LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 7 of 8

2013

Bate Stamp Numbers
00188532 - 00189540

Prepared for
Department of the Army
Longhorn Army Ammunition Plant

1976 – 2013

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

VOLUME 7 of 8

2013

Note: Volume 7, Year 2013, A and B are listed Out of Date in Sequence and should have been inserted in Year 1999 and 2000 respectively.

A.	Title:	Report – Final Closure Report, Hazardous Waste Storage Area 31-W, RCRA Permit 50195 Unit No. 001, Longhorn Army Ammunition Plant, Karnack, Texas
	Author(s):	
	Recipient:	U.S. Army Corps of Engineers
	Date:	October, 1999
	Bate Stamp:	00188532 - 00189424
B.	Title:	Report –Closure Report, Building 701, EPA ID No. TX6213820529, Longhorn Army Ammunition Plant, Karnack, Texas
	Author(s):	Complete Environmental Service
	Recipient:	U.S. Army Corps of Engineers
	Date:	April, 2000
	Bate Stamp:	00189425 - 00189540

FINAL CLOSURE REPORT

HAZARDOUS WASTE STORAGE AREA 31-W

RCRA PERMIT 50195 UNIT NO. 001

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TX

October 1999

Permitted Hazardous Waste Container
Storage Area 31-W

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1.0 INTRODUCTION

The U.S. Army has excessed Longhorn Army Ammunition Plant and there is no further use for permitted hazardous waste management units. To satisfy the requirements of their RCRA permit, each of these units will be decontaminated and closed.

A closure plan dated July 1997 was prepared in addition to the September 1988 closure plan approved in the Longhorn AAP Hazardous Waste Permit 50195. The July closure plan follows more rigid closure standards than those found in the 1988 closure plan. Both of these plans are located in Appendix IV of this report.

This report documents the decontamination and sampling activities performed by Anderson Columbia Environmental and Complete Environmental Service for the closure of the RCRA permitted container storage area known as Container Storage Area 31-W located at Longhorn Army Ammunition Plant. The report serves to establish the work accomplished and final configuration of container storage area 31-W to LHAAP Risk Reduction Standard 2 for Residential Use.

Anderson Columbia Environmental performed decontamination and closure of permitted storage area 31-W on July 30, 1998. Due to what appeared to be cross-contamination of the soil samples and contamination in the final rinsate of the concrete slab, the area was decontaminated again. Anderson Columbia Environmental collected more soil samples on December 3, 1998. Numerous inconsistencies were found in the data from the December sampling event. Because the decontamination and closure goals were not met for the work done in July 1998 and then again in December 1998, the Army scheduled another contractor to perform an additional sampling event. This sampling event took place in June 1999 and the samples were sent to a different laboratory. Laboratory data from the third sampling event was found to be acceptable. This closure report is a summary of the information and data collected from all of the sampling and decontamination events, which took place to support the closure of permitted storage area 31-W.

Although data was found to be unacceptable for work done during July 1998, it was documented in a closure report with recommendations for completing the closure of storage area 31-W. These recommendations were followed and decontamination and sample collection was performed on December 3, 1998. The work completed in December 1998 was documented in a closure report as Addendum One to the original closure report. Although all of the analytical information from the work done in 1998 is not acceptable, some of the analysis is acceptable and subsequent work done builds on this data. To adequately track the closure process, both of these reports are included in this report as Section Two and Section Three. Section One is specifically for data collected during the final collection of verification samples and the remediation of the soil. Data collected, work done, waste manifests, etc., which correlate with the work done during that phase of the project are included in that particular section.

In an effort to complete the closure of the building a plan was written for the collection of additional soil verification samples to determine if previous samples were cross contaminated. Verification samples of rinsate were also collected to identify if the concrete slab was fully decontaminated. The verification samples were collected on May 18, 1999. The results of the verification samples are listed below.

1. ***Decontamination Verification Samples*** – Two verification samples and a duplicate sample collected in two randomly selected bays at storage area 31-W. The samples did not reveal any detectable concentrations of volatiles. The semi-volatile bis(2-ethylhexyl)phthalate was detected in one sample at a concentration of 105 Ug/L. The trip blank shipped with the samples was not contaminated with any volatiles.

2. ***Soil Verification Samples*** – Five verification samples of soil and a duplicate sample were collected from previous soil sample locations at 31-W that, from the previous sampling event

in December, were apparently cross-contaminated with volatiles. None of the samples collected during this sampling event contained detectable concentrations of volatiles. This verifies that the soil at container storage area 31-W is not contaminated with volatiles.

3. ***Soil Contamination from Metals*** – Sample site 31-W-10 was contaminated with lead above LHAAP plant background levels. The soil at this sample location was excavated to fifteen inches deep and an eight foot square around the sample location. After excavation, a soil sample was collected from the surface of the excavation location and where sample 31-W-10 had previously been collected. The sample was analyzed for lead. The concentration was reduced from 31.8 mg/kg to 9.53 mg/kg. This is below the plant background concentration at this location after excavation. No further remediation needs to take place at storage area 31-W for lead.

   Based on the sampling done in July of 1998, barium levels detected in some of the soil samples from site 31-W are above plant background and may be considered contamination. Therefore, barium will be included in a deed recording as a contaminant left in place at 31-W.

   Cadmium levels in some of the soil samples appear to be higher than both the UCL and UTL, however, data available in the plant background report is insufficient to calculate distribution probability values. It is believed that cadmium is above plant background levels and also above the TNRCC published cleanup level of 0.5 mg/kg in 30 TAC 335.568. However, the samples were subjected to the EPA Method 1312 SPLP analysis and the cadmium was non-detect at 0.005 mg/l, the drinking water MCL. It is believed that cadmium will not contribute to groundwater contamination. Therefore, cadmium will be included in a deed recording as a contaminant left in place at 31-W.

This work was performed during the spring of 1999 and completed in July 1999. Decontamination and remediation goals to TNRCC Risk Reduction Standard 2 (RRS2) to residential health criteria have been met as documented by this report.

2.0 BACKGROUND INFORMATION

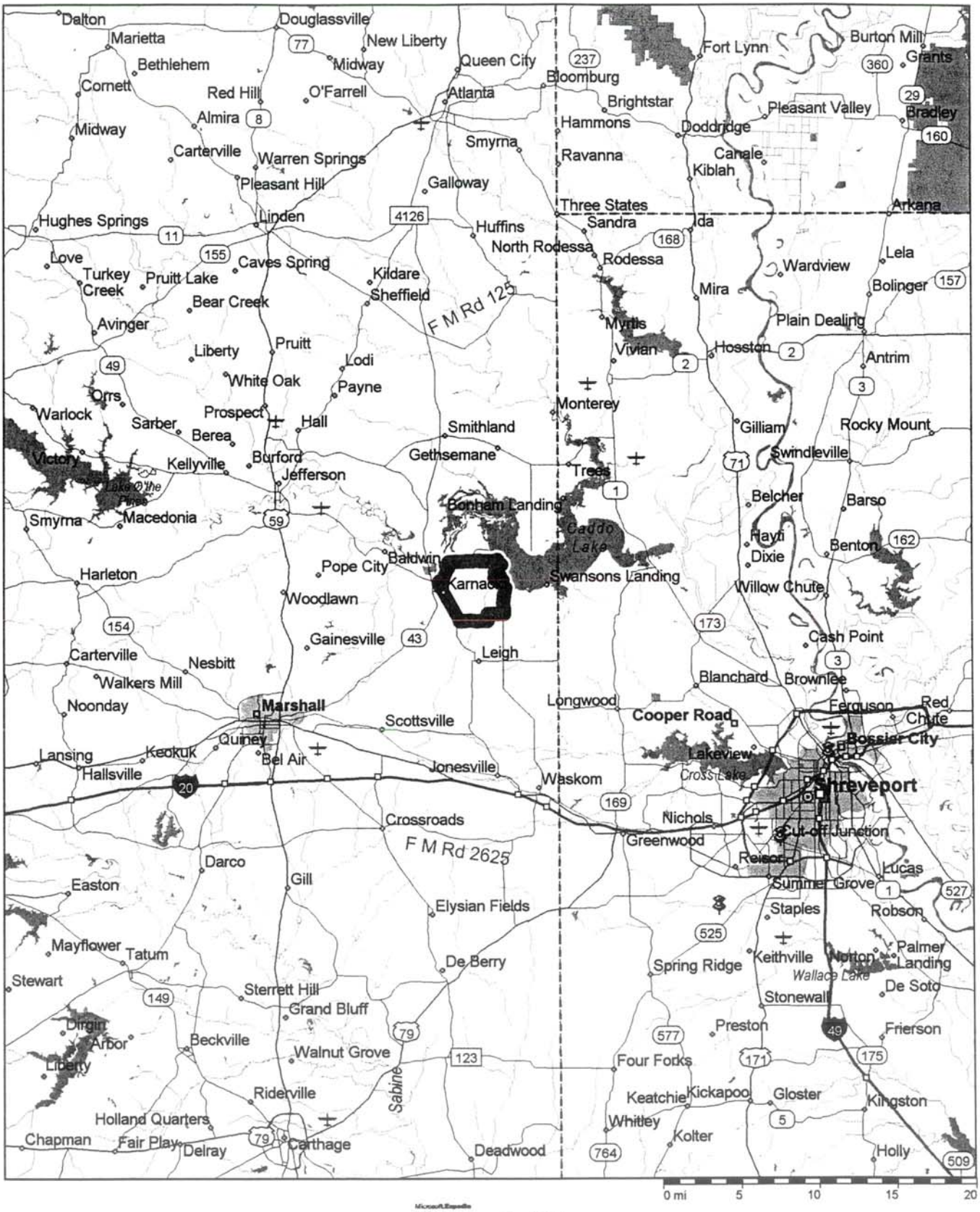
2.1 Location of Longhorn Army Ammunition Plant

Longhorn Army Ammunition Plant (LHAAP) is located in the northeast corner of Harrison County, Texas, approximately 3.6 miles from the Louisiana border. Caddo Lake, Caddo Lake State Park and the small town of Karnack border LHAAP. The plant is located approximately 30 miles west of Shreveport, Louisiana, with the nearest major city being Marshall, Texas, 15 miles to the southwest. Figure 1-1 illustrates the location of LHAAP. The installation has a total area of approximately 8,493 acres. State Highways 43 and 134 access the installation.

2.2 Location of Container Storage Area 31-W

Permitted storage area 31-W is located on 51st street within the confines of Longhorn Army Ammunition Plant, Harrison County, Texas. The storage area is located near the central portion of LHAAP.

LOCATION OF LONGHORN ARMY AMMUNITION PLANT



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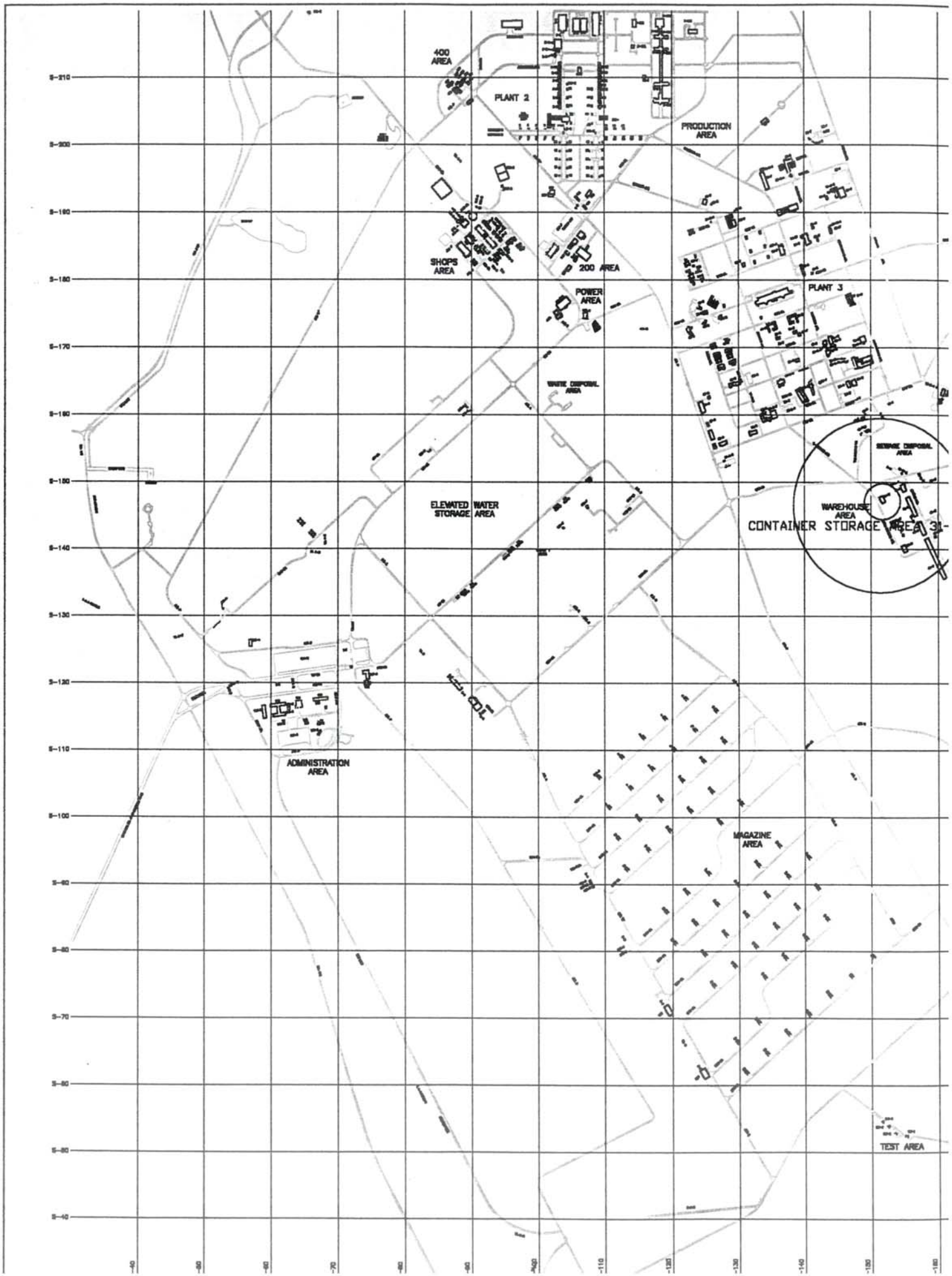

400 AREA
PLANT 2
PRODUCTION AREA
SHOPS AREA
200 AREA
POWER AREA
PLANT 3
WASTE DISPOSAL AREA
SEWAGE DISPOSAL AREA
ELEVATED WATER STORAGE AREA
WAREHOUSE AREA
CONTAINER STORAGE AREA 31
ADMINISTRATION AREA
MAGAZINE AREA
TEST AREA

9.0 CONCLUSIONS AND CERTIFICATION

The semi-volatile bis(2-ethylhexylphthalate) was detected in the rinsewater verification sample from container storage area 31-W. This chemical is considered a waste constituent. This constituent will be included in a deed record as a constituent left in place at container storage area 31-W.

Concentrations of barium and cadmium have been left in place in the soils at 31-W. These metals are considered waste constituents. These constituents will be included in a deed record as constituents left in place at container storage area 31-W.

This supplemental information, together with the information in the Closure Report for 31-W, and the Addendum One to the Closure Report for 31-W, effectively determines that container storage area 31-W has been decontaminated and meets criteria for health-based closure/remediation based on Title 30 Chapter 335 Subchapter S Part 568 Appendix II. The health-based standards are included with this report as Appendix IV.

CFR 270.11(d)
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Decontamination and closure of Container Storage Area 31-W Permit Unit 001 has been completed in accordance with the approved closure plan. Conditional requirements in accordance with the 15 April 1999 TNRCC letter, pertinent requirements as stated in 30 TAC Chapter 335, and the requirements of Longhorn AAP Part B Hazardous Waste Permit 50195 have been met.

U.S. Army Representative:_____ Date:_____

_____

Licensed Professional Engineer: Wayne Thomas Date: 11/8/99

WAYNE THOMAS

2.3 Description of Container Storage Area 31-W

Container storage area 31-W is described in the Longhorn AAP RCRA permit 50195 as permit unit number 001. The storage area is designated as waste management unit number 008 in the Longhorn AAP Notice of Registration.

2.4 Narrative of Closure Events

July 13, 1998: Initial notification to TNRCC of closure activities

July 29-30, 1998: Materials (not waste) stored in the building were moved to the old warehouse 31-W or were moved from bay to bay as cleaning of the bays proceeded. A high-pressure water sprayer was used to both wash and rinse the floor. The wash was a mixture of Alconox and water and the rinse was clean water. The wash and rinse water were vacuumed up and stored in 55-gallon drums. Liquid samples of the wash and rinse water were taken. Thirteen soil samples were taken from around container storage area 31-W. The thirteenth soil sample was taken and split as a quality control sample. All drums containing the wash and rinse water from building 31-W were stored in cell C of 31-W until final disposal offsite.

December 3, 1998: Container Storage Area 31-W was decontaminated. Soil samples were collected again from the same locations as previously collected.

February 9, 1999: Initial closure report with Addendum One submitted to TNRCC.

March 31, 1999: Notice of deficiency letter for 31-W Closure Report received by Army from TNRCC.

May 18, 1999: Two bays were randomly selected from 31-W to be washed with rinsewater. The rinsewater was sampled and analyzed for volatiles and semi-volatiles. Five soil verification samples were collected and analyzed to confirm the presence or absence of volatiles.

June 8, 1999: Soil excavated from location 31-W-10.

July 21, 1999: Excavated soil shipped to landfill.

3.0 SPILL EVENTS

Due to the large volume of containers received and processed through the 31-W storage area, spill events were common within the containment areas. Drums that began leaking were routinely overpacked or the contents were transferred into other containers. Releases of the contents of any drum onto the floor were promptly cleaned-up when they occurred.

4.0 DATA QUALITY

The following procedures were followed in order to ensure that data from sampling is of acceptable quality. All procedures were in accordance with the most recent approved EPA SW-846 Test Methods for Evaluating Solid Waste.

Tables are included with each section below that compares laboratory QA/QC data to EPA SW-846 methods to determine acceptability of the data. The information for the analysis of organics and inorganic analytes is included in the tables.

Tables were not prepared for the analysis of metals, method 6020. Upon review of the laboratory data though, it is apparent that the correct protocol of method 6020 was followed. Laboratory standards were prepared and analyzed. Intensities of the standards were monitored for every analysis. When the intensity of the internal standard in the initial calibration standard failed to fall between 30 and 120% in the initial calibration method, the corrective procedure depicted in SW-846 was followed. Laboratory Control Samples (LCS) were analyzed for each analyte. When the initial calibration solution and the instrument check standard were not within 10% of the expected value, the problem was corrected and the instrument was recalibrated. Method blanks and spiked

samples were prepared and analyzed in accordance with SW-846 as part of the quality control procedure.

4.1 Quality Assurance Samples

Rinsewater sample VS-31W-Bay B was split into a QC/duplicate sample. The duplicate sample number was analyzed for volatiles and semi-volatiles.

The last of the five soil samples collected was also split for a QC sample. The field sample, VS-31W-12 was split into two parts. Samples collected for VOCs were not homogenized but were obtained by alternately filling the sample containers until all containers required were full. The field samples and the duplicate were submitted to Analab Corporation for analysis.

4.2 Matrix Spike/Matrix Spike Duplicate Samples.

Matrix spikes and matrix spike duplicates (MS/MSD) were collected for approximately 5% of the samples taken. MS/MSD's are samples of the environmental media that are spiked in the laboratory with a known concentration of a target analyte(s) to verify percent recoveries. They are primarily used to check sample matrix interference's and the precision of a given sample matrix. A MS/MSD is analyzed with every batch of samples; however, it is selected randomly by the laboratory and may not be from the same group of samples as those submitted for a particular project. The results for MS/MSD's are included in pages twenty-two through thirty-one of the lab report provided in Appendix I.

Sample: Lab ID 408831 VS-31W-Rinsewater Bay A Date: 06/01/1999 Method 8270C				
COMPOUND	**LABORATORY ANALYSIS RESULTS % First**	**LABORATORY ANALYSIS RESULTS % Second**	**ACCEPTABLE RANGE (EPA METHOD 8270C)**	**EVALUATION**
Acenaphthene	97.6	72.2	60.1-132.3	Accept
4-Chloro-3-methylphenol	81.3	60.7	40.8-127.9	Accept
2-Chlorophenol	76.0	52.4	36.2-120.4	Accept
1,4-Dichlorobenzene	88.6	93.2	37.3-105.7	Accept
2,4-Dinitrotoluene	96.0	72.6	47.5-126.9	Accept
4-Nitrophenol	30.9	27.2	13.0-106.5	Accept
N-Nitrosodi-n-propylamine	104	73.1	13.6-197.9	Accept
Pentachlorophenol	82.7	61.1	38.1-151.8	Accept
Phenol	32.3	21.0	16.6-100.0	Accept
Pyrene	97.0	69.6	69.6-100.0	Accept
1,2,4,-Trichlorobenzene	88.4	63.0	57.3-129.2	Accept

Sample: Lab ID 408832 VS-31W Rinsewater Bay B Date: 05/20/1999 Method 8260B				
COMPOUND	**LABORATORY ANALYSIS RESULTS % First**	**LABORATORY ANALYSIS RESULTS % Second**	**ACCEPTABLE RANGE (EPA METHOD 8260B)**	**EVALUATION**
Benzene	97.4	98.4	70-130%	Accept
Chlorobenzene	104	104	70-130%	Accept
1,1-Dichloroethylene	96.0	96.2	70-130%	Accept
Toluene	98.6	99.2	70-130%	Accept
Trichloroethylene	97.4	97.8	70-130%	Accept

Sample: Lab ID 409156 Date: 05/24/1999 Method 8260B				
COMPOUND	LABORATORY ANALYSIS RESULTS % First	LABORATORY ANALYSIS RESULTS % Second	ACCEPTABLE RANGE (EPA METHOD 8260B)	EVALUATION
Benzene	98.8	99.8	70-130%	Accept
Chlorobenzene	101	105	70-130%	Accept
1,1-Dichloroethylene	88.8	88.8	70-130%	Accept
Toluene	96.2	99.0	70-130%	Accept
Trichloroethylene	96.0	98.0	70-130%	Accept

Sample: Lab ID 408837 VS-31W-6 Soil Sample Date: 05/21/1999 Method 8260B				
COMPOUND	LABORATORY ANALYSIS RESULTS % First	LABORATORY ANALYSIS RESULTS % Second	ACCEPTABLE RANGE (EPA METHOD 8260B)	EVALUATION
Benzene	97.6	94.0	70-130%	Accept
Chlorobenzene	94.0	90.6	70-130%	Accept
1,1-Dichloroethylene	92.2	87.8	70-130%	Accept
Toluene	91.4	88.6	70-130%	Accept
Trichloroethylene	93.2	91.4	70-130%	Accept

Sample: Lab ID 408852 VS-811-1-1-SS Date: 05/21/1999 Method 8260B				
COMPOUND	LABORATORY ANALYSIS RESULTS % First	LABORATORY ANALYSIS RESULTS % Second	ACCEPTABLE RANGE (EPA METHOD 8260B)	EVALUATION
Benzene	99.2	85.4	70-130%	Accept
Chlorobenzene	97.6	79.0	70-130%	Accept
1,1-Dichloroethylene	101	94.4	70-130%	Accept
Toluene	95.0	83.0	70-130%	Accept
Trichloroethylene	97.0	87.2	70-130%	Accept

4.3 Surrogate/Spike Samples.

Surrogate recoveries are all within acceptable limits. Percent recoveries are carried out to the second significant digit. None of the recoveries are close enough to an unacceptable range that would allow the second significant digit to effect the acceptance of the data. The table below compares laboratory surrogate recoveries to the EPA method used for analysis of the samples.

Sample: Lab ID 408829 VS-31W-Bay B/CSA Closure Rinsewater Bay B Date: 06/01/1999 Method 8270C			
COMPOUND	LABORATORY ANALYSIS RESULTS % Recovery	ACCEPTABLE RANGE (EPA METHOD 8270C TABLE 8)	EVALUATION
2,4,6-Tribromophenol	92.9	10-123	Accept
2-Fluorophenol-SURR	49.6	43-116	Accept
Phenol-d6-SURR	32.2	10-94	Accept
Nitrobenzene-d5-SURR	42.9	35-114	Accept
2-Fluorobiphenyl-SURR	44.9	21-100	Accept
4-Terphenyl-d14-SURR	45.2	33-141	Accept

Sample: Lab ID 408830 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B Date: 06/01/1999
Method 8270C

COMPOUND	LABORATORY ANALYSIS RESULTS % Recovery	ACCEPTABLE RANGE (EPA METHOD 8270C TABLE 8)	EVALUATION
2,4,6-Tribromophenol	88.2	10-123	Accept
2-Fluorophenol-SURR	46.9	43-116	Accept
Phenol-d6-SURR	29.7	10-94	Accept
Nitrobenzene-d5-SURR	39.6	35-114	Accept
2-Fluorobiphenyl-SURR	41.3	21-100	Accept
4-Terphenyl-d14-SURR	42.3	33-141	Accept

Sample: Lab ID 408831 VS-31W-Bay A/CSA Closure Rinsewater Bay A Date: 06/01/1999
Method 8270C

COMPOUND	LABORATORY ANALYSIS RESULTS % Recovery	ACCEPTABLE RANGE (EPA METHOD 8270C TABLE 8)	EVALUATION
2,4,6-Tribromophenol	69.7	10-123	Accept
2-Fluorophenol-SURR	34.9	43-116	Accept
Phenol-d6-SURR	21.3	10-94	Accept
Nitrobenzene-d5-SURR	29.8	35-114	Accept
2-Fluorobiphenyl-SURR	32.6	21-100	Accept
4-Terphenyl-d14-SURR	31.8	33-141	Accept

Sample: Lab ID 408832 VS-31W-Bay B/CSA Closure Rinsewater Bay B Date: 05/20/1999
Method 8260B

COMPOUND	LABORATORY ANALYSIS RESULTS % Recovery	ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)	EVALUATION
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	100	74-121	Accept

Sample: Lab ID 408833 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B Date: 05/20/1999
Method 8260B

COMPOUND	LABORATORY ANALYSIS RESULTS % Recovery	ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)	EVALUATION
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	110	74-121	Accept

Sample: Lab ID 408834 VS-31W-Bay A/CSA Closure Rinsewater Bay A Date: 05/24/1999
Method 8260B

COMPOUND	LABORATORY ANALYSIS RESULTS % Recovery	ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)	EVALUATION
Dibromofluoromethane	110	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	100	74-121	Accept

Sample: Lab ID 408835 VS-31W-Bay Trip Blank Date: 05/20/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Recovery**	**ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)**	**EVALUATION**
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	100	74-121	Accept

Sample: Lab ID 408836 VS-31W-4/CSA Closure-CES Soil Sample 31W Date: 05/21/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Recovery**	**ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)**	**EVALUATION**
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	100	74-121	Accept

Sample: Lab ID 408837 VS-31W-6/CSA Closure-CES16 Soil sample 31W Date: 05/21/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Recovery**	**ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)**	**EVALUATION**
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	110	74-121	Accept

Sample: Lab ID 408838 VS-31W-8/CSA Closure-CES16 Soil Sample 31W Date: 05/21/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Recovery**	**ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)**	**EVALUATION**
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	110	74-121	Accept

Sample: Lab ID 408839 VS-31W-10/CSA Closure-CES16 Soil Sample 31W Date: 05/21/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Recovery**	**ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)**	**EVALUATION**
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	110	74-121	Accept

Sample: Lab ID 408840 VS-31W-12/CSA Closure-CES16 Soil Sample 31W Date: 05/21/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Recovery**	**ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)**	**EVALUATION**
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	110	74-121	Accept

Sample: Lab ID 408841 VS-31W-12/CSA Closure-CES16 Soil Sample 31W Date: 05/21/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Recovery**	**ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)**	**EVALUATION**
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	110	74-121	Accept

Sample: Lab ID 408860 FDC-1 Fill Dirt Certification Date: 05/21/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Recovery**	**ACCEPTABLE RANGE (EPA METHOD 8260B TABLE 6)**	**EVALUATION**
Dibromofluoromethane	100	80-120	Accept
Toluene-d8	100	81-117	Accept
Bromofluorobenzene-SURR	100	74-121	Accept

4.4 Instrument Calibration Check

In accordance with EPA Methods 8260B and 8270C, the percent relative standard deviation should be less than 30% for each calibration check compound. If a %RSD is greater than 30%, then corrective action is required.
The table below illustrates the laboratory results from instrument calibration checks.

Date: 06/01/1999 Method 8270C			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Deviation**	**EPA ACCEPTABLE RELATIVE STANDARD DEVIATION (RSD)**	**EVALUATION**
Acenaphthene	-4.3	30	Accept
Benzo(a)pyrene	-3.6	30	Accept
4-Chloro-3-methylphenol	-5.4	30	Accept
1,4-Dichlorobenzene	-4.6	30	Accept
2,4-Dichlorophenol	-2.7	Not listed	Accept
Di-n-octylphthalate	-0.3	30	Accept
Fluoranthene	-11.8	30	Accept
Hexachlorobutadiene	-4.3	30	Accept
2-Nitrophenol	1.1	30	Accept
N-Nitrosodiphenylamine (as DPA)	-1.4	Not listed	Accept
Pentachlorophenol	-10.5	30	Accept
Phenol	-3.6	30	Accept
2,4,6-Trichlorophenol	-0.3	30	Accept

Date: 05/20/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Deviation**	**EPA ACCEPTABLE RELATIVE STANDARD DEVIATION (RSD)**	**EVALUATION**
Chloroform	2.8	30	Accept
1,1-Dichloroethylene	5.3	30	Accept
1,2-Dichloropropane	4.5	30	Accept
Ethyl Benzene	0.8	30	Accept
Toluene	6.8	30	Accept
Vinyl Chloride	-0.8	30	Accept

Date: 05/24/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Deviation**	**EPA ACCEPTABLE RELATIVE STANDARD DEVIATION (RSD)**	**EVALUATION**
Chloroform	3.9	30	Accept
1,1-Dichloroethylene	12.4	30	Accept
1,2-Dichloropropane	-2.8	30	Accept
Ethyl Benzene	-3.1	30	Accept
Toluene	2.6	30	Accept
Vinyl Chloride	16.9	30	Accept

Date: 05/21/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Deviation**	**EPA ACCEPTABLE RELATIVE STANDARD DEVIATION (RSD)**	**EVALUATION**
Chloroform	13.9	30	Accept
1,1-Dichloroethylene	16.0	30	Accept
1,2-Dichloropropane	15.3	30	Accept
Ethyl Benzene	18.6	30	Accept
Toluene	18.4	30	Accept
Vinyl Chloride	11.2	30	Accept

Date: 05/20/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS % Deviation**	**EPA ACCEPTABLE RELATIVE STANDARD DEVIATION (RSD)**	**EVALUATION**
Chloroform	2.8	30	Accept
1,1-Dichloroethylene	5.3	30	Accept
1,2-Dichloropropane	4.5	30	Accept
Ethyl Benzene	0.8	30	Accept
Toluene	6.8	30	Accept
Vinyl Chloride	-0.8	30	Accept

4.5 Instrument Tune

The system hardware was tuned to meet or exceed the standards of EPA Method 8270C, Table 3. Lab data was evaluated by comparing to EPA Method 8270C, Table 3. One ion, mass 441 was different than Table 3. According to the laboratory, the tuning met or exceeded the EPA criteria. Any difference may have been due to the manufacturer's instructions, etc. EPA is aware that tuning criteria for specific equipment may be different than their recommendations and has noted such in SW-846.

Date: 06/01/1999 Method 8270C			
COMPOUND	**LABORATORY ANALYSIS RESULTS Result**	**EPA ACCEPTABLE RANGE**	**EVALUATION**
DFTPP Mass 51	41.2	30-60	Accept
DFTPP Mass 68	0.2	<2	Accept
DFTPP Mass 69	51.3	Not listed	Accept
DFTPP Mass 70	1.0	<2	Accept
DFTPP Mass 127	52.0	40-60	Accept
DFTPP Mass 197	0.0	<1	Accept
DFTPP Mass 198	100.0	100	Accept
DFTPP Mass 199	6.6	5-9	Accept
DFTPP Mass 275	17.7	10-30	Accept
DFTPP Mass 365	1.5	>1	Accept
DFTPP Mass 441	75.3	< Mass 443	Accept
DFTPP Mass 442	41.9	>40	Accept
DFTPP Mass 443	19.3	17-23	Accept

Date: 05/24/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS Result**	**EPA ACCEPTABLE RANGE**	**EVALUATION**
BFB Mass 50	20.5	15-40	Accept
BFB Mass 75	48.4	30-60	Accept
BFB Mass 95	100.0	100	Accept
BFB Mass 96	6.4	5-9	Accept
BFB Mass 173	0.0	<2	Accept
BFB Mass 174	68.7	>50	Accept
BFB Mass 175	8.6	5-9	Accept
BFB Mass 176	98.1	>95 & <101	Accept
BFB Mass 177	6.6	5-9	Accept

Date: 05/21/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS Result**	**EPA ACCEPTABLE RANGE**	**EVALUATION**
BFB Mass 50	20.4	15-40	Accept
BFB Mass 75	48.2	30-60	Accept
BFB Mass 95	100.0	100	Accept
BFB Mass 96	6.3	5-9	Accept
BFB Mass 173	0.0	<2	Accept
BFB Mass 174	70.2	>50	Accept
BFB Mass 175	8.3	5-9	Accept
BFB Mass 176	97.4	>95 & <101	Accept
BFB Mass 177	6.3	5-9	Accept

Date: 05/20/1999 Method 8260B			
COMPOUND	**LABORATORY ANALYSIS RESULTS Result**	**EPA ACCEPTABLE RANGE**	**EVALUATION**
BFB Mass 50	20.3	15-40	Accept
BFB Mass 75	47.9	30-60	Accept
BFB Mass 95	100.0	100	Accept
BFB Mass 96	6.8	5-9	Accept
BFB Mass 173	0.0	<2	Accept
BFB Mass 174	69.6	>50	Accept
BFB Mass 175	8.5	5-9	Accept
BFB Mass 176	96.8	>95 & <101	Accept
BFB Mass 177	6.6	5-9	Accept

4.6 System Performance Check Compounds

In accordance with EPA Method 8260B, the laboratory must make a system performance check each 12 hours. The check was performed accurately by the laboratory. The table below lists the EPA criteria and the laboratory results. As indicated, all tests are within EPA standards.

