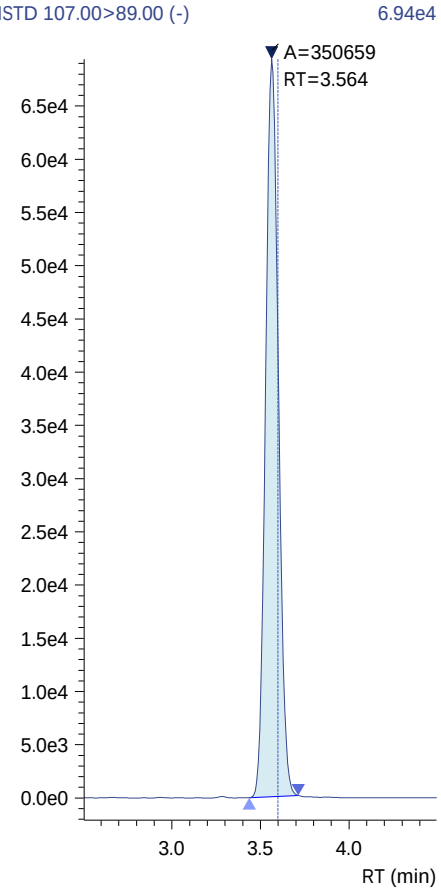
Conc 0.3369
R#1 28.40 (27.33)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 10/9/2023 9:34:14 AM

E2300897-004

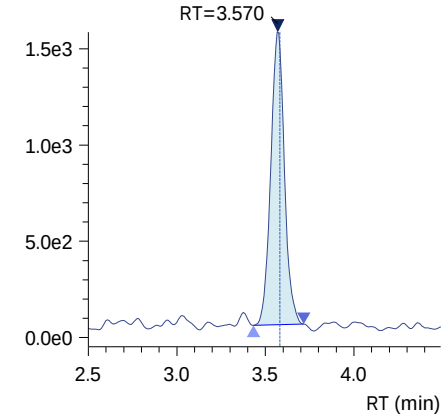
Sample ID: E2300897-004
Date Acquired: 10/6/2023 12:03:35 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-027.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.570	8176	347958	0.1593	ng/mL	101.00 >85.00	31.35	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.563	347958	347958	1.0000	ng/mL	----	----	

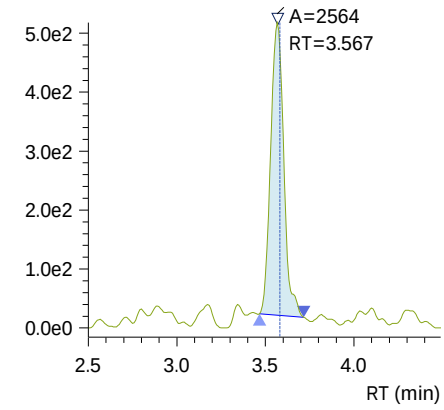
Perchlorate

Conc 0.1593
R#1 31.35 (27.33)

Q 99.00>83.00 (-) A=8176 1.59e3



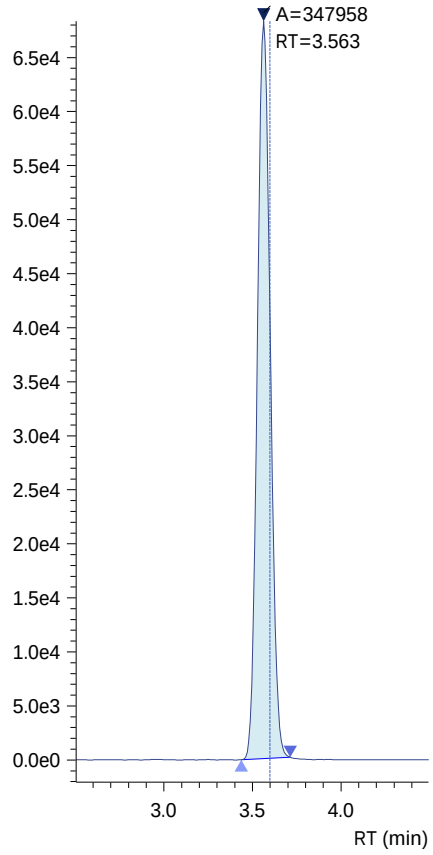
R1 101.00>85.00 (-) 5.18e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.84e4



Insight Report

Printed at 10/9/2023 9:34:14 AM

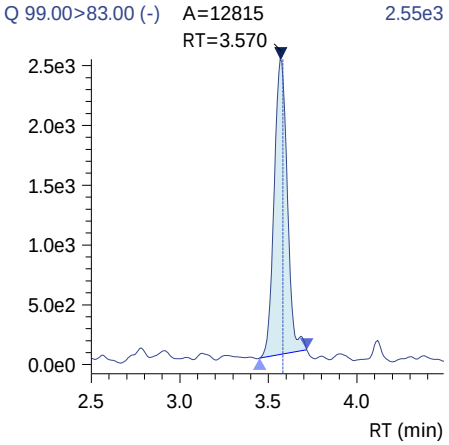
E2300897-005

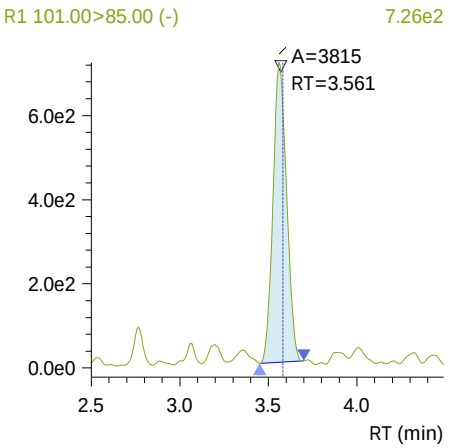
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Date Acquired: 10/6/2023 12:09:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-028.lcd
Vial: 8 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.570	12815	345406	0.2516	ng/mL	101.00 >85.00	29.77	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.564	345406	345406	1.0000	ng/mL	----	----	

Perchlorate

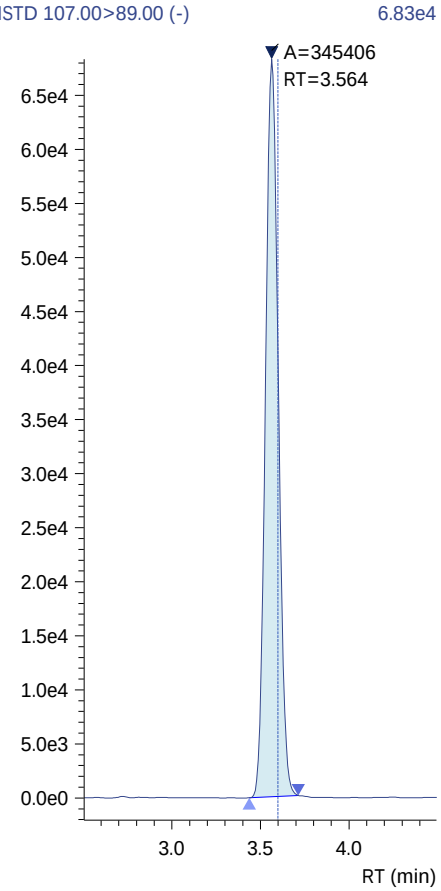
Conc 0.2516
R#1 29.77 (27.33)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