Date: 06/01/1999 Method 8270C			
COMPOUND	**LABORATORY ANALYSIS RESULTS Response Factor**	**EPA ACCEPTABLE RANGE (Minimum Response Factor)**	**EVALUATION**
2,4-Dinitrophenol	0.167	0.05	Accept
Hexachlorocyclopentadiene	0.227	0.05	Accept
4-Nitrophenol	0.218	0.05	Accept
N-Nitrosodi-n-propylamine	0.714	0.05	Accept

Date: 05/24/1999 Method 8260B			
COMPOUND	LABORATORY ANALYSIS RESULTS Response Factor	EPA ACCEPTABLE RANGE (Minimum Response Factor)	EVALUATION
Chloromethane	0.550	.1000	Accept
1,1-Dichloroethane	0.991	.1000	Accept
Bromoform	0.240	.1010	Accept
Chlorobenzene	1.094	.3000	Accept
1,1,2,2-Tetrachloroethane	1.524	.3000	Accept

Date: 05/21/1999 Method 8260B			
COMPOUND	LABORATORY ANALYSIS RESULTS Response Factor	EPA ACCEPTABLE RANGE (Minimum Response Factor)	EVALUATION
Chloromethane	0.636	.1000	Accept
1,1-Dichloroethane	1.031	.1000	Accept
Bromoform	0.207	.1010	Accept
Chlorobenzene	1.127	.3000	Accept
1,1,2,2-Tetrachloroethane	1.317	.3000	Accept

Date: 05/20/1999 EPA Method 8260B			
COMPOUND	LABORATORY ANALYSIS RESULTS Response Factor	EPA ACCEPTABLE RANGE (Minimum Response Factor)	EVALUATION
Chloromethane	0.634	.1000	Accept
1,1-Dichloroethane	1.001	.1000	Accept
Bromoform	0.225	.1010	Accept
Chlorobenzene	1.065	.3000	Accept
1,1,2,2-Tetrachloroethane	1.491	.3000	Accept

4.7 Trip Blank Results

One trip blank was collected from distilled water and placed into the ice chest with the samples for shipment to the laboratory. No volatiles were detected in the trip blank sample.

4.8 Discussion of Quality Assurance Sample Results

Instruments were tuned and calibrated for acceptable performance. All surrogate/spike analyses for the various verification samples were within acceptable ranges. No contaminants were detected in the method blank results.

There has been no cross-contamination of the rinsewater or soil verification samples due to field or laboratory cross-contamination.

5.0 RINSEWATER VERIFICATION SAMPLE COLLECTION FROM CONTAINER STORAGE AREA 31-W

Rinsewater samples were collected as prescribed in the addendum to the closure plan. Two samples were collected from random bays on the slab at storage area 31-W.

The rinsewater sampling procedure was as follows.

1. Two each curbed bays were selected.
2. The professional engineer randomly selected each area.
3. The containment area was scrubbed with distilled water.
4. The water was collected and analyzed for volatiles and semi-volatiles.

The professional engineer selected the two areas. The areas were Bay A and Bay B. Each bay exhibited some etching of the concrete, whereas other bays in the building did not exhibit the degree of etching as Bays A and B. Each bay is constructed as a sloped containment basin and water collected at the bottom of the basin. The water on the concrete slab was scrubbed with a Tampico bristle scrub brush to assist in removing any contaminants from the floor. The water was allowed to sit on the concrete slab approximately fifteen minutes. After the fifteen minutes the water was collected for analysis.

Samples to be analyzed for volatiles were collected first. The samples were collected using a syringe as indicated in the picture below and to the right. Water was collected for semi-volatile analysis next. The semi-volatile samples required three one-liter containers. Because of the larger containers, the samples were collected using one-gallon water jugs that were cut open to form a scoop. Other methods to obtain the water from the floor were ineffective. The jug used as a scoop was one of the jugs that the water came in for use on the floor as rinsewater. The jugs were disposed of after use. The water collected from the floor was immediately poured into sample containers. The containers were sealed, placed into Ziploc bags, and placed into an ice chest.

Location of rinsewater sample in containment bay

Tampico brush and device used to sample for volatiles

5.1 Discussion of Rinsewater Verification Analysis Results

Rinsewater from the decontamination procedure was collected and analyzed for all constituents of concern to verify decontamination of storage area 31-W. Potable water was sampled and analyzed for the same constituents as the decontamination water. Rinsewater analysis was then compared with the LHAAP groundwater background and MCL's to accurately assess if the building was completely decontaminated. This action was performed in accordance with Provision IV.B.4 of the Longhorn RCRA permit 50195 and the supplemental closure plan.

Table 5-1 lists the rinsewater sample analysis results. Only the detected constituents are listed in the table. Chemical constituents analyzed for and below the method detection limit are not listed in the table. There were no volatiles detected in the rinsewater samples.

TABLE 5-1
RINSEWATER ANALYSIS RESULTS

Parameter	LHAAP Potable Water Background Sampled: 06/14/99	RinseWater Analysis Results BAY A Sampled: 05/18/99	RinseWater Analysis Results BAY B Sampled: 05/18/99	RinseWater Analysis Results BAY B Duplicate Sampled: 05/18/99	TripBlank Analysis Results Sampled: 05/18/99
Volatiles (Ug/L) Method 8260B					
None Detected	ND	ND	ND	ND	ND
Semi-Volatiles (Ug/L) Method 8270C					
Bis(2-ethylhexyl)phthalate	ND	ND	105	103	NA
Diethyl phthalate	4900	ND	ND	ND	ND
Phenol	48.7	ND	ND	ND	ND

ND: Not Detected
NR: Not Regulated

6.0 INVESTIGATION OF SOILS

Five soil samples and a duplicate were collected from the perimeter of the permitted storage area on May 18, 1999, as verification samples to confirm the presence or absence of volatile organic compounds. Soil samples were collected from areas where soil samples collected during prior sampling events had indicated some contamination from volatiles. The samples were collected from the sites 31-W-4, 31-W-6, 31-W-8, 31-W-10, and 31-W-12. None of the soil had any detectable concentrations of any volatile, which confirms the assumption that previous soils collected during the December sampling event were cross-contaminated during sampling, either in the field or at the laboratory.

Each soil sample was collected in accordance with SW-846. Quality of the samples and analysis was ensured by the collection of a quality assurance/quality control (QA/QC) sample. Sample twelve was collected and split in duplicate as a QA/QC sample.

Soil samples were collected using a stainless steel auger. Soil was collected from the auger and placed immediately into the sample containers. The auger was decontaminated between collection of each sample with an Alconox & water solution and then rinsed thoroughly to prevent cross-contamination. Sample containers were sealed and placed into an ice chest on ice for shipment to the laboratory. The ice chest was also sealed closed with tape. The samples were collected on May 18, 1999. The laboratory picked up the samples from the LHAAP front gate the next day. Samples were shipped utilizing a chain-of-custody. No compositing of the soil samples was performed.

6.1 Soil Sample Locations

Five soil samples were collected from the perimeter of the permitted storage area. Each soil sample was collected at the locations where the soil samples were collected during the first sampling and second sampling events in July and December 1998. Soil samples were numbered

the same. The drawing entitled "Verification Sample Locations" shows the location where the soil samples were collected.

Below is a description of each of the soil samples collected on May 18, 1999.

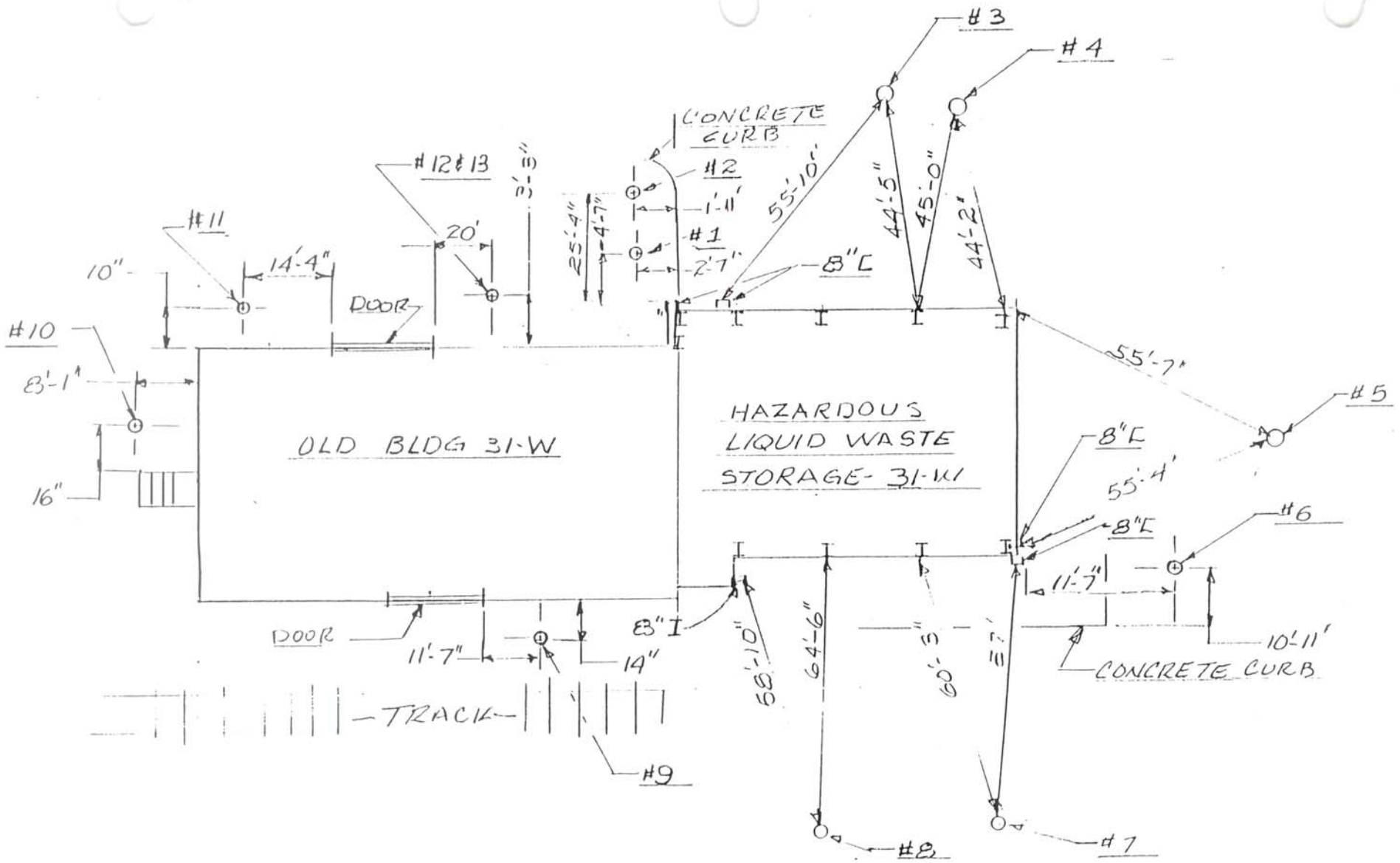
Sample No.	Sample Depth	Description of Soil
VS-31-W-4	0-6"	Wet red clay
VS-31-W-6	0-6"	Wet sandy soil
VS-31-W-8	0-6"	Wet sandy brown soil
VS-31-W-10	0-6"	Wet red clay mottled with gray clay
VS-31-W-12 & Duplicate	0-6"	Dry tan clay

6.2 Discussion of Volatiles Analysis Results

No volatile organic compounds were detected in any of the verification samples.

TABLE 6.2-1
SOIL ANALYSIS RESULTS FOR VOLATILES
THIRD SAMPLING EVENT

Parameter (Volatiles) EPA Test Method 8260B	Detection Limit	Units	Sample ID 31-W-4 Sampled: 05/18/99	Sample ID 31-W-6 Sampled: 05/18/99	Sample ID 31-W-8 Sampled: 05/18/99	Sample ID 31-W-10 Sampled: 05/18/99	Sample ID 31-W-12 Sampled: 05/18/99
All Volatiles	0.01	MG/KG	ND	ND	ND	ND	ND



BLDG-31-W SOIL SAMPLES
30 JULY 1998

FIGURE 6-1

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6.3 Discussion of Metals Content in Soil

The following is a table of the total metals concentrations detected in the soil at container storage area 31-W during the July 30, 1998 sampling event. Strictly speaking, levels of barium, cadmium, chromium, and lead were above plant background concentrations.

TABLE 6.3-1
SOIL ANALYSIS RESULTS FOR METALS

Parameter (Metals)	EPA Test Method	Detection Limit	Units	LHAAP Soil Background	Sample ID 31-W-1 Sampled: 07/30/98	Sample ID 31-W-2 Sampled: 07/30/98	Sample ID 31-W-3 Sampled: 07/30/98	Sample ID 31-W-4 Sampled: 07/30/98	Sample ID 31-W-5 Sampled: 07/30/98
Arsenic	3050/6010B	2.5	MG/KG	7.0	<2.5	<2.5	3.15	<2.5	<2.5
Barium	3050/6010B	2.5	MG/KG	161.8	58.1	55.7	79.7	62.7	26
Cadmium	3050/6010B	.5	MG/KG	1.25	1.05	1.4	1.95	2.16	<.50
Chromium	3050/6010B	.5	MG/KG	16.7	9.66	9.67	11.4	15	5.14
Lead	3050/6010B	.1.5	MG/KG	14.6	7.96	10.7	10.5	12.7	5.52
Mercury	7471	.1	MG/KG	0.25	<.1	<.1	<.1	<.1	<.1
Selenium	3050/6010B	4.0	MG/KG	0.5	<4.0	<4.0	<4.0	<4.0	<4.0
Silver	3050/6010B	.5	MG/KG	1.3	<.50	<.50	<.50	<.50	<.50

Parameter (Metals)	EPA Test Method	Detection Limit	Units	LHAAP Soil Background	Sample ID 31-W-6 Sampled: 07/30/98	Sample ID 31-W-7 Sampled: 07/30/98	Sample ID 31-W-8 Sampled: 07/30/98	Sample ID 31-W-9 Sampled: 07/30/98
Arsenic	3050/6010B	2.5	MG/KG	7.0	<2.5	5.28	3.8	<2.5
Barium	3050/6010B	2.5	MG/KG	161.8	51.8	70.8	88.4	44
Cadmium	3050/6010B	.5	MG/KG	1.25	<.50	2.38	1.14	<.50
Chromium	3050/6010B	.5	MG/KG	16.7	8.47	16.9	14.8	7.25
Lead	3050/6010B	.1.5	MG/KG	14.6	6.24	12.3	11.7	16.4
Mercury	7471	.1	MG/KG	0.25	<.1	<.1	<.1	<.1
Selenium	3050/6010B	4.0	MG/KG	0.5	<4.0	<4.0	<4.0	<4.0
Silver	3050/6010B	.5	MG/KG	1.3	<.50	<.50	<.50	<.50

Parameter (Metals)	EPA Test Method	Detection Limit	Units	LHAAP Soil Background	Sample ID 31-W-10 Sampled: 07/30/98	Sample ID 31-W-11 Sampled: 07/30/98	Sample ID 31-W-12 Sampled: 07/30/98	Sample ID 49-W-13 Duplicate Sampled: 07/30/98
Arsenic	3050/6010B	2.5	MG/KG	7.0	<2.5	<2.5	<2.5	<2.5
Barium	3050/6010B	2.5	MG/KG	161.8	303	167	274	77.3
Cadmium	3050/6010B	.5	MG/KG	1.25	1.34	<.50	<.50	<.50
Chromium	3050/6010B	.5	MG/KG	16.7	8.61	4.31	6.84	7.4
Lead	3050/6010B	.1.5	MG/KG	14.6	450	4.97	7.82	7.56
Mercury	7471	.1	MG/KG	0.25	<.1	<.1	<.1	<.1
Selenium	3050/6010B	4.0	MG/KG	0.5	<4.0	<4.0	<4.0	<4.0
Silver	3050/6010B	.5	MG/KG	1.3	<.50	<.50	<.50	<.50

Each metal detected above the upper confidence limit (UCL)at 31-W will be discussed separately to determine whether the metals are truly contamination or not and if they need to be entered into a deed record.

Lead

Two soil samples 31-W-9 and 31-W-10, collected during the July 1998 sampling event had lead concentrations above the LHAAP soil background upper confidence limit (UCL) for risk assessment evaluations. The UCL was calculated on the mean and standard deviation. Excerpts of the *Final Report, Soil Background Concentration Report, May 1995*, are located in Appendix VI.

Lead concentrations in sample 31-W-10 that far exceeded the analysis results from the other eleven soil samples. Although leachate of lead from this soil sample was far below plant groundwater concentrations, (documented in the first Closure Report/Section 3) it was decided at that time to collect another soil sample to confirm the original sample analysis results.

Soil sample 31-W-10-S, collected December 3, was collected from the same location as 31-W-10, the sample collected in July. Analytical results from the sampling events are as follows:

TABLE 6.3-2
LEAD ANALYSIS RESULTS (Sample Locaton 31-W-10)

Analyte (EPA Test Method 6010B)	**Detection Limit (MG/KG)**	**LHAAP Soil Background (MG/KG)**	**Analysis Results Sample 31-W-10** Sampled: 07/30/98	**Analysis Results Sample 31-W-10-S** Sampled: 12/03/98
Lead	1.5	14.6	450	31.8

Analysis results for the sample collected on 12/03/98 was above the UCL for the LHAAP lead background concentration. It was decided to pursue excavation due to the high concentrations of metals in the first set of samples collected on 07/30/98. Due to the contamination, the soil around sample location 31-W-10 was removed and disposed of at an offsite landfill. The area was excavated to a depth of fifteen inches and to an area eight foot around the sample location.

Approximately nine cubic yards of soil was removed from the site. Soil was removed to the edge of the building foundation and steps. The soil was removed by trackhoe. Soil from site 31-W-10 was loaded directly into the bucket of a Bobcat 553 skid steer loader with the trackhoe. The soil was then loaded into the rolloff box.

After excavation, a soil sample was collected from the excavation area and analyzed for total lead. The metal was below plant background levels in the sample, thus confirming that the contamination was localized and completely removed for disposal.

TABLE 6.3-3
SOIL ANALYSIS VERIFICATION SAMPLE RESULTS(Sample Locaton 31-W-10)

Analyte (EPA Test Method 6020)	**Detection Limit (MG/KG)**	**LHAAP Soil Background (MG/KG)**	**Sample ID 31-W-10** Sampled: 06/14/99
Lead	0.277	14.6	9.53

The site was backfilled with fill dirt from the LHAAP Borrow Area. This soil is a red clay soil. The material was tested for RCRA metal and volatiles. The metals concentrations were within LHAAP background levels and there were no volatiles detected. Information on the fill dirt is located in Section 8.

The other sample which exhibited lead concentrations above the calculate UCL, sample No. 31-W-9, contained a total lead concentration of 16.4 mg/kg as indicated in the following table.

TABLE 6.3-4
LEAD ANALYSIS RESULTS

Analyte (EPA Test Method 6010B)	**Detection Limit (MG/KG)**	**LHAAP Soil Background (UCL) (MG/KG)**	**Analysis Results Sample 31-W-9** Sampled: 07/30/98
Lead	1.5	14.6	16.4

It is believed that the level of 16.4 mg/kg is not contamination from lead but a value typical as part of a range of analysis results. The value of 16.4 mg/kg was the highest value of a set of twelve samples. Listed below are the values of the lead analysis from the July 1998 sampling event.

SAMPLE ID	Lead
31-W-1	7.96
31-W-2	10.70
31-W-3	10.50
31-W-4	12.70
31-W-5	5.52
31-W-6	6.24
31-W-7	12.30
31-W-8	11.70
31-W-9	16.40
31-W-10	9.53
31-W-11	4.97
31-W-12	7.82
31-W-13	7.56
Mean:	8.94
Standard Deviation:	2.55

In accordance with Table 4-1 of the LHAAP Soil Background Report located in Appendix III, the range of detections for lead were from 2.6 to 17.4 mg/kg, with the outliers omitted. Although none of the above samples were as low as the low range of 2.6 mg/kg value in the background concentration report, the mean of 8.94 at container storage area 31-W is well below the LHAAP background concentration of 14.6 mg/kg.

The concentration of 16.4 mg/kg fits perfectly well into a range of values of soil samples. The upper tolerance limit (UTL) for lead, as indicated in Table 5-1 of the LHAAP background report located in Appendix VI, indicates a value of 52 mg/kg expected to be a part of a sample population. The upper tolerance limit (UTL) describes the range of values that is expected to contain a certain percentage of the population with a certain degree of confidence. For background values presented in the LHAAP Soil Background Report, the 95% UTL with 95% coverage was calculated.

Barium

Three soil samples 31-W-10, 31-W-11, and 31-W-12, collected during the July 1998 sampling event had barium concentrations above the LHAAP soil background upper confidence limit (UCL) for risk assessment evaluations. The UCL was calculated on the mean and standard deviation. Excerpts of the *Final Report, Soil Background Concentration Report, May 1995*, are located in Appendix VI.

To determine if there is actually contamination from barium at 31-W, barium has been reviewed in accordance with 30 TAC 335.553(d)(2) to determine if clean-up requirements are necessary. Chapter 335.553 references the preferred method for a statistical comparison of the results of the soil analysis utilizing the 95% confidence limit of the mean concentration to determine the required clean-up level.

In brief the formula reads: Clean-up Level $\geq$ X + ts/sqrt (n),

Where X = the mean concentration
s = the standard deviation = $[\Sigma(y\text{-}y)^2/(n\text{-}1)]^{1/2}$
t = a value from Table 2(in 30 TAC 335.553) based on 13 samples = 1.771
sqrt (n) = the square root of the sample size = 3.6

The calculation reveals a clean-up level of 121.0 mg/kg. This is below the 30 TAC 335.568 medium specific concentration of 200 mg/kg in soil that is assumed protective of human health concerning cross media contamination of groundwater and air.

Barium levels at 31-W are clearly in compliance with 30 TAC 335.555, attainment of Risk Reduction Standard Number 2/Attainment of Closure/Remediation to Health Based Standards and Criteria for residential use.

Calculated Clean-up Levels	
SAMPLE ID	**Barium**
31-W-1	58.10
31-W-2	55.70
31-W-3	79.70
31-W-4	62.70
31-W-5	26.00
31-W-6	51.80
31-W-7	70.80
31-W-8	88.40
31-W-9	44.00
31-W-10	303
31-W-11	167.00
31-W-12	274.00
31-W-13	77.30
Mean:	88.88
Standard Deviation:	65.27
Cleanup Level:	121.0

Cadmium

Total cadmium levels detected in five soil samples (Sample 31-W-2, 3, 4, 7, & 10) exceeded the plant background average of 1.25 mg/kg.

To determine if there is actually contamination from cadmium at 31-W, cadmium has been reviewed in accordance with 30 TAC 335.553(d)(2) to determine if clean-up requirements are necessary. Chapter 335.553 references the preferred method for a statistical comparison of the results of the soil analysis utilizing the 95% confidence limit of the mean concentration to determine the required clean-up level.

In brief the formula reads: Clean-up Level $\geq$ X + ts/sqrt (n),

Where X = the mean concentration
s = the standard deviation = $[\Sigma(y-y)^2/(n-1)]^{1/2}$
t = a value from Table 2(in 30 TAC 335.553) based on 13 samples = 1.771
sqrt (n) = the square root of the sample size = 3.6

The calculation reveals a clean-up level of 1.5 mg/kg. This is above the cadmium background level of 1.25 mg/kg established at the Longhorn Army Ammunition Plant as well as TNRCC risk based concentration criteria for health-based closure. This calculated clean-up level for cadmium is more than the installation background level, so cadmium should be considered a contaminant.

The five soil samples containing cadmium levels above the plant background average were subjected to EPA Method 1312 analysis. As indicated in the following table, leachate of cadmium

from the soil is less than the average LHAAP groundwater background of.018 mg/L as well as drinking water MCL's. LHAAP groundwater background values are located in Appendix VI.

Sample ID	LHAAP Groundwater Background for Cadmium	Method 1312 –Synthetic Precipitation Leaching Procedure
Sample 31-W-2	0.018 mg/L	<0.005 mg/L
Sample 31-W-3	0.018 mg/L	<0.005 mg/L
Sample 31-W-4	0.018 mg/L	<0.005 mg/L
Sample 31-W-7	0.018 mg/L	<0.005 mg/L
Sample 31-W-10	0.018 mg/L	<0.005 mg/L

Cadmium was compared to the examples of medium-specific concentrations (MSC), standards and criteria for health-based closure/remediation based on Title 30 Chapter 335 Subchapter S Part 568 Appendix II. The health based standards are included with this report as Appendix IV. This information was downloaded from the TNRCC web site on December 8, 1998. The Summary of Updates to the Tables Accompanying the Interoffice Memorandum Entitled Implementation of the Existing Risk Reduction rule, Original tables current as of July 1, 1998, was also referenced to determine the most recent update to the RRS 2 Table. This update is also included in Appendix IV. In accordance with the above standards for RRS 2 to residential standards, it is believed that cadmium in the soils at 31-W will not present a risk to human health.

Chromium

The maximum chromium level detected in any soil sample (Sample 31-W-7) was 16.9 mg/kg as compared to the plant background average of 16.7 mg/kg. This was the only soil sample that exceeded the plant background level for chromium as indicated in the following table.

TABLE 6.3-5
CHROMIUM ANALYSIS RESULTS

Analyte (EPA Test Method 6010B)	Detection Limit (MG/KG)	LHAAP Soil Background (UCL) (MG/KG)	Analysis Results Sample 31-W-7 Sampled: 07/30/98
Chromium	1.5	16.7	16.9

It is believed that the level of 16.9 mg/kg is not contamination from chromium but a value typical as part of a range of analysis results. The value of 16.9 mg/kg was the highest value of a set of twelve samples and only exceeds the LHAAP background value by 0.2 mg/kg. Listed below are the values of the chromium analysis from the July 1998 sampling event.

SAMPLE ID	Chromium
31-W-1	9.66
31-W-2	9.67
31-W-3	11.40
31-W-4	15.00
31-W-5	5.14
31-W-6	8.47
31-W-7	16.90
31-W-8	14.80
31-W-9	7.25
31-W-10	8.61
31-W-11	4.31
31-W-12	6.84
31-W-13	7.40
Mean:	9.65
Standard Deviation:	3.88

In accordance with Table 4-1 of the LHAAP background report located in Appendix VI, the range of detections for chromium were from 3.2 to 22.8 mg/kg. Although none of the above samples were as low as the low of 3.2 mg/kg value in the background concentration report, the mean of 9.65 at CSA 31-W is well below the LHAAP background concentration of 16.7 mg/kg.

The concentration of 16.7 mg/kg fits perfectly well into the range of values expected from a collection of soil samples. The upper tolerance limit (UTL) for chromium, as indicated in Table 5-1 of the LHAAP background report located in Appendix III, indicates a value of 45 mg/kg expected to be a part of a sample population. The upper tolerance limit (UTL) describes the range of values that is expected to contain a certain percentage of the population with a certain degree of confidence. For background values presented in the LHAAP Soil Background Report, the 95% UTL with 95% coverage was calculated.

6.4 Disposition of Waste Streams

All rinsewater collected from the verification sampling at container storage area 31-W was classified in accordance with 40 CFR part 261 and 30 TAC Subchapter R. The rinsewater met the conditions to be classified as a class II waste. Complete Environmental Service disposed of this water as required in their contract.

Soil from the rolloff box was collected and analyzed for TCLP lead, corrosivity, sulfide, cyanide, and ignitability. The soil was profiled as a class II non-hazardous waste. It was shipped to Olympic Waste Pinehill Landfill in Kilgore, Texas. A Texas One-Time Shipment Code was assigned to the waste stream. Analytical information and a copy of the waste shipment manifest are located in Appendix II.

7.0 QUALIFICATION OF PERMIT UNIT 001 FOR CLOSURE TO RESIDENTIAL RISK REDUCTION STANDARD No. 2

After decontamination, one semi-volatile constituent remains in the concrete at container storage area 31-W, bis(2-ethylhexyl)phthalate. Bis(2-ethylhexyl)phthalate was a common plasticizer used in catalyst C-5 (lead peroxide) that was used to initiate the cure cycle of common resin compounds.

Because of the presence of bis(2-ethylhexyl)phthalate, barium, and cadmium, a deed record has been prepared and made part of this closure report. The deed record has been filed at the Harrison County Courthouse as a permanent record.

Bis(2-ethylhexyl)phthalate has been compared to TNRCC 30 TAC 335.568 Appendix II Ground-Water Protection Standards for Residential Use (GWP-Res) and to the Soil/Air and Ingestion Standards for Residential Use (SAI-Res). Levels of bis(2-ethylhexyl)phthalate in the concrete at container storage area 31-W are well below the risk-based concentration in the RBC Table dated October 1998.

Soils containing cadmium and barium have been left in place at container storage area 31-W. Concentrations left in place have been compared to TNRCC 30 TAC 335.568 Appendix II Ground-Water Protection Standards for Residential Use (GWP-Res) and to the Soil/Air and Ingestion Standards for Residential Use (SAI-Res).

Levels of barium in the soil at container storage area 31-W are well below the risk-based concentration in the RBC Table dated October 1998.

Levels of total cadmium in the soil, although above acceptable concentrations for health-based closure, do not leach detectable concentrations of cadmium at a concentration of 0.005 mg/l, the EPA maximum contaminant limit (MCL) for groundwater. Therefore, cadmium is considered to be acceptable for closure for Ground-Water Protection Standards for Residential Use (GWP-Res) and to the Soil/Air and Ingestion Standards for Residential Use (SAI-Res).

The table below lists the constituents left in place at storage area 31-W.

TABLE 7.0-1
CONTAMINANTS AT CONTAINER STORAGE AREA 31-W

Location	**Contaminant**	**Detection Limit**	**Unit**	**Concentration**
Concrete	bis(2-ethylhexyl)phthalate	10.0	Ug/L	105.0
Soil	Cadmium	.5	Mg/Kg	1.4 to 2.88
Soil	Barium	2.5	Mg/Kg	167 to 303

In accordance with the described rationale, it is believed that Permit Unit 001, container storage area 31-W, meets the requirements for closure. A Deed Certification in accordance with 30 TAC 335.560 has been placed in the county records. A copy of the deed certification is included in Appendix V of this report.

8.0 FILL DIRT CERTIFICATION

A soil sample from the LHAAP Borrow Area was collected and analyzed for 8-RCRA metals and volatiles. Any volatile organic compound was considered to be non-background. Concentrations of metals in the soil were compared to the Longhorn Army Ammunition Plant Final *Soil Background Concentration Report*, prepared by the U.S. Army Corps of Engineers Tulsa District, May 1995. The table of background values is included as an appendix in this report. The complete report is available for review at Longhorn AAP.

Concentrations of total metals in the soil at the borrow area was typical of LHAAP background levels. There were no volatile organic compounds detected.

Table 8.0-1
FILL DIRT ANALYSIS RESULTS
EXPLOSIVE WASTE STORAGE AREA 811-1

Parameter	Detection Limit	Units	LHAAP Background Levels	Analysis Results Sampled: 05/18/99
Metals (Method 6020)				
Arsenic	0.283	MG/KG	7.0	2.25
Lead	0.283	MG/KG	14.6	5.07
Barium	1.41	MG/KG	161.8	61.1
Cadmium	0.283	MG/KG	1.25	ND
Chromium	0.283	MG/KG	16.7	10.2
Selenium	0.283	MG/KG	0.5	ND
Silver	0.283	MG/KG	1.3	ND
Mercury (Method 7040A)	0.00566	MG/KG	0.25	0.0132
Volatiles (Method 8260B)				
None Detected	5.0	ug/kg	None	ND

9.0 CONCLUSIONS AND CERTIFICATION

The semi-volatile bis(2-ethylhexylphthalate) was detected in the rinsewater verification sample from container storage area 31-W. This chemical is considered a waste constituent. This constituent will be included in a deed record as a constituent left in place at container storage area 31-W.

Concentrations of barium and cadmium have been left in place in the soils at 31-W. These metals are considered waste constituents. These constituents will be included in a deed record as constituents left in place at container storage area 31-W.

This supplemental information, together with the information in the Closure Report for 31-W, and the Addendum One to the Closure Report for 31-W, effectively determines that container storage area 31-W has been decontaminated and meets criteria for health-based closure/remediation based on Title 30 Chapter 335 Subchapter S Part 568 Appendix II. The health-based standards are included with this report as Appendix IV.

CFR 270.11(d)
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Decontamination and closure of Container Storage Area 31-W Permit Unit 001 has been completed in accordance with the approved closure plan. Conditional requirements in accordance with the 15 April 1999 TNRCC letter, pertinent requirements as stated in 30 TAC Chapter 335, and the requirements of Longhorn AAP Part B Hazardous Waste Permit 50195 have been met.