Printed at 10/9/2023 9:34:14 AM

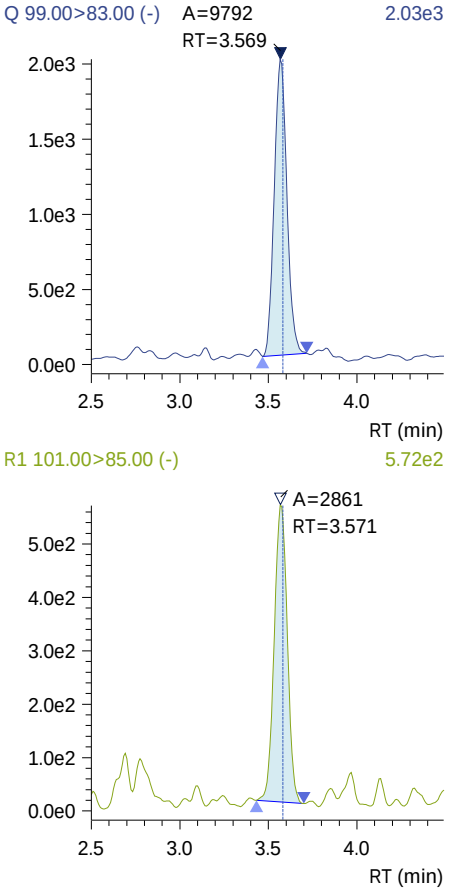
E2300897-001

Sample ID: E2300897-001
Date Acquired: 10/6/2023 12:14:38 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-029.lcd
Vial: 4 | 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	9792	342970	0.1936	ng/mL	101.00 >85.00	29.22	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.563	342970	342970	1.0000	ng/mL	----	----	

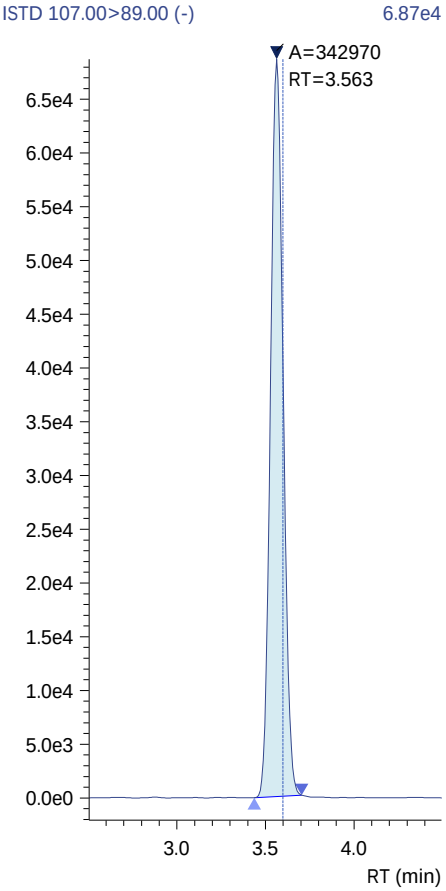
Perchlorate

Conc 0.1936
R#1 29.22 (27.33)



Sodium Perchlorate-18O4_IS

Conc 1.0000



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E2300897-002

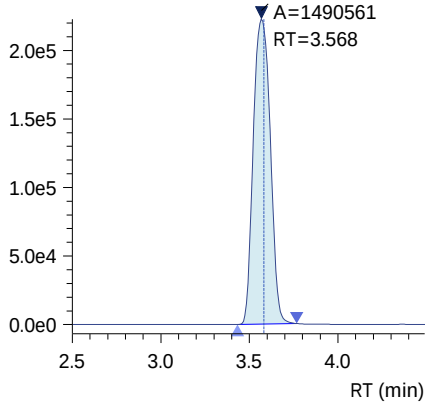
Sample ID: DNU-D
Date Acquired: 10/6/2023 12:20:08 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-030.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.568	1490561	155606	64.95 98	ng/mL	101.00 >85.00	27.45	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.558	155606	155606	1.0000	ng/mL	----	----	

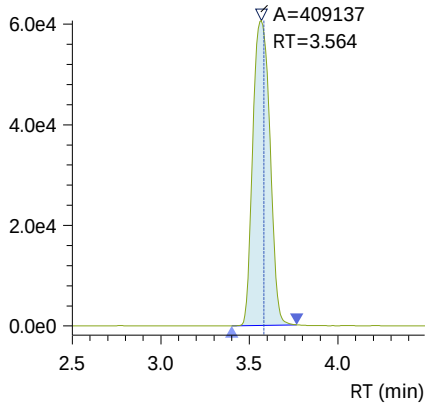
Perchlorate

Conc 64.9598
R#1 27.45 (27.33)

Q 99.00>83.00 (-) 2.23e5



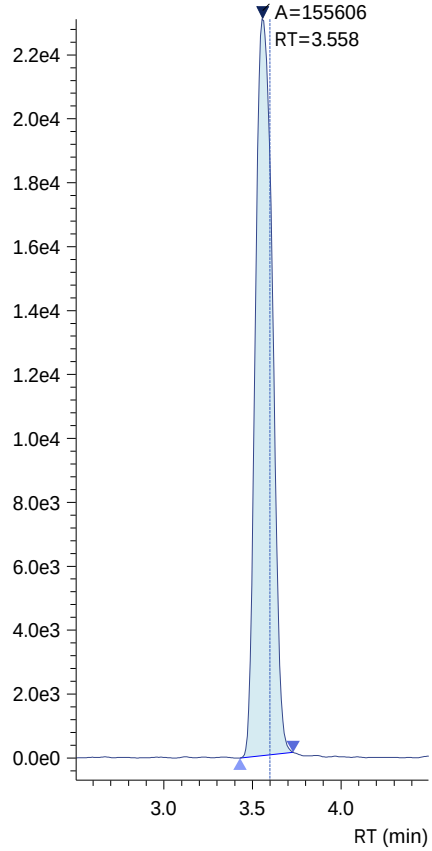
R1 101.00>85.00 (-) 6.07e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 2.31e4



Insight Report

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E2300897-006

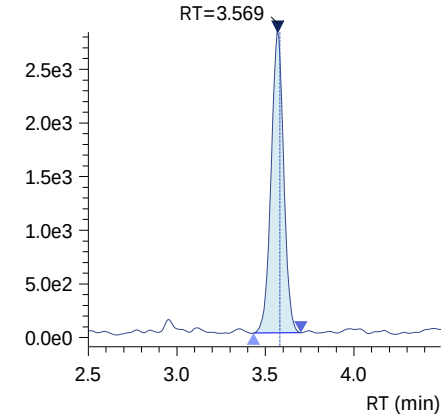
Sample ID: E2300897-006
Date Acquired: 10/6/2023 12:25:40 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-031.lcd
Vial: 9 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.569	13911	345054	0.2734	ng/mL	101.00 >85.00	22.59	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.562	345054	345054	1.0000	ng/mL	----	----	

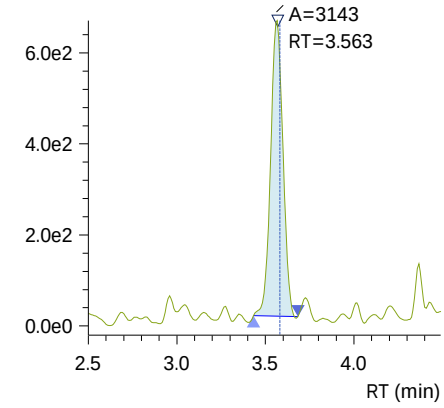
Perchlorate

Conc 0.2734
R#1 22.59 (27.33)

Q 99.00>83.00 (-) A=13911 2.85e3



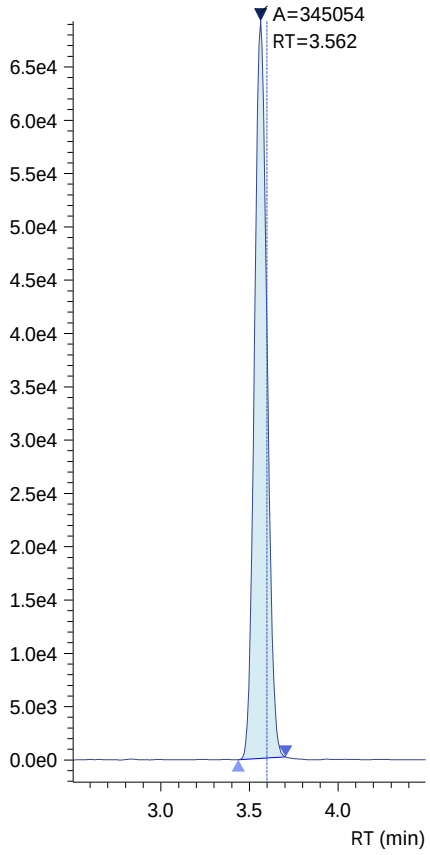
R1 101.00>85.00 (-) 6.71e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.93e4