U.S. Army Representative:_____ Date:_____

_____

Licensed Professional Engineer: Wayne Thomas Date: 11/OCT/99

WAYNE THOMAS

VERIFICATION SAMPLE RESULTS

- RINSEWATER
- TRIP BLANK
- SOIL SAMPLES (VOLATILES ANALYSIS)

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Report Date: 06/02/199

Project Report: 102062P

Complete Environmental Service
P.O. Box 170
Karnack, TX 75661-
Attention: Bill Corrigan

Results for Project 102062

408829 VS-31W-Bay B/CSA Closure Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0910 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acenaphthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	83-32-9
Acenaphthylene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	208-96-8
Anthracene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	120-12-7
Benzidine	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1640	KLB	92-87-5
Benzo(a)anthracene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	56-55-3
Benzo(a)pyrene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	50-32-8
Benzo(b)fluoranthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	205-99-2
Benzo(ghi)perylene	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1640	KLB	191-24-2
Benzo(k)fluoranthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	207-08-9
4-Bromophenyl phenyl ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	101-55-3
Butyl benzyl phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	85-68-7
2-Chloronaphthalene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	91-58-7
[illegible]ophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	95-57-8
[illegible]rophenyl phenyl ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	7005-72-3
Chrysene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	218-01-9
1,2-DPH (as azobenzene)	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1640	KLB	122-66-7
Dibenz(a,h)anthracene	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1640	KLB	53-70-3
1,3-Dichlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/L	15.0	EPA Method 8270C	06/01/1999 1640	KLB	106-46-7
3,3'-Dichlorobenzidine	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1640	KLB	91-94-1
2,4-Dichlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	120-83-2
Diethyl phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	84-66-2
Dimethyl phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	131-11-3
2,4-Dimethylphenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	105-67-9
2,4-Dinitrophenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1640	KLB	51-28-5
2,4-Dinitrotoluene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	121-14-2
2,6-Dinitrotoluene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	606-20-2
Fluoranthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	206-44-0
Fluorene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	86-73-7
Hexachlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	118-74-1
Hexachlorobutadiene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	87-68-3
Hexachlorocyclopentadiene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	77-47-4
Hexachloroethane	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1640	KLB	67-72-1
Isophorone	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	78-59-1
Naphthalene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	91-20-3
[illegible]nzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	98-95-3
[illegible]phenol	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1640	KLB	88-75-5
4-Nitrophenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1640	KLB	100-08-7

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Project Report: 102062P

Results for Project 102062

408829 VS-31W-Bay B/CSA Closure Rinsewater Bay B,

Liquid Aqueous Taken: 05/18/1999 0910 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
N-Nitrosodimethylamine	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1640	KLB	62-75-9
N-Nitrosodiphenylamine (as DPA)	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1640	KLB	86-30-6
Pentachlorophenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1640	KLB	87-86-5
Phenanthrene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	85-01-8
Phenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	108-95-2
Pyrene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	129-00-0
1,2,4-Trichlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	120-82-1
2,4,6-Trichlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	88-06-2
2,4,5-Trichlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	95-95-4
Di-n-butylphthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	84-74-2
Indeno(1,2,3-cd)pyrene	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1640	KLB	193-39-5
Bis(2-chloroethoxy)methane	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	111-91-1
Bis(2-chloroethyl)ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	111-44-4
Bis(2-chloroisopropyl)ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	108-60-1
Bis(2-ethylhexyl)phthalate	105	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	117-81-7
4-Chloro-3-methylphenol	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1640	KLB	59-50-7
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1640	KLB	534-52-1
ctylphthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1640	KLB	117-84-0
N-Nitrosodi-n-propylamine	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1640	KLB	621-64-7

408830 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B,

Liquid Aqueous Taken: 05/18/1999 0910 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acenaphthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	83-32-9
Acenaphthylene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	208-96-8
Anthracene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	120-12-7
Benzidine	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1722	KLB	92-87-5
Benzo(a)anthracene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	56-55-3
Benzo(a)pyrene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	50-32-8
Benzo(b)fluoranthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	205-99-2
Benzo(ghi)perylene	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1722	KLB	191-24-2
Benzo(k)fluoranthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	207-08-9
4-Bromophenyl phenyl ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	101-55-3
Butyl benzyl phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	85-68-7
2-Chloronaphthalene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	91-58-7
2-Chlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	95-57-8
4-Chlorophenyl phenyl ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	7005-72-3
Chrysene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	218-01-9
1,2-DPH (as azobenzene)	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1722	KLB	122-66-7
Dibenz(a,h)anthracene	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1722	KLB	53-70-3
1,3-Dichlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	541-73-1
nlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	95-50-1
,4-Dichlorobenzene	ND	ug/L	15.0	EPA Method 8270C	06/01/1999 1722	KLB	106-46-7
3,3'-Dichlorobenzidine	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1722	KLB	91-94-1

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Project Report: 102062P

Results for Project 102062

408830 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0910 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
2,4-Dichlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	120-83-2
Diethyl phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	84-66-2
Dimethyl phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	131-11-3
2,4-Dimethylphenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	105-67-9
2,4-Dinitrophenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1722	KLB	51-28-5
2,4-Dinitrotoluene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	121-14-2
2,6-Dinitrotoluene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	606-20-2
Fluoranthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	206-44-0
Fluorene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	86-73-7
Hexachlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	118-74-1
Hexachlorobutadiene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	87-68-3
Hexachlorocyclopentadiene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	77-47-4
Hexachloroethane	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1722	KLB	67-72-1
Isophorone	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	78-59-1
Naphthalene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	91-20-3
Nitrobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	98-95-3
2-Nitrophenol	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1722	KLB	88-75-5
4-Nitrophenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1722	KLB	100-08-7
N-Nitrosodimethylamine	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1722	KLB	62-75-9
N-Nitrosodiphenylamine (as DPA)	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1722	KLB	86-30-6
Pentachlorophenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1722	KLB	87-86-5
Phenanthrene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	85-01-8
Phenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	108-95-2
Pyrene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	129-00-0
1,2,4-Trichlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	120-82-1
2,4,6-Trichlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	88-06-2
2,4,5-Trichlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	95-95-4
Di-n-butylphthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	84-74-2
Indeno(1,2,3-cd)pyrene	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1722	KLB	193-39-5
Bis(2-chloroethoxy)methane	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	111-91-1
Bis(2-chloroethyl)ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	111-44-4
Bis(2-chloroisopropyl)ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	108-60-1
Bis(2-ethylhexyl)phthalate	103	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	117-81-7
4-Chloro-3-methylphenol	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1722	KLB	59-50-7
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1722	KLB	534-52-1
Di-n-octylphthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1722	KLB	117-84-0
N-Nitrosodi-n-propylamine	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1722	KLB	621-64-7

408831 VS-31W-Bay A/CSA Closure Rinsewater Bay A, Liquid Aqueous Taken: 05/18/1999 0955 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Fluorene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	83-32-9
Acenaphthylene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	208-96-8
Anthracene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	120-12-7

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Project Report: 102062P

Results for Project 102062

408831 VS-31W-Bay A/CSA Closure Rinsewater Bay A, Liquid Aqueous Taken: 05/18/1999 0955 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Benzidine	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1352	KLB	92-87-5
Benzo(a)anthracene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	56-55-3
Benzo(a)pyrene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	50-32-8
Benzo(b)fluoranthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	205-99-2
Benzo(ghi)perylene	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1352	KLB	191-24-2
Benzo(k)fluoranthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	207-08-9
4-Bromophenyl phenyl ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	101-55-3
Butyl benzyl phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	85-68-7
2-Chloronaphthalene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	91-58-7
2-Chlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	95-57-8
4-Chlorophenyl phenyl ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	7005-72-3
Chrysene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	218-01-9
1,2-DPH (as azobenzene)	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1352	KLB	122-66-7
Dibenz(a,h)anthracene	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1352	KLB	53-70-3
1,3-Dichlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	95-50-1
[illegible]Dichlorobenzene	ND	ug/L	15.0	EPA Method 8270C	06/01/1999 1352	KLB	106-46-7
[illegible]chlorobenzidine	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1352	KLB	91-94-1
2,4-Dichlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	120-83-2
Diethyl phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	84-66-2
Dimethyl phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	131-11-3
2,4-Dimethylphenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	105-67-9
2,4-Dinitrophenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1352	KLB	51-28-5
2,4-Dinitrotoluene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	121-14-2
2,6-Dinitrotoluene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	606-20-2
Fluoranthene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	206-44-0
Fluorene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	86-73-7
Hexachlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	118-74-1
Hexachlorobutadiene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	87-68-3
Hexachlorocyclopentadiene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	77-47-4
Hexachloroethane	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1352	KLB	67-72-1
Isophorone	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	78-59-1
Naphthalene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	91-20-3
Nitrobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	98-95-3
2-Nitrophenol	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1352	KLB	88-75-5
4-Nitrophenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1352	KLB	100-08-7
N-Nitrosodimethylamine	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1352	KLB	62-75-9
N-Nitrosodiphenylamine (as DPA)	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1352	KLB	86-30-6
Pentachlorophenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1352	KLB	87-86-5
Phenanthrene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	85-01-8
[illegible]	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	108-95-2
[illegible]	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	129-00-0
1,2,4-Trichlorobenzene	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	120-82-1
2,4,6-Trichlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	88-06-2

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Project Report: 102062P

Results for Project 102062

408831 VS-31W-Bay A/CSA Closure Rinsewater Bay A,

Liquid Aqueous Taken: 05/18/1999 0955 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
2,4,5-Trichlorophenol	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	95-95-4
Di-n-butylphthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	84-74-2
Indeno(1,2,3-cd)pyrene	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1352	KLB	193-39-5
Bis(2-chloroethoxy)methane	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	111-91-1
Bis(2-chloroethyl)ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	111-44-4
Bis(2-chloroisopropyl)ether	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	108-60-1
Bis(2-ethylhexyl)phthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	117-81-7
4-Chloro-3-methylphenol	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1352	KLB	59-50-7
4,6-Dinitro-2-methylphenol	ND	ug/L	50.0	EPA Method 8270C	06/01/1999 1352	KLB	534-52-1
Di-n-octylphthalate	ND	ug/L	10.0	EPA Method 8270C	06/01/1999 1352	KLB	117-84-0
N-Nitrosodi-n-propylamine	ND	ug/L	20.0	EPA Method 8270C	06/01/1999 1352	KLB	621-64-7

408832 VS-31W-Bay B/CSA Closure Rinsewater Bay B,

Liquid Aqueous Taken: 05/18/1999 0805 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 1631	KLB	67-64-1
Acrolein	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 1631	KLB	107-02-8
itrile	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 1631	KLB	107-13-1
Benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	71-43-2
Bromobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	108-86-1
Bromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	74-97-5
Bromodichloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	75-27-4
Bromoform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	74-83-9
tert-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	98-06-6
sec-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	135-98-8
n-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	104-51-8
Carbon Tetrachloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	56-23-5
Chlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	108-90-7
Chloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	110-75-8
Chloroform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	74-87-3
2-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	95-49-8
4-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	106-43-4
Dibromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	75-27-4
1,2-Dibromoethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	106-93-4
Dibromomethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	106-46-7
odifluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	75-71-8
,1-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	75-34-3
1,2-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	107-06-2

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Project Report: 102062P

Results for Project 102062

408832 VS-31W-Bay B/CSA Closure Rinsewater Bay B,

Liquid Aqueous Taken: 05/18/1999 0805 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
trans-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	75-35-4
1,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	78-87-5
2,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	594-20-7
1,3-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	563-58-6
Ethyl benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	100-41-4
Hexachlorobutadiene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	98-82-8
p-Isopropyltoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 1631	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	108-10-1
Methylene Chloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	75-09-2
Naphthalene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	91-20-3
ylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	103-65-1
Styrene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	630-20-6
Tetrachloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	127-18-4
Toluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	79-00-5
Trichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	79-01-6
Trichlorofluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	108-67-8
Vinyl Chloride	ND	ug/L	2.00	EPA Method 8260B	05/20/1999 1631	KLB	75-01-4
Xylenes, Total	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1631	KLB	96-12-8

408833 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B,

Liquid Aqueous Taken: 05/18/1999 0805 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 1913	KLB	67-64-1
Acrolein	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 1913	KLB	107-02-8
itrile	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 1913	KLB	107-13-1
Benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	71-43-2
Bromobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	108-86-1

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Project Report: 102062P

Results for Project 102062

408833 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0805 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Bromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	74-97-5
Bromodichloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	75-27-4
Bromoform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	74-83-9
tert-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	98-06-6
sec-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	135-98-8
n-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	104-51-8
Carbon Tetrachloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	56-23-5
Chlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	108-90-7
Chloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	110-75-8
Chloroform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	74-87-3
2-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	95-49-8
4-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	106-43-4
Dibromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	75-27-4
1,2-Dibromoethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	106-93-4
Dibromomethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	75-71-8
1,1-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	75-34-3
1,2-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	75-35-4
1,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	78-87-5
2,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	594-20-7
1,3-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	563-58-6
Ethyl benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	100-41-4
Hexachlorobutadiene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	98-82-8
p-Isopropyltoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 1913	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	108-10-1
Methylene Chloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	75-09-2
Naphthalene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	91-20-3
n-Propylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	103-65-1
Styrene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	79-34-5

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Results for Project 102062

408833 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0805 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
1,1,1,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	630-20-6
Tetrachloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	127-18-4
Toluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	79-00-5
Trichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	79-01-6
Trichlorofluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	108-67-8
Vinyl Chloride	ND	ug/L	2.00	EPA Method 8260B	05/20/1999 1913	KLB	75-01-4
Xylenes, Total	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 1913	KLB	96-12-8

34 VS-31W-Bay A/CSA Closure Rinsewater Bay A, Liquid Aqueous Taken: 05/18/1999 0940 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/L	20.0	EPA Method 8260B	05/22/1999 1403	KLB	67-64-1
Acrolein	ND	ug/L	50.0	EPA Method 8260B	05/22/1999 1403	KLB	107-02-8
Acrylonitrile	ND	ug/L	20.0	EPA Method 8260B	05/22/1999 1403	KLB	107-13-1
Benzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	71-43-2
Bromobenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	108-86-1
Bromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	74-97-5
Bromodichloromethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	75-27-4
Bromoform	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	74-83-9
tert-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	98-06-6
sec-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	135-98-8
n-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	104-51-8
Carbon Tetrachloride	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	56-23-5
Chlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	108-90-7
Chloroethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	110-75-8
Chloroform	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	74-87-3
2-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	95-49-8
4-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	106-43-4
Dibromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	75-27-4
1,2-Dibromoethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	106-93-4
omethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	95-50-1

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Project Report: 102062P

Results for Project 102062

408834 VS-31W-Bay A/CSA Closure Rinsewater Bay A,

Liquid Aqueous Taken: 05/18/1999 0940 By: Client

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
1,4-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	75-71-8
1,1-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	75-34-3
1,2-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	75-35-4
1,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	78-87-5
2,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	594-20-7
1,3-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	563-58-6
Ethyl benzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	100-41-4
Hexachlorobutadiene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	98-82-8
[illegible]ropyltoluene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	25155-15-1
[illegible]. Ethyl Ketone (Butanone)	ND	ug/L	50.0	EPA Method 8260B	05/22/1999 1403	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	108-10-1
Methylene Chloride	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	75-09-2
Naphthalene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	91-20-3
n-Propylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	103-65-1
Styrene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	630-20-6
Tetrachloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	127-18-4
Toluene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	79-00-5
Trichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	79-01-6
Trichlorofluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	108-67-8
Vinyl Chloride	ND	ug/L	2.00	EPA Method 8260B	05/22/1999 1403	KLB	75-01-4
Xylenes, Total	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	EPA Method 8260B	05/22/1999 1403	KLB	96-12-8

[illegible]5 VS-31W-Bay TB Trip Blank

Liquid Aqueous Taken: 05/18/1999 By: SKL Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 2101	KLB	67-64-1

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Results for Project 102062

408835 VS-31W-Bay TB Trip Blank

Liquid Aqueous Taken: 05/18/1999 By: SKL Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acrolein	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 2101	KLB	107-02-8
Acrylonitrile	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 2101	KLB	107-13-1
Benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	71-43-2
Bromobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	108-86-1
Bromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	74-97-5
Bromodichloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	75-27-4
Bromoform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	74-83-9
tert-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	98-06-6
sec-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	135-98-8
n-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	104-51-8
Carbon Tetrachloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	56-23-5
Chlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	108-90-7
Chloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	110-75-8
Chloroform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	67-66-3
[illegible]methane (Methyl Chloride)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	74-87-3
[illegible]rotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	95-49-8
4-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	106-43-4
Dibromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	75-27-4
1,2-Dibromoethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	106-93-4
Dibromomethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	75-71-8
1,1-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	75-34-3
1,2-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	75-35-4
1,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	78-87-5
2,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	594-20-7
1,3-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	563-58-6
Ethyl benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	100-41-4
Hexachlorobutadiene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	98-82-8
[illegible]opyltoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	25155-15-1
[illegible] Ethyl Ketone (Butanone)	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 2101	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	108-10-1
Methylene Chloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	75-09-2

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Project Report: 102062P

Results for Project 102062

408835 VS-31W-Bay TB Trip Blank

Liquid Aqueous Taken: 05/18/1999 By: SKL Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Naphthalene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	91-20-3
n-Propylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	103-65-1
Styrene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	630-20-6
Tetrachloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	127-18-4
Toluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	79-00-5
Trichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	79-01-6
Trichlorofluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	108-67-8
Vinyl Chloride	ND	ug/L	2.00	EPA Method 8260B	05/20/1999 2101	KLB	75-01-4
s, Total	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2101	KLB	96-12-8

408836 VS-31W-4/CSA Closure-CES16 Soil sample 31W

Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1559	KLB	67-64-1
Acrolein	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1559	KLB	107-02-8
Acrylonitrile	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1559	KLB	107-13-1
Benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	71-43-2
Bromobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	108-86-1
Bromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	74-97-5
Bromodichloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	75-27-4
Bromoform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	74-83-9
tert-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	98-06-6
sec-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	135-98-8
n-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	104-51-8
Carbon Tetrachloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	56-23-5
Chlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	108-90-7
Chloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	110-75-8
Chloroform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	74-87-3
otoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	95-49-8
4-Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	106-43-4
Dibromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	75-27-4

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Project Report: 102062P

Results for Project 102062

408836 VS-31W-4/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
1,2-Dibromoethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	106-93-4
Dibromomethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	75-71-8
1,1-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	75-34-3
1,2-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	75-35-4
1,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	78-87-5
2,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	594-20-7
1,3-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	563-58-6
[illegible]enzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	100-41-4
Hexachlorobutadiene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	98-82-8
p-Isopropyltoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1559	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	108-10-1
Methylene Chloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	75-09-2
Naphthalene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	91-20-3
n-Propylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	103-65-1
Styrene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	630-20-6
Tetrachloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	127-18-4
Toluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	79-00-5
Trichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	79-01-6
Trichlorofluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	108-67-8
Vinyl Chloride	ND	ug/kg	2.00	EPA Method 8260B	05/21/1999 1559	KLB	75-01-4
[illegible]s, Total	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1559	KLB	96-12-8

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Project Report: 102062P

Results for Project 102062

408837 VS-31W-6/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1017 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1049	KLB	67-64-1
Acrolein	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1049	KLB	107-02-8
Acrylonitrile	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1049	KLB	107-13-1
Benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	71-43-2
Bromobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	108-86-1
Bromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	74-97-5
Bromodichloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	75-27-4
Bromoform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	74-83-9
tert-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	98-06-6
sec-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	135-98-8
n-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	104-51-8
Carbon Tetrachloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	56-23-5
Chlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	108-90-7
Chloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	110-75-8
Chloroform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	74-87-3
2-Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	95-49-8
4-Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	106-43-4
Dibromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	75-27-4
1,2-Dibromoethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	106-93-4
Dibromomethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	75-71-8
1,1-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	75-34-3
1,2-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	75-35-4
1,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	78-87-5
2,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	594-20-7
1,3-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	563-58-6
Ethyl benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	100-41-4
Hexachlorobutadiene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	98-82-8
p-Isopropyltoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1049	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	108-10-1

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Project Report: 102062P

Results for Project 102062

408837 VS-31W-6/CSA Closure-CES16 Soil sample 31W

Soil Taken: 05/18/1999 1017 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Methylene Chloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	75-09-2
Naphthalene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	91-20-3
n-Propylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	103-65-1
Styrene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	630-20-6
Tetrachloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	127-18-4
Toluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	79-00-5
Trichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	79-01-6
Trichlorofluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	108-67-8
Vinyl chloride	ND	ug/kg	2.00	EPA Method 8260B	05/21/1999 1049	KLB	75-01-4
Xylenes, Total	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1049	KLB	96-12-8

408838 VS-31W-8/CSA Closure-CES16 Soil sample 31W

Soil Taken: 05/18/1999 1027 By: Ferris/Mowad Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1626	KLB	67-64-1
Acrolein	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1626	KLB	107-02-8
Acrylonitrile	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1626	KLB	107-13-1
Benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	71-43-2
Bromobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	108-86-1
Bromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	74-97-5
Bromodichloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	75-27-4
Bromoform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	74-83-9
tert-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	98-06-6
sec-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	135-98-8
n-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	104-51-8
Carbon Tetrachloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	56-23-5
Chlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	108-90-7
Chloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	110-75-8
Chloroform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	74-87-3
2-Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	95-49-8
4-Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	106-43-4

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Project Report: 102062P

Results for Project 102062

408838 VS-31W-8/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1027 By: Ferris/Mowad Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Dibromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	75-27-4
1,2-Dibromoethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	106-93-4
Dibromomethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	75-71-8
1,1-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	75-34-3
1,2-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	75-35-4
1,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	78-87-5
2,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	594-20-7
1,3-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	10061-01-5
[illegible]1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	10061-02-6
[illegible]chloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	563-58-6
Ethyl benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	100-41-4
Hexachlorobutadiene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	98-82-8
p-Isopropyltoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1626	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	108-10-1
Methylene Chloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	75-09-2
Naphthalene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	91-20-3
n-Propylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	103-65-1
Styrene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	630-20-6
Tetrachloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	127-18-4
Toluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	79-00-5
Trichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	79-01-6
Trichlorofluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	95-63-6
[illegible]Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	108-67-8
[illegible]hloride	ND	ug/kg	2.00	EPA Method 8260B	05/21/1999 1626	KLB	75-01-4
Xylenes, Total	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1626	KLB	96-12-8

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Project Report: 102062P

408839 VS-31W-10/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1653	KLB	67-64-1
Acrolein	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1653	KLB	107-02-8
Acrylonitrile	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1653	KLB	107-13-1
Benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	71-43-2
Bromobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	108-86-1
Bromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	74-97-5
Bromodichloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	75-27-4
Bromoform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	74-83-9
tert-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	98-06-6
sec-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	135-98-8
n-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	104-51-8
Carbon Tetrachloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	56-23-5
Chlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	108-90-7
Chloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	110-75-8
Chloroform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	67-66-3
methane (Methyl Chloride)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	74-87-3
Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	95-49-8
4-Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	106-43-4
Dibromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	75-27-4
1,2-Dibromoethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	106-93-4
Dibromomethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	75-71-8
1,1-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	75-34-3
1,2-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	75-35-4
1,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	78-87-5
2,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	594-20-7
1,3-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	563-58-6
Ethyl benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	100-41-4
Hexachlorobutadiene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	98-82-8
opyltoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	25155-15-1
ethyl Ethyl Ketone (Butanone)	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1653	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	108-10-1

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Project Report: 102062P

Results for Project 102062

408839 VS-31W-10/CSA Closure-CES16 Soil sample 31W

Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Methylene Chloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	75-09-2
Naphthalene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	91-20-3
n-Propylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	103-65-1
Styrene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	630-20-6
Tetrachloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	127-18-4
Toluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	79-00-5
Trichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	79-01-6
Trichlorofluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	95-63-6
[illegible] Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	108-67-8
[illegible] Chloride	ND	ug/kg	2.00	EPA Method 8260B	05/21/1999 1653	KLB	75-01-4
Xylenes, Total	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1653	KLB	96-12-8

408840 VS-31W-12/CSA Closure-CES16 Soil sample 31W

Soil Taken: 05/18/1999 1048 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1720	KLB	67-64-1
Acrolein	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1720	KLB	107-02-8
Acrylonitrile	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1720	KLB	107-13-1
Benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	71-43-2
Bromobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	108-86-1
Bromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	74-97-5
Bromodichloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	75-27-4
Bromoform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	74-83-9
tert-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	98-06-6
sec-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	135-98-8
n-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	104-51-8
Carbon Tetrachloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	56-23-5
Chlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	108-90-7
Chloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	110-75-8
Chloroform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	67-66-3
[illegible] ethane (Methyl Chloride)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	74-87-3
2-Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	95-49-8
4-Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	106-43-4

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Project Report: 102062P

Results for Project 102062

408840 VS-31W-12/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1048 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Dibromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	75-27-4
1,2-Dibromoethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	106-93-4
Dibromomethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	75-71-8
1,1-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	75-34-3
1,2-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	75-35-4
1,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	78-87-5
2,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	594-20-7
1,3-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	10061-01-5
tran 1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	10061-02-6
chloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	563-58-6
Ethyl benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	100-41-4
Hexachlorobutadiene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	98-82-8
p-Isopropyltoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1720	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	108-10-1
Methylene Chloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	75-09-2
Naphthalene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	91-20-3
n-Propylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	103-65-1
Styrene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	630-20-6
Tetrachloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	127-18-4
Toluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	79-00-5
Trichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	79-01-6
Trichlorofluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	108-67-8
nloride	ND	ug/kg	2.00	EPA Method 8260B	05/21/1999 1720	KLB	75-01-4
Xylenes, Total	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1720	KLB	96-12-8

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Project Report: 102062P

408841 VS-31W-12/CSA Closure-CES16 Soil sample 31W - Soil Taken: 05/18/1999 1048 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1748	KLB	67-64-1
Acrolein	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1748	KLB	107-02-8
Acrylonitrile	ND	ug/kg	20.0	EPA Method 8260B	05/21/1999 1748	KLB	107-13-1
Benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	71-43-2
Bromobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	108-86-1
Bromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	74-97-5
Bromodichloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	75-27-4
Bromoform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	74-83-9
tert-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	98-06-6
sec-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	135-98-8
n-Butylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	104-51-8
Carbon Tetrachloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	56-23-5
Chlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	108-90-7
Chloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	110-75-8
Chloroform	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	67-66-3
·methane (Methyl Chloride)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	74-87-3
·lorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	95-49-8
4-Chlorotoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	106-43-4
Dibromochloromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	75-27-4
1,2-Dibromoethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	106-93-4
Dibromomethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	75-71-8
1,1-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	75-34-3
1,2-Dichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	75-35-4
1,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	78-87-5
2,2-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	594-20-7
1,3-Dichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	563-58-6
Ethyl benzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	100-41-4
Hexachlorobutadiene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	98-82-8
·l ·opyltoluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	25155-15-1
·thyl Ethyl Ketone (Butanone)	ND	ug/kg	50.0	EPA Method 8260B	05/21/1999 1748	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	108-10-1

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Project Report: 102062P

Results for Project 102062

408841 VS-31W-12/CSA Closure-CES16 Soil sample 31W - Soil Taken: 05/18/1999 1048 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Methylene Chloride	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	75-09-2
Naphthalene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	91-20-3
n-Propylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	103-65-1
Styrene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	630-20-6
Tetrachloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	127-18-4
Toluene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	79-00-5
Trichloroethylene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	79-01-6
Trichlorofluoromethane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	108-67-8
Vinyl Chloride	ND	ug/kg	2.00	EPA Method 8260B	05/21/1999 1748	KLB	75-01-4
Xylenes, Total	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/kg	5.00	EPA Method 8260B	05/21/1999 1748	KLB	96-12-8

Sample Preparation Steps for Project 102062

408829 VS-31W-Bay B/CSA Closure Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0910 By: Client

Parameter	Result	Unit	Method	Analyzed	By
Liquid-Liquid Extraction, BNA	1/500	mL/mL	EPA Method 3520	05/21/1999 0830	LMB
Semi-Volatile Hydrocarbons	Verified		EPA Method 8270C	06/01/1999 1640	KLB

408830 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0910 By: Client

Parameter	Result	Unit	Method	Analyzed	By
Liquid-Liquid Extraction, BNA	1/500	mL/mL	EPA Method 3520	05/21/1999 0830	LMB
Semi-Volatile Hydrocarbons	Verified		EPA Method 8270C	06/01/1999 1722	KLB

408831 VS-31W-Bay A/CSA Closure Rinsewater Bay A, Liquid Aqueous Taken: 05/18/1999 0955 By: Client

Parameter	Result	Unit	Method	Analyzed	By
Liquid-Liquid Extraction, BNA	1/500 SA/SB	mL/mL	EPA Method 3520	05/21/1999 0830	LMB
Semi-Volatile Hydrocarbons	Verified		EPA Method 8270C	06/01/1999 1352	KLB

408832 VS-31W-Bay B/CSA Closure Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0805 By: Client

Parameter	Result	Unit	Method	Analyzed	By

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Sample Preparation Steps for Project 102062

408832 VS-31W-Bay B/CSA Closure Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0805 By: Client

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/20/1999 1631	KLB

408833 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0805 By: Client

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/20/1999 1913	KLB

408834 VS-31W-Bay A/CSA Closure Rinsewater Bay A, Liquid Aqueous Taken: 05/18/1999 0940 By: Client

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/22/1999 1403	KLB

408835 VS-31W-Bay TB Trip Blank Liquid Aqueous Taken: 05/18/1999 By: SKL Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/20/1999 2101	KLB

36 VS-31W-4/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1559	KLB

408837 VS-31W-6/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1017 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1049	KLB

408838 VS-31W-8/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1027 By: Ferris/Mowad Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1626	KLB

408839 VS-31W-10/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1653	KLB

408840 VS-31W-12/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1048 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1720	KLB

408841 VS-31W-12/CSA Closure-CES16 Soil sample 31W - Soil Taken: 05/18/1999 1048 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Sampling/Pickup Charge	Verified			05/20/1999 06:47	CAL
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1748	KLB

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Sample Specific Quality Control/Quality Assurance

408829 VS-31W-Bay B/CSA Closure Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0910 By: Client

EPA Method 8270C Surrogate/Spike on Sample 408829 06/01/1999 1

Compound	Result	Concentration	%Recovery
2,4,6-Tribromophenol	92.9	100	93
2-Fluorophenol-SURR	49.6	100	50
Phenol-d6-SURR	32.2	100	32
Nitrobenzene-d5-SURR	42.9	50.0	86
2-Fluorobiphenyl-SURR	44.9	50.0	90
4-Terphenyl-d14-SURR	45.2	50.0	90

EPA Method 8260B Internal Standard Areas on Sample 408829 06/01/1999 1

Compound	IS Area	CCC IS Area	Status
1,4-Dichlorobenzene-d4-ISTD	500500	456400	
Naphthalene-d8-ISTD	2007000	1811000	
Acenaphthene-d10-ISTD	998200	958200	
Phenanthrene-d10-ISTD	1462000	1489000	
Chrysene-d12-ISTD	1003000	1066000	
Perylene-d12-ISTD	781000	891300	

408830 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0910 By: Client

EPA Method 8270C Surrogate/Spike on Sample 408830 06/01/1999 1

Compound	Result	Concentration	%Recovery
2,4,6-Tribromophenol	88.2	100	88
2-Fluorophenol-SURR	46.9	100	47
Phenol-d6-SURR	29.7	100	30
Nitrobenzene-d5-SURR	39.6	50.0	79
2-Fluorobiphenyl-SURR	41.3	50.0	83
4-Terphenyl-d14-SURR	42.3	50.0	85

EPA Method 8260B Internal Standard Areas on Sample 408830 06/01/1999 1

Compound	IS Area	CCC IS Area	Status
1,4-Dichlorobenzene-d4-ISTD	502800	456400	
Naphthalene-d8-ISTD	2041000	1811000	
Acenaphthene-d10-ISTD	1021000	958200	
Phenanthrene-d10-ISTD	1511000	1489000	
Chrysene-d12-ISTD	1057000	1066000	
lene-d12-ISTD	817900	891300	

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Sample Specific Quality Control/Quality Assurance

408831 VS-31W-Bay A/CSA Closure Rinsewater Bay A, Liquid Aqueous Taken: 05/18/1999 0955 By: Client

EPA Method 8270C Surrogate/Spike on Sample 408831 06/01/1999 1

Compound	Result	Concentration	%Recovery
2,4,6-Tribromophenol	69.7	100	70
2-Fluorophenol-SURR	34.9	100	35
Phenol-d6-SURR	21.3	100	21
Nitrobenzene-d5-SURR	29.8	50.0	60
2-Fluorobiphenyl-SURR	32.6	50.0	65
4-Terphenyl-d14-SURR	31.8	50.0	64

EPA Method 8260B Internal Standard Areas on Sample 408831 06/01/1999 1

Compound	IS Area	CCC IS Area	Status
1,4-Dichlorobenzene-d4-ISTD	416200	456400	
Naphthalene-d8-ISTD	1600000	1811000	
Acenaphthene-d10-ISTD	792600	958200	
Phenanthrene-d10-ISTD	1191000	1489000	
Chrysene-d12-ISTD	841600	1066000	
Perylene-d12-ISTD	676800	891300	

408832 VS-31W-Bay B/CSA Closure Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0805 By: Client

EPA Method 8260B Surrogate/Spike on Sample 408832 05/20/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	40.9	40.0	100
Toluene-d8	40.9	40.0	100
Bromofluorobenzene-SURR	42.0	40.0	100

EPA Method 8260B Internal Standard Areas on Sample 408832 05/20/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	202100	206400	
1,4-Difluorobenzene-ISTD	301000	309600	
Clorobenzene-d5-ISTD	245800	254200	
1,4-Dichlorobenzene-d4-ISTD	106400	109800	

408833 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0805 By: Client

EPA Method 8260B Surrogate/Spike on Sample 408833 05/20/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	41.8	40.0	100
Toluene-d8	41.6	40.0	100
Bromofluorobenzene-SURR	42.2	40.0	110

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Sample Specific Quality Control/Quality Assurance

408833 VS-31W-Bay B/CSA Closure-Dupe Rinsewater Bay B, Liquid Aqueous Taken: 05/18/1999 0805 By: Client

EPA Method 8260B Internal Standard Areas on Sample 408833 05/20/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	200700	206400	
1,4-Difluorobenzene-ISTD	295600	309600	
Clorobenzene-d5-ISTD	244300	254200	
1,4-Dichlorobenzene-d4-ISTD	106300	109800	

408834 VS-31W-Bay A/CSA Closure Rinsewater Bay A, Liquid Aqueous Taken: 05/18/1999 0940 By: Client

EPA Method 8260B Surrogate/Spike on Sample 408834 05/24/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	42.6	40.0	110
Toluene-d8	41.1	40.0	100
Bromofluorobenzene-SURR	41.3	40.0	100

EPA Method 8260B Internal Standard Areas on Sample 408834 05/24/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	193300	196500	
1,4-Difluorobenzene-ISTD	275100	274200	
Clorobenzene-d5-ISTD	230000	230200	
1,4-Dichlorobenzene-d4-ISTD	101500	101400	

408835 VS-31W-Bay TB Trip Blank Liquid Aqueous Taken: 05/18/1999 By: SKL Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408835 05/20/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	41.5	40.0	100
Toluene-d8	40.2	40.0	100
Bromofluorobenzene-SURR	41.9	40.0	100

EPA Method 8260B Internal Standard Areas on Sample 408835 05/20/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	197000	206400	
1,4-Difluorobenzene-ISTD	296300	309600	
Clorobenzene-d5-ISTD	240700	254200	
1,4-Dichlorobenzene-d4-ISTD	104700	109800	

408836 VS-31W-4/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

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408836 VS-31W-4/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408836 05/21/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	41.4	40.0	100
Toluene-d8	40.8	40.0	100
Bromofluorobenzene-SURR	41.7	40.0	100

EPA Method 8260B Internal Standard Areas on Sample 408836 05/21/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	174600	179200	
1,4-Difluorobenzene-ISTD	246000	258900	
Clorobenzene-d5-ISTD	196300	210700	
1,4-Dichlorobenzene-d4-ISTD	80700	91080	

408837 VS-31W-6/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1017 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408837 05/21/1999 1

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	41.0	40.0	100
Toluene-d8	40.1	40.0	100
Bromofluorobenzene-SURR	43.0	40.0	110

408838 VS-31W-8/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1027 By: Ferris/Mowad Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408838 05/21/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	40.4	40.0	100
Toluene-d8	40.9	40.0	100
Bromofluorobenzene-SURR	44.9	40.0	110

EPA Method 8260B Internal Standard Areas on Sample 408838 05/21/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	172500	179200	
1,4-Difluorobenzene-ISTD	245200	258900	
Clorobenzene-d5-ISTD	191000	210700	
1,4-Dichlorobenzene-d4-ISTD	75370	91080	

408839 VS-31W-10/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408839 05/21/1999 2

Compound	Result	Concentration	%Recovery

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408839 VS-31W-10/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1009 By: Client Rec:05/19/1999

Dibromofluoromethane	41.6	40.0	100
Toluene-d8	40.8	40.0	100
Bromofluorobenzene-SURR	45.3	40.0	110

EPA Method 8260B Internal Standard Areas on Sample 408839 05/21/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	170000	179200	
1,4-Difluorobenzene-ISTD	238300	258900	
Clorobenzene-d5-ISTD	185000	210700	
1,4-Dichlorobenzene-d4-ISTD	69580	91080	

408840 VS-31W-12/CSA Closure-CES16 Soil sample 31W Soil Taken: 05/18/1999 1048 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408840 05/21/1999 2

Compound	Result	Concentration	%Recovery
omofluoromethane	40.8	40.0	100
luene-d8	40.2	40.0	100
Bromofluorobenzene-SURR	43.6	40.0	110

EPA Method 8260B Internal Standard Areas on Sample 408840 05/21/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	169700	179200	
1,4-Difluorobenzene-ISTD	239100	258900	
Clorobenzene-d5-ISTD	185500	210700	
1,4-Dichlorobenzene-d4-ISTD	72460	91080	

408841 VS-31W-12/CSA Closure-CES16 Soil sample 31W - Soil Taken: 05/18/1999 1048 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408841 05/21/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	40.8	40.0	100
Toluene-d8	40.6	40.0	100
Bromofluorobenzene-SURR	43.8	40.0	110

EPA Method 8260B Internal Standard Areas on Sample 408841 05/21/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	165700	179200	
1 -Difluorobenzene-ISTD	234200	258900	
robenzene-d5-ISTD	182200	210700	
1,4-Dichlorobenzene-d4-ISTD	71070	91080	

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Organic Quality Control/Quality Assurance for Project 102062

EPA Method 8270C Instrument Tune 06/01/1999 1

Mass	Reference Mass	Min Abundance	Max Abundance	Result	Status
DFTPP Mass 51	198	30.0	60.0	41.2	PASS
DFTPP Mass 68	69	0	2.00	0.2	PASS
DFTPP Mass 69	198	0	100	51.3	PASS
DFTPP Mass 70	69	0	2.00	1.0	PASS
DFTPP Mass 127	198	40.0	60.0	52.0	PASS
DFTPP Mass 197	198	0	1.00	0.0	PASS
DFTPP Mass 198	198	100	100	100.0	PASS
DFTPP Mass 199	198	5.00	9.00	6.6	PASS
DFTPP Mass 275	198	10.0	30.0	17.7	PASS
DFTPP Mass 365	198	1.00	100	1.5	PASS
DFTPP Mass 441	443	0	100	75.3	PASS
DFTPP Mass 442	198	40.0	100	41.9	PASS
DFTPP Mass 443	442	17.0	23.0	19.3	PASS

Instrument Calibration Check 06/01/1999 1

Compound	Max %Rel. Std.	%Deviation	Status
Acenaphthene	30.0	-4.3	PASS
Benzo(a)pyrene	30.0	-3.6	PASS
4-Chloro-3-methylphenol	30.0	-5.4	PASS
1,4-Dichlorobenzene	30.0	-4.6	PASS
2,4-Dichlorophenol	30.0	-2.7	PASS
Di-n-octylphthalate	30.0	-0.3	PASS
Fluoranthene	30.0	-11.8	PASS
Hexachlorobutadiene	30.0	-4.3	PASS
2-Nitrophenol	30.0	1.1	PASS
N-Nitrosodiphenylamine (as DPA)	30.0	-1.4	PASS
Pentachlorophenol	30.0	-10.5	PASS
Phenol	30.0	-3.6	PASS
2,4,6-Trichlorophenol	30.0	-0.3	PASS

EPA Method 8270C Instrument System Performance Check 06/01/1999 1

Compound	Min Response Factor	Response Factor	Status
2,4-Dinitrophenol	.0500	0.167	PASS
Hexachlorocyclopentadiene	.0500	0.227	PASS
4-Nitrophenol	.0500	0.218	PASS
N-Nitrosodi-n-propylamine	.0500	0.714	PASS

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Organic Quality Control/Quality Assurance for Project 102062

EPA Method 8270C Matrix Spike/Duplicate on Sample 408831 06/01/1999 1

Compound	First (%)	Second (%)	%Difference
Acenaphthene	97.6	72.2	-26
4-Chloro-3-methylphenol	81.3	60.7	-25
2-Chlorophenol	76.0	52.4	-31
1,4-Dichlorobenzene	88.6	63.2	-29
2,4-Dinitrotoluene	96.0	72.6	-24
4-Nitrophenol	30.9	27.2	-12
N-Nitrosodi-n-propylamine	104	73.1	-30
Pentachlorophenol	82.7	61.1	-26
Phenol	32.3	21.0	-35
Pyrene	97.0	69.6	-28
1,2,4-Trichlorobenzene	88.4	63.0	-29

EPA Method 8260B Blank 05/20/1999 2

Compound	Result
Benzene	ND
[illegible]robenzene	ND
1,1-Dichloroethylene	ND
Methylene Chloride	ND
Toluene	ND
Trichloroethylene	ND

EPA Method 8260B Instrument Tune 05/20/1999 2

Mass	Reference Mass	Min Abundance	Max Abundance	Result	Status
BFB Mass 50	95	15.0	40.0	20.3	PASS
BFB Mass 75	95	30.0	60.0	47.9	PASS
BFB Mass 95	95	100	100	100.0	PASS
BFB Mass 96	95	5.00	9.00	6.8	PASS
BFB Mass 173	174	0	2.00	0.0	PASS
BFB Mass 174	95	50.0	100	69.6	PASS
BFB Mass 175	174	5.00	9.00	8.5	PASS
BFB Mass 176	174	95.0	101	96.8	PASS
BFB Mass 177	176	5.00	9.00	6.6	PASS

Instrument Calibration Check 05/20/1999 2

Compound	Max %Rel. Std.	%Deviation	Status
Chloroform	20.0	2.8	PASS
1,1-Dichloroethylene	20.0	5.3	PASS
1, Dichloropropane	20.0	4.5	PASS
[illegible]yl benzene	20.0	0.8	PASS
Toluene	20.0	6.8	PASS

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Organic Quality Control/Quality Assurance for Project 102062

Vinyl Chloride	20.0	-0.8	PASS

EPA Method 8260B Instrument System Performance Check 05/20/1999 2

Compound	Min Response Factor	Response Factor	Status
Bromoform	.1010	0.225	PASS
Chlorobenzene	.3000	1.065	PASS
Chloromethane (Methyl Chloride)	.1000	0.634	PASS
1,1-Dichloroethane	.1000	1.001	PASS
1,1,2,2-Tetrachloroethane	.3000	1.491	PASS

EPA Method 8260B Matrix Spike/Duplicate on Sample 408832 05/20/1999 2

Compound	First (%)	Second (%)	%Difference
Benzene	97.4	98.4	1.0
Chlorobenzene	104	104	0
1,1-Dichloroethylene	96.0	96.2	0.21
Toluene	98.6	99.2	0.61
Trichloroethylene	97.4	97.8	0.41

EPA Method 8260B Blank 05/24/1999 2

Compound	Result
Benzene	ND
Chlorobenzene	ND
1,1-Dichloroethylene	ND
Methylene Chloride	ND
Toluene	ND
Trichloroethylene	ND

EPA Method 8260B Instrument Tune 05/24/1999 2

Mass	Reference Mass	Min Abundance	Max Abundance	Result	Status
BFB Mass 50	95	15.0	40.0	20.5	PASS
BFB Mass 75	95	30.0	60.0	48.4	PASS
BFB Mass 95	95	100	100	100.0	PASS
BFB Mass 96	95	5.00	9.00	6.4	PASS
BFB Mass 173	174	0	2.00	0.0	PASS
BFB Mass 174	95	50.0	100	68.7	PASS
BFB Mass 175	174	5.00	9.00	8.6	PASS
BFB Mass 176	174	95.0	101	98.1	PASS
BFB Mass 177	176	5.00	9.00	6.6	PASS

Instrument Calibration Check 05/24/1999 2

Compound	Max %Rel. Std.	%Deviation	Status
Chloroform	20.0	3.9	PASS

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Organic Quality Control/Quality Assurance for Project 102062

1,1-Dichloroethylene	20.0	12.4	PASS
1,2-Dichloropropane	20.0	-2.8	PASS
Ethyl benzene	20.0	-3.1	PASS
Toluene	20.0	2.6	PASS
Vinyl Chloride	20.0	16.9	PASS

EPA Method 8260B Instrument System Performance Check 05/24/1999 2

Compound	Min Response Factor	Response Factor	Status
Bromoform	.1010	0.240	PASS
Chlorobenzene	.3000	1.094	PASS
Chloromethane (Methyl Chloride)	.1000	0.550	PASS
1,1-Dichloroethane	.1000	0.991	PASS
1,1,2,2-Tetrachloroethane	.3000	1.524	PASS

EPA Method 8260B Matrix Spike/Duplicate on Sample 409156 05/24/1999 2

Compound	First (%)	Second (%)	%Difference
Benzene	98.8	99.8	1.0
Chlorobenzene	101	105	4.0
1,1-Dichloroethylene	88.8	88.8	0
Toluene	96.2	99.0	2.9
Trichloroethylene	96.0	98.0	2.1

EPA Method 8260B Blank 05/21/1999 2

Compound	Result
Benzene	ND
Chlorobenzene	ND
1,1-Dichloroethylene	ND
Methylene Chloride	ND
Toluene	ND
Trichloroethylene	ND

EPA Method 8260B Instrument Tune 05/21/1999 2

Mass	Reference Mass	Min Abundance	Max Abundance	Result	Status
BFB Mass 50	95	15.0	40.0	20.4	PASS
BFB Mass 75	95	30.0	60.0	48.2	PASS
BFB Mass 95	95	100	100	100.0	PASS
BFB Mass 96	95	5.00	9.00	6.3	PASS
BFB Mass 173	174	0	2.00	0.0	PASS
BFB Mass 174	95	50.0	100	70.2	PASS
BFB Mass 175	174	5.00	9.00	8.3	PASS
BFB Mass 176	174	95.0	101	97.4	PASS
BFB Mass 177	176	5.00	9.00	6.3	PASS

Continued

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Project Report: 102062P

Organic Quality Control/Quality Assurance for Project 102062

Instrument Calibration Check 05/21/1999 2

Compound	Max %Rel. Std.	%Deviation	Status
Chloroform	20.0	13.9	PASS
1,1-Dichloroethylene	20.0	16.0	PASS
1,2-Dichloropropane	20.0	15.3	PASS
Ethyl benzene	20.0	18.6	PASS
Toluene	20.0	18.4	PASS
Vinyl Chloride	20.0	11.2	PASS

EPA Method 8260B Instrument System Performance Check 05/21/1999 2

Compound	Min Response Factor	Response Factor	Status
Bromoform	.1010	0.207	PASS
Chlorobenzene	.3000	1.127	PASS
Chloromethane (Methyl Chloride)	.1000	0.636	PASS
1,1-Dichloroethane	.1000	1.031	PASS
1,2,2-Tetrachloroethane	.3000	1.317	PASS

EPA Method 8260B Matrix Spike/Duplicate on Sample 408837 05/21/1999 2

Compound	First (%)	Second (%)	%Difference
Benzene	97.6	94.0	-3.7
Chlorobenzene	94.0	90.6	-3.6
1,1-Dichloroethylene	92.2	87.8	-4.8
Toluene	91.4	88.6	-3.1
Trichloroethylene	93.2	91.4	-1.9

MAL is our Minimum Analytical Level/Minimum Quantitation Level. The MAL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL).

An analytical result must be above this MAL before we report a value in the "Results" column of our report. Otherwise, we report ND (Not Detected above MAL), because the result is "<" (less than) the number in the MAL column.

Continued

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Project Report: 102062P

I certify that the results were generated using the above specified methods.

C. H. Whiteside, Ph.D., President

Corporate Office
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31-W

Complete Environmental Service

P.O Box 170, Karnack, TX 75661 phone:903/679-2062 fax:903/679-2056

CONTRACTOR P.O. NO. CES16

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 658
DOYLINE, LA 71023

PROJECT NAME/NUMBER CSA Closure
REPORT RESULTS TO: Bill Corrigan

LAB DESTINATION ANALAB
PHONE NO _____ OFFICE (903) 679-2062
FAX (903) 679-2056

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
VS-31W-BAY B	Rinsewater Bay B, 31W	5/18/99 9:10 am.	semi-VOA's 40X929	qt. glass, amber, ice 4°C.	WRC	3 each bottles in plastic bag, ziploc
VS-31W-Bay B	Rinsewater-Duplicate Bay B, 31W	5/18/99 9:10 am.	semi-VOA's 40X930	qt. glass, amber, iced to 4°C	WRC	3 each bottles in plastic bag, ziploc
VS-31W-BAY A	Rinsewater Bay A-31W	5/18/99 9:55 am.	semi-VOA's 40X931	qt. glass, amber, iced to 4°C.	WRC	3 each bottles in plastic bag. ziploc
VS-31W-Bay B	Rinsewater Bay B, 31W	5/18/99 0805 am.	VOA's 40X832	40 ml ZHE, glass, ice to 4°C	WRC	2 each bottles in ziploc bag
VS-31W-Bay A	Rinsewater Duplicate, Bay B, 31W	5/18/99 0805 am	VOA's 40X833	40 ml ZHE glass, iced to 4°C	WRC	2 each bottles in ziploc bag.
VS-31W-BAY A	Rinsewater Bay A, 31W	5/18/99 0940 am	VOA's 40X834	40 ml ZHE, glass, iced to 4°C	WRC	2 each bottles in ziploc bag.
VS-31W-TB	Trip Blank	sent by lab.	VOA's 40X835	40 ml ZHE, glass, iced to 4°C	WRC	1 each bottle in ziploc bag.
VS-31W-4	soil sample 31W	5/18/99 1009 am.	VOA's 40X836	8 oz glass, iced to 4°C	WRC	1 each bottle in ziploc bag.

SPECIAL INSTRUCTIONS Run separate matrix spike / matrix spike duplicates for these samples then samples from 48-W and 811-1

SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY Bill Corrigan, CES, 5/19/99, 0800 3. RELINQUISHED BY _____

RECEIVED BY Mark Wilk 5/19/99 1042 RECEIVED BY Agnes 5/19/99 1630

RELINQUISHED BY Mark Wilk 5/19/99 1630 4. RELINQUISHED BY _____

ANA-LAB CORP. THE COMPLETE SERVICE LAB

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31-W

2 of 2

Complete Environmental Service

P.O Box 170, Karnack, TX 75661 phone:903/679-2062 fax:903/679-2056

CONTRACTOR P.O. NO. CES/1

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 658
DOYLINE, LA 71023

PROJECT NAME/NUMBER CSA Closure
REPORT RESULTS TO: Bill Corrigan

LAB DESTINATION ANALAB
PHONE NO _____ OFFICE (903) 679-2062
FAX (903) 679-2056

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
VS-31W-6	soil sample 31W	5/18/99 10:17 am	VOA's 40837	8 oz glass iced to 4°C	WRC	1 each jar in ziploc bag.
VS-31W-8	soil sample 31W	5/18/99 10:27 am	VOA's 40838	8 oz glass iced to 4°C	WRC	1 each jar in ziploc bag
VS-31W-10	soil sample 31W	5/18/99 10:37 am	VOA's 40839	8 oz glass iced to 4°C	WRC	1 each jar in ziploc bag
VS-31W-12	soil sample	5/18/99 10:48 am	VOA's 40840	8 oz glass iced to 4°C	WRC	1 each jar in ziploc bag
VS-31W-12	soil, sample duplicate 31W	5/18/99 10:48 am	VOA's 40841	8 oz glass iced to 4°C	WRC	1 each jar in ziploc bag.

SPECIAL INSTRUCTIONS Run seperate matrix spike and matrix spike duplicates for this set of samples than samples from 49W and 811-1

SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY William Corrigan, CES, 5/19/99, 0800 3. RELINQUISHED BY _____

RECEIVED BY Mack Wilks 5/19/99 1042 RECEIVED BY _____

RELINQUISHED BY Mack Wilks 5/19/99 1130 4. RELINQUISHED BY _____

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VERIFICATION SAMPLE RESULTS

- SOIL SAMPLE FROM SITE 31-W-10 (AFTER EXCAVATION)

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Corporate Office
P.O. Box 9000 -- Kilgore, TX 75663-9000
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Report Date: 06/29/1999

Project Report: 103980
Client: CES2

Complete Environmental Service
P.O. Box 170
Karnack, TX 75661-
Attention: Bill Corrigan

Results for Project 103980

411561 811-1 Rinsewater 811-1/Decon./CES 16 Liquid Aqueous Taken: 06/14/1999 1416 By: Bill Corrigan Rec:06/16/1999

Parameter	*Result*	*Unit*	*MAL*	*Method*	*Analyzed*	*By*	*CAS*
Total Pet. Hydrocarbons	5		5	EPA Method 1664	06/19/1999 1104	MAM	
Total Arsenic	27.1	ug/L	1.00	EPA Method 200.8	06/18/1999 0800	WOB	7440-38-2
Total Lead	29.4	ug/L	1.00	EPA Method 200.8	06/18/1999 0800	WOB	7439-92-1
Acenaphthene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	83-32-9
Acenaphthylene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	208-96-8
Anthracene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	120-12-7
Benzidine	ND	ug/L	50.0	EPA Method 625	06/26/1999 0212	KLB	92-87-5
Benzo(a)anthracene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	56-55-3
Benzo(a)pyrene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	50-32-8
Benzo(b)fluoranthene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	205-99-2
(ghi)perylene	ND	ug/L	20.0	EPA Method 625	06/26/1999 0212	KLB	191-24-2
Benzo(k)fluoranthene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	207-08-9
Benzyl Butyl phthalate	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	85-68-7
4-Bromophenyl phenyl ether	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	101-55-3
2-Chloronaphthalene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	91-58-7
2-Chlorophenol	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	95-57-8
4-Chlorophenyl phenyl ether	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	7005-72-3
Chrysene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	218-01-9
1,2-DPH (as azobenzene)	ND	ug/L	20.0	EPA Method 625	06/26/1999 0212	KLB	122-66-7
Dibenz(a,h)anthracene	ND	ug/L	20.0	EPA Method 625	06/26/1999 0212	KLB	53-70-3
1,3-Dichlorobenzene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/L	15.0	EPA Method 625	06/26/1999 0212	KLB	106-46-7
3,3'-Dichlorobenzidine	ND	ug/L	50.0	EPA Method 625	06/26/1999 0212	KLB	91-94-1
2,4-Dichlorophenol	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	120-83-2
Diethyl phthalate	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	84-66-2
Dimethyl phthalate	90.5	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	131-11-3
2,4-Dimethylphenol	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	105-67-9
2,4-Dinitrophenol	ND	ug/L	52.1	EPA Method 625	06/26/1999 0212	KLB	51-28-5
2,4-Dinitrotoluene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	121-14-2
2,6-Dinitrotoluene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	606-20-2
Fluoranthene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	206-44-0
Fluorene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	86-73-7
Hexachlorobenzene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	118-74-1
nlorobutadiene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	87-68-3
Hexachlorocyclopentadiene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	77-47-4
Hexachloroethane	ND	ug/L	20.0	EPA Method 625	06/26/1999 0212	KLB	67-72-1

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Project Report: 103980
Client: CES2

Results for Project 103980

411561 811-1 Rinsewater 811-1/Decon./CES 16 Liquid Aqueous Taken: 06/14/1999 1416 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Isophorone	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	78-59-1
Naphthalene	ND	ug/L	20.0	EPA Method 625	06/26/1999 0212	KLB	91-20-3
Nitrobenzene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	98-95-3
2-Nitrophenol	ND	ug/L	20.0	EPA Method 625	06/26/1999 0212	KLB	88-75-5
4-Nitrophenol	ND	ug/L	52.1	EPA Method 625	06/26/1999 0212	KLB	100-08-7
N-Nitrosodimethylamine	ND	ug/L	50.0	EPA Method 625	06/26/1999 0212	KLB	62-75-9
N-Nitrosodiphenylamine (as DPA)	ND	ug/L	20.0	EPA Method 625	06/26/1999 0212	KLB	86-30-6
Pentachlorophenol	194	ug/L	52.1	EPA Method 625	06/26/1999 1930	KLB	87-86-5
Phenanthrene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	85-01-8
Phenol	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	108-95-2
Pyrene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	129-00-0
1,2,4-Trichlorobenzene	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	120-82-1
2,4,6-Trichlorophenol	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	88-06-2
Trichlorophenol	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	95-95-4
Di-n-butylphthalate	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	84-74-2
Indeno(1,2,3-cd)pyrene	ND	ug/L	20.0	EPA Method 625	06/26/1999 0212	KLB	193-39-5
Bis(2-chloroethoxy)methane	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	111-91-1
Bis(2-chloroethyl)ether	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	111-44-4
Bis(2-chloroisopropyl)ether	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	108-60-1
Bis(2-ethylhexyl)phthalate	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	117-81-7
4-Chloro-3-methylphenol	ND	ug/L	20.8	EPA Method 625	06/26/1999 0212	KLB	59-50-7
4,6-Dinitro-2-methylphenol	ND	ug/L	52.1	EPA Method 625	06/26/1999 0212	KLB	534-52-1
Di-n-octylphthalate	ND	ug/L	10.4	EPA Method 625	06/26/1999 0212	KLB	117-64-0
N-Nitrosodi-n-propylamine	ND	ug/L	20.0	EPA Method 625	06/26/1999 0212	KLB	621-64-7
Oil and Grease (HEM)	26	mg/L	5	Method 1664	06/18/1999 0834	MAM	

411562 31-W Soil - Metals Area 55-16/CES 16 Soil Taken: 06/14/1999 1645 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Chromium	11.2 *	mg/kg	0.277	EPA Method 6020	06/22/1999 1000	WOB	7440-47-3
Total Lead	9.53 *	mg/kg	0.277	EPA Method 6020	06/22/1999 1000	WOB	7439-92-1
Total Solids	90.2	%	0.1	SM 18th 2540 G	06/22/1999 0700	MAM	

* Dry Weight Basis

Sample Preparation Steps for Project 103980

411561 811-1 Rinsewater 811-1/Decon./CES 16 Liquid Aqueous Taken: 06/14/1999 1416 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	Method	Analyzed	By
Bottle pH	<2	SU		06/16/1999 2058	AAJ
his Report AS Soon As	FAXED			06/29/1999 15:08	KEK
Liquid - Metals Digestion	50/50	mL/mL	EPA Method 200.2	06/17/1999 0830	PJD
Liquid-Liquid Extraction, BNA	1/960	mL/mL	EPA Method 625	06/21/1999 0815	LMB

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Corporate Office

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Project Report: 103980
Client: CES2

Sample Preparation Steps for Project 103980

411561 811-1 Rinsewater 811-1/Decon./CES 16 Liquid Aqueous Taken: 06/14/1999 1416 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	Method	Analyzed	By
Semi-Volatile Hydrocarbons	Verified		EPA Method 625	06/26/1999 0212	KLB

411562 31-W Soil - Metals Area 55-16/CES 16 Soil Taken: 06/14/1999 1645 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	Method	Analyzed	By
As Received to Dry Weight Basis	Converted		Calculation	06/23/1999 13:01	CAL
Solid - Metals Digestion	50/1	ml/g	EPA Method 3050B	06/18/1999 0830	PJD
Fax This Report AS Soon As	FAXED		FAX	06/23/1999 13:02	KEK

Sample Specific Quality Control/Quality Assurance

411561 811-1 Rinsewater 811-1/Decon./CES 16 Liquid Aqueous Taken: 06/14/1999 1416 By: Bill Corrigan Rec:06/16/1999

EPA Method 625 Surrogate/Spike on Sample 411561 06/25/1999 1

Compound	Result	Concentration	%Recovery
2,4,6-Tribromophenol	99.3	100	99
[illegible]orophenol-SURR	30.3	100	30
Phenol-d6-SURR	19.5	100	20
Nitrobenzene-d5-SURR	41.9	50.0	84
2-Fluorobiphenyl-SURR	44.0	50.0	88
4-Terphenyl-d14-SURR	45.9	50.0	92

EPA Method 624 Internal Standard Areas on Sample 411561 06/25/1999 1

Compound	IS Area	CCC IS Area	Status
1,4-Dichlorobenzene-d4-ISTD	563300	439200	
Naphthalene-d8-ISTD	2183000	1704000	
Acenaphthene-d10-ISTD	1156000	938200	
Phenanthrene-d10-ISTD	1867000	1477000	
Chrysene-d12-ISTD	1430000	1270000	
Perylene-d12-ISTD	1081000	1075000	

Organic Quality Control/Quality Assurance for Project 103980

EPA Method 8270C Instrument Tune 06/25/1999 1

Mass	Reference Mass	Min Abundance	Max Abundance	Result	Status
DFTPP Mass 51	198	30.0	60.0	51.2	PASS
DFTPP Mass 68	69	0	2.00	0.0	PASS
DFTPP Mass 69	198	0	100	51.0	PASS
DFTPP Mass 70	69	0	2.00	0.4	PASS
DFTPP Mass 127	198	40.0	60.0	54.6	PASS
DFTPP Mass 197	198	0	1.00	0.0	PASS
DFTPP Mass 198	198	100	100	100.0	PASS
[illegible]FTPP Mass 199	198	5.00	9.00	6.8	PASS
[illegible]P Mass 275	198	10.0	30.0	20.6	PASS
DFTPP Mass 365	198	1.00	100	2.8	PASS
DFTPP Mass 441	443	0	100	75.6	PASS

Continued

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Project Report: 103980
Client:

Organic Quality Control/Quality Assurance for Project 103980

DFTPP Mass 442	198	40.0	100	63.0	PASS
DFTPP Mass 443	442	17.0	23.0	19.1	PASS

Instrument Calibration Check 06/25/1999 1

Compound	Max %Rel. Std.	%Deviation	Status
Acenaphthene	30.0	0.9	PASS
Benzo(a)pyrene	30.0	2.6	PASS
4-Chloro-3-methylphenol	30.0	4.2	PASS
1,4-Dichlorobenzene	30.0	3.1	PASS
2,4-Dichlorophenol	30.0	3.2	PASS
Di-n-octylphthalate	30.0	1.6	PASS
Fluoranthene	30.0	3.2	PASS
Hexachlorobutadiene	30.0	2.8	PASS
2-Nitrophenol	30.0	3.1	PASS
N-Nitrosodiphenylamine (as DPA)	30.0	3.9	PASS
Pentachlorophenol	30.0	24.8	PASS
[illegible]nol	30.0	5.5	PASS
[illegible]5-Trichlorophenol	30.0	6.5	PASS

EPA Method 8270C Instrument System Performance Check 06/25/1999 1

Compound	Min Response Factor	Response Factor	Status
2,4-Dinitrophenol	.0500	0.094	PASS
Hexachlorocyclopentadiene	.0500	0.221	PASS
4-Nitrophenol	.0500	0.172	PASS
N-Nitrosodi-n-propylamine	.0500	0.646	PASS

SET Quality Control/Quality Assurance for Project 103980

Total Arsenic

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	*Type*	*Result*	*Value*	*Unit*	*Percent*
	Standard	0.101	0.100	ppm	1.0
	Standard	0.314	0.300	ppm	4.7
	Standard	0.299	0.300	ppm	-0.3
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.0995	0.100	ppm	-0.5
	Standard	0.314	0.300	ppm	4.7
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.299	0.300	ppm	-0.3
	Standard	0.300	0.300	ppm	0.0
	Standard	0.298	0.300	ppm	-0.7
	LCS	0.527	0.500	ppm	5.4
	LCS	0.508	0.500	ppm	1.6
	Blank	<0.00100		ppm	

Continued

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THE COMPLETE SERVICE LAB

Corporate Office
P.O. Box 9000 -- Kilgore, TX 75663-9000
903/984-0551 FAX 903/984-5914

Project Report: 103980
Client:

SET Quality Control/Quality Assurance for Project 103980

Total Arsenic

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
	Blank	<0.00100		ppm	
411360	Spike		0.500	ppm	96
411360	Spike		0.500	ppm	102
411437	Spike		0.500	ppm	105
411437	Spike		0.500	ppm	102
411481	Spike		0.500	ppm	95
411481	Spike		0.500	ppm	98

Total Chromium

(Analyzed: 06/22/1999 1000 WOB Verified: 06/23/1999 11:58 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.103	0.100	ppm	3.0
	Standard	0.312	0.300	ppm	4.0
	Standard	0.318	0.300	ppm	6.0
	Standard	0.102	0.100	ppm	2.0
	Standard	0.314	0.300	ppm	4.7
	Standard	0.313	0.300	ppm	4.3
	Standard	0.309	0.300	ppm	3.0
	Standard	0.308	0.300	ppm	2.7
	Standard	0.102	0.100	ppm	2.0
	Standard	0.309	0.300	ppm	3.0
	Standard	0.312	0.300	ppm	4.0
	Standard	0.312	0.300	ppm	4.0
	Standard	0.314	0.300	ppm	4.7
	Standard	0.305	0.300	ppm	1.7
	Standard	0.320	0.300	ppm	6.7
	Standard	0.315	0.300	ppm	5.0
	Standard	0.304	0.300	ppm	1.3
	LCS	0.541	0.500	ppm	8.2
	LCS	0.557	0.500	ppm	11.4
	LCS	0.111	0.100	ppm	11.0
	LCS	-0.000330	0.100	ppm	-100
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
	Blank	<0.00500		ppm	
	Blank	<0.00500		ppm	
	Blank	<0.00100		ppm	
411523	Spike		0.100	ppm	98
411523	Spike		0.100	ppm	102
3	Spike		0.500	ppm	109
411813	Spike		0.500	ppm	110

Continued

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Project Report: 103980
Client:

SET Quality Control/Quality Assurance for Project 103980

Total Chromium

(Analyzed: 06/22/1999 1000 WOB Verified: 06/23/1999 11:58 SAH)

Sample	Type	Result	Value	Unit	Percent
411817	Spike		0.500	ppm	106
411817	Spike		0.500	ppm	108
412048	Spike		0.100	ppm	1.7
412048	Spike		0.100	ppm	-0.40

Total Lead

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.0988	0.100	ppm	-1.2
	Standard	0.305	0.300	ppm	1.7
	Standard	0.308	0.300	ppm	2.7
	Standard	0.296	0.300	ppm	-1.3
	Standard	0.102	0.100	ppm	2.0
	Standard	0.302	0.300	ppm	0.7
	Standard	0.316	0.300	ppm	5.3
	Standard	0.312	0.300	ppm	4.0
	Standard	0.305	0.300	ppm	1.7
	Standard	0.312	0.300	ppm	4.0
	Standard	0.318	0.300	ppm	6.0
	LCS	0.545	0.500	ppm	9.0
	LCS	0.480	0.500	ppm	-4.0
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
411360	Spike		0.500	ppm	106
411360	Spike		0.500	ppm	100
411437	Spike		0.500	ppm	114
411437	Spike		0.500	ppm	110
411481	Spike		0.500	ppm	106
411481	Spike		0.500	ppm	113
	Standard	0.101	0.100	ppm	1.0
	Standard	0.308	0.300	ppm	2.7
	Standard	0.314	0.300	ppm	4.7
	Standard	0.101	0.100	ppm	1.0
	Standard	0.315	0.300	ppm	5.0
	Standard	0.314	0.300	ppm	4.7
	Standard	0.313	0.300	ppm	4.3
	Standard	0.316	0.300	ppm	5.3
	Standard	0.0997	0.100	ppm	-0.3
	Standard	0.306	0.300	ppm	2.0
	Standard	0.304	0.300	ppm	1.3
	Standard	0.301	0.300	ppm	0.3

Continued

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Project Report: 103980
Client:

SET Quality Control/Quality Assurance for Project 103980

Total Lead

(Analyzed: 06/22/1999 1000 WOB Verified: 06/23/1999 11:58 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.305	0.300	ppm	1.7
	Standard	0.303	0.300	ppm	1.0
	Standard	0.310	0.300	ppm	3.3
	Standard	0.310	0.300	ppm	3.3
	Standard	0.299	0.300	ppm	-0.3
	LCS	0.530	0.500	ppm	6.0
	LCS	0.544	0.500	ppm	8.8
	LCS	0.108	0.100	ppm	8.0
	LCS	0.108	0.100	ppm	8.0
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
	Blank	<0.00500		ppm	
	Blank	<0.00500		ppm	
	Blank	<0.00100		ppm	
411523	Spike		0.100	ppm	101
411523	Spike		0.100	ppm	97
411813	Spike		0.500	ppm	111
411813	Spike		0.500	ppm	113
411817	Spike		0.500	ppm	109
411817	Spike		0.500	ppm	110
412048	Spike		0.100	ppm	114
412048	Spike		0.100	ppm	84

Oil and Grease (HEM)

(Analyzed: 06/18/1999 0834 MAM Verified: 06/21/1999 17:37 WJP)

Sample	Type	Result	Value	Unit	Percent
	Standard	35.1	40.0	mg/L	-12.3
	Blank	0.0001		grams	
411569	Duplicate	ND	ND	mg/L	0.0
411457	Spike		0.040	grams	90

Total Solids

(Analyzed: 06/22/1999 0700 MAM Verified: 06/23/1999 13:09 WJP)

Sample	Type	Result	Value	Unit	Percent
	Blank	<.1		%	
410700	Duplicate	81.4	81.3	%	0.1
411562	Duplicate	90.2	90.0	%	0.1

MAL is our Minimum Analytical Level/Minimum Quantitation Level. The MAL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions or concentrations performed during sample preparation (EQL).

Our analytical result must be above this MAL before we report a value in the "Results" column of our report.

Continued

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Corporate Office

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Project Report: 103980
Client:

Otherwise, we report ND (Not Detected above MAL), because the result is "<" (less than) the number in the MAL column.