Insight Report

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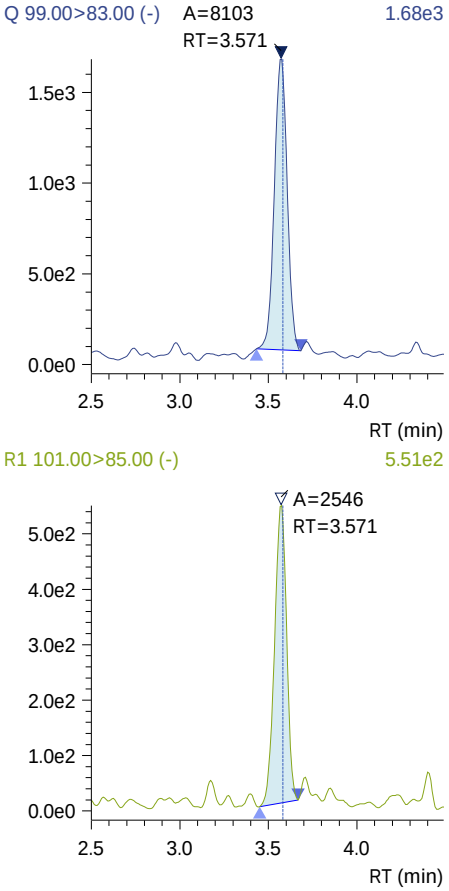
E2300897-007

Sample ID: E2300897-007
Date Acquired: 10/6/2023 12:36:11 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-032.lcd
Vial: 10 | 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	3.571	8103	341840	0.1607	ng/mL	101.00 >85.00	31.42	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.565	341840	341840	1.0000	ng/mL	----	----	

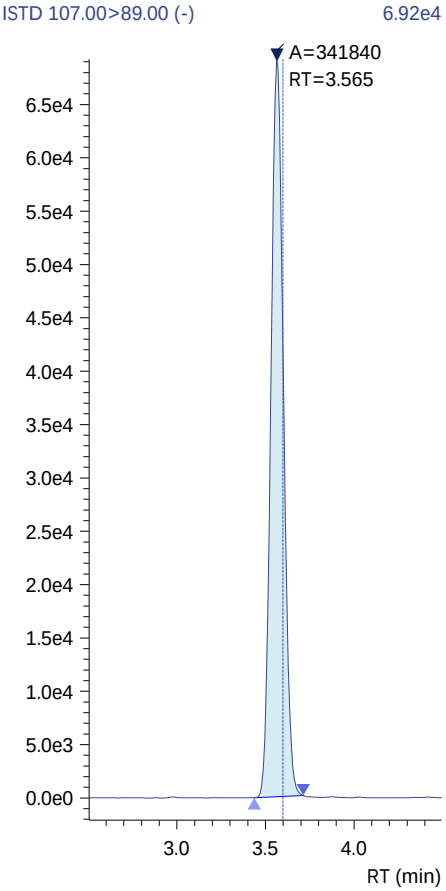
Perchlorate

Conc 0.1607
R#1 31.42 (27.33)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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E2300897-008

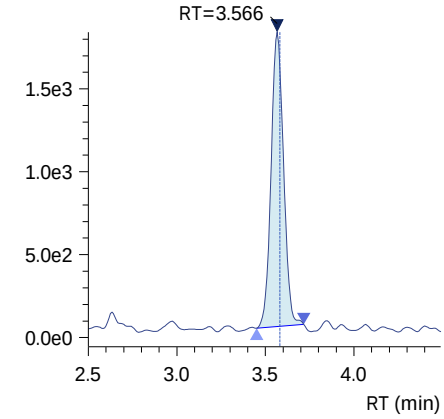
Sample ID: E2300897-008
Date Acquired: 10/6/2023 12:41:42 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-033.lcd
Vial: 11 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.566	8691	338089	0.1743	ng/mL	101.00 >85.00	26.64	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.564	338089	338089	1.0000	ng/mL	----	----	

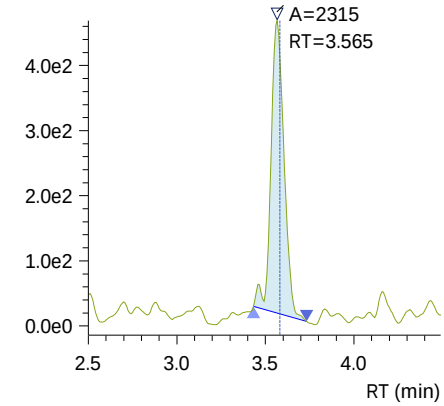
Perchlorate

Conc 0.1743
R#1 26.64 (27.33)

Q 99.00>83.00 (-) A=8691 RT=3.566 1.84e3



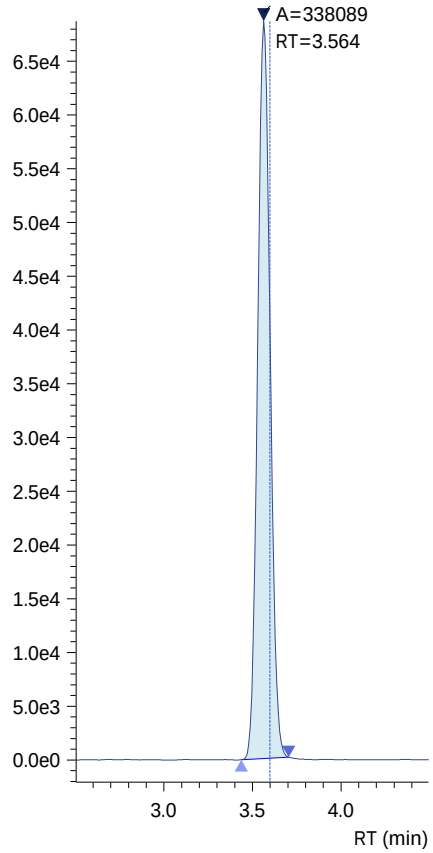
R1 101.00>85.00 (-) 4.69e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.87e4



Insight Report

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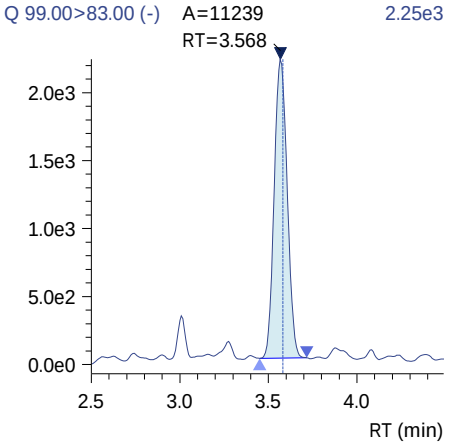
E2300897-009

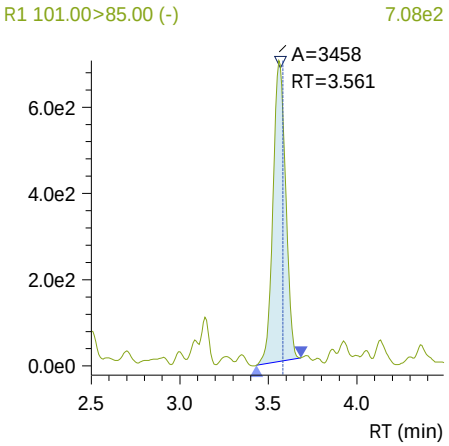
Sample ID: E2300897-009
Date Acquired: 10/6/2023 12:47:16 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-034.lcd
Vial: 12 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.568	11239	321447	0.2371	ng/mL	101.00 >85.00	30.77	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.564	321447	321447	1.0000	ng/mL	----	----	