These analytical results relate to the sample tested. This report may NOT be reproduced EXCEPT in FULL without written approval of Ana-Lab Corp.

I certify that the results were generated using the above specified methods.

Roy White, M.S., QA/QC Director

00188607

ANA-LAB CORP. THE COMPLETE SERVICE LAB

Corporate Office P.O. Box 9000 -- Kilgore, TX 75663-9000
903/984-0551 FAX 903/984-5914

Complete Environmental Service

P.O Box 170, Kernack, TX 75661 phone:903/679-2062 fax:903/679-2056

CONTRACTOR P.O. NO. CES16

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 658
DOYLINE, LA 71023

PROJECT NAME/NUMBER 811-1 Decon.
REPORT RESULTS TO: Bill Corrigan

LAB DESTINATION Analab
PHONE NO ______ OFFICE (903) 679-2062
FAX (903) 679-2056

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
811-1-RW-1	811-1 Rinsewater	6/14/99 2:16 pm.	Semi-VOA's	1 qt. amber glass, 4°C	WRC	411561
811-1-RW-1	811-1 Rinsewater	6/14/99 2:16 pm.	Total lead, Total arsenic	500 ml plastic, HNO_3<2, 4°C	WRC	
811-1-RW-1	811-1 Rinsewater	6/14/99 2:16 pm.	TPH	1 qt. glass, H_2SO_4<2, 4°C	WRC	
31-W-SS-1	31-W soil sample from area 05-10	6/14/99 4:45 pm	total lead, total chromium	Poz. glass, 4°C	WRC	→ 411562

SPECIAL INSTRUCTIONS fax or email results to Bill Corrigan.

SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY Bill Corrigan, CES, 6/16/99, 0800 in Guard Bldg. 3. RELINQUISHED BY ______

RECEIVED BY J.B[illegible] 6-16 0930 RECEIVED BY A[illegible] 6/16/99 1545

RELINQUISHED BY JB 6-16 1545 4. RELINQUISHED BY ______

VERIFICATION SAMPLE RESULTS

- FILL DIRT CERTIFICATION

ANA-LAB CORP.
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Corporate Office
P.O. Box 9000 -- Kilgore, TX 75663-9000
903/984-0551 FAX 903/984-5914

Report Date: 05/28/1999

Complete Environmental Service
P.O. Box 170
Karnack, TX 75661-
Attention: Bill Corrigan

Project Report: 102064
Client: CES2
Project Number:
CES2 CSA Closure-CES16,

Results for Project 102064

408852 VS-811-1-1-SS/CSA Closure Soil Sample-CES16 Soil Taken: 05/18/1999 1146 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Arsenic	23.7 *	mg/kg	0.325	EPA Method 6020	05/27/1999 1300	WOB	7440-38-2
Total Cadmium	ND *	mg/kg	0.325	EPA Method 6020	05/20/1999 1000	WOB	7440-43-9
Total Chromium	17.6 *	mg/kg	0.325	EPA Method 6020	05/27/1999 1300	WOB	7440-47-3
Total Lead	9.88 *	mg/kg	0.325	EPA Method 6020	05/20/1999 1000	WOB	7439-92-1
Total Silver	ND *	mg/kg	0.325	EPA Method 6020	05/20/1999 1000	WOB	7440-22-4
Acetone	ND *	ug/kg	26	EPA Method 8260B	05/21/1999 0954	KLB	67-64-1
Acrolein	ND *	ug/kg	65	EPA Method 8260B	05/21/1999 0954	KLB	107-02-8
Acrylonitrile	ND *	ug/kg	26	EPA Method 8260B	05/21/1999 0954	KLB	107-13-1
Benzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	71-43-2
Bromobenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	108-86-1
ɔchloromethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	74-97-5
Bromodichloromethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	75-27-4
Bromoform	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	74-83-9
tert-Butylbenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	98-06-6
sec-Butylbenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	135-98-8
n-Butylbenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	104-51-8
Carbon Tetrachloride	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	56-23-5
Chlorobenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	108-90-7
Chloroethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	75-00-3
2-Chloroethylvinyl ether	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	110-75-8
Chloroform	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	74-87-3
2-Chlorotoluene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	95-49-8
4-Chlorotoluene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	106-43-4
Dibromochloromethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	75-27-4
1,2-Dibromoethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	106-93-4
Dibromomethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	74-95-3
1,3-Dichlorobenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	541-73-1
1,2-Dichlorobenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	95-50-1
1,4-Dichlorobenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	106-46-7
Dichlorodifluoromethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	75-71-8
1,1-Dichloroethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	75-34-3
1,2-Dichloroethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	107-06-2
1,2-Dichloroethene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	156-60-5
cis-1,2-Dichloroethene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	156-59-2
1,1-Dichloroethylene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	75-35-4

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ANA-LAB CORP.
THE COMPLETE SERVICE LAB

Corporate Office
P.O. Box 9000 -- Kilgore, TX 75663-9000
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Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Results for Project 102064

408852 VS-811-1-1-SS/CSA Closure Soil Sample-CES16

Soil Taken: 05/18/1999 1146 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
1,2-Dichloropropane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	78-87-5
2,2-Dichloropropane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	594-20-7
1,3-Dichloropropane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	142-28-9
cis-1,3-Dichloropropene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	10061-01-5
trans-1,3-Dichloropropene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	10061-02-6
1,1-Dichloropropene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	563-58-6
Ethyl benzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	100-41-4
Hexachlorobutadiene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	98-82-8
p-Isopropyltoluene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND *	ug/kg	65	EPA Method 8260B	05/21/1999 0954	KLB	78-93-3
Methyl Isobutyl Ketone	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	108-10-1
Methylene Chloride	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	75-09-2
'halene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	91-20-3
...Propylbenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	103-65-1
Styrene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	630-20-6
Tetrachloroethylene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	127-18-4
Toluene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	108-88-3
1,2,4-Trichlorobenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	120-82-1
1,2,3-Trichlorobenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	87-61-6
1,1,1-Trichloroethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	71-55-6
1,1,2-Trichloroethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	79-00-5
Trichloroethylene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	79-01-6
Trichlorofluoromethane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	75-69-4
1,2,3-Trichloropropane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	96-18-4
1,2,4-Trimethylbenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	95-63-6
1,3,5-Trimethylbenzene	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	108-67-8
Vinyl Chloride	ND *	ug/kg	2.6	EPA Method 8260B	05/21/1999 0954	KLB	75-01-4
Xylenes, Total	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND *	ug/kg	6.5	EPA Method 8260B	05/21/1999 0954	KLB	96-12-8
Total Solids	76.9	%	0.1	SM 18th 2540 G	05/21/1999 1454	PRE	

* Dry Weight Basis

408853 VS-811-2-1-SS/CSA Closure Soil Sample-CES16

Soil Taken: 05/18/1999 1150 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Arsenic	21.3 *	mg/kg	0.292	EPA Method 6020	05/20/1999 1000	WOB	7440-38-2
Cadmium	ND *	mg/kg	0.292	EPA Method 6020	05/20/1999 1000	WOB	7440-43-9
Total Chromium	64.6 *	mg/kg	0.292	EPA Method 6020	05/20/1999 1000	WOB	7440-47-3

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THE COMPLETE SERVICE LAB

Corporate Office
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903/984-0551 FAX 903/984-5914

Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Results for Project 102064

408853 VS-811-2-1-SS/CSA Closure Soil Sample-CES16 Soil Taken: 05/18/1999 1150 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Lead	12.3 *	mg/kg	0.292	EPA Method 6020	05/20/1999 1000	WOB	7439-92-1
Total Silver	ND *	mg/kg	0.292	EPA Method 6020	05/20/1999 1000	WOB	7440-22-4
Acetone	ND *	ug/kg	23	EPA Method 8260B	05/21/1999 1020	KLB	67-64-1
Acrolein	ND *	ug/kg	58	EPA Method 8260B	05/21/1999 1020	KLB	107-02-8
Acrylonitrile	ND *	ug/kg	23	EPA Method 8260B	05/21/1999 1020	KLB	107-13-1
Benzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	71-43-2
Bromobenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	108-86-1
Bromochloromethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	74-97-5
Bromodichloromethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	75-27-4
Bromoform	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	74-83-9
tert-Butylbenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	98-06-6
sec-Butylbenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	135-98-8
ylbenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	104-51-8
arbon Tetrachloride	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	56-23-5
Chlorobenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	108-90-7
Chloroethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	75-00-3
2-Chloroethylvinyl ether	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	110-75-8
Chloroform	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	74-87-3
2-Chlorotoluene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	95-49-8
4-Chlorotoluene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	106-43-4
Dibromochloromethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	75-27-4
1,2-Dibromoethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	106-93-4
Dibromomethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	74-95-3
1,3-Dichlorobenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	541-73-1
1,2-Dichlorobenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	95-50-1
1,4-Dichlorobenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	106-46-7
Dichlorodifluoromethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	75-71-8
1,1-Dichloroethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	75-34-3
1,2-Dichloroethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	107-06-2
trans-1,2-Dichloroethene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	156-60-5
cis-1,2-Dichloroethene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	156-59-2
1,1-Dichloroethylene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	75-35-4
1,2-Dichloropropane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	78-87-5
2,2-Dichloropropane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	594-20-7
1,3-Dichloropropane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	142-28-9
3-Dichloropropene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	10061-01-5
is-1,3-Dichloropropene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	10061-02-6
1,1-Dichloropropene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	563-58-6

Continued

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Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Results for Project 102064

408853 VS-811-2-1-SS/CSA Closure Soil Sample-CES16 Soil Taken: 05/18/1999 1150 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Ethyl benzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	100-41-4
Hexachlorobutadiene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	98-82-8
p-Isopropyltoluene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND *	ug/kg	58	EPA Method 8260B	05/21/1999 1020	KLB	78-93-3
Methyl Isobutyl Ketone	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	108-10-1
Methylene Chloride	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	75-09-2
Naphthalene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	91-20-3
n-Propylbenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	103-65-1
Styrene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	630-20-6
Tetrachloroethylene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	127-18-4
ne	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	108-88-3
1,2,4-Trichlorobenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	120-82-1
1,2,3-Trichlorobenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	87-61-6
1,1,1-Trichloroethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	71-55-6
1,1,2-Trichloroethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	79-00-5
Trichloroethylene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	79-01-6
Trichlorofluoromethane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	75-69-4
1,2,3-Trichloropropane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	96-18-4
1,2,4-Trimethylbenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	95-63-6
1,3,5-Trimethylbenzene	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	108-67-8
Vinyl Chloride	ND *	ug/kg	2.3	EPA Method 8260B	05/21/1999 1020	KLB	75-01-4
Xylenes, Total	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND *	ug/kg	5.8	EPA Method 8260B	05/21/1999 1020	KLB	96-12-8
Total Solids	85.5	%	0.1	SM 18th 2540 G	05/21/1999 1454	PRE	

* Dry Weight Basis

408854 VS-811-3-1-SS/CSA Closure Soil Sample-CES16 Soil Taken: 05/18/1999 1210 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Arsenic	24.4 *	mg/kg	0.280	EPA Method 6020	05/20/1999 1000	WOB	7440-38-2
Total Cadmium	ND *	mg/kg	0.280	EPA Method 6020	05/20/1999 1000	WOB	7440-43-9
Total Chromium	44.2 *	mg/kg	0.280	EPA Method 6020	05/20/1999 1000	WOB	7440-47-3
Total Lead	8.68 *	mg/kg	0.280	EPA Method 6020	05/20/1999 1000	WOB	7439-92-1
Total Silver	ND *	mg/kg	0.280	EPA Method 6020	05/20/1999 1000	WOB	7440-22-4
Acetone	ND *	ug/kg	22	EPA Method 8260B	05/21/1999 1117	KLB	67-64-1
Acrolein	ND *	ug/kg	56	EPA Method 8260B	05/21/1999 1117	KLB	107-02-8
unitrile	ND *	ug/kg	22	EPA Method 8260B	05/21/1999 1117	KLB	107-13-1
Benzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	71-43-2

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Project Report: 102064
Client: CES2
Project Number:
CES2 CSA Closure-CES16,

Results for Project 102064

408854 VS-811-3-1-SS/CSA Closure Soil Sample-CES16 Soil Taken: 05/18/1999 1210 By: Client Rec:05/19/1999

Parameter	*Result*	*Unit*	*MAL*	*Method*	*Analyzed*	*By*	*CAS*
Bromobenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	108-86-1
Bromochloromethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	74-97-5
Bromodichloromethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	75-27-4
Bromoform	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	74-83-9
tert-Butylbenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	98-06-6
sec-Butylbenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	135-98-8
n-Butylbenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	104-51-8
Carbon Tetrachloride	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	56-23-5
Chlorobenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	108-90-7
Chloroethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	75-00-3
2-Chloroethylvinyl ether	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	110-75-8
Chloroform	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	67-66-3
›omethane (Methyl Chloride)	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	74-87-3
2-Chlorotoluene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	95-49-8
4-Chlorotoluene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	106-43-4
Dibromochloromethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	75-27-4
1,2-Dibromoethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	106-93-4
Dibromomethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	74-95-3
1,3-Dichlorobenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	541-73-1
1,2-Dichlorobenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	95-50-1
1,4-Dichlorobenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	106-46-7
Dichlorodifluoromethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	75-71-8
1,1-Dichloroethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	75-34-3
1,2-Dichloroethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	107-06-2
trans-1,2-Dichloroethene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	156-60-5
cis-1,2-Dichloroethene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	156-59-2
1,1-Dichloroethylene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	75-35-4
1,2-Dichloropropane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	78-87-5
2,2-Dichloropropane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	594-20-7
1,3-Dichloropropane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	142-28-9
cis-1,3-Dichloropropene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	10061-01-5
trans-1,3-Dichloropropene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	10061-02-6
1,1-Dichloropropene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	563-58-6
Ethyl benzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	100-41-4
Hexachlorobutadiene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	98-82-8
ropyltoluene	7.1 *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND *	ug/kg	56	EPA Method 8260B	05/21/1999 1117	KLB	78-93-3
Methyl Isobutyl Ketone	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	108-10-1

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Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Results for Project 102064

408854 VS-811-3-1-SS/CSA Closure Soil Sample-CES16

Soil Taken: 05/18/1999 1210 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Methylene Chloride	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	75-09-2
Naphthalene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	91-20-3
n-Propylbenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	103-65-1
Styrene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	630-20-6
Tetrachloroethylene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	127-18-4
Toluene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	108-88-3
1,2,4-Trichlorobenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	120-82-1
1,2,3-Trichlorobenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	87-61-6
1,1,1-Trichloroethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	71-55-6
1,1,2-Trichloroethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	79-00-5
Trichloroethylene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	79-01-6
orofluoromethane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	75-69-4
1,2,3-Trichloropropane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	96-18-4
1,2,4-Trimethylbenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	95-63-6
1,3,5-Trimethylbenzene	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	108-67-8
Vinyl Chloride	ND *	ug/kg	2.2	EPA Method 8260B	05/21/1999 1117	KLB	75-01-4
Xylenes, Total	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND *	ug/kg	5.6	EPA Method 8260B	05/21/1999 1117	KLB	96-12-8
Total Solids	89.3	%	0.1	SM 18th 2540 G	05/21/1999 1454	PRE	

* Dry Weight Basis

408855 VS-811-4-1-SS/CSA Closure Soil Sample-CES16

Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Arsenic	6.63 *	mg/kg	0.308	EPA Method 6020	05/20/1999 1000	WOB	7440-38-2
Total Cadmium	ND *	mg/kg	0.308	EPA Method 6020	05/20/1999 1000	WOB	7440-43-9
Total Chromium	15.8 *	mg/kg	0.308	EPA Method 6020	05/20/1999 1000	WOB	7440-47-3
Total Lead	10.3 *	mg/kg	0.308	EPA Method 6020	05/20/1999 1000	WOB	7439-92-1
Total Silver	ND *	mg/kg	0.308	EPA Method 6020	05/20/1999 1000	WOB	7440-22-4
Acetone	ND *	ug/kg	25	EPA Method 8260B	05/21/1999 1433	KLB	67-64-1
Acrolein	ND *	ug/kg	62	EPA Method 8260B	05/21/1999 1433	KLB	107-02-8
Acrylonitrile	ND *	ug/kg	25	EPA Method 8260B	05/21/1999 1433	KLB	107-13-1
Benzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	71-43-2
Bromobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	108-86-1
Bromochloromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	74-97-5
Bromodichloromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	75-27-4
oform	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	75-25-2
omethane (Methyl Bromide)	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	74-83-9
tert-Butylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	98-06-6

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Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Results for Project 102064

408855 VS-811-4-1-SS/CSA Closure Soil Sample-CES16 Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
sec-Butylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	135-98-8
n-Butylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	104-51-8
Carbon Tetrachloride	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	56-23-5
Chlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	108-90-7
Chloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	75-00-3
2-Chloroethylvinyl ether	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	110-75-8
Chloroform	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	74-87-3
2-Chlorotoluene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	95-49-8
4-Chlorotoluene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	106-43-4
Dibromochloromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	75-27-4
1,2-Dibromoethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	106-93-4
Dibromomethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	74-95-3
ichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	541-73-1
1,2-Dichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	95-50-1
1,4-Dichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	106-46-7
Dichlorodifluoromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	75-71-8
1,1-Dichloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	75-34-3
1,2-Dichloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	107-06-2
trans-1,2-Dichloroethene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	156-60-5
cis-1,2-Dichloroethene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	156-59-2
1,1-Dichloroethylene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	75-35-4
1,2-Dichloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	78-87-5
2,2-Dichloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	594-20-7
1,3-Dichloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	142-28-9
cis-1,3-Dichloropropene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	10061-01-5
trans-1,3-Dichloropropene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	10061-02-6
1,1-Dichloropropene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	563-58-6
Ethyl benzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	100-41-4
Hexachlorobutadiene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	98-82-8
p-Isopropyltoluene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND *	ug/kg	62	EPA Method 8260B	05/21/1999 1433	KLB	78-93-3
Methyl Isobutyl Ketone	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	108-10-1
Methylene Chloride	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	75-09-2
Naphthalene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	91-20-3
n-Propylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	103-65-1
ıe	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	630-20-6

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Corporate Office
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Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Results for Project 102064

408855 VS-811-4-1-SS/CSA Closure Soil Sample-CES16 Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Tetrachloroethylene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	127-18-4
Toluene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	108-88-3
1,2,4-Trichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	120-82-1
1,2,3-Trichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	87-61-6
1,1,1-Trichloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	71-55-6
1,1,2-Trichloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	79-00-5
Trichloroethylene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	79-01-6
Trichlorofluoromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	75-69-4
1,2,3-Trichloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	96-18-4
1,2,4-Trimethylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	95-63-6
1,3,5-Trimethylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	108-67-8
Vinyl Chloride	ND *	ug/kg	2.5	EPA Method 8260B	05/21/1999 1433	KLB	75-01-4
Xylenes, Total	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	95-47-6, etc.
ibromo-3-chloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1433	KLB	96-12-8
Total Solids	81.1	%	0.1	SM 18th 2540 G	05/21/1999 1454	PRE	

* Dry Weight Basis

408856 VS-811-4-1-SS/CSA Closure Soil Sample-CES16 -Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Arsenic	4.93 *	mg/kg	0.312	EPA Method 6020	05/20/1999 1000	WOB	7440-38-2
Total Cadmium	ND *	mg/kg	0.312	EPA Method 6020	05/20/1999 1000	WOB	7440-43-9
Total Chromium	18.5 *	mg/kg	0.312	EPA Method 6020	05/20/1999 1000	WOB	7440-47-3
Total Lead	9.38 *	mg/kg	0.312	EPA Method 6020	05/20/1999 1000	WOB	7439-92-1
Total Silver	ND *	mg/kg	0.312	EPA Method 6020	05/20/1999 1000	WOB	7440-22-4
Acetone	ND *	ug/kg	25	EPA Method 8260B	05/21/1999 1501	KLB	67-64-1
Acrolein	ND *	ug/kg	62	EPA Method 8260B	05/21/1999 1501	KLB	107-02-8
Acrylonitrile	ND *	ug/kg	25	EPA Method 8260B	05/21/1999 1501	KLB	107-13-1
Benzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	71-43-2
Bromobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	108-86-1
Bromochloromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	74-97-5
Bromodichloromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	75-27-4
Bromoform	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	74-83-9
tert-Butylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	98-06-6
sec-Butylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	135-98-8
n-Butylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	104-51-8
Carbon Tetrachloride	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	56-23-5
obenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	108-90-7
oethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	75-00-3
2-Chloroethylvinyl ether	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	110-75-8

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Corporate Office

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Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Results for Project 102064

408856 VS-811-4-1-SS/CSA Closure Soil Sample-CES16 -Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

Parameter	*Result*	*Unit*	*MAL*	*Method*	*Analyzed*	*By*	*CAS*
Chloroform	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	74-87-3
2-Chlorotoluene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	95-49-8
4-Chlorotoluene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	106-43-4
Dibromochloromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	75-27-4
1,2-Dibromoethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	106-93-4
Dibromomethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	74-95-3
1,3-Dichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	541-73-1
1,2-Dichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	95-50-1
1,4-Dichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	106-46-7
Dichlorodifluoromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	75-71-8
1,1-Dichloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	75-34-3
1,2-Dichloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	107-06-2
1,2-Dichloroethene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	156-60-5
cis-1,2-Dichloroethene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	156-59-2
1,1-Dichloroethylene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	75-35-4
1,2-Dichloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	78-87-5
2,2-Dichloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	594-20-7
1,3-Dichloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	142-28-9
cis-1,3-Dichloropropene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	10061-01-5
trans-1,3-Dichloropropene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	10061-02-6
1,1-Dichloropropene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	563-58-6
Ethyl benzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	100-41-4
Hexachlorobutadiene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	98-82-8
p-Isopropyltoluene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND *	ug/kg	62	EPA Method 8260B	05/21/1999 1501	KLB	78-93-3
Methyl Isobutyl Ketone	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	108-10-1
Methylene Chloride	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	75-09-2
Naphthalene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	91-20-3
n-Propylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	103-65-1
Styrene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	630-20-6
Tetrachloroethylene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	127-18-4
Toluene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	108-88-3
1,2,4-Trichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	120-82-1
Trichlorobenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	87-61-6
1,1,1-Trichloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	71-55-6
1,1,2-Trichloroethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	79-00-5

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Project Report: 102064
Client: CES2
Project Number:
CES2 CSA Closure-CES16,

Results for Project 102064

408856 VS-811-4-1-SS/CSA Closure Soil Sample-CES16 -Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Trichloroethylene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	79-01-6
Trichlorofluoromethane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	75-69-4
1,2,3-Trichloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	96-18-4
1,2,4-Trimethylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	95-63-6
1,3,5-Trimethylbenzene	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	108-67-8
Vinyl Chloride	ND *	ug/kg	2.5	EPA Method 8260B	05/21/1999 1501	KLB	75-01-4
Xylenes, Total	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND *	ug/kg	6.2	EPA Method 8260B	05/21/1999 1501	KLB	96-12-8
Total Solids	80.2	%	0.1	SM 18th 2540 G	05/21/1999 1454	PRE	

* Dry Weight Basis

408857 VS-811-1-EB Equipment Blank Liquid Aqueous Taken: 05/18/1999 1230 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
[illegible]ne	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 2128	KLB	67-64-1
[illegible]ein	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 2128	KLB	107-02-8
Acrylonitrile	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 2128	KLB	107-13-1
Benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	71-43-2
Bromobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	108-86-1
Bromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	74-97-5
Bromodichloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	75-27-4
Bromoform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	74-83-9
tert-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	98-06-6
sec-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	135-98-8
n-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	104-51-8
Carbon Tetrachloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	56-23-5
Chlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	108-90-7
Chloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	110-75-8
Chloroform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	74-87-3
2-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	95-49-8
4-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	106-43-4
Dibromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	75-27-4
1,2-Dibromoethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	106-93-4
Dibromomethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	541-73-1
[illegible]ichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	95-50-1
[illegible]ichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	75-71-8

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Project Report: 102064
Client: CES2
Project Number:
CES2 CSA Closure-CES16,

Results for Project 102064

408857 VS-811-1-EB Equipment Blank Liquid Aqueous Taken: 05/18/1999 1230 By: Client Rec:05/19/1999

Parameter	*Result*	*Unit*	*MAL*	*Method*	*Analyzed*	*By*	*CAS*
1,1-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	75-34-3
1,2-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	75-35-4
1,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	78-87-5
2,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	594-20-7
1,3-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	563-58-6
Ethyl benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	100-41-4
Hexachlorobutadiene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	87-68-3
›pyl Benzene (Cumene)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	98-82-8
p-Isopropyltoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 2128	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	108-10-1
Methylene Chloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	75-09-2
Naphthalene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	91-20-3
n-Propylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	103-65-1
Styrene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	630-20-6
Tetrachloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	127-18-4
Toluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	79-00-5
Trichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	79-01-6
Trichlorofluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	108-67-8
Vinyl Chloride	ND	ug/L	2.00	EPA Method 8260B	05/20/1999 2128	KLB	75-01-4
Xylenes, Total	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2128	KLB	96-12-8

Continued

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Corporate Office
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903/984-0551 FAX 903/984-5914

Project Report: 102064
Client: CES2
Project Number:
CES2 CSA Closure-CES16,

Results for Project 102064

408858 811-1-TB Trip Blank Liquid Aqueous Taken: 05/18/1999 By: SKL Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 2155	KLB	67-64-1
Acrolein	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 2155	KLB	107-02-8
Acrylonitrile	ND	ug/L	20.0	EPA Method 8260B	05/20/1999 2155	KLB	107-13-1
Benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	71-43-2
Bromobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	108-86-1
Bromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	74-97-5
Bromodichloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	75-27-4
Bromoform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	74-83-9
tert-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	98-06-6
sec-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	135-98-8
n-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	104-51-8
Carbon Tetrachloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	56-23-5
obenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	108-90-7
Chloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	110-75-8
Chloroform	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	74-87-3
2-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	95-49-8
4-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	106-43-4
Dibromochloromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	75-27-4
1,2-Dibromoethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	106-93-4
Dibromomethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	75-71-8
1,1-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	75-34-3
1,2-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	75-35-4
1,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	78-87-5
2,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	594-20-7
1,3-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	10061-02-6
ichloropropene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	563-58-6
Ethyl benzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	100-41-4
Hexachlorobutadiene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	87-68-3

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Corporate Office
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Project Report: 102064
Client: CES2
Project Number:
CES2 CSA Closure-CES16,

Results for Project 102064

408858 811-1-TB Trip Blank

Liquid Aqueous Taken: 05/18/1999 By: SKL Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Isopropyl Benzene (Cumene)	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	98-82-8
p-Isopropyltoluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND	ug/L	50.0	EPA Method 8260B	05/20/1999 2155	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	108-10-1
Methylene Chloride	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	75-09-2
Naphthalene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	91-20-3
n-Propylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	103-65-1
Styrene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	630-20-6
Tetrachloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	127-18-4
Toluene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	120-82-1
·Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	87-61-6
,1,1-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	79-00-5
Trichloroethylene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	79-01-6
Trichlorofluoromethane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	108-67-8
Vinyl Chloride	ND	ug/L	2.00	EPA Method 8260B	05/20/1999 2155	KLB	75-01-4
Xylenes, Total	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	EPA Method 8260B	05/20/1999 2155	KLB	96-12-8

408859 VS-811-1-EB/CSA Closure-CES16 Equipment

Liquid Aqueous Taken: 05/18/1999 1230 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Arsenic	1.79	ug/L	1.00	EPA Method 6020	05/24/1999 1300	WOB	7440-38-2
Total Barium	ND	ug/L	5.00	EPA Method 6020	05/24/1999 1300	WOB	7440-39-3
Total Cadmium	ND	ug/L	1.00	EPA Method 6020	05/24/1999 1300	WOB	7440-43-9
Total Chromium	1.98	ug/L	1.00	EPA Method 6020	05/24/1999 1300	WOB	7440-47-3
Total Lead	1.32	ug/L	1.00	EPA Method 6020	05/24/1999 1300	WOB	7439-92-1
Total Selenium	19.7	ug/L	1.00	EPA Method 6020	05/24/1999 1300	WOB	7782-49-2
Total Silver	ND	ug/L	1.00	EPA Method 6020	05/24/1999 1300	WOB	7440-22-4
Total Mercury	ND	ug/L	0.150	EPA Method 7470A	05/21/1999 1444	WOB	7439-97-6

408860 FDC-1 Fill Dirt Certification

Soil Taken: 05/18/1999 1602 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Arsenic	2.25 *	mg/kg	0.283	EPA Method 6020	05/20/1999 1000	WOB	7440-38-2
otal Barium	61.1 *	mg/kg	1.41	EPA Method 6020	05/20/1999 1000	WOB	7440-39-3
Total Cadmium	ND *	mg/kg	0.283	EPA Method 6020	05/20/1999 1000	WOB	7440-43-9

Continued

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Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Results for Project 102064

408860 FDC-1 Fill Dirt Certification Soil Taken: 05/18/1999 1602 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Chromium	10.2 *	mg/kg	0.283	EPA Method 6020	05/20/1999 1000	WOB	7440-47-3
Total Lead	5.07 *	mg/kg	0.283	EPA Method 6020	05/20/1999 1000	WOB	7439-92-1
Total Selenium	ND *	mg/kg	0.283	EPA Method 6020	05/20/1999 1000	WOB	7782-49-2
Total Silver	ND *	mg/kg	0.283	EPA Method 6020	05/20/1999 1000	WOB	7440-22-4
Total Mercury	0.0132 *	mg/kg	0.00566	EPA Method 7471A	05/20/1999 1629	WOB	7439-97-6
Acetone	ND *	ug/kg	23	EPA Method 8260B	05/21/1999 1530	KLB	67-64-1
Acrolein	ND *	ug/kg	57	EPA Method 8260B	05/21/1999 1530	KLB	107-02-8
Acrylonitrile	ND *	ug/kg	23	EPA Method 8260B	05/21/1999 1530	KLB	107-13-1
Benzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	71-43-2
Bromobenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	108-86-1
Bromochloromethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	74-97-5
Bromodichloromethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	75-27-4
Bromoform	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	75-25-2
ɔmethane (Methyl Bromide)	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	74-83-9
tert-Butylbenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	98-06-6
sec-Butylbenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	135-98-8
n-Butylbenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	104-51-8
Carbon Tetrachloride	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	56-23-5
Chlorobenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	108-90-7
Chloroethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	75-00-3
2-Chloroethylvinyl ether	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	110-75-8
Chloroform	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	74-87-3
2-Chlorotoluene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	95-49-8
4-Chlorotoluene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	106-43-4
Dibromochloromethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	75-27-4
1,2-Dibromoethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	106-93-4
Dibromomethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	74-95-3
1,3-Dichlorobenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	541-73-1
1,2-Dichlorobenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	95-50-1
1,4-Dichlorobenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	106-46-7
Dichlorodifluoromethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	75-71-8
1,1-Dichloroethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	75-34-3
1,2-Dichloroethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	107-06-2
trans-1,2-Dichloroethene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	156-60-5
cis-1,2-Dichloroethene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	156-59-2
1,1-Dichloroethylene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	75-35-4
chloropropane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	78-87-5
2,2-Dichloropropane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	594-20-7
1,3-Dichloropropane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	142-28-9

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Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Results for Project 102064

408860 FDC-1 Fill Dirt Certification

Soil Taken: 05/18/1999 1602 By: Client Rec:05/19/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
cis-1,3-Dichloropropene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	10061-01-5
trans-1,3-Dichloropropene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	10061-02-6
1,1-Dichloropropene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	563-58-6
Ethyl benzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	100-41-4
Hexachlorobutadiene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	98-82-8
p-Isopropyltoluene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND *	ug/kg	57	EPA Method 8260B	05/21/1999 1530	KLB	78-93-3
Methyl Isobutyl Ketone	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	108-10-1
Methylene Chloride	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	75-09-2
Naphthalene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	91-20-3
n-Propylbenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	103-65-1
Styrene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	100-42-5
2-Tetrachloroethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	630-20-6
Tetrachloroethylene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	127-18-4
Toluene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	108-88-3
1,2,4-Trichlorobenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	120-82-1
1,2,3-Trichlorobenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	87-61-6
1,1,1-Trichloroethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	71-55-6
1,1,2-Trichloroethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	79-00-5
Trichloroethylene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	79-01-6
Trichlorofluoromethane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	75-69-4
1,2,3-Trichloropropane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	96-18-4
1,2,4-Trimethylbenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	95-63-6
1,3,5-Trimethylbenzene	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	108-67-8
Vinyl Chloride	ND *	ug/kg	2.3	EPA Method 8260B	05/21/1999 1530	KLB	75-01-4
Xylenes, Total	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND *	ug/kg	5.7	EPA Method 8260B	05/21/1999 1530	KLB	96-12-8
Total Solids	88.4	%	0.1	SM 18th 2540 G	05/21/1999 1454	PRE	

* Dry Weight Basis

Sample Preparation Steps for Project 102064

408852 VS-811-1-1-SS/CSA Closure Soil Sample-CES16

Soil Taken: 05/18/1999 1146 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
As Received to Dry Weight Basis	Converted		Calculation	05/28/1999 16:19	CAL
- Metals Digestion	50/1 A/S/S	ml/g	EPA Method 3050B	05/20/1999 1300	PJD
e Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 0954	KLB

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903/984-0551 FAX 903/984-5914

Project Report: 102064
Client: CES2
Project Number: CES2 CSA Closure-CES16,

Sample Preparation Steps for Project 102064

408853 VS-811-2-1-SS/CSA Closure Soil Sample-CES16

Soil Taken: 05/18/1999 1150 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
As Received to Dry Weight Basis	Converted		Calculation	05/24/1999 13:48	CAL
Solid - Metals Digestion	50/1	ml/g	EPA Method 3050B	05/20/1999 1300	PJD
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1020	KLB

408854 VS-811-3-1-SS/CSA Closure Soil Sample-CES16

Soil Taken: 05/18/1999 1210 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
As Received to Dry Weight Basis	Converted		Calculation	05/24/1999 13:48	CAL
Solid - Metals Digestion	50/1	ml/g	EPA Method 3050B	05/20/1999 1300	PJD
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1117	KLB

408855 VS-811-4-1-SS/CSA Closure Soil Sample-CES16

Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
As Received to Dry Weight Basis	Converted		Calculation	05/24/1999 13:48	CAL
Solid - Metals Digestion	50/1	ml/g	EPA Method 3050B	05/20/1999 1300	PJD
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1433	KLB