Perchlorate

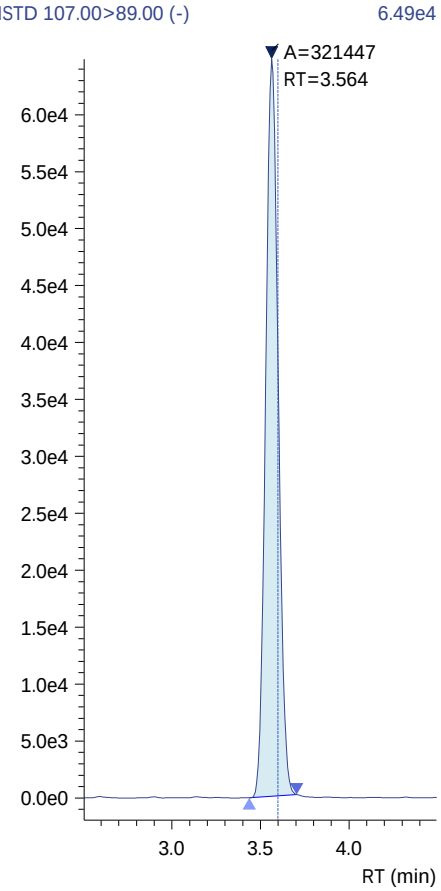
Conc 0.2371
R#1 30.77 (27.33)





Sodium Perchlorate-18O4_IS

Conc 1.0000



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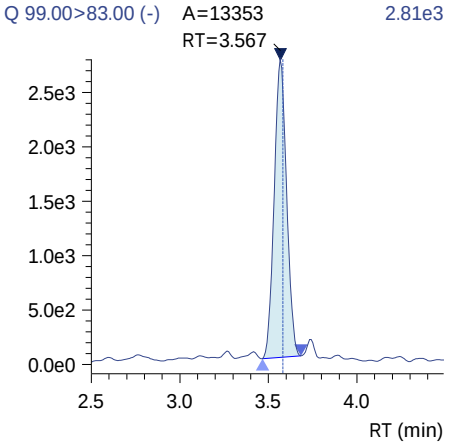
E2300897-010

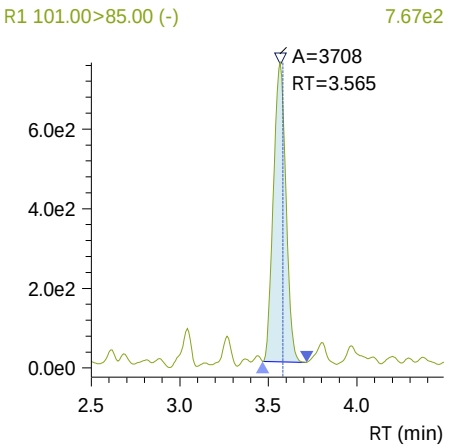
Sample ID: E2300897-010
Date Acquired: 10/6/2023 12:52:47 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-035.lcd
Vial: 13 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.567	13353	330747	0.2738	ng/mL	101.00 >85.00	27.77	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.564	330747	330747	1.0000	ng/mL	----	----	

Perchlorate

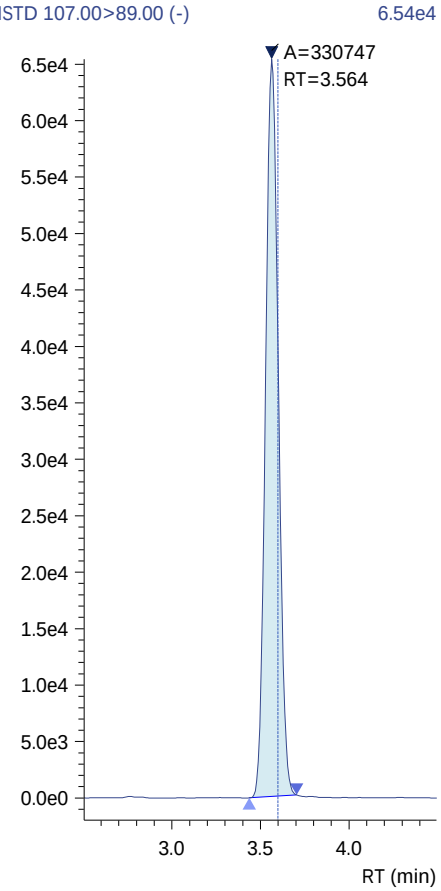
Conc 0.2738
R#1 27.77 (27.33)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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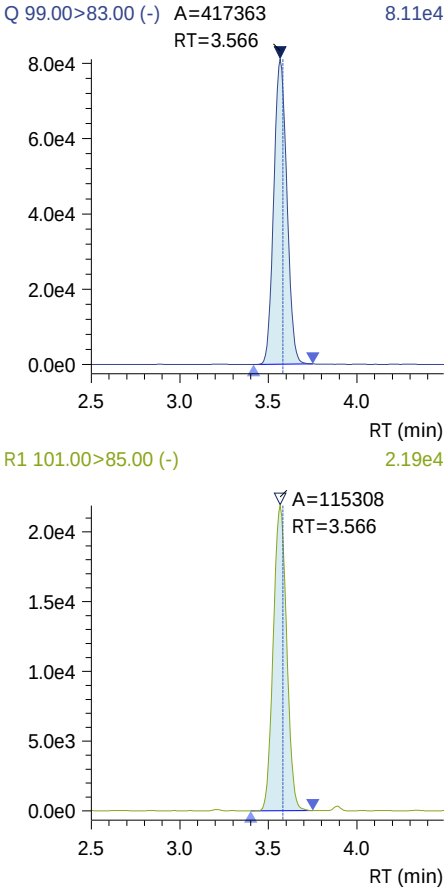
CCV

Sample ID: CCV
Date Acquired: 10/6/2023 12:58:19 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-036.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	3.566	417363	280928	10.0749	ng/mL	101.00 >85.00	27.63	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.564	280928	280928	1.0000	ng/mL	----	----	

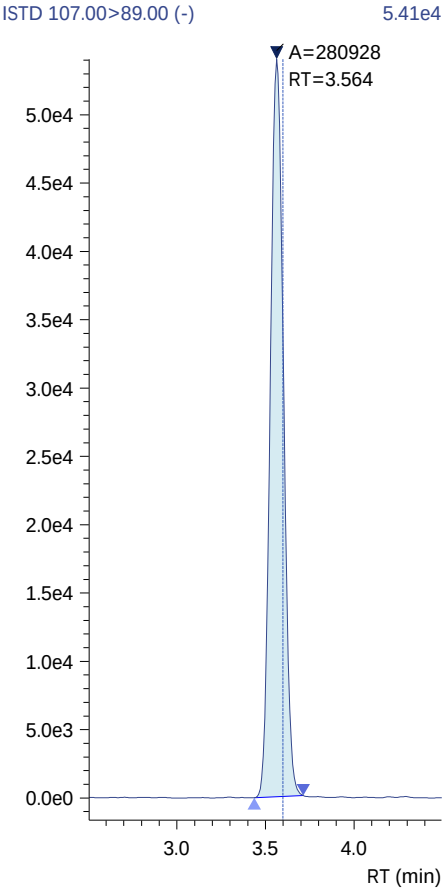
Perchlorate

Conc 10.0749
R#1 27.63 (27.33)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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E2300897-011X200