408856 VS-811-4-1-SS/CSA Closure Soil Sample-CES16 -

Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
As Received to Dry Weight Basis	Converted		Calculation	05/24/1999 13:48	CAL
Solid - Metals Digestion	50/1	ml/g	EPA Method 3050B	05/20/1999 1300	PJD
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1501	KLB

408857 VS-811-1-EB Equipment Blank

Liquid Aqueous Taken: 05/18/1999 1230 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/20/1999 2128	KLB

408858 811-1-TB Trip Blank

Liquid Aqueous Taken: 05/18/1999 By: SKL Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/20/1999 2155	KLB

408859 VS-811-1-EB/CSA Closure-CES16 Equipment

Liquid Aqueous Taken: 05/18/1999 1230 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
Bottle pH	<2	SU		05/19/1999 2358	AAJ
Liquid - Metals Digestion	50/50 A/S/S	mL/mL	EPA Method 3010A	05/24/1999 1000	PJD
Mercury Liquid Metals Digestion	150/100	mL/mL	EPA Method 7470A	05/20/1999 0900	WBM
Mercury Liquid Metals Digestion	150/100	mL/mL	EPA Method 7470A	05/21/1999 0900	WBM

408860 FDC-1 Fill Dirt Certification

Soil Taken: 05/18/1999 1602 By: Client Rec:05/19/1999

Parameter	Result	Unit	Method	Analyzed	By
As Received to Dry Weight Basis	Converted		Calculation	05/24/1999 13:48	CAL
Metals Digestion	50/1 A/S/S	ml/g	EPA Method 3050B	05/20/1999 1300	PJD
Metals Digestion - Hg Solid	50/1	mL/g	EPA Method 7471A	05/20/1999 0900	WBM
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	05/21/1999 1530	KLB

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Project Report: 102064
Client: CES2
Project Number:
CES2 CSA Closure-CES16,

Sample Specific Quality Control/Quality Assurance

408852 **VS-811-1-1-SS/CSA Closure Soil Sample-CES16** Soil Taken: 05/18/1999 1146 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408852 05/21/1999 1

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	40.6	40.0	100
Toluene-d8	41.1	40.0	100
Bromofluorobenzene-SURR	41.2	40.0	100

EPA Method 8260B Internal Standard Areas on Sample 408852 05/21/1999 1

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	175000	179200	
1,4-Difluorobenzene-ISTD	253100	258900	
Clorobenzene-d5-ISTD	204400	210700	
1,4-Dichlorobenzene-d4-ISTD	84650	91080	

408853 **VS-811-2-1-SS/CSA Closure Soil Sample-CES16** Soil Taken: 05/18/1999 1150 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408853 05/21/1999 1

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	40.9	40.0	100
Toluene-d8	41.0	40.0	100
Bromofluorobenzene-SURR	44.9	40.0	110

EPA Method 8260B Internal Standard Areas on Sample 408853 05/21/1999 1

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	177800	179200	
1,4-Difluorobenzene-ISTD	254900	258900	
Clorobenzene-d5-ISTD	202200	210700	
1,4-Dichlorobenzene-d4-ISTD	75030	91080	

408854 **VS-811-3-1-SS/CSA Closure Soil Sample-CES16** Soil Taken: 05/18/1999 1210 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408854 05/21/1999 1

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	40.8	40.0	100
Toluene-d8	40.0	40.0	100
Bromofluorobenzene-SURR	44.4	40.0	110

EPA Method 8260B Internal Standard Areas on Sample 408854 05/21/1999 1

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	174700	179200	
1,4-Difluorobenzene-ISTD	250900	258900	
Clorobenzene-d5-ISTD	192500	210700	
1,4-Dichlorobenzene-d4-ISTD	73060	91080	

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Sample Specific Quality Control/Quality Assurance

408855 VS-811-4-1-SS/CSA Closure Soil Sample-CES16 Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408855 05/21/1999 1

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	41.0	40.0	100
Toluene-d8	41.8	40.0	100
Bromofluorobenzene-SURR	41.3	40.0	100

EPA Method 8260B Internal Standard Areas on Sample 408855 05/21/1999 1

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	175400	179200	
1,4-Difluorobenzene-ISTD	246900	258900	
Clorobenzene-d5-ISTD	200400	210700	
1,4-Dichlorobenzene-d4-ISTD	83810	91080	

408856 VS-811-4-1-SS/CSA Closure Soil Sample-CES16 -Soil Taken: 05/18/1999 1220 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408856 05/21/1999 1

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	41.3	40.0	100
Toluene-d8	41.1	40.0	100
Bromofluorobenzene-SURR	42.1	40.0	110

EPA Method 8260B Internal Standard Areas on Sample 408856 05/21/1999 1

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	172000	179200	
1,4-Difluorobenzene-ISTD	242800	258900	
Clorobenzene-d5-ISTD	193800	210700	
1,4-Dichlorobenzene-d4-ISTD	81400	91080	

408857 VS-811-1-EB Equipment Blank Liquid Aqueous Taken: 05/18/1999 1230 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408857 05/20/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	41.5	40.0	100
Toluene-d8	40.7	40.0	100
Bromofluorobenzene-SURR	42.1	40.0	110

EPA Method 8260B Internal Standard Areas on Sample 408857 05/20/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	198300	206400	
1,4-Difluorobenzene-ISTD	291900	309600	
Clorobenzene-d5-ISTD	238900	254200	
1,4-Dichlorobenzene-d4-ISTD	101200	109800	

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Project Number:
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Sample Specific Quality Control/Quality Assurance

408858 811-1-TB Trip Blank Liquid Aqueous Taken: 05/18/1999 By: SKL Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408858 05/20/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	41.6	40.0	100
Toluene-d8	41.1	40.0	100
Bromofluorobenzene-SURR	42.1	40.0	110

EPA Method 8260B Internal Standard Areas on Sample 408858 05/20/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	201600	206400	
1,4-Difluorobenzene-ISTD	292800	309600	
Clorobenzene-d5-ISTD	241800	254200	
1,4-Dichlorobenzene-d4-ISTD	103900	109800	

408860 FDC-1 Fill Dirt Certification Soil Taken: 05/18/1999 1602 By: Client Rec:05/19/1999

EPA Method 8260B Surrogate/Spike on Sample 408860 05/21/1999 1

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	40.8	40.0	100
Toluene-d8	40.6	40.0	100
Bromofluorobenzene-SURR	41.3	40.0	100

EPA Method 8260B Internal Standard Areas on Sample 408860 05/21/1999 1

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	175000	179200	
1,4-Difluorobenzene-ISTD	245000	258900	
Clorobenzene-d5-ISTD	192100	210700	
1,4-Dichlorobenzene-d4-ISTD	81940	91080	

Organic Quality Control/Quality Assurance for Project 102064

EPA Method 8260B Blank 05/21/1999 1

Compound	Result
Benzene	ND
Chlorobenzene	ND
1,1-Dichloroethylene	ND
Methylene Chloride	ND
Toluene	ND
Trichloroethylene	ND

EPA Method 8260B Instrument Tune 05/21/1999 1

Mass	Reference Mass	Min Abundance	Max Abundance	Result	Status
BFB Mass 50	95	15.0	40.0	20.4	PASS
BFB Mass 75	95	30.0	60.0	48.2	PASS
BFB Mass 95	95	100	100	100.0	PASS
BFB Mass 96	95	5.00	9.00	6.3	PASS

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BFB Mass 173	174	0	2.00	0.0	PASS
BFB Mass 174	95	50.0	100	70.2	PASS
BFB Mass 175	174	5.00	9.00	8.3	PASS
BFB Mass 176	174	95.0	101	97.4	PASS
BFB Mass 177	176	5.00	9.00	6.3	PASS

Instrument Calibration Check 05/21/1999 1

Compound	Max %Rel. Std.	%Deviation	Status
Chloroform	20.0	13.9	PASS
1,1-Dichloroethylene	20.0	16.0	PASS
1,2-Dichloropropane	20.0	15.3	PASS
Ethyl benzene	20.0	18.6	PASS
Toluene	20.0	18.4	PASS
Vinyl Chloride	20.0	11.2	PASS

EPA Method 8260B Instrument System Performance Check 05/21/1999 1

Compound	Min Response Factor	Response Factor	Status
Chloroform	.1010	0.207	PASS
Chlorobenzene	.3000	1.127	PASS
Chloromethane (Methyl Chloride)	.1000	0.636	PASS
1,1-Dichloroethane	.1000	1.031	PASS
1,1,2,2-Tetrachloroethane	.3000	1.317	PASS

EPA Method 8260B Matrix Spike/Duplicate on Sample 408852 05/21/1999 1

Compound	First (%)	Second (%)	%Difference
Benzene	99.2	85.4	-14
Chlorobenzene	97.6	79.0	-19
1,1-Dichloroethylene	101	94.4	-6.5
Toluene	95.0	83.0	-13
Trichloroethylene	97.0	87.2	-10

EPA Method 8260B Blank 05/20/1999 2

Compound	Result
Benzene	ND
Chlorobenzene	ND
1,1-Dichloroethylene	ND
Methylene Chloride	ND
Toluene	ND
Trichloroethylene	ND

EPA Method 8260B Instrument Tune 05/20/1999 2

Mass	Reference Mass	Min Abundance	Max Abundance	Result	Status
BFB Mass 50	95	15.0	40.0	20.3	PASS
BFB Mass 75	95	30.0	60.0	47.9	PASS
BFB Mass 95	95	100	100	100.0	PASS
BFB Mass 96	95	5.00	9.00	6.8	PASS

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BFB Mass 173	174	0	2.00	0.0	PASS
BFB Mass 174	95	50.0	100	69.6	PASS
BFB Mass 175	174	5.00	9.00	8.5	PASS
BFB Mass 176	174	95.0	101	96.8	PASS
BFB Mass 177	176	5.00	9.00	6.6	PASS

Instrument Calibration Check 05/20/1999 2

Compound	Max %Rel. Std.	%Deviation	Status
Chloroform	20.0	2.8	PASS
1,1-Dichloroethylene	20.0	5.3	PASS
1,2-Dichloropropane	20.0	4.5	PASS
Ethyl benzene	20.0	0.8	PASS
Toluene	20.0	6.8	PASS
Vinyl Chloride	20.0	-0.8	PASS

EPA Method 8260B Instrument System Performance Check 05/20/1999 2

Compound	Min Response Factor	Response Factor	Status
Bromoform	.1010	0.225	PASS
Chlorobenzene	.3000	1.065	PASS
Chloromethane (Methyl Chloride)	.1000	0.634	PASS
1,1-Dichloroethane	.1000	1.001	PASS
1,1,2,2-Tetrachloroethane	.3000	1.491	PASS

EPA Method 8260B Matrix Spike/Duplicate on Sample 408832 05/20/1999 2

Compound	First (%)	Second (%)	%Difference
Benzene	97.4	98.4	1.0
Chlorobenzene	104	104	0
1,1-Dichloroethylene	96.0	96.2	0.21
Toluene	98.6	99.2	0.61
Trichloroethylene	97.4	97.8	0.41

SET Quality Control/Quality Assurance for Project 102064

Total Silver (Analyzed: 05/20/1999 1000 WOB Verified: 05/21/1999 14:34 SAH)

Sample	*Type*	*Result*	*Value*	*Unit*	*Percent*
	Standard	0.0986	0.100	ppm	-1.4
	Standard	0.310	0.300	ppm	3.3
	Standard	0.296	0.300	ppm	-1.3
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.297	0.300	ppm	-1.0
	Standard	0.297	0.300	ppm	-1.0
	Standard	0.290	0.300	ppm	-3.3
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.104	0.100	ppm	4.0

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SET Quality Control/Quality Assurance for Project 102064

Total Silver

(Analyzed: 05/20/1999 1000 WOB Verified: 05/21/1999 14:34 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.309	0.300	ppm	3.0
	Standard	0.313	0.300	ppm	4.3
	Standard	0.310	0.300	ppm	3.3
	Standard	0.310	0.300	ppm	3.3
	Standard	0.317	0.300	ppm	5.7
	LCS	0.0900	0.100	ppm	-10.0
	LCS	0.0869	0.100	ppm	-13.1
	LCS	0.0104	0.0200	ppm	-48.0
	LCS	0.0102	0.0200	ppm	-49.0
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
	Blank	<0.00500		ppm	
	Blank	<0.00500		ppm	
7	Spike		0.0200	ppm	43
408317	Spike		0.0200	ppm	43
408398	Spike		0.100	ppm	67
408398	Spike		0.100	ppm	63
408399	Spike		0.100	ppm	64
408540	Spike		0.100	ppm	85
408540	Spike		0.100	ppm	89
408615	Spike		0.100	ppm	83
408615	Spike		0.100	ppm	83
408755	Spike		0.100	ppm	90
408755	Spike		0.100	ppm	72
408825	Spike		0.100	ppm	72
408825	Spike		0.100	ppm	69
408852	Spike		0.0200	ppm	50
408852	Spike		0.0200	ppm	52
408860	Spike		0.0200	ppm	51
408860	Spike		0.0200	ppm	47
	Standard	0.0954	0.100	ppm	-4.6
	Standard	0.304	0.300	ppm	1.3
	Standard	0.300	0.300	ppm	0.0
	Standard	0.272	0.300	ppm	-9.3
	Standard	0.277	0.300	ppm	-7.7
	Standard	0.276	0.300	ppm	-8.0
	Standard	0.275	0.300	ppm	-8.3
	LCS	0.0417	0.100	ppm	-58.3
	LCS	0.00784	0.0200	ppm	-60.8
	Blank	<0.00100		ppm	

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Total Silver

(Analyzed: 05/24/1999 1300 WOB Verified: 05/24/1999 16:00 SAH)

Sample	Type	Result	Value	Unit	Percent
	Blank	<0.00500		ppm	
408262	Spike		0.100	ppm	35
408859	Spike		0.100	ppm	39
408859	Spike		0.100	ppm	39
408962	Spike		0.100	ppm	35
408962	Spike		0.100	ppm	34

Total Arsenic

(Analyzed: 05/27/1999 1300 WOB Verified: 05/28/1999 16:13 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.108	0.100	ppm	8.0
	Standard	0.319	0.300	ppm	6.3
	Standard	0.304	0.300	ppm	1.3
	Standard	0.329	0.300	ppm	9.7
	Standard	0.103	0.100	ppm	3.0
	Standard	0.327	0.300	ppm	9.0
	Standard	0.319	0.300	ppm	6.3
	Standard	0.325	0.300	ppm	8.3
	Standard	0.319	0.300	ppm	6.3
	Standard	0.304	0.300	ppm	1.3
	Standard	0.326	0.300	ppm	8.7
	Standard	0.320	0.300	ppm	6.7
	Standard	0.328	0.300	ppm	9.3
	Standard	0.100	0.100	ppm	0.0
	Standard	0.326	0.300	ppm	8.7
	Standard	0.310	0.300	ppm	3.3
	Standard	0.296	0.300	ppm	-1.3
	Standard	0.305	0.300	ppm	1.7
	LCS	0.0999	0.100	ppm	-0.1
	LCS	0.102	0.100	ppm	2.0
	LCS	0.502	0.500	ppm	0.4
	LCS	0.0969	0.100	ppm	-3.1
	Blank	0.0072		ppm	
	Blank	<0.00500		ppm	
	Blank	<0.00100		ppm	
	Blank	0.48		ppm	
408852	Spike		0.100	ppm	89
408852	Spike		0.100	ppm	75
[illegible]	Spike		0.100	ppm	87
[illegible]	Spike		0.100	ppm	88
409353	Spike		0.500	ppm	102

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Total Arsenic

(Analyzed: 05/27/1999 1300 WOB Verified: 05/28/1999 16:13 SAH)

Sample	Type	Result	Value	Unit	Percent
409353	Spike		0.500	ppm	104
409373	Spike		0.500	ppm	104
409373	Spike		0.500	ppm	101
	Standard	0.101	0.100	ppm	1.0
	Standard	0.314	0.300	ppm	4.7
	Standard	0.313	0.300	ppm	4.3
	Standard	0.316	0.300	ppm	5.3
	Standard	0.311	0.300	ppm	3.7
	Standard	0.315	0.300	ppm	5.0
	Standard	0.308	0.300	ppm	2.7
	Standard	0.317	0.300	ppm	5.7
	Standard	0.325	0.300	ppm	8.3
	Standard	0.103	0.100	ppm	3.0
	Standard	0.307	0.300	ppm	2.3
	Standard	0.309	0.300	ppm	3.0
	Standard	0.304	0.300	ppm	1.3
	Standard	0.302	0.300	ppm	0.7
	Standard	0.306	0.300	ppm	2.0
	LCS	0.492	0.500	ppm	-1.6
	LCS	0.504	0.500	ppm	0.8
	LCS	0.105	0.100	ppm	5.0
	LCS	0.101	0.100	ppm	1.0
	Blank	<0.00100		ppm	
	Blank	0.0010		ppm	
	Blank	0.0080		ppm	
	Blank	0.011		ppm	
408317	Spike		0.100	ppm	79
408317	Spike		0.100	ppm	81
408398	Spike		0.500	ppm	92
408398	Spike		0.500	ppm	92
408399	Spike		0.500	ppm	97
408540	Spike		0.500	ppm	105
408540	Spike		0.500	ppm	108
408615	Spike		0.500	ppm	104
408615	Spike		0.500	ppm	103
408755	Spike		0.500	ppm	98
408755	Spike		0.500	ppm	101
`5	Spike		0.500	ppm	99
0625	Spike		0.500	ppm	100
408860	Spike		0.100	ppm	93

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Total Arsenic

(Analyzed: 05/20/1999 1000 WOB Verified: 05/21/1999 14:34 SAH)

Sample	Type	Result	Value	Unit	Percent
408860	Spike		0.100	ppm	85
	Standard	0.0940	0.100	ppm	-6.0
	Standard	0.302	0.300	ppm	0.7
	Standard	0.296	0.300	ppm	-1.3
	Standard	0.306	0.300	ppm	2.0
	Standard	0.317	0.300	ppm	5.7
	Standard	0.297	0.300	ppm	-1.0
	Standard	0.298	0.300	ppm	-0.7
	LCS	0.497	0.500	ppm	-0.6
	LCS	0.0998	0.100	ppm	-0.2
	Blank	<0.00100		ppm	
	Blank	0.016		ppm	
408262	Spike		0.500	ppm	99
9	Spike		0.500	ppm	96
408859	Spike		0.500	ppm	96
408962	Spike		0.500	ppm	95
408962	Spike		0.500	ppm	95

Total Barium

(Analyzed: 05/24/1999 1300 WOB Verified: 05/24/1999 16:00 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.0935	0.100	ppm	-6.5
	Standard	0.293	0.300	ppm	-2.3
	Standard	0.292	0.300	ppm	-2.7
	Standard	0.284	0.300	ppm	-5.3
	Standard	0.287	0.300	ppm	-4.3
	Standard	0.273	0.300	ppm	-9.0
	LCS	0.472	0.500	ppm	-5.6
	LCS	0.100	0.100	ppm	0.0
	Blank	0.0050		ppm	
	Blank	<0.0250		ppm	
408262	Spike		0.500	ppm	90
408852	Spike		0.100	ppm	181
408852	Spike		0.100	ppm	131
408859	Spike		0.500	ppm	94
408859	Spike		0.500	ppm	92
408962	Spike		0.500	ppm	93
408962	Spike		0.500	ppm	92
6	Spike		0.100	ppm	101
6	Spike		0.100	ppm	144
	Standard	0.0972	0.100	ppm	-2.8

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Total Barium

(Analyzed: 05/20/1999 1000 WOB Verified: 05/21/1999 14:34 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.305	0.300	ppm	1.7
	Standard	0.290	0.300	ppm	-3.3
	Standard	0.285	0.300	ppm	-5.0
	Standard	0.278	0.300	ppm	-7.3
	Standard	0.276	0.300	ppm	-8.0
	Standard	0.280	0.300	ppm	-6.7
	Standard	0.300	0.300	ppm	0.0
	Standard	0.295	0.300	ppm	-1.7
	Standard	0.105	0.100	ppm	5.0
	Standard	0.311	0.300	ppm	3.7
	Standard	0.314	0.300	ppm	4.7
	Standard	0.307	0.300	ppm	2.3
	Standard	0.308	0.300	ppm	2.7
	Standard	0.311	0.300	ppm	3.7
	LCS	0.502	0.500	ppm	0.4
	LCS	0.461	0.500	ppm	-7.8
	LCS	0.0978	0.100	ppm	-2.2
	LCS	0.103	0.100	ppm	3.0
	Blank	0.012		ppm	
	Blank	<0.00500		ppm	
	Blank	<0.0250		ppm	
	Blank	<0.0250		ppm	
408317	Spike		0.100	ppm	75
408317	Spike		0.100	ppm	82
408398	Spike		0.500	ppm	89
408398	Spike		0.500	ppm	87
408399	Spike		0.500	ppm	86
408540	Spike		0.500	ppm	96
408540	Spike		0.500	ppm	100
408615	Spike		0.500	ppm	96
408615	Spike		0.500	ppm	94
408755	Spike		0.500	ppm	85
408755	Spike		0.500	ppm	87
408825	Spike		0.500	ppm	93
408825	Spike		0.500	ppm	93
408852	Spike		0.100	ppm	174
408852	Spike		0.100	ppm	132
0	Spike		0.100	ppm	202
408860	Spike		0.100	ppm	167

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Corporate Office
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Project Report: 102064
Client:
Project Number:
CES2 CSA Closure-CES16,

SET Quality Control/Quality Assurance for Project 102064

Total Cadmium

(Analyzed: 05/20/1999 1000 WOB Verified: 05/21/1999 14:34 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.101	0.100	ppm	1.0
	Standard	0.315	0.300	ppm	5.0
	Standard	0.299	0.300	ppm	-0.3
	Standard	0.302	0.300	ppm	0.7
	Standard	0.299	0.300	ppm	-0.3
	Standard	0.300	0.300	ppm	0.0
	Standard	0.297	0.300	ppm	-1.0
	Standard	0.297	0.300	ppm	-1.0
	Standard	0.306	0.300	ppm	2.0
	Standard	0.107	0.100	ppm	7.0
	Standard	0.312	0.300	ppm	4.0
	Standard	0.315	0.300	ppm	5.0
	Standard	0.311	0.300	ppm	3.7
	Standard	0.313	0.300	ppm	4.3
	Standard	0.317	0.300	ppm	5.7
	LCS	0.251	0.250	ppm	0.4
	LCS	0.252	0.250	ppm	0.8
	LCS	0.0512	0.0500	ppm	2.4
	LCS	0.0510	0.0500	ppm	2.0
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
	Blank	<0.00500		ppm	
	Blank	<0.00500		ppm	
408317	Spike		0.0500	ppm	87
408317	Spike		0.0500	ppm	87
408398	Spike		0.250	ppm	95
408398	Spike		0.250	ppm	94
408399	Spike		0.250	ppm	94
408540	Spike		0.250	ppm	96
408540	Spike		0.250	ppm	100
408615	Spike		0.250	ppm	99
408615	Spike		0.250	ppm	98
408755	Spike		0.250	ppm	89
408755	Spike		0.250	ppm	92
408825	Spike		0.250	ppm	95
408825	Spike		0.250	ppm	96
408852	Spike		0.0500	ppm	93
[illegible]2	Spike		0.0500	ppm	92
[illegible]60	Spike		0.0500	ppm	103
408860	Spike		0.0500	ppm	97

Continued

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Project Report: 102064
Client:
Project Number:
CES2 CSA Closure-CES16,

SET Quality Control/Quality Assurance for Project 102064

Total Cadmium

(Analyzed: 05/24/1999 1300 WOB Verified: 05/24/1999 16:00 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.0980	0.100	ppm	-2.0
	Standard	0.304	0.300	ppm	1.3
	Standard	0.303	0.300	ppm	1.0
	Standard	0.278	0.300	ppm	-7.3
	Standard	0.285	0.300	ppm	-5.0
	Standard	0.278	0.300	ppm	-7.3
	Standard	0.278	0.300	ppm	-7.3
	LCS	0.250	0.250	ppm	0.0
	LCS	0.0462	0.0500	ppm	-7.6
	Blank	<0.00100		ppm	
	Blank	<0.00500		ppm	
408262	Spike		0.250	ppm	87
408859	Spike		0.250	ppm	98
9	Spike		0.250	ppm	98
408962	Spike		0.250	ppm	88
408962	Spike		0.250	ppm	88

Total Chromium

(Analyzed: 05/27/1999 1300 WOB Verified: 05/28/1999 16:13 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.107	0.100	ppm	7.0
	Standard	0.320	0.300	ppm	6.7
	Standard	0.306	0.300	ppm	2.0
	Standard	0.325	0.300	ppm	8.3
	Standard	0.102	0.100	ppm	2.0
	Standard	0.328	0.300	ppm	9.3
	Standard	0.320	0.300	ppm	6.7
	Standard	0.326	0.300	ppm	8.7
	Standard	0.322	0.300	ppm	7.3
	Standard	0.306	0.300	ppm	2.0
	Standard	0.322	0.300	ppm	7.3
	Standard	0.322	0.300	ppm	7.3
	Standard	0.325	0.300	ppm	8.3
	Standard	0.299	0.300	ppm	-0.3
	Standard	0.304	0.300	ppm	1.3
	LCS	0.101	0.100	ppm	1.0
	LCS	0.104	0.100	ppm	4.0
	LCS	0.502	0.500	ppm	0.4
	LCS	0.135	0.100	ppm	35.0
	Blank	<0.00500		ppm	
	Blank	<0.00500		ppm	

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Project Report: 102064
Client:
Project Number:
CES2 CSA Closure-CES16,

SET Quality Control/Quality Assurance for Project 102064

Total Chromium

(Analyzed: 05/27/1999 1300 WOB Verified: 05/28/1999 16:13 SAH)

Sample	Type	Result	Value	Unit	Percent
	Blank	<0.00100		ppm	
	Blank	0.62		ppm	
408852	Spike		0.100	ppm	88
408852	Spike		0.100	ppm	85
409250	Spike		0.100	ppm	80
409250	Spike		0.100	ppm	94
409353	Spike		0.500	ppm	102
409353	Spike		0.500	ppm	106
409373	Spike		0.500	ppm	103
409373	Spike		0.500	ppm	99
	Standard	0.0982	0.100	ppm	-1.8
	Standard	0.314	0.300	ppm	4.7
	Standard	0.311	0.300	ppm	3.7
	Standard	0.311	0.300	ppm	3.7
	Standard	0.311	0.300	ppm	3.7
	Standard	0.313	0.300	ppm	4.3
	Standard	0.307	0.300	ppm	2.3
	Standard	0.310	0.300	ppm	3.3
	Standard	0.328	0.300	ppm	9.3
	Standard	0.106	0.100	ppm	6.0
	Standard	0.311	0.300	ppm	3.7
	Standard	0.313	0.300	ppm	4.3
	Standard	0.313	0.300	ppm	4.3
	Standard	0.315	0.300	ppm	5.0
	Standard	0.319	0.300	ppm	6.3
	LCS	0.495	0.500	ppm	-1.0
	LCS	0.509	0.500	ppm	1.8
	LCS	0.104	0.100	ppm	4.0
	LCS	0.105	0.100	ppm	5.0
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
	Blank	<0.00500		ppm	
	Blank	0.011		ppm	
408317	Spike		0.100	ppm	86
408317	Spike		0.100	ppm	90
408398	Spike		0.500	ppm	98
408398	Spike		0.500	ppm	98
[illegible]	Spike		0.500	ppm	97
408540	Spike		0.500	ppm	101
408540	Spike		0.500	ppm	105

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Project Report: 102064
Client:
Project Number:
CES2 CSA Closure-CES16,

SET Quality Control/Quality Assurance for Project 102064

Total Chromium

(Analyzed: 05/20/1999 1000 WOB Verified: 05/21/1999 14:34 SAH)

Sample	Type	Result	Value	Unit	Percent
408615	Spike		0.500	ppm	102
408615	Spike		0.500	ppm	101
408755	Spike		0.500	ppm	94
408755	Spike		0.500	ppm	97
408825	Spike		0.500	ppm	99
408825	Spike		0.500	ppm	101
408860	Spike		0.100	ppm	103
408860	Spike		0.100	ppm	91
	Standard	0.0949	0.100	ppm	-5.1
	Standard	0.302	0.300	ppm	0.7
	Standard	0.293	0.300	ppm	-2.3
	Standard	0.281	0.300	ppm	-6.3
	Standard	0.292	0.300	ppm	-2.7
	Standard	0.281	0.300	ppm	-6.3
	Standard	0.279	0.300	ppm	-7.0
	LCS	0.490	0.500	ppm	-2.0
	LCS	0.0941	0.100	ppm	-5.9
	Blank	<0.00100		ppm	
	Blank	<0.00500		ppm	
408262	Spike		0.500	ppm	92
408859	Spike		0.500	ppm	95
408859	Spike		0.500	ppm	94
408962	Spike		0.500	ppm	92
408962	Spike		0.500	ppm	93

Total Mercury

(Analyzed: 05/21/1999 1444 WOB Verified: 05/21/1999 16:48 WJP)

Sample	Type	Result	Value	Unit	Percent
	Standard	24.6	25.0	ppb	-1.6
	Standard	5.26	5.00	ppb	5.2
	Standard	5.22	5.00	ppb	4.4
	Standard	5.03	5.00	ppb	0.6
	Standard	4.85	5.00	ppb	-3.0
	Standard	4.89	5.00	ppb	-2.2
	LCS	9.59	10.0	ppb	-4.1
	LCS	10.6	10.0	ppb	6.0
	Blank	<0.10		ppb	
	Blank	<0.15		ppb	
408262	Spike		10.0	ppb	101
3	Spike		10.0	ppb	95
408263	Spike		10.0	ppb	100

Continued

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Project Report: 102064
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Total Mercury

(Analyzed: 05/21/1999 1444 WOB Verified: 05/21/1999 16:48 WJP)

Sample	Type	Result	Value	Unit	Percent
408264	Spike		10.0	ppb	100
408678	Spike		10.0	ppb	99
408678	Spike		10.0	ppb	94
408906	Spike		10.0	ppb	94
408906	Spike		10.0	ppb	94
408909	Spike		10.0	ppb	98
408909	Spike		10.0	ppb	100
408910	Spike		10.0	ppb	96
408911	Spike		10.0	ppb	91
408912	Spike		10.0	ppb	92

Total Mercury

(Analyzed: 05/20/1999 1629 WOB Verified: 05/21/1999 09:27 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	24.4	25.0	ppb	-2.4
	Standard	5.14	5.00	ppb	2.8
	Standard	5.03	5.00	ppb	0.6
	Standard	5.14	5.00	ppb	2.8
	Standard	5.03	5.00	ppb	0.6
	LCS	9.45	10.0	ppb	-5.5
	Blank	<0.10		ppb	
408654	Spike		10.0	ppb	85
408654	Spike		10.0	ppb	83

Total Lead

(Analyzed: 05/20/1999 1000 WOB Verified: 05/21/1999 14:34 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.0978	0.100	ppm	-2.2
	Standard	0.310	0.300	ppm	3.3
	Standard	0.306	0.300	ppm	2.0
	Standard	0.309	0.300	ppm	3.0
	Standard	0.305	0.300	ppm	1.7
	Standard	0.304	0.300	ppm	1.3
	Standard	0.305	0.300	ppm	1.7
	Standard	0.307	0.300	ppm	2.3
	Standard	0.319	0.300	ppm	6.3
	Standard	0.105	0.100	ppm	5.0
	Standard	0.316	0.300	ppm	5.3
	Standard	0.318	0.300	ppm	6.0
	Standard	0.313	0.300	ppm	4.3
	Standard	0.311	0.300	ppm	3.7
	Standard	0.315	0.300	ppm	5.0
	LCS	0.514	0.500	ppm	2.8

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Project Number:
CES2 CSA Closure-CES16,

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Total Lead

(Analyzed: 05/20/1999 1000 WOB Verified: 05/21/1999 14:34 SAH)

Sample	Type	Result	Value	Unit	Percent
	LCS	0.508	0.500	ppm	1.6
	LCS	0.102	0.100	ppm	2.0
	LCS	0.105	0.100	ppm	5.0
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
	Blank	<0.00500		ppm	
	Blank	<0.00500		ppm	
408317	Spike		0.100	ppm	84
408317	Spike		0.100	ppm	86
408398	Spike		0.500	ppm	99
408398	Spike		0.500	ppm	98
408399	Spike		0.500	ppm	96
408540	Spike		0.500	ppm	102
[illegible]0	Spike		0.500	ppm	107
408615	Spike		0.500	ppm	102
408615	Spike		0.500	ppm	101
408755	Spike		0.500	ppm	97
408755	Spike		0.500	ppm	100
408825	Spike		0.500	ppm	98
408825	Spike		0.500	ppm	98
408852	Spike		0.100	ppm	101
408852	Spike		0.100	ppm	94
408860	Spike		0.100	ppm	102
408860	Spike		0.100	ppm	104
	Standard	0.0958	0.100	ppm	-4.2
	Standard	0.303	0.300	ppm	1.0
	Standard	0.300	0.300	ppm	0.0
	Standard	0.292	0.300	ppm	-2.7
	Standard	0.304	0.300	ppm	1.3
	Standard	0.290	0.300	ppm	-3.3
	Standard	0.291	0.300	ppm	-3.0
	LCS	0.499	0.500	ppm	-0.2
	LCS	0.0963	0.100	ppm	-3.7
	Blank	<0.00100		ppm	
	Blank	<0.00500		ppm	
408262	Spike		0.500	ppm	100
408852	Spike		0.100	ppm	101
[illegible]2	Spike		0.100	ppm	94
408859	Spike		0.500	ppm	98
408859	Spike		0.500	ppm	97

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Project Number:
CES2 CSA Closure-CES16,

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Total Lead

(Analyzed: 05/24/1999 1300 WOB Verified: 05/24/1999 16:00 SAH)

Sample	Type	Result	Value	Unit	Percent
408962	Spike		0.500	ppm	98
408962	Spike		0.500	ppm	97
409076	Spike		0.100	ppm	102
409076	Spike		0.100	ppm	132

Total Selenium

(Analyzed: 05/24/1999 1300 WOB Verified: 05/24/1999 16:00 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.0915	0.100	ppm	-8.5
	Standard	0.321	0.300	ppm	7.0
	Standard	0.325	0.300	ppm	8.3
	Standard	0.318	0.300	ppm	6.0
	Standard	0.322	0.300	ppm	7.3
	Standard	0.318	0.300	ppm	6.0
	LCS	0.526	0.500	ppm	5.2
	Blank	0.022		ppm	
408962	Spike		0.500	ppm	98
408962	Spike		0.500	ppm	99
	Standard	0.106	0.100	ppm	6.0
	Standard	0.314	0.300	ppm	4.7
	Standard	0.312	0.300	ppm	4.0
	Standard	0.308	0.300	ppm	2.7
	Standard	0.319	0.300	ppm	6.3
	Standard	0.314	0.300	ppm	4.7
	Standard	0.320	0.300	ppm	6.7
	Standard	0.330	0.300	ppm	10.0
	Standard	0.328	0.300	ppm	9.3
	Standard	0.104	0.100	ppm	4.0
	Standard	0.301	0.300	ppm	0.3
	Standard	0.300	0.300	ppm	0.0
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.301	0.300	ppm	0.3
	Standard	0.302	0.300	ppm	0.7
	LCS	0.496	0.500	ppm	-0.8
	LCS	0.520	0.500	ppm	4.0
	LCS	0.109	0.100	ppm	9.0
	LCS	0.0958	0.100	ppm	-4.2
	Blank	0.0036		ppm	
	Blank	<0.00100		ppm	
	Blank	0.022		ppm	
	Blank	0.020		ppm	

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CES2 CSA Closure-CES16,

SET Quality Control/Quality Assurance for Project 102064

Total Selenium

(Analyzed: 05/20/1999 1000 WOB Verified: 05/21/1999 14:34 SAH)

Sample	Type	Result	Value	Unit	Percent
408317	Spike		0.100	ppm	81
408317	Spike		0.100	ppm	78
408398	Spike		0.500	ppm	91
408398	Spike		0.500	ppm	93
408399	Spike		0.500	ppm	96
408540	Spike		0.500	ppm	101
408540	Spike		0.500	ppm	105
408615	Spike		0.500	ppm	101
408615	Spike		0.500	ppm	101
408755	Spike		0.500	ppm	97
408755	Spike		0.500	ppm	100
408825	Spike		0.500	ppm	96
408825	Spike		0.500	ppm	98
2	Spike		0.100	ppm	92
408852	Spike		0.100	ppm	92
408860	Spike		0.100	ppm	100
408860	Spike		0.100	ppm	81

Total Solids

(Analyzed: 05/21/1999 1454 PRE Verified: 05/24/1999 13:48 SAH)

Sample	Type	Result	Value	Unit	Percent
	Blank	-0.0001		grams	
	Blank	0.0000		grams	
408649	Duplicate	80.7	80.8	%	0.1
408884	Duplicate	52.9	51.6	%	1.7
408894	Duplicate	52.3	57.3	%	6.2
408904	Duplicate	66.3	65.5	%	0.8

MAL is our Minimum Analytical Level/Minimum Quantitation Level. The MAL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL).