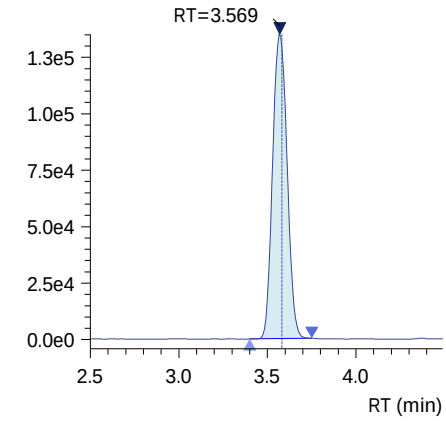
Sample ID: E2300897-011
Date Acquired: 10/6/2023 1:41:50 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-037.lcd
Vial: 14 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.569	768930	250328	20.8305	ng/mL	101.00 >85.00	27.71	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.564	250328	250328	1.0000	ng/mL	----	----	

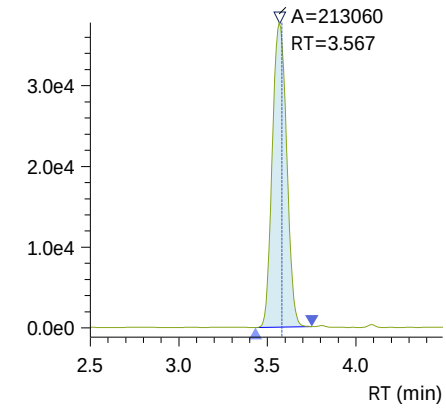
Perchlorate

Conc 20.8305
R#1 27.71 (27.33)

Q 99.00>83.00 (-) A=768930 1.35e5



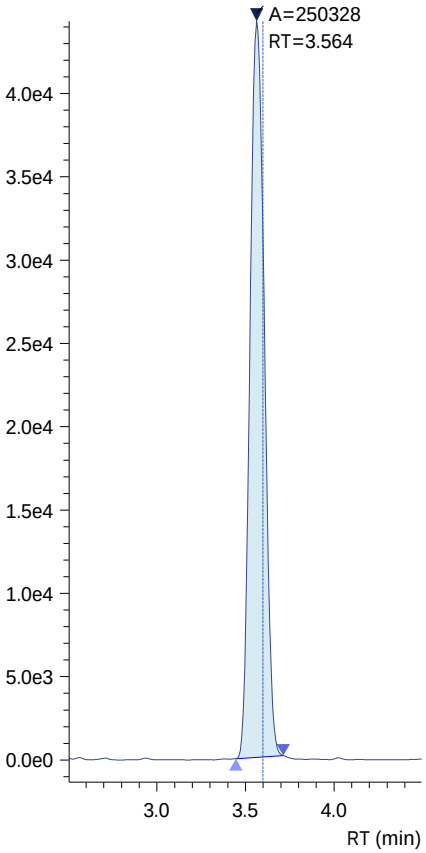
R1 101.00>85.00 (-) 3.78e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.43e4



Insight Report

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E2300897-012X200

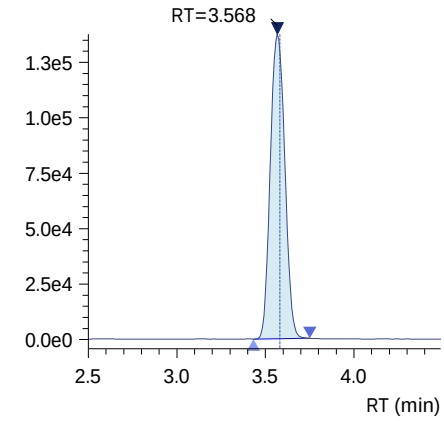
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Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-038.lcd
Vial: 15 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.568	784205	249254	21.3358	ng/mL	101.00 >85.00	27.77	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.563	249254	249254	1.0000	ng/mL	----	----	

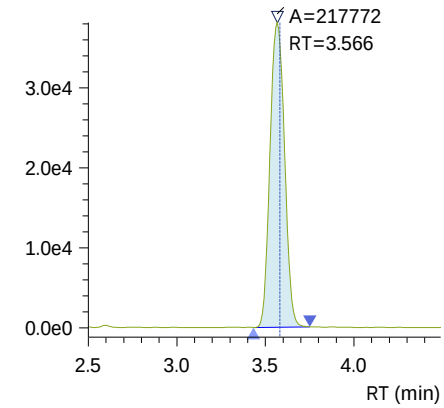
Perchlorate

Conc 21.3358
R#1 27.77 (27.33)

Q 99.00>83.00 (-) A=784205 1.38e5



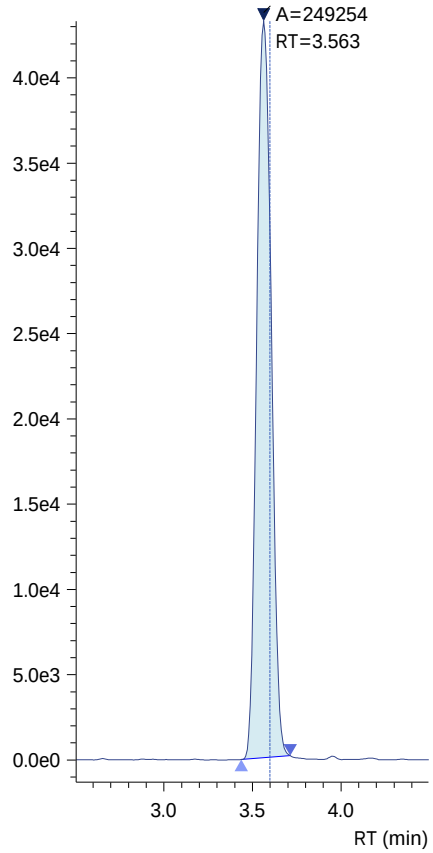
R1 101.00>85.00 (-) 3.82e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.33e4



Insight Report

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E2300897-013X200

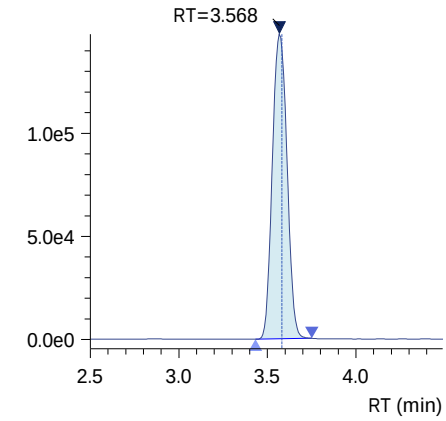
Sample ID: E2300897-013
Date Acquired: 10/6/2023 1:52:55 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-039.lcd
Vial: 16 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.568	852776	246824	23.42 98	ng/mL	101.00 >85.00	26.98	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.562	246824	246824	1.0000	ng/mL	----	----	

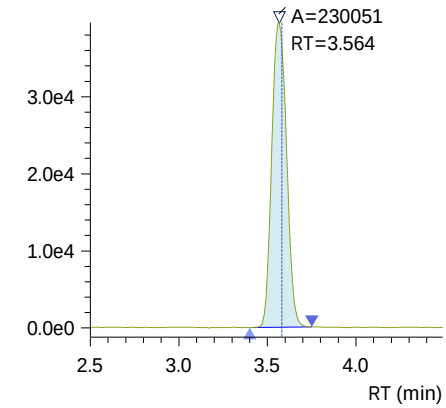
Perchlorate

Conc 23.4298
R#1 26.98 (27.33)

Q 99.00>83.00 (-) A=852776 1.48e5



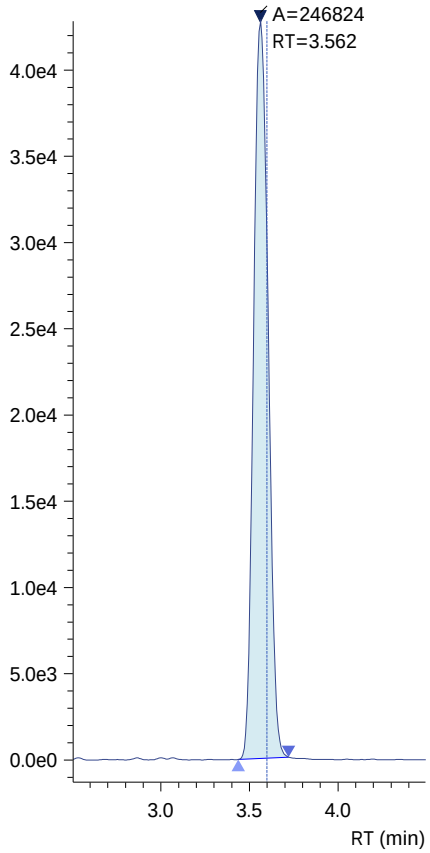
R1 101.00>85.00 (-) 3.96e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.28e4



Insight Report

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E2300897-014X200

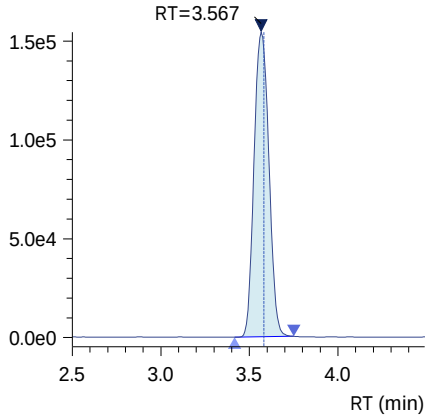
Sample ID: E2300897-014
Date Acquired: 10/6/2023 1:58:29 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-040.lcd
Vial: 17 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.567	899787	238761	25.55 62	ng/mL	101.00 >85.00	26.94	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.562	238761	238761	1.0000	ng/mL	----	----	

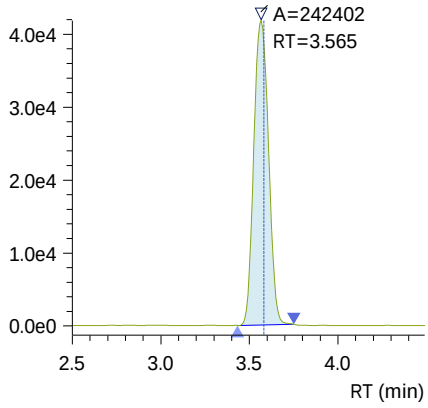
Perchlorate

Conc 25.5562
R#1 26.94 (27.33)

Q 99.00>83.00 (-) A=899787 1.55e5



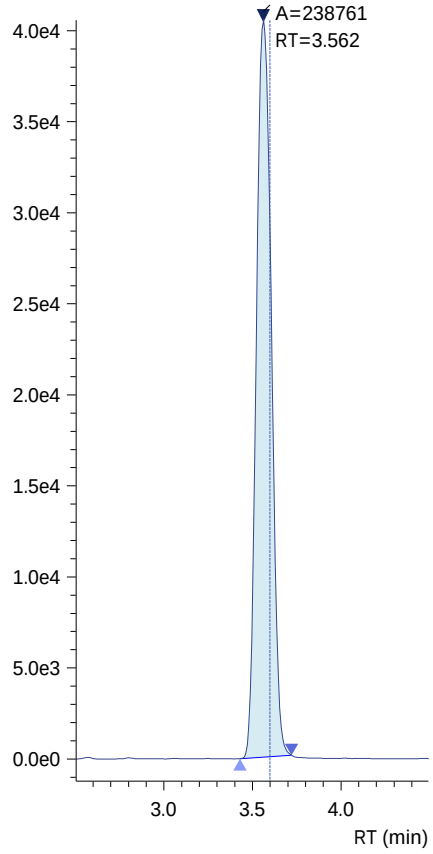
R1 101.00>85.00 (-) 4.19e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.06e4



Insight Report

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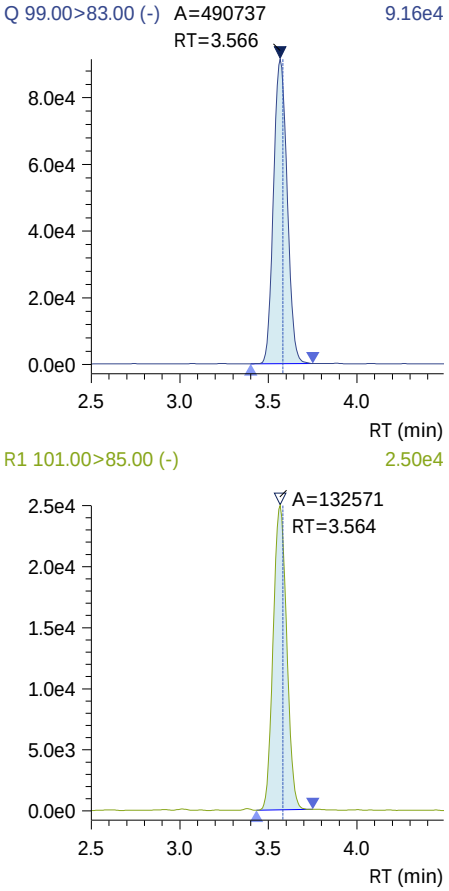
E2300897-015X50

Sample ID: E2300897-015
Date Acquired: 10/6/2023 2:03:59 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-041.lcd
Vial: 18 | 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	3.566	490737	300260	11.08 34	ng/mL	101.00 >85.00	27.02	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.563	300260	300260	1.0000	ng/mL	----	----	

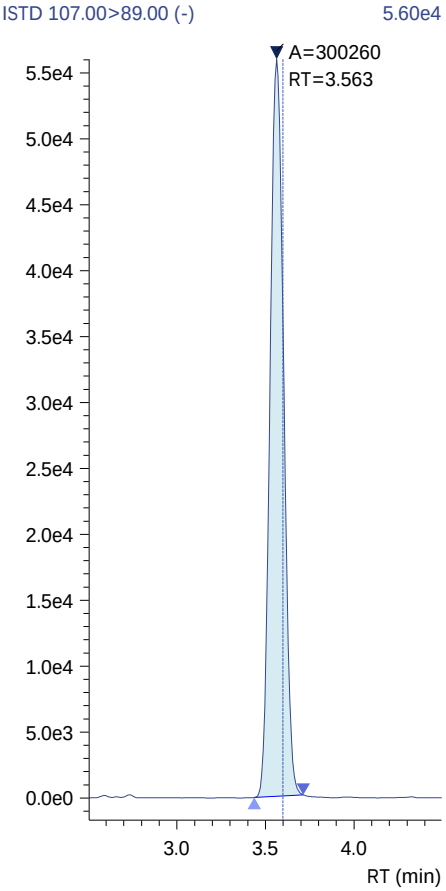
Perchlorate

Conc 11.0834
R#1 27.02 (27.33)



Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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E2300897-016X1000

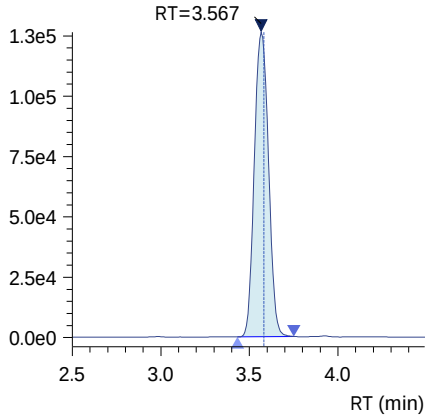
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Date Acquired: 10/6/2023 2:09:34 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-042.lcd
Vial: 19 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.567	703785	267150	17.8651	ng/mL	101.00 >85.00	27.47	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.562	267150	267150	1.0000	ng/mL	----	----	

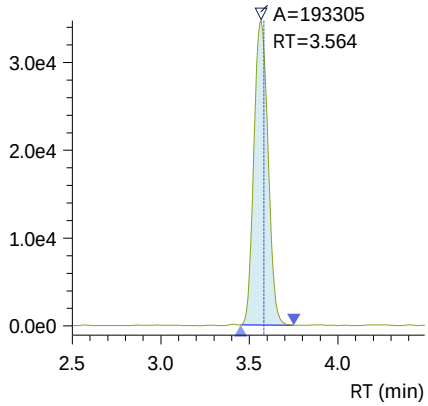
Perchlorate

Conc 17.8651
R#1 27.47 (27.33)