Our analytical result must be above this MAL before we report a value in the "Results" column of our report. Otherwise, we report ND (Not Detected above MAL), because the result is "<" (less than) the number in the MAL column.

I certify that the results were generated using the above specified methods.

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Project Report: 102064
Client:
Project Number:
CES2 CSA Closure-CES16,

C. H. Whiteside, Ph.D., President

00188644

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Complete Environmental Service

P.O Box 170, Karnack, TX 75661 phone:903/679-2062 fax:903/679-2056

CONTRACTOR P.O. NO. CES16

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 668
DOYLINE, LA 71023

PROJECT NAME/NUMBER CSA Closure
REPORT RESULTS TO: Bill Corrigan

LAB DESTINATION ANALAB
PHONE NO OFFICE (903) 679-2062
FAX (903) 679-2056

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
VS-811-1-1-55	soil sample 408852	5/18/99 11:46 am	VOA's, total lead, cadmium, chromium, arsenic, silver	8 oz glass, ice	WRC	
VS-811-1-2-55	soil sample 408853	5/18/99 11:50 am.	" "	8 oz glass, ice	WRC	
VS-811-1-3-55	soil sample 408854	5/18/99 12:10 pm.	" "	8 oz. glass ice	WRC	
VS-811-1-4-55	soil sample 408855	5/18/99 12:20 pm.	" "	8 oz. glass ice	WRC	
VS-811-1-4-55	soil sample Duplicate 408856	5/18/99 12:20 pm	" "	~~8~~ 2 oz. glass ice	WRC	
VS-811-1-EB	Equipment Blank 408857	5/18/99 12:30 pm	VOA's ~~8 RCRA metals~~	2 ea - 40 ml ZHE, glass, ice	WRC	
811-1-TB	Trip Blank 408858	5/18/99 from lab	VOA's	2 ea - 40 ml ZHE, glass, ice	WRC	

SPECIAL INSTRUCTIONS Run seperate matrix spike / matrix spike duplicates for this set of samples from samples from 31W or 49W.

SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY Bill Corrigan, CES, 5/19/99, 0800 3. RELINQUISHED BY

RECEIVED BY Mark Wilk 5/19/99 1042 RECEIVED BY Barnes 5/19/99 1630

RELINQUISHED BY Mark Wilk 5/19/99 1630 4. RELINQUISHED BY

00188645

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Complete Environmental Service
P.O Box 170, Karnack, TX 75661 phone:903/679-2062 fax:903/679-2056

CONTRACTOR P.O. NO. CES16

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 658
DOYLINE, LA 71023

PROJECT NAME/NUMBER CSA Closure
REPORT RESULTS TO: Bill Corrigan

LAB DESTINATION ANALAB
PHONE NO ____ OFFICE (903) 679-2062
FAX (903) 679-2056

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
VS-811-1-EB	Equipment Blank, 811-1 408859	5/18/99 12:30 pm	8-RCRA metals	HNO3 to pH<2, plastic, ice	WRC III	
FDC-1	Fill Dirt soil certification 408860	5/18/99 4:02 pm	VOA's, 8-RCRA metals	qt. glass, ice	WRC III	

SPECIAL INSTRUCTIONS Run separate matrix spike and matrix spike duplicates for this set of samples than samples from 31W or 49AL

SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY William Corrigan, CES, 5/19/99, 0800 3. RELINQUISHED BY ____

RECEIVED BY Mack [illegible] 5/19/99 1042 RECEIVED BY ____

RELINQUISHED BY Mack [illegible] 5/19/99 1630 4. RELINQUISHED BY ____

VERIFICATION SAMPLE RESULTS

- POTABLE WATER BACKGROUND

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Corporate Office
P.O. Box 9000 -- Kilgore, TX 75663-9000
903/984-0551 FAX 903/984-5914

Report Date: 06/29/1999

Project Report: 103978
Client: CES2

Complete Environmental Service
P.O. Box 170
Karnack, TX 75661-
Attention: Bill Corrigan

Results for Project 103978

411559 Trip Blank 811-1-Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1025 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Acetone	ND	ug/L	20.0	EPA Method 8260B	06/17/1999 1818	KLB	67-64-1
Acrolein	ND	ug/L	50.0	EPA Method 8260B	06/17/1999 1818	KLB	107-02-8
Acrylonitrile	ND	ug/L	20.0	EPA Method 8260B	06/17/1999 1818	KLB	107-13-1
Benzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	71-43-2
Bromobenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	108-86-1
Bromochloromethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	74-97-5
Bromodichloromethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	75-27-4
Bromoform	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	74-83-9
tert-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	98-06-6
[illegible]ylbenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	135-98-8
n-Butylbenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	104-51-8
Carbon Tetrachloride	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	56-23-5
Chlorobenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	108-90-7
Chloroethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	110-75-8
Chloroform	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	74-87-3
2-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	95-49-8
4-Chlorotoluene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	106-43-4
Dibromochloromethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	75-27-4
1,2-Dibromoethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	106-93-4
Dibromomethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	74-95-3
1,3-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	106-46-7
Dichlorodifluoromethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	75-71-8
1,1-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	75-34-3
1,2-Dichloroethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	156-60-5
cis-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	156-59-2
1,1-Dichloroethylene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	75-35-4
1,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	78-87-5
2,2-Dichloropropane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	594-20-7
[illegible]loropropane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	10061-02-6

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Project Report: 103978
Client: CES2

Results for Project 103978

411559 Trip Blank 811-1-Decon/CES 16

Liquid Aqueous Taken: 06/14/1999 1025 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
1,1-Dichloropropene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	563-58-6
Ethyl benzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	100-41-4
Hexachlorobutadiene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	87-68-3
Isopropyl Benzene (Cumene)	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	98-82-8
p-Isopropyltoluene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	25155-15-1
Methyl Ethyl Ketone (Butanone)	ND	ug/L	50.0	EPA Method 8260B	06/17/1999 1818	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	108-10-1
Methylene Chloride	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	75-09-2
Naphthalene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	91-20-3
n-Propylbenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	103-65-1
Styrene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	79-34-5
1,1,1,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	630-20-6
T loroethylene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	127-18-4
T e	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	79-00-5
Trichloroethylene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	79-01-6
Trichlorofluoromethane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	75-69-4
1,2,3-Trichloropropane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	95-63-6
1,3,5-Trimethylbenzene	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	108-67-8
Vinyl Chloride	ND	ug/L	2.00	EPA Method 8260B	06/17/1999 1818	KLB	75-01-4
Xylenes, Total	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	EPA Method 8260B	06/17/1999 1818	KLB	96-12-8

411560 Potable Water Bld 811-1 Decon/CES 16

Liquid Aqueous Taken: 06/14/1999 1020 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Bromochloromethane	ND	ug/L	5.00		06/17/1999 1755	KLB	74-97-5
1,4-Dichlorobenzene	ND	ug/L	5.00		06/17/1999 1755	KLB	106-46-7
cis-1,2-Dichloroethene	ND	ug/L	5.00		06/17/1999 1755	KLB	156-59-2
Turbidity	ND	NTU	1		06/18/1999 0715	GDG	
Total Arsenic	ND	ug/L	1.00	EPA Method 200.8	06/18/1999 0800	WOB	7440-38-2
Total Barium	62.5	ug/L	5.00	EPA Method 200.8	06/18/1999 0800	WOB	7440-39-3
Total Cadmium	ND	ug/L	1.00	EPA Method 200.8	06/18/1999 0800	WOB	7440-43-9
Total Chromium	ND	ug/L	1.00	EPA Method 200.8	06/18/1999 0800	WOB	7440-47-3
L d	5.42	ug/L	1.00	EPA Method 200.8	06/18/1999 0800	WOB	7439-92-1
Total Selenium	5.01	ug/L	0.100	EPA Method 200.8	06/18/1999 0800	WOB	7782-49-2

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Project Report: 103978
Client: CES2

Results for Project 103978

411560 Potable Water Bld 811-1 Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1020 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Total Silver	ND	ug/L	1.00	EPA Method 200.8	06/18/1999 0800	WOB	7440-22-4
Total Mercury	ND	ug/L	0.150	EPA Method 245.1	06/21/1999 1514	WOB	7439-97-6
Acetone	ND	ug/L	20.0	EPA Method 524	06/17/1999 1755	KLB	67-64-1
Acrolein	ND	ug/L	50.0	EPA Method 524	06/17/1999 1755	KLB	107-02-8
Acrylonitrile	ND	ug/L	20.0	EPA Method 524	06/17/1999 1755	KLB	107-13-1
Benzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	71-43-2
Bromobenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	108-86-1
Bromodichloromethane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	75-27-4
Bromoform	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	75-25-2
Bromomethane (Methyl Bromide)	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	74-83-9
tert-Butylbenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	98-06-6
sec-Butylbenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	135-98-8
n-Butylbenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	104-51-8
C[illegible] Tetrachloride	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	56-23-5
C[illegible]benzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	108-90-7
Chloroethane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	75-00-3
2-Chloroethylvinyl ether	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	110-75-8
Chloroform	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	67-66-3
Chloromethane (Methyl Chloride)	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	74-87-3
2-Chlorotoluene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	95-49-8
4-Chlorotoluene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	106-43-4
Dibromochloromethane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	75-27-4
1,2-Dibromoetnane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	106-93-4
1,3-Dichlorobenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	95-50-1
Dichlorodifluoromethane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	75-71-8
1,2-Dichloroethane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	107-06-2
trans-1,2-Dichloroethene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	156-60-5
1,1-Dichloroethylene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	75-35-4
1,2-Dichloropropane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	78-87-5
2,2-Dichloropropane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	594-20-7
1,3-Dichloropropane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	142-28-9
cis-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	10061-02-6
1,1-Dichloropropene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	563-58-6
Ethyl benzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	100-41-4
Hexachlorobutadiene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	87-68-3
I[illegible]yl Benzene (Cumene)	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	98-82-8
p[illegible]opyltoluene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	25155-15-1
Methylene Chloride	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	75-09-2

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Project Report: 103978
Client: CES2

Results for Project 103978

411560 Potable Water Bld 811-1 Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1020 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Naphthalene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	91-20-3
n-Propylbenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	103-65-1
Styrene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	79-34-5
Tetrachloroethylene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	127-18-4
Toluene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	108-88-3
1,2,4-Trichlorobenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	120-82-1
1,2,3-Trichlorobenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	87-61-6
1,1,1-Trichloroethane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	71-55-6
1,1,2-Trichloroethane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	79-00-5
Trichloroethylene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	79-01-6
Trichlorofluoromethane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	75-69-4
1,3,5-Trimethylbenzene	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	108-67-8
[illegible]hloride	ND	ug/L	2.00	EPA Method 524	06/17/1999 1755	KLB	75-01-4
[illegible]es, Total	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	95-47-6, etc.
1,2-Dibromo-3-chloropropane	ND	ug/L	5.00	EPA Method 524	06/17/1999 1755	KLB	96-12-8
Acenaphthene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	83-32-9
Acenaphthylene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	208-96-8
Anthracene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	120-12-7
Benzidine	ND	ug/L	50.0	EPA Method 525	06/25/1999 2104	KLB	92-87-5
Benzo(a)anthracene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	56-55-3
Benzo(a)pyrene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	50-32-8
Benzo(b)fluoranthene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	205-99-2
Benzo(ghi)perylene	ND	ug/L	20.0	EPA Method 525	06/25/1999 2104	KLB	191-24-2
Benzo(k)fluoranthene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	207-08-9
Benzyl Butyl phthalate	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	85-68-7
4-Bromophenyl phenyl ether	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	101-55-3
2-Chloronaphthalene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	91-58-7
2-Chlorophenol	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	95-57-8
4-Chlorophenyl phenyl ether	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	7005-72-3
Chrysene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	218-01-9
1,2-DPH (as azobenzene)	ND	ug/L	20.0	EPA Method 525	06/25/1999 2104	KLB	122-66-7
Dibenz(a,h)anthracene	ND	ug/L	20.0	EPA Method 525	06/25/1999 2104	KLB	53-70-3
1,3-Dichlorobenzene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	541-73-1
1,2-Dichlorobenzene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	95-50-1
1,4-Dichlorobenzene	ND	ug/L	15.0	EPA Method 525	06/25/1999 2104	KLB	106-46-7
3,3'-Dichlorobenzidine	ND	ug/L	50.0	EPA Method 525	06/25/1999 2104	KLB	91-94-1
[illegible]hloroethane	ND	ug/L	5.00	EPA Method 525	06/17/1999 1755	KLB	75-34-3
2,[illegible]chlorophenol	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	120-83-2
Diethyl phthalate	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	84-66-2

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Project Report: 103978
Client: CES2

Results for Project 103978

411560 Potable Water Bld 811-1 Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1020 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
Dimethyl phthalate	4900	ug/L	1060	EPA Method 525	06/26/1999 1551	KLB	131-11-3
2,4-Dimethylphenol	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	105-67-9
2,4-Dinitrophenol	ND	ug/L	53.2	EPA Method 525	06/25/1999 2104	KLB	51-28-5
2,4-Dinitrotoluene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	121-14-2
2,6-Dinitrotoluene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	606-20-2
Fluoranthene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	206-44-0
Fluorene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	86-73-7
Hexachlorobenzene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	118-74-1
Hexachlorobutadiene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	87-68-3
Hexachlorocyclopentadiene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	77-47-4
Hexachloroethane	ND	ug/L	20.0	EPA Method 525	06/25/1999 2104	KLB	67-72-1
Isophorone	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	78-59-1
Naphthalene	ND	ug/L	20.0	EPA Method 525	06/25/1999 2104	KLB	91-20-3
[illegible]nzene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	98-95-3
2-[illegible]ophenol	ND	ug/L	20.0	EPA Method 525	06/25/1999 2104	KLB	88-75-5
4-Nitrophenol	ND	ug/L	53.2	EPA Method 525	06/25/1999 2104	KLB	100-08-7
N-Nitrosodimethylamine	ND	ug/L	50.0	EPA Method 525	06/25/1999 2104	KLB	62-75-9
N-Nitrosodiphenylamine (as DPA)	ND	ug/L	20.0	EPA Method 525	06/25/1999 2104	KLB	86-30-6
Pentachlorophenol	ND	ug/L	53.2	EPA Method 525	06/25/1999 2104	KLB	87-86-5
Phenanthrene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	85-01-8
Phenol	48.7	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	108-95-2
Pyrene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	129-00-0
1,2,4-Trichlorobenzene	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	120-82-1
2,4,6-Trichlorophenol	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	88-06-2
Di-n-butylphthalate	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	84-74-2
Indeno(1,2,3-cd)pyrene	ND	ug/L	20.0	EPA Method 525	06/25/1999 2104	KLB	193-39-5
Bis(2-chloroethoxy)methane	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	111-91-1
Bis(2-chloroethyl)ether	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	111-44-4
Bis(2-chloroisopropyl)ether	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	108-60-1
Bis(2-ethylhexyl)phthalate	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	117-81-7
4-Chloro-3-methylphenol	ND	ug/L	21.3	EPA Method 525	06/25/1999 2104	KLB	59-50-7
4,6-Dinitro-2-methylphenol	ND	ug/L	53.2	EPA Method 525	06/25/1999 2104	KLB	534-52-1
Di-n-octylphthalate	ND	ug/L	10.6	EPA Method 525	06/25/1999 2104	KLB	117-84-0
N-Nitrosodi-n-propylamine	ND	ug/L	20.0	EPA Method 525	06/25/1999 2104	KLB	621-64-7
Dibromomethane	ND	ug/L	5.00	EPA Method 624	06/17/1999 1755	KLB	74-95-3
Methyl Ethyl Ketone (Butanone)	ND	ug/L	50.0	EPA Method 624	06/17/1999 1755	KLB	78-93-3
Methyl Isobutyl Ketone	ND	ug/L	5.00	EPA Method 624	06/17/1999 1755	KLB	108-10-1
[illegible] Tetrachloroethane	ND	ug/L	5.00	EPA Method 624	06/17/1999 1755	KLB	630-20-6
[illegible] richloropropane	ND	ug/L	5.00	EPA Method 624	06/17/1999 1755	KLB	96-18-4
1,2,4-Trimethylbenzene	ND	ug/L	5.00	EPA Method 624	06/17/1999 1755	KLB	95-63-6

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Project Report: 103978
Client: CES2

Results for Project 103978

411560 Potable Water Bld 811-1 Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1020 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	MAL	Method	Analyzed	By	CAS
2,4,5-Trichlorophenol	ND	ug/L	10.6	EPA Method 625	06/25/1999 2104	KLB	95-95-4

Sample Preparation Steps for Project 103978

411559 Trip Blank 811-1-Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1025 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	Method	Analyzed	By
Volatile Hydrocarbons by GC/MS	Verified		EPA Method 8260B	06/17/1999 1818	KLB
Fax This Report AS Soon As	FAXED		FAX	06/22/1999 14:23	KEK

411560 Potable Water Bld 811-1 Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1020 By: Bill Corrigan Rec:06/16/1999

Parameter	Result	Unit	Method	Analyzed	By
Bottle pH	<2	SU		06/16/1999 2053	AAJ
Fax This Report AS Soon As	FAXED			06/29/1999 12:27	KEK
Mercury Liquid Metals Digestion	150/100 A/S/S	mL/mL	EPA Method 245.1	06/21/1999 0900	WBM
[illegible] Hydrocarbons by GC/MS	Verified		EPA Method 524	06/17/1999 1755	KLB
[illegible] Liquid Extraction, BNA	1/940	mL/mL	EPA Method 525	06/21/1999 0815	LMB
Semi-Volatile Hydrocarbons	Verified		EPA Method 525	06/25/1999 2104	KLB

Sample Specific Quality Control/Quality Assurance

411559 Trip Blank 811-1-Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1025 By: Bill Corrigan Rec:06/16/1999

EPA Method 8260B Surrogate/Spike on Sample 411559 06/17/1999 2

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	41.5	40.0	100
Toluene-d8	40.0	40.0	100
Bromofluorobenzene-SURR	40.4	40.0	100

EPA Method 8260B Internal Standard Areas on Sample 411559 06/17/1999 2

Compound	IS Area	CCC IS Area	Status
Pentafluorobenzene-ISTD	146300	150000	
1,4-Difluorobenzene-ISTD	229700	231100	
Clorobenzene-d5-ISTD	202300	200200	
1,4-Dichlorobenzene-d4-ISTD	84290	87180	

411560 Potable Water Bld 811-1 Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1020 By: Bill Corrigan Rec:06/16/1999

EPA Method 524 Surrogate/Spike on Sample 411560 06/17/1999 1

Compound	Result	Concentration	%Recovery
Dibromofluoromethane	40.6	40.0	100
Toluene-d8	40.6	40.0	100
Bromofluorobenzene-SURR	40.3	40.0	100

EPA Method 524 Internal Standard Areas on Sample 411560 06/17/1999 1

Compound	IS Area	CCC IS Area	Status

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Project Report: 103978
Client: CES2

Sample Specific Quality Control/Quality Assurance

411560 Potable Water Bld 811-1 Decon/CES 16 Liquid Aqueous Taken: 06/14/1999 1020 By: Bill Corrigan Rec:06/16/1999

Pentafluorobenzene-ISTD	151700	158300
1,4-Difluorobenzene-ISTD	236600	246400
Clorobenzene-d5-ISTD	205800	213600
1,4-Dichlorobenzene-d4-ISTD	86120	91810

EPA Method 525 Surrogate/Spike on Sample 411560 06/25/1999 1

Compound	Result	Concentration	%Recovery
2,4,6-Tribromophenol	94.8	100	95
2-Fluorophenol-SURR	51.4	100	51
Phenol-d6-SURR	31.6	100	32
Nitrobenzene-d5-SURR	40.4	50.0	81
2-Fluorobiphenyl-SURR	40.0	50.0	80
4-Terphenyl-d14-SURR	46.5	50.0	93

EPA Method 524 Internal Standard Areas on Sample 411560 06/25/1999 1

Compound	IS Area	CCC IS Area	Status
chlorobenzene-d4-ISTD	511700	439200	
Naphthalene-d8-ISTD	2070000	1704000	
Acenaphthene-d10-ISTD	1172000	938200	
Phenanthrene-d10-ISTD	1862000	1477000	
Chrysene-d12-ISTD	1568000	1270000	
Perylene-d12-ISTD	1289000	1075000	

Organic Quality Control/Quality Assurance for Project 103978

EPA Method 8260B Blank 06/17/1999 1 2

Compound	Result
Benzene	ND
Chlorobenzene	ND
1,1-Dichloroethylene	ND
Methylene Chloride	ND
Toluene	ND
Trichloroethylene	ND

EPA Method 8260B Instrument Calibration Check 06/17/1999 2

Compound	Max %Rel. Std.	%Deviation	Status
Chloroform	20.0	-7.5	PASS
1,1-Dichloroethylene	20.0	-0.1	PASS
1,2-Dichloropropane	20.0	-0.9	PASS
Ethyl benzene	20.0	-1.2	PASS
Toluene	20.0	-0.9	PASS
Vinyl Chloride	20.0	1.0	PASS

Method 8260B Instrument System Performance Check 06/17/1999 2

Compound	Min Response Factor	Response Factor	Status

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Organic Quality Control/Quality Assurance for Project 103978

Bromoform	.1010	0.230	PASS
Chlorobenzene	.3000	1.022	PASS
Chloromethane (Methyl Chloride)	.1000	0.564	PASS
1,1-Dichloroethane	.1000	1.022	PASS
1,1,2,2-Tetrachloroethane	.3000	1.439	PASS

EPA Method 8260B Matrix Spike/Duplicate on Sample 411662 06/17/1999 2

Compound	First (%)	Second (%)	%Difference
Benzene	101	102	0.99
Chlorobenzene	99.2	99.4	0.20
1,1-Dichloroethylene	101	99.4	-1.6
Toluene	100	101	1.0
Trichloroethylene	69.2	69.8	0.87

EPA Method 8260B Blank 06/17/1999 1

Compound	Result
Benzene	ND
Chlorobenzene	ND
1,1-Dichloroethylene	ND
Methylene Chloride	ND
Toluene	ND
Trichloroethylene	ND

EPA Method 8260B Instrument Tune 06/17/1999 1

Mass	Reference Mass	Min Abundance	Max Abundance	Result	Status
BFB Mass 50	95	15.0	40.0	19.7	PASS
BFB Mass 75	95	30.0	60.0	46.9	PASS
BFB Mass 95	95	100	100	100.0	PASS
BFB Mass 96	95	5.00	9.00	6.6	PASS
BFB Mass 173	174	0	2.00	0.0	PASS
BFB Mass 174	95	50.0	100	74.5	PASS
BFB Mass 175	174	5.00	9.00	8.5	PASS
BFB Mass 176	174	95.0	101	96.7	PASS
BFB Mass 177	176	5.00	9.00	6.2	PASS

Instrument Calibration Check 06/17/1999 1

Compound	Max %Rel. Std.	%Deviation	Status
Chloroform	20.0	-4.5	PASS
1,1-Dichloroethylene	20.0	2.7	PASS
1,2-Dichloropropane	20.0	-0.1	PASS
Ethyl benzene	20.0	2.9	PASS
Toluene	20.0	1.6	PASS
Vinyl Chloride	20.0	0.4	PASS

EPA Method 8260B Instrument System Performance Check 06/17/1999 1

Compound	Min Response Factor	Response Factor	Status

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Organic Quality Control/Quality Assurance for Project 103978

Bromoform	.1010	0.221	PASS
Chlorobenzene	.3000	0.995	PASS
Chloromethane (Methyl Chloride)	.1000	0.566	PASS
1,1-Dichloroethane	.1000	0.993	PASS
1,1,2,2-Tetrachloroethane	.3000	1.347	PASS

EPA Method 8260B Matrix Spike/Duplicate on Sample 411665 06/17/1999 1

Compound	First (%)	Second (%)	%Difference
Benzene	98.6	98.6	0
Chlorobenzene	98.4	98.2	-0.20
1,1-Dichloroethylene	99.8	102	2.2
Toluene	99.2	99.2	0
Trichloroethylene	105	104	-0.95

EPA Method 8270C Instrument Tune 06/25/1999 1

Mass	Reference Mass	Min Abundance	Max Abundance	Result	Status
DFTPP Mass 51	198	30.0	60.0	51.2	PASS
DFTPP Mass 68	69	0	2.00	0.0	PASS
DFTPP Mass 69	198	0	100	51.0	PASS
DFTPP Mass 70	69	0	2.00	0.4	PASS
DFTPP Mass 127	198	40.0	60.0	54.6	PASS
DFTPP Mass 197	198	0	1.00	0.0	PASS
DFTPP Mass 198	198	100	100	100.0	PASS
DFTPP Mass 199	198	5.00	9.00	6.8	PASS
DFTPP Mass 275	198	10.0	30.0	20.6	PASS
DFTPP Mass 365	198	1.00	100	2.8	PASS
DFTPP Mass 441	443	0	100	76.6	PASS
DFTPP Mass 442	198	40.0	100	63.0	PASS
DFTPP Mass 443	442	17.0	23.0	19.1	PASS

Instrument Calibration Check 06/25/1999 1

Compound	Max %Rel. Std.	%Deviation	Status
Acenaphthene	30.0	0.9	PASS
Benzo(a)pyrene	30.0	2.6	PASS
4-Chloro-3-methylphenol	30.0	4.2	PASS
1,4-Dichlorobenzene	30.0	3.1	PASS
2,4-Dichlorophenol	30.0	3.2	PASS
Di-n-octylphthalate	30.0	1.6	PASS
Fluoranthene	30.0	3.2	PASS
Hexachlorobutadiene	30.0	2.8	PASS
2-Nitrophenol	30.0	3.1	PASS
N-Nitrosodiphenylamine (as DPA)	30.0	3.9	PASS
Pentachlorophenol	30.0	24.8	PASS
[illegible]	30.0	5.5	PASS
[illegible]-Trichlorophenol	30.0	6.5	PASS

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EPA Method 8270C Instrument System Performance Check 06/25/1999 1

Compound	Min Response Factor	Response Factor	Status
2,4-Dinitrophenol	.0500	0.094	PASS
Hexachlorocyclopentadiene	.0500	0.221	PASS
4-Nitrophenol	.0500	0.172	PASS
N-Nitrosodi-n-propylamine	.0500	0.646	PASS

SET Quality Control/Quality Assurance for Project 103978

Total Silver

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.101	0.100	ppm	1.0
	Standard	0.314	0.300	ppm	4.7
	Standard	0.311	0.300	ppm	3.7
	Standard	0.311	0.300	ppm	3.7
	Standard	0.0978	0.100	ppm	-2.2
	Standard	0.306	0.300	ppm	2.0
	Standard	0.309	0.300	ppm	3.0
	Standard	0.306	0.300	ppm	2.0
	Standard	0.307	0.300	ppm	2.3
	Standard	0.314	0.300	ppm	4.7
	Standard	0.315	0.300	ppm	5.0
	LCS	0.0954	0.100	ppm	-4.6
	LCS	0.0862	0.100	ppm	-13.8
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
411360	Spike		0.100	ppm	97
411360	Spike		0.100	ppm	79
411437	Spike		0.100	ppm	96
411437	Spike		0.100	ppm	97
411481	Spike		0.100	ppm	92
411481	Spike		0.100	ppm	93

Total Arsenic

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.101	0.100	ppm	1.0
	Standard	0.314	0.300	ppm	4.7
	Standard	0.299	0.300	ppm	-0.3
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.0995	0.100	ppm	-0.5
	Standard	0.314	0.300	ppm	4.7
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.299	0.300	ppm	-0.3

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SET Quality Control/Quality Assurance for Project 103978

Total Arsenic

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.300	0.300	ppm	0.0
	Standard	0.298	0.300	ppm	-0.7
	LCS	0.527	0.500	ppm	5.4
	LCS	0.508	0.500	ppm	1.6
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
411360	Spike		0.500	ppm	96
411360	Spike		0.500	ppm	102
411437	Spike		0.500	ppm	105
411437	Spike		0.500	ppm	102
411481	Spike		0.500	ppm	95
411481	Spike		0.500	ppm	98

Total Barium

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Type	Result	Value	Unit	Percent
Standard	0.103	0.100	ppm	3.0
Standard	0.312	0.300	ppm	4.0
Standard	0.306	0.300	ppm	2.0
Standard	0.313	0.300	ppm	4.3
Standard	0.0985	0.100	ppm	-1.5
Standard	0.300	0.300	ppm	0.0
Standard	0.306	0.300	ppm	2.0
Standard	0.297	0.300	ppm	-1.0
Standard	0.301	0.300	ppm	0.3
Standard	0.302	0.300	ppm	0.7
Standard	0.304	0.300	ppm	1.3
LCS	0.544	0.500	ppm	8.8
LCS	0.470	0.500	ppm	-6.0
Blank	<0.00500		ppm	
Blank	<0.00500		ppm	
Spike		0.500	ppm	102
Spike		0.500	ppm	97
Spike		0.500	ppm	106
Spike		0.500	ppm	107
Spike		0.500	ppm	102
Spike		0.500	ppm	102

Total Cadmium

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Type	Result	Value	Unit	Percent
Standard	0.102	0.100	ppm	2.0
Standard	0.316	0.300	ppm	5.3

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Project Report: 103978
Client:

SET Quality Control/Quality Assurance for Project 103978

Total Cadmium

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.312	0.300	ppm	4.0
	Standard	0.310	0.300	ppm	3.3
	Standard	0.101	0.100	ppm	1.0
	Standard	0.305	0.300	ppm	1.7
	Standard	0.300	0.300	ppm	0.0
	Standard	0.304	0.300	ppm	1.3
	Standard	0.305	0.300	ppm	1.7
	Standard	0.300	0.300	ppm	0.0
	Standard	0.316	0.300	ppm	5.3
	LCS	0.268	0.250	ppm	7.2
	LCS	0.239	0.250	ppm	-4.4
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
[illegible]	Spike		0.250	ppm	104
[illegible]	Spike		0.250	ppm	89
411437	Spike		0.250	ppm	105
411437	Spike		0.250	ppm	109
411481	Spike		0.250	ppm	102
411481	Spike		0.250	ppm	104

Total Chromium

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.0997	0.100	ppm	-0.3
	Standard	0.319	0.300	ppm	6.3
	Standard	0.292	0.300	ppm	-2.7
	Standard	0.292	0.300	ppm	-2.7
	Standard	0.0964	0.100	ppm	-3.6
	Standard	0.304	0.300	ppm	1.3
	Standard	0.298	0.300	ppm	-0.7
	Standard	0.288	0.300	ppm	-4.0
	Standard	0.297	0.300	ppm	-1.0
	Standard	0.293	0.300	ppm	-2.3
	Standard	0.298	0.300	ppm	-0.7
	LCS	0.532	0.500	ppm	6.4
	LCS	0.510	0.500	ppm	2.0
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
411360	Spike		0.500	ppm	90
[illegible]	Spike		0.500	ppm	97
411437	Spike		0.500	ppm	101

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Project Report: 103978
Client:

SET Quality Control/Quality Assurance for Project 103978

Total Chromium

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
411437	Spike		0.500	ppm	97
411481	Spike		0.500	ppm	102
411481	Spike		0.500	ppm	98

Total Mercury

(Analyzed: 06/21/1999 1514 WOB Verified: 06/22/1999 10:28 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	24.8	25.0	ppb	-0.8
	Standard	24.6	25.0	ppb	-1.6
	Standard	5.02	5.00	ppb	0.4
	Standard	4.97	5.00	ppb	-0.6
	Standard	4.90	5.00	ppb	-2.0
	Standard	4.86	5.00	ppb	-2.8
	LCS	10.7	10.0	ppb	7.0
	Blank	<0.15		ppb	
	Spike		10.0	ppb	105
411399	Spike		10.0	ppb	102
411524	Spike		10.0	ppb	105
411560	Spike		10.0	ppb	102
411560	Spike		10.0	ppb	107
411768	Spike		10.0	ppb	80
411768	Spike		10.0	ppb	79

Total Lead

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.0988	0.100	ppm	-1.2
	Standard	0.305	0.300	ppm	1.7
	Standard	0.308	0.300	ppm	2.7
	Standard	0.296	0.300	ppm	-1.3
	Standard	0.102	0.100	ppm	2.0
	Standard	0.302	0.300	ppm	0.7
	Standard	0.316	0.300	ppm	5.3
	Standard	0.312	0.300	ppm	4.0
	Standard	0.305	0.300	ppm	1.7
	Standard	0.312	0.300	ppm	4.0
	Standard	0.318	0.300	ppm	6.0
	LCS	0.545	0.500	ppm	9.0
	LCS	0.480	0.500	ppm	-4.0
	Blank	<0.00100		ppm	
	Blank	<0.00100		ppm	
	Spike		0.500	ppm	106
411360	Spike		0.500	ppm	100

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Total Lead

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
411437	Spike		0.500	ppm	114
411437	Spike		0.500	ppm	110
411481	Spike		0.500	ppm	106
411481	Spike		0.500	ppm	113

Total Selenium

(Analyzed: 06/18/1999 0800 WOB Verified: 06/21/1999 12:16 SAH)

Sample	Type	Result	Value	Unit	Percent
	Standard	0.0982	0.100	ppm	-1.8
	Standard	0.317	0.300	ppm	5.7
	Standard	0.318	0.300	ppm	6.0
	Standard	0.313	0.300	ppm	4.3
	Standard	0.320	0.300	ppm	6.7
	Standard	0.322	0.300	ppm	7.3
	Standard	0.314	0.300	ppm	4.7
	Standard	0.329	0.300	ppm	9.7
	LCS	0.562	0.500	ppm	12.4
	Blank	<0.000100		ppm	
411360	Spike		0.500	ppm	107
411360	Spike		0.500	ppm	96
411437	Spike		0.500	ppm	115
411437	Spike		0.500	ppm	115
411481	Spike		0.500	ppm	27
411481	Spike		0.500	ppm	25

Turbidity

(Analyzed: 06/18/1999 0715 GDG Verified: 06/18/1999 0843 SAH)

Sample	Type	Result	Value	Unit	Percent
411560	Standard	10.2	10.0	NTU	2.0
411560	Standard	10.2	10.0	NTU	2.0
411560	LCS	7.65	7.80	NTU	-1.9
411560	Duplicate	ND	ND	NTU	0.0

MAL is our Minimum Analytical Level/Minimum Quantitation Level. The MAL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL).