Q 99.00>83.00 (-) A=703785 1.27e5



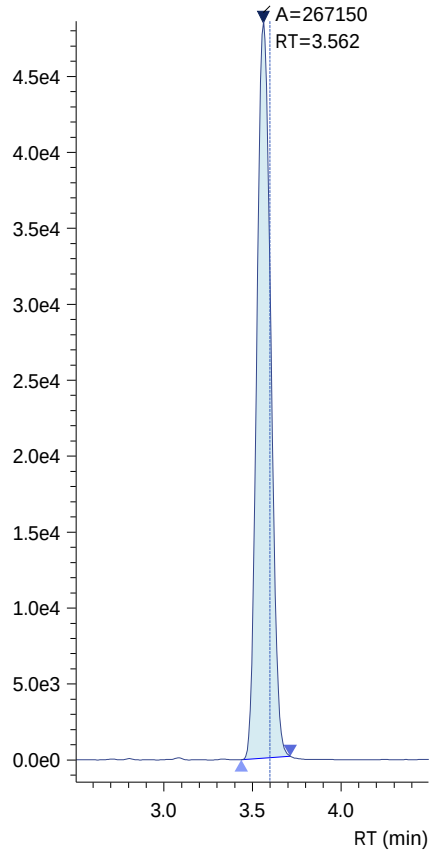
R1 101.00>85.00 (-) 3.48e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 4.86e4



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E2300897-002X5

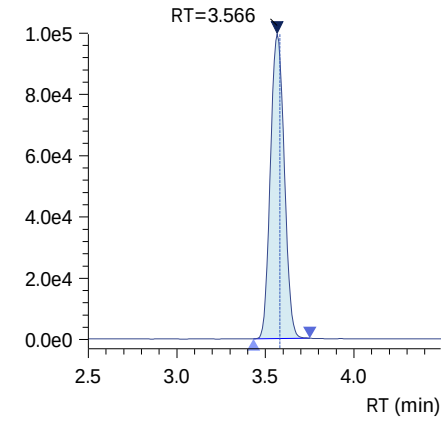
Sample ID: E2300897-002
Date Acquired: 10/6/2023 2:15:07 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-043.lcd
Vial: 5 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.566	541140	291892	12.57 21	ng/mL	101.00 >85.00	28.03	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.562	291892	291892	1.0000	ng/mL	----	----	

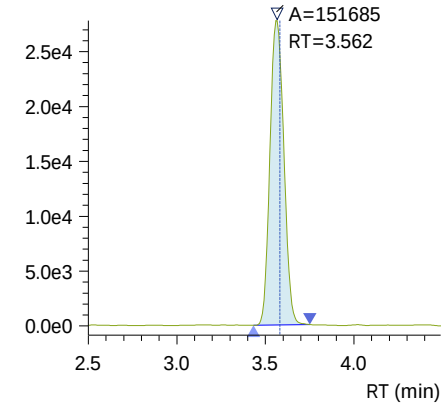
Perchlorate

Conc 12.5721
R#1 28.03 (27.33)

Q 99.00>83.00 (-) A=541140 9.96e4



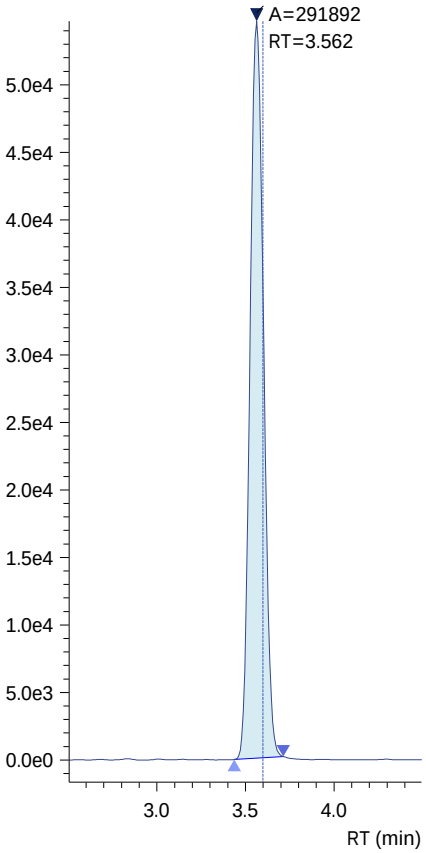
R1 101.00>85.00 (-) 2.78e4



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 5.47e4



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IB

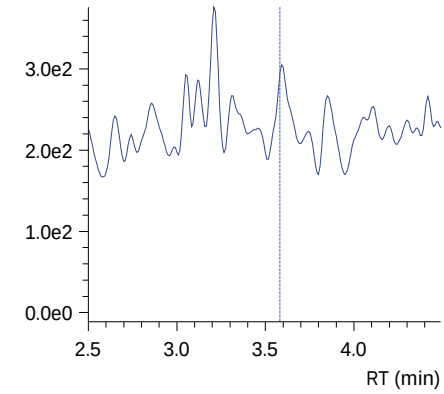
Sample ID: IB
Date Acquired: 10/6/2023 2:20:37 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-044.lcd
Vial: 1 | Inj. Volume: 10.0000uL | Tray: 0

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	ND(W/B)	----	----	310783	----	ng/mL	101.00 >85.00	0.00	19.13-35.53
Sodium Perchlorate-18O4_IS	Auto	3.563	310783	310783	1.0000	ng/mL	----	----	

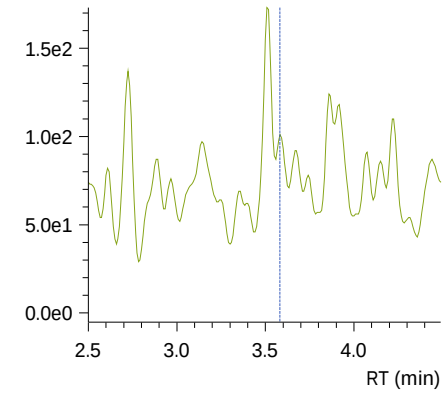
Perchlorate

Conc ----
R#1 0.00 (27.33)

Q 99.00>83.00 (-) 3.76e2



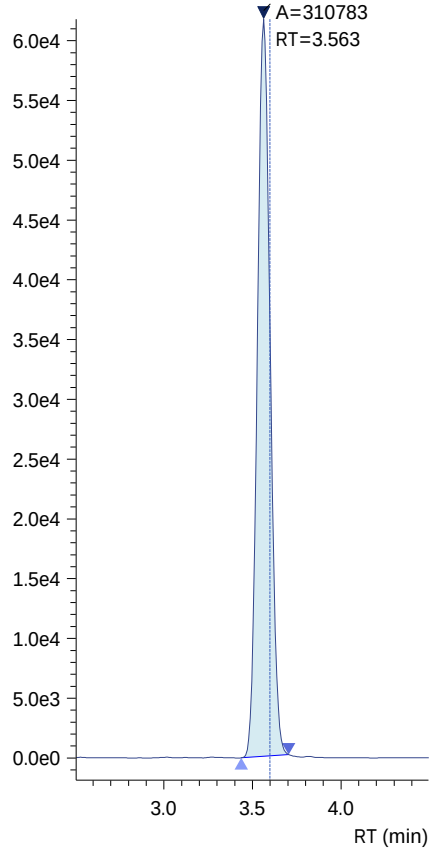
R1 101.00>85.00 (-) 1.73e2



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.18e4



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EQ2300488-04

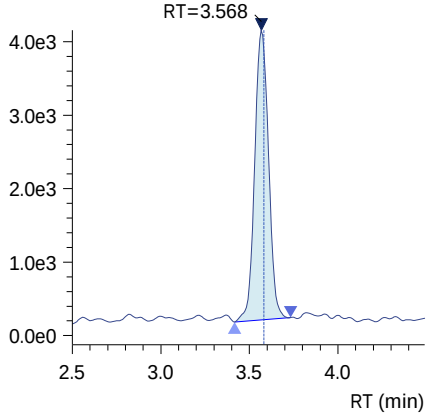
Sample ID: EQ2300488-04
Date Acquired: 10/6/2023 2:26:10 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-045.lcd
Vial: 20 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.568	21427	341839	0.4251	ng/mL	101.00 >85.00	30.35	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.564	341839	341839	1.0000	ng/mL	----	----	

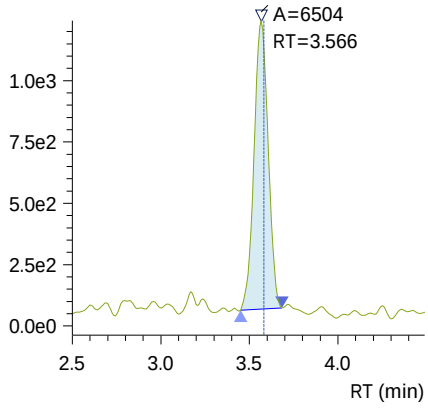
Perchlorate

Conc 0.4251
R#1 30.35 (27.33)

Q 99.00>83.00 (-) A=21427 RT=3.568 4.16e3



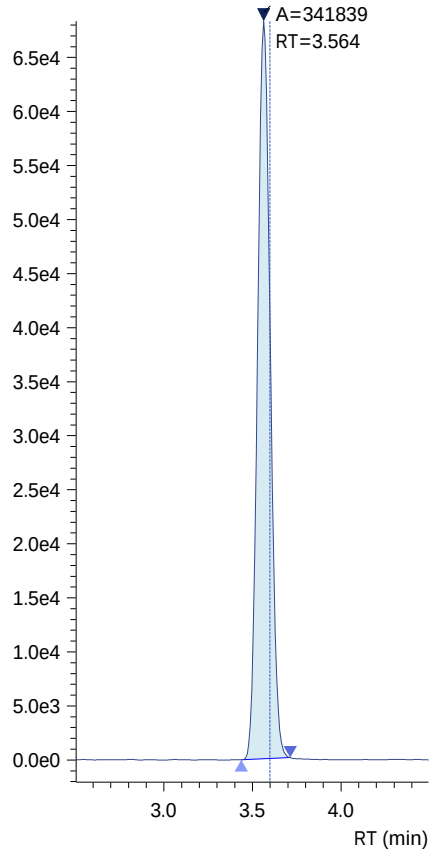
R1 101.00>85.00 (-) 1.25e3



Sodium Perchlorate-18O4_IS

Conc 1.0000

ISTD 107.00>89.00 (-) 6.84e4



Insight Report

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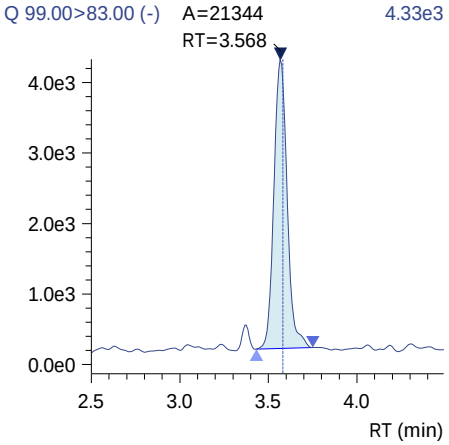
EQ2300488-05

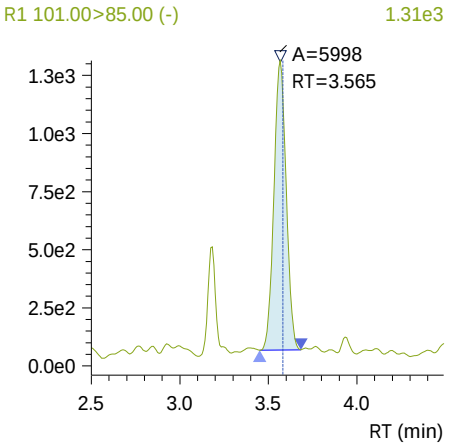
Sample ID: EQ2300488-05
Date Acquired: 10/6/2023 2:31:44 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-046.lcd
Vial: 21 | Inj. Volume: 10.0000uL | Tray: 3

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.568	21344	341719	0.4236	ng/mL	101.00 >85.00	28.10	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.564	341719	341719	1.0000	ng/mL	----	----	

Perchlorate

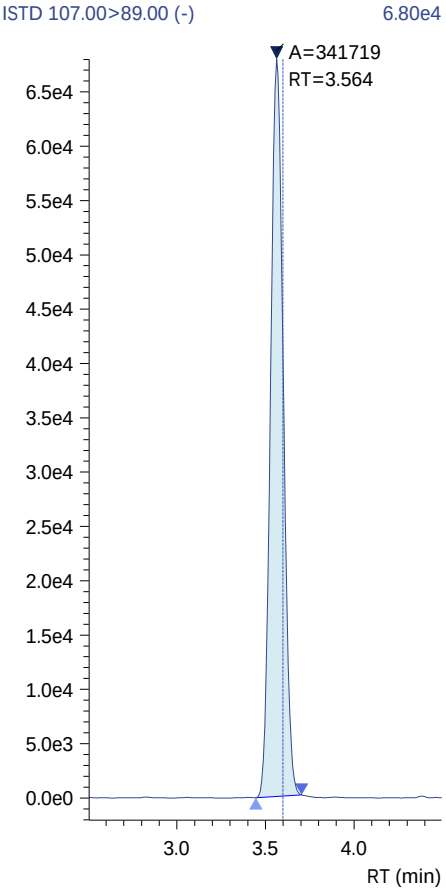
Conc 0.4236
R#1 28.10 (27.33)





Sodium Perchlorate-18O4_IS

Conc 1.0000



Insight Report

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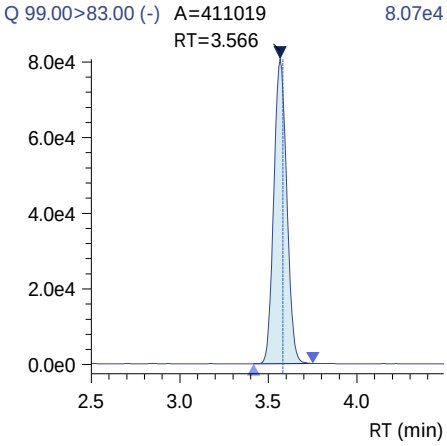
CCV

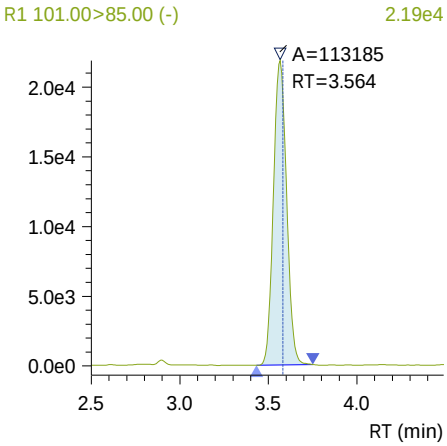
Sample ID: CCV
Date Acquired: 10/6/2023 2:37:18 PM
Acquired by: System Administrator
Data File: I:\LCMS01\DATA\20231006\20231006-047.lcd
Vial: 7 | Inj. Volume: 10.0000uL | Tray: 1

Name	Mode ID	Found RT	Area	ISTD Area	Conc.	Unit	Ref 1 m/z	Ref 1 Actual Ratio	Comment 1
Perchlorate	Auto	3.566	411019	290425	9.5973	ng/mL	101.00 >85.00	27.54	19.13-35.53
Sodium Perchlorate-18O4 _IS	Auto	3.563	290425	290425	1.0000	ng/mL	----	----	

Perchlorate

Conc 9.5973
R#1 27.54 (27.33)





Sodium Perchlorate-18O4_IS

Conc 1.0000