Our analytical result must be above this MAL before we report a value in the "Results" column of our report. Otherwise, we report ND (Not Detected above MAL), because the result is "<" (less than) the number in the MAL column.

Continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

Corporate Office

P.O. Box 9000 -- Kilgore, TX 75663-9000
903/984-0551 FAX 903/984-5914

Project Report: 103978
Client:

I certify that the results were generated using the above specified methods.

Roy White, M.S., QA/QC Director

00188662

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

Corporate Office

P.O. Box 9000 -- Kilgore, TX 75663-9000
903/984-0551 FAX 903/984-5914

Complete Environmental Service

P.O Box 170, Karnack, TX 75661 phone:903/679-2062 fax:903/679-2056

CONTRACTOR P.O. NO. CES16

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 658
DOYLINE, LA 71023

PROJECT NAME/NUMBER 811-1 Decon
REPORT RESULTS TO: Bill Corrigan

LAB DESTINATION Analab
PHONE NO ______
OFFICE (903) 679-2062
FAX (903) 679-2056

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
Trip Blank	Trip Blank	6/14/99 10:25 am	VOA's	40 ml TFE, 4°C, glass	WRC	411555
Bottle Water	Bldg. 811-1	6/14/99 10:25 AM	Semi-VOA's	1 qt. amber, glass, 4°C	WRC	411563
POTABLE WATER	BLD 811-1	6/14/99 10:30	VOA's	500 ml plastic, HNO_3, 4°C	WRC	
POTABLE WATER	BLDG 811-1	6/14/99 10:30 AM	8-RCRA metals	40 ml TFE, glass, 4°C	WRC	

SPECIAL INSTRUCTIONS fax or email results, Bill Corrigan
SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY Bill Corrigan, CES, 6/16/99, 0800 in Guard Bldg 0800 - 0930
3. RELINQUISHED BY ______

RECEIVED BY J. B[illegible] 6-16 0930
RECEIVED BY [illegible] 6/16/99 1545

RELINQUISHED BY J.B. 6-16- 1545
4. RELINQUISHED BY ______

00188663

414 West California Ave
Ruston, LA 71270

EarthNet Laboratories, Inc

318-255-0060
318-251-5614 FAX
800-256-4362

Quality People Working For A Quality Environment

06/30/99

Complete Environmental Service
Attn: Bill Corrigan
P.O. Box 170
Karnack, TX 75661
903-679-2062 Fax 903-679-2056

SAMPLE--(G)rab/(C)omp: G
DATE RECEIVED: 06/23/99
COLLECTED BY: CLIENT

PRESERVED?: Y
TIME RECEIVED: 13:45
BROUGHT IN BY : E

SAMPLE ID	SOURCE	PARAMETER	SAMPLE CONC.	UNITS	MDL	--BEGIN-- DATE	TIME	ANL	METHOD	COLLECTION DATE	TIME
EL68667	31-W-10	Lead(TCLP)	0.066	mg/l	0.025	06/29/99	09:45	SL	SW 6010	06/21/99	15:55
		Barium(TCLP)	0.602	mg/l	0.001	06/29/99	09:45	SL	SW 6010		
		Corrosivity (ph)	4.7	s.u.	0.1	06/24/99	14:30	CH	SW 9045		
		Sulfide, Reactivity	<1.0	mg/kg	1.0	06/25/99	13:00	GC	SW 7.3.4.1		
		Cyanide, Reactivity	<0.2	mg/kg	0.2	06/25/99	13:00	GC	SW 7.3.3.2		
		Ignitability	>212.0	Deg F	75.0	06/30/99	08:00	EJ	SW 1010		
		Extraction, TCLP	Completed			06/24/99	15:00	CH	SW 1311		

Certified By QA Director/QC Manager

Analyses conducted in accordance with the list of Approved Test Procedures, published in 40 CFR--Parts 60, 136, and 261. Test procedures are from the 18/19th edition of Standard Methods for the Examination of Water and Wastewater, Methods for Chemical Analysis of Water and Wastes, 1979 (EPA) ASTM (Annual Book of Standards, Part 31, Water, 1985), or Test Methods for Evaluating Solid Waste (SW-846).

The duplicate analyses and/or spiked samples indicate all methodologies are in control.
Retain records for three years.

* Indicates out of compliance limits established by client and/or regulatory agencies. See permit for regulatory reporting requirements.

00188664

414 West California Ave
Ruston, LA 71270

EarthNet Laboratories, Inc

318-255-0060
318-251-5614 FAX
800-256-4362

TCLP ANALYSIS
TCLP REPORT FORM

ENL Sample No.: EL68667 Collected: 06/21/99 By: Client Time: 1555
Client: Complete Environmental Received: 06/23/99 By: KG Time: 1345
Bill Corrigan VOAMS Analysis Date/Analyst
Address: P.O. Box 170 BNAMS Analysis Date/Analyst
Karmack, TX 75661 GCECD Analysis Date/Analyst
Phone#: 903-679-2062 Metals Analysis Date/Analyst 06/29/99 SL
Sample ID: 31-W-10 Extraction Date/Time 06/24/99-1500 CH

EPA HW No.	Contaminant	Analytical Methods SW-846	Regulatory Levels mg/L	Detection Limit mg/L	Sample Concentration mg/L
D005	Barium	6010	100	0.001	0.602
D008	Lead	6010	5.0	0.025	0.066

ND - Not Detected

Toxicity characteristic leaching procedure (TCLP) is performed according to SW-846 (Third Edition), Method 1311 dated November, 1990.

Certified By Quality Control Manager
Dir QA

EarthNet Laboratories, Inc.
414 West California Avenue
Ruston, LA 71270

Reactivity, Corrosivity and Ignitability Report

Client: Complete Environmental Service
P.O. Box 170
Karmack, TX 75661

P.O.#
File #

Leachate
Grab
Comp X

Date Collected 06/21/99
Date Received 06/23/99
EL# EL68667

Collected By Client
Received By PH

Source 31-W-10

Certified By
Laboratory Director

REACTIVITY

Stability: Stable x Unstable

Reaction with Water: No Reaction x Violent

Endothermic Exothermic

Generate Gases Did Not Generate Gases x

R. Cyanide EPA Limit 250.0 mg/kg Sample Concentration: <0.2 mg/kg

R. Sulfide EPA Limit 500.0 mg/kg Sample Concentration: <1.0 mg/kg

CORROSIVITY

Corrosivity EPA Limit 2-12.5 Standard pH Units Sample: 4.7 Units

IGNITABILITY

Ignitability EPA Limit >140°F Sample Flashpoint: >212.0 °F

414 West California
( ) 255-0060
Ruston, LA 71270
(800) 256-4362

EarthNet Laboratories, Inc.

P.O. # NA

CHAIN OF CUSTODY Rush Standard ✓

Client		Delivered By:			
Name: Complete Environmental Service	Attn: Bill Corrigan	Client	EarthNet ✓	Delivery Service	Bus
Address: P.O. Box 170					
City, State, Zip: Karnack, TX 75661		Project Name/Location			
Phone Number: 903/679-3012	Fax Number: 903/679-3056				

Lab Use	Sample Collection				All Samples to be Cooled to 4°C				
Sample No.	Date	Time	Comp/Grab	Source	Analysis Required	Container	Preservative	Matrix	Special Instructions
Sil-1 soil	6/21/99	3:40pm	Grab	SIL-1-1	PH, reactivity, corrosivity, ignitability, TCLP Arsenic, chromium lead	glass	none	soil	68666
SI-W-soil	6/21/99	3:55pm	Grab	SI-W-10	PH, reactivity, corrosivity, ignitability, TCLP Lead + Barium	glass	none	soil	68667
49-W-soil	6/21/99	4:05pm	Grab	49-W-13	PH, reactivity, corrosivity, ignitability, TCLP chromium	glass	none	soil	68668

All samples will be collected and preserved according to USEPA established protocols.

Additional Remarks: Fax results to Bill Corrigan

Sampled by: William R. Corrigan

Relinquished by: William R. Corrigan	Date: 6/22/99	Time: 1030am	Received by: Joyce W. Shelton	Date: 6-23-99	Time: 10:00
Relinquished by: Joyce W. Shelton	Date: 6-23-99	Time: 11:00	Received by: [illegible]	Date: 6-23-99	Time: 11:00
Relinquished by: [illegible]	Date: 6-23-99	Time: 1205	Received by: Brenda Vandell	Date: 6-23-99	Time: 1205
Relinquished by: Brenda Vandell	Date: 6-23-99	Time: 1345	Received for Laboratory by: P. Hughes	Date: 6/23	Time: 1345

00188666

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

TNRCC

ONE-TIME SHIPMENT REQUEST FOR TEXAS WASTE CODE FOR SHIPMENT OF CLASS 1, 2, 3 AND EPA HAZARDOUS WASTE

Pursuant to the generator notification requirements of 30 TAC Section 335.6, the generator of a solid waste is required to submit to the TNRCC detailed written information pertaining to the composition and characteristics of the waste. Please complete all applicable sections. Incomplete forms will delay processing. Assigned waste codes cannot be changed without prior approval from the TNRCC.

Please type or print legibly:

Bill Corrigan
Longhorn Army Ammunition Plant
PO Box 658
Doyline, LA 71023

GENERATOR CONTACT PERSON
GENERATOR COMPANY NAME
GENERATOR MAILING ADDRESS
CITY, STATE, ZIP CODE
PHONE NO. (903)679 .2062
FAX NO. (903)679 .2056

COMPLETE ONLY IF NOT REGISTERED

Are you industrial? ☒ Yes ☐ No

If industrial, have you submitted TNRCC Initial Notification form (TNRCC-0002)? ☒ Yes ☐ No

Date submitted: August 6, 1980

COMPLETE ONLY IF REGISTERED

30990
Solid Waste Registration No.

TX6213820529
U. S. EPA Identification No.

Generating Site Location (☐ Check if same as above) LHAAP, Hwy 134 @ Spur 449, Karnack, TX 75661
(STREET ADDRESS OR PHYSICAL DESCRIPTION)

Designated Treatment, Storage, and/or Disposal Facility Name and Address Pinehill Landfill, I-20 @ Hwy.31 Kilgore, TX 75662. Permit # 1327B

DESCRIPTION OF WASTE
(do not use DOT description or trade name)

1. Soil from RCRA closure of CSA 49-W Contaminated with chromium above background.
2. Soil form RCRA closure of CSA 81-W. Contaminated with barium & lead above background.
3. Soil from RCRA closrue of CSA 811-I. Contaminated with metals above plant background
4.

TNRCC USE ONLY

For TNRCC Assignment of Texas Waste Code Number	① FORM CODE	② CLASS CODE	③ EPA CODE	④ ORIGIN CODE
DY8Z3022	302	2		7
DY923022	302	2		7
DY933022	302	2		7

TEXAS WASTE CODES

PROCESSED DATE: 6-1-99
PROCESSED BY: FD
TNRCC REGION: 5 OFFICE

GENERATOR/REPRESENTATIVE

I certify that the above information is correct to the best of my knowledge.

I, William R. Corrigan, *am employed by:*
(NAME, Please Print)

(COMPANY NAME AND MAILING ADDRESS)

Complete Environmental Service
Attn: Bill Corrigan
P.O. Box 170
Karnack, TX 75661

I am authorized to sign this certification for:

Complete Environmental Service
(COMPANY NAME)
William R. Corrigan
(SIGNATURE)
5/27/99
(DATE)
(903) 679-2062
(PHONE NUMBER)

TNRCC-0757 (Rev. 07-17-96)

PINEHILL LANDFILL
2611 NORTH HIGHWAY 42 / P O BOX 1857
KILGORE, TX 75662
OPERATING PERMIT # 1327-B
TELEPHONE #903-984-3922
FAX #903-983-1827

SPECIAL WASTE ACCEPTANCE APPROVAL

DATE: July 9, 1999

GENERATOR COMPANY NAME: Longhorn Army Ammunition Plant

GENERATOR SITE ADDRESS:
Highway 134 @ Spur 449
Karnack, TX 75661

GENERATOR MAILING ADDRESS:
P.O. Box 658
Doyline, LA 71023

GENERATOR CONTACT/ TELEPHONE #: Bill Corrican (903) 679-2062

TECHNICAL CONTACT/ TELEPHONE #: Lynn Muckelrath (903) 679-2062

WASTE STREAM NAME: Soil from Area 31W - Closure of Container Storage Area

WASTE CLASSIFICATION: Non-Hazardous Special Waste.

AWI DISPOSAL SITE AUTHORIZATION APPROVAL #: FH992732

TOTAL ANNUAL VOLUME: 20 Cubic Yard(s)

AWI DISPOSAL AUTHORIZATION EXPIRATION DATE: January 31, 2000.

SPECIAL CONDITIONS: This approval is granted subject to the enforcement of the conditions listed below :

1) Loads of this waste stream may be randomly inspected upon receipt at the landfill to conform with the Waste Profile Sheet.
2) Any load determined to contain free liquids cannot be accepted for landfill disposal (40 CFR 258.28).
3) Each load must be accompanied by a Non-Hazardous Special Waste shipping / tracking document/manifest.
4) Customer must contact Pinehill Landfill to schedule this waste stream prior to disposal.
5) The approved disposal volume for this material is listed above. If the disposal volume is exceeded, landfill personnel must notify the AWI Environmental Compliance Department immediately for further instructions.
6) Texas Waste Code – DY923022

Allied Waste Industries' Landfill Compliance Department has reviewed the documentation submitted for approval. This material has been found to be acceptable for non-hazardous in accordance with US EPA Regulations 40 CFR 261.

Rebecca Stein
Rebecca Stein, Special Waste Coordinator

Eric Ballenger, Environmental Monitoring Manager

Original to: Wess Harwell, Pinehill Landfill
pc: AWI Alsip Office-File
Camille Threadgill, AWI Sales, Athens, TX
Lynn Muckelrath, Longhorn Army Ammunition Plant

00188669

WASTE MOVEMENT RECORD

N° 3602

East Texas Market Area Landfills
1-800-678-7274

Roll off # R2758RT

AWI Approval Number
~~PH992732~~
PH992734

Expiration Date
Jan. 31, 2000

- ☐ **Ellis County Landfill** — Ennis, TX — Permit #1745
- ☑ **Pinehill Landfill** — Kilgore, TX — Permit #1327B
- ☐ **Greenwood Farms Landfill** — Tyler, TX — Permit #1972
- ☐ **Royal Oaks Landfill** — Jacksonville, TX — Permit #1614A
- ☐ **Other** _____

GENERATOR CERTIFICATE: I, a representative of Longhorn Army Ammo Plant (company name), Hwy 134 @ Spur 449, Karnack, TX 75661 (address, city, zip), certify that this shipment consists of ~~10 CY PH992732~~ 10 CY PH992734 20 cubic yards / tons / drums of non-hazardous 50.7 from areas 49W + 31W (name of waste material) and is classified as follows:

- ☑ Non-hazardous industrial waste - If generated in Texas, it is a Class II Waste assigned Waste Code Number ~~D48Z3022~~ D49Z3022 and Notice of Registration Number 30995 _____ by the TNRCC.
- ☐ Non-hazardous oilfield-related waste from _____
- ☐ Sludge (Type) _____
- ☐ Other Waste _____

GENERATOR

PRINTED / TYPED NAME	SIGNATURE	DATE SHIPPED Month	Day	Year
LYNROWE MICKELRATH	Lynrowe Mickelrath	07	21	99

TRANSPORTER

PRINTED / TYPED NAME	SIGNATURE	Month	Day	Year
Mike Castle	Mike Castle	7	21	99

LANDFILL OPERATOR CERTIFICATE OF RECEIPT OF WASTE

PRINTED / TYPED NAME	SIGNATURE	DATE RECEIVED Month	Day	Year
Kimberly Thomas	Kimberly Thomas	7	21	99

COPIES: White - Generator; Green - Transporter; Canary/Pink - Landfill; Goldenrod - Generator at time of shipment

RE-CLAIM Environmental, Inc. La. LLC
10845 La. Hwy 1, Shreveport, La. 71115
(Federal Tax No. 72-1312512)

00188670

Manifest No. 5800

SPECIAL TRANSPORTATION MANIFEST

Generator/Location

NAME: Longhorn Army Ammunition Plant

ADDRESS WHERE SHIPMENT ORIGINATES: Hwy. 134

MAILING ADDRESS:

CITY: Karnack, Texas STATE: ZIP:

Purchase Order No.

Work Contracted by

BILL TO:
(If different from Location)

NAME: Complete Environmental Services

ADDRESS: P. O. Box 170

CITY: Karnack, Texas 75661 STATE: ZIP:

SERVICE/INVOICE SECTION

ITEM/QTY	D.O.T. PROPER SHIPPING NAME	DESCRIPTION	QTY	PRICE	LINE TOTAL
1	COMBUSTIBLE LIQUID NOS NA 1993	WASTE WATER & OIL PUMPED FROM TANKS			
2	NA 1993 WASTE OILY WATER	WASTE COOLANT PUMPED FROM TANKS			
3	COMBUSTIBLE LIQUID NOS NA 1993	OFF SPEC - PRODUCT			
4	COMBUSTIBLE LIQUID NOS NA 1993	OFF SPEC - LIGHT OIL			
5	COMBUSTIBLE LIQUID NOS NA 1993	OFF SPEC - #4 OIL			
6		SERVICE CHARGE			
7		INDIVIDUAL ANALYSIS FOR EACH 55-GAL DRUM			
8		SERVICE CHARGE FOR EACH 55-GAL DRUM			
9		WASTE COOLANT			
10		ENVIRO WATER	600		
11		OFF SPEC - PRODUCT & WATER MIXTURE			
		TOTAL	600		

WASTE SEGREGATION CERTIFICATION

Generator hereby certifies that the information provided above is true and correct. Generator also certifies that the used oils supplied to RE-CLAIM Environmental, Inc. will not be mixed, combined, or otherwise blended in any quantity with materials containing polychlorinated biphenyls (PCBs), halogenated solvents, or any other material defined as hazardous waste under 40 CFR Part 261 or applicable State regulations. Generator agrees to indemnify and hold RE-CLAIM Environmental, Inc. harmless for any damages, costs, attorneys and expert fees, arising out of or in any way related to a breach of any of the above certifications by Gernerator.

X William R. Corrigan
(SIGNATURE)

By

E.P.A. IDENTIFICATION NUMBER: T X 6 2 1 3 8 2 0 5 2 9

TO BE COMPLETED BY TRANSPORTER

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION AND THE E.P.A.

TRANSPORTER NAME: RE-CLAIM Environmental, Inc. La. LLC
ADDRESS: 10845 La. Hwy 1 Shreveport, La. 71115
TELEPHONE NUMBER: (318) 797-0087

E.P.A. IDENTIFICATION NUMBER: L A R 0 0 0 0 2 4 9 7 6

This manifest form does not, in any way, replace the national uniform hazardous waste manifest which must be used if this transported waste is a hazardous waste.

SIGNATURE OF TRANSPORTER AGENT: D B King

DATE — MONTH: 7 DAY: 22 YEAR: 99

FACILITY INFORMATION AND CERTIFICATE OF DISPOSAL

RECEIVER'S NAME: RE-CLAIM Environmental, Inc.La. LLC
BUSINESS ADDRESS: 10845 La. Hwy 1
DESTINATION (SITE) ADDRES: Shreveport, La. 71115

FACILITY TELEPHONE NUMBER: (318) 797-0087

E.P.A. IDENTIFICATION NUMBER: L A R 0 0 0 0 2 4 9 7 6

This is to certify that all non-hazardous material removed from above location has been received and will be disposed of in accordance with applicable local, state, and federal regulations. Manifest are on file. Our treatment system operates on a first in, first out basis and product should be processed within seven days.

SIGNATURE OF FACILITY AGENT: Delia Rodriguez

DATE — MONTH: DAY: YEAR:

LONGHORN ARMY AMMUNITION PLANT

CLOSURE/POST-CLOSURE PLAN

SEPTEMBER, 1988

Allen B. Childress, Jr.
Environmental Coordinator
Morton Thiokol, Inc.

Don E. Maley
Environmental Coordinator
Army

PURPOSE

The purpose of this plan is to provide guidance should the need arise to close an existing waste disposal site on Longhorn Army Ammunition Plant. The procedures provided are of a general nature and will be revised and expanded before actual closure of a particular site begins.

GENERAL PROCEDURES

A. The contact point for any information or problems encountered with any waste disposal facility currently in use or closed, is the Commander, Longhorn Army Ammunition Plant, Marshall, Texas 75670, phone number (214) 679-2100. Should the plant itself ever be deactivated, the contact point will become the Environmental Operations Center, U.S. Army Armament, Munitions and Chemical Command, Rock Island, Illinois 61299 which can be reached at Autovon number 8-793-6244, commercial number (309) 782-6244/4793.

B. Any site which is closed or partially closed will be certified closed by an independent (subcontractor) registered professional engineer, who will have access to the disposal site before, during, and after closure to insure that the site is closed as per the state approved Closure Plan. The registered professional engineer will provide a letter of certification to the installation certifying proper closure. A copy of this letter plus a notarized letter signed by the General Manager and Contracting Officer's Representative will be provided to the state within 30 days of final closure.

C. Following closure or partial closure of any disposal site, a metes and bounds description of the site will be recorded with the Harrison County Court Clerk. This metes and bounds description will include information necessary to describe the site, all waste cells within the site, the type and quantity of materials left in the closed site and a statement that the site will not be used for other activities. A copy of this information with the seal of the County Clerk will be provided to the Executive Director of the Texas Water Commission. As there is no deed to the property owned by the federal government, the notice recorded with the metes and bounds description will be furnished with a map of the installation.

D. Periodic revision of this plan will be made to insure that new facilities are added, and that closed sites are removed from the plan. Revision of the Closure Plan Cost Estimate will be done annually on/or before November 30th.

E. This plan is not for release outside of Longhorn Army Ammunition Plant without the approval of the Commander. It's purpose is as an internal planning document meeting the requirements of the Resource Conservation and Recovery Act and the Texas Water Commission for development of closure/post-closure plans.

F. All equipment used to totally or partially close a hazardous waste site will be cleaned and decontaminated. The item will be cleaned and decontaminated with material appropriate for the type of waste and equipment involved, such as: water, solvents, absorbent, etc. All waste and waste residues produced will be collected and managed as a hazardous

waste. It will then be shipped off-site for disposal at an approved hazardous waste site. Equipment that is impractical to clean and decontaminate, such as brooms, mops and rags, will be packaged and shipped off-site for disposal at an approved hazardous waste site.

SPECIFIC SITE PROCEDURES

A. Burning Ground (B.G. #3) Open Burning Area

1. Closure Procedures

Depending on priorities and operational requirements, higher echelons of the U. S. Army will determine if a facility is to be laid away (deactivated) or maintained when production ceases. Partial closure of this facility and/or relocation of operations could be made at any time throughout the life of the facility. Partial closure could be done as per the procedures contained here but, in all probability, would be accomplished by removal of the contaminated soil for disposal in an off-plant hazardous waste disposal site and then refilling the area to grade. Explosive waste ash residue from burns in this area is periodically removed and tested and if found to be non-hazardous, buried in a sanitary landfill on-plant or, if hazardous, shipped to an off-plant hazardous waste disposal site. There is, therefore, no permanent accumulations of hazardous waste at this facility and there is no known life expectancy for the site. The expected year of closure for the site is the year 2030. At this time, closure, either partial or complete closure, is not being contemplated. Should the decision be made to deactivate the open burning area, the following is proposed as a method:

a. Equipment such as burning pans and cages would be removed and salvaged. Clay linings from pans will be drummed and tested for EP toxicity (metals) to determine proper disposal methods.

b. A thorough search will be made of the area to be deactivated for unexploded ordnance or explosives and any items found will be destroyed.

c. Representative soil samples will be taken in the area and analyzed for explosive residue. If explosive residue is found, a layer of straw will be laid over the area, soaked with diesel and burned off.

d. Soil tests will be conducted for metals and organics and any area found to exceed EPA listed standards will be excavated, the soil drummed and shipped to an off-plant hazardous waste disposal site.

e. Low areas will be filled with soil and contoured to control surface water runoff and to prevent standing water. Appropriate vegetation will then be planted and maintained to prevent erosion. Fertilizer will be applied to promote growth.

f. The area will be posted and secured as required by the use of a chain link fence and gates.

g. The area will be inspected monthly for the first year and quarterly thereafter to check for possible leaching, surface runoff or erosion and to maintain proper cover.

h. Records of inspections performed will be maintained by the installation Environmental Control Office. An annual report will be made to the U.S. Army higher echelons for permanent record.

i. Monitoring of wells around the Burning Ground will be conducted annually for the first five (5) years. If no groundwater contamination from open burning operations is found after five (5) years, then a request for an exemption to the monitoring requirements will be made.

2. Care of Site After Closure

a. No other use of this site is planned at this time.

b. If required, inspections, maintenance actions and reports will be continued for a minimum of 30 years or until conditions change.

c. As required, preventive maintenance inspections will be continued on a quarterly basis indefinitely to insure integrity of the site.

d. The Department of Defense Explosive Safety Board requires that all areas containing buried explosives remain under federal control until the explosives are rendered innocuous. Closed site ownership and responsibility is expected to remain with the U.S. Army.

B. Demolition Range

1. Closure Procedures

Depending on priorities and operational requirements, higher echelons of the U.S. Army will determine if a facility is to be laid away, closed or maintained when production operations cease. Partial closure of the demolition range or relocation of the existing demolition sites is possible throughout the life of the facility. Partial closure or relocation would be accomplished in the same manner as closure. Following demolition of explosives there is very little residue left and accumulation, for all intents and purposes, of waste will not occur. The estimated life of the facility is 50 years from 1980 (2030) assuming that the actual demolition pits will be relocated several times during this period. Time required to close this facility would be six months after notice to proceed from the regulator. Closure of the demolition range is not anticipated until and unless, the entire plant closes. Should the decision be made to close the demolition range, the following is proposed as a method:

a. Stake the area out, within 500 feet of the demolition pits, into 100 foot square grids and perform a detailed surface search for unexploded ordnance. Any unexploded ordnance found will be destroyed in place.

b. Take core samples to a depth of ten feet in each demolition pit and sample for metals.

c. If testing indicates contamination, remove the contaminated soil and dispose of it in an off-plant hazardous waste disposal site.

d. If no contamination is found, fill the demolition pits with dirt, contour to prevent run-on of surface water and seed to prevent erosion.

e. Place warning signs immediately around/above the demolition pit areas stating, "Warning, Former Demolition Area".

2. Care of Site After Closure

a. Semiannual maintenance checks for soil erosion will be made for the first several years after which additional checks will be made as required.

b. No monitoring will be required because the site will be closed by removing all hazardous waste, and the potential for groundwater contamination is very small.

c. No other use of this site is planned at this time.

d. Records of inspections and maintenance actions will be maintained by installation Environmental Control Office and an annual report will be made to U.S. Army higher echelons for permanent record.

e. If required, post-closure actions will continue for up to 30 years, unless conditions change.

C. Drum Storage Buildings (49-W, 31-W, and 811-1)

1. Closure Procedures

Depending on priorities and operational requirements, higher echelons of the U.S. Army will determine if a facility is to be laid away (deactivated) or maintained when production ceases. Partial closure of this facility, and/or relocation of operations, could be made at any time throughout the life of the facility. Partial closure would be accomplished by returning part of the facility now used for hazardous waste storage to normal operations. Waste at these facilities is stored in drums pending off-site disposal and there is no known life expectancy for the buildings. At this time, closure, either partial or complete, is not being contemplated. The expected year of closure for these sites is 2030. Should the decision be made to deactivate or close all or part of these facilities, the following is proposed as a method:

a. Remove all remaining drums and ship to an approved off-site hazardous waste disposal facility, utilizing manifest procedures.

b. Sweep/mop the floor areas utilized for drum storage and drum any recovered residue for off-site disposal as in (a) above.

c. Inspect the facility for any evidence of contamination and provide a letter of certification to the Texas Water Commission stating

that the facility is partially or completely closed for hazardous waste storage operations.

d. If the facility is to be laid away and not utilized for other operations, the building will be posted and lay away forms completed. An annual inspection of the facility will be made by Property and Maintenance personnel and recorded on the lay away form.

e. Monitoring procedures during post-closure will not be necessary as sources of pollution will not exist.

2. Care of Site After Closure

a. Should the facility ever be released for public sale, a certificate of decontamination would be prepared.

b. If the facility is laid away, an annual inspection would be conducted indefinitely.

D. Lagoon (Unlined Evaporation Pond) Closure Procedures

1. Closure was completed and certified in July 1986.

2. Care of Site After Closure

a. No other use of this site is planned at this time.

b. The closed facility is inspected as part of the Preventive Maintenance program for the plant to insure that the clay cap remains intact. The grass cover will be maintained indefinitely to protect the cap. Mowing of the grass will insure that erosion can be easily spotted and controlled.

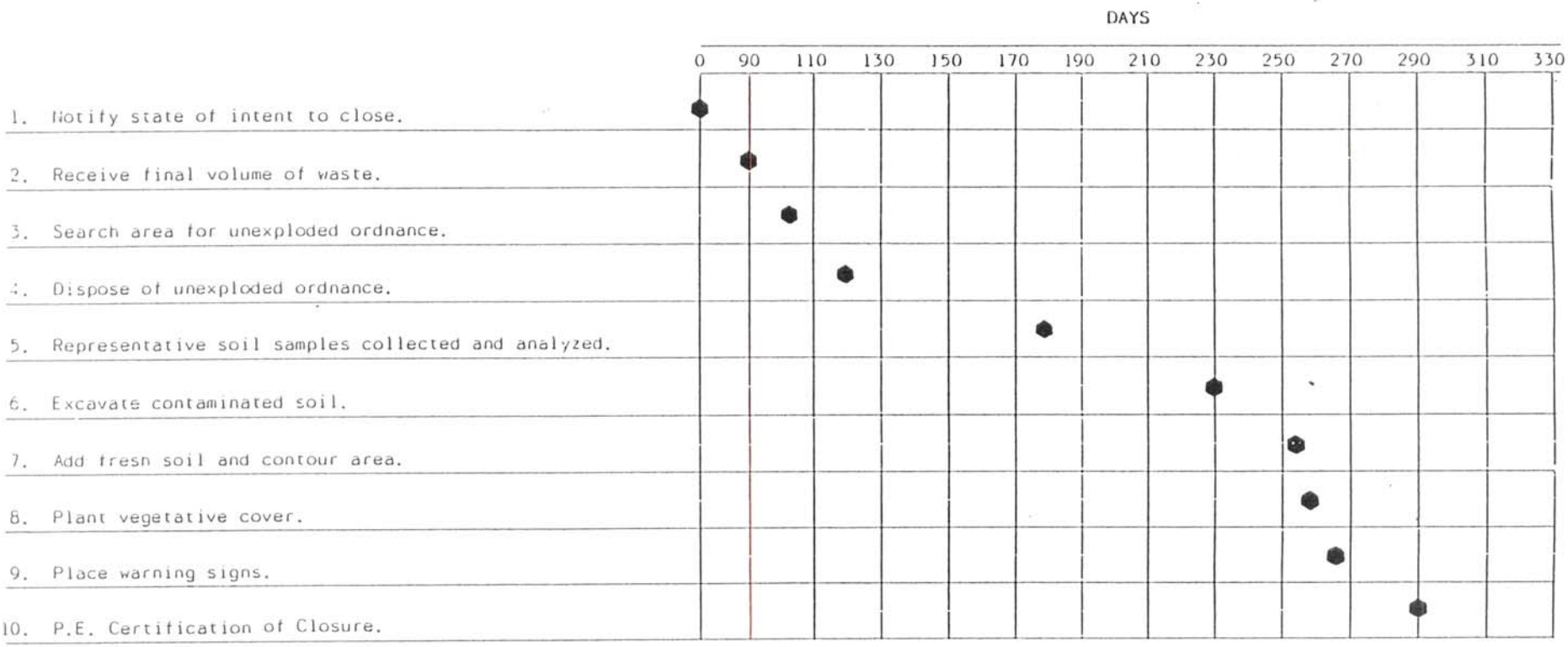
c. The fence around Burning Ground No. 3 will be maintained along with gate security and signs to preclude inadvertent access to the closed lagoon site.

d. Post closure activities are expected to continue for at least 30 years.

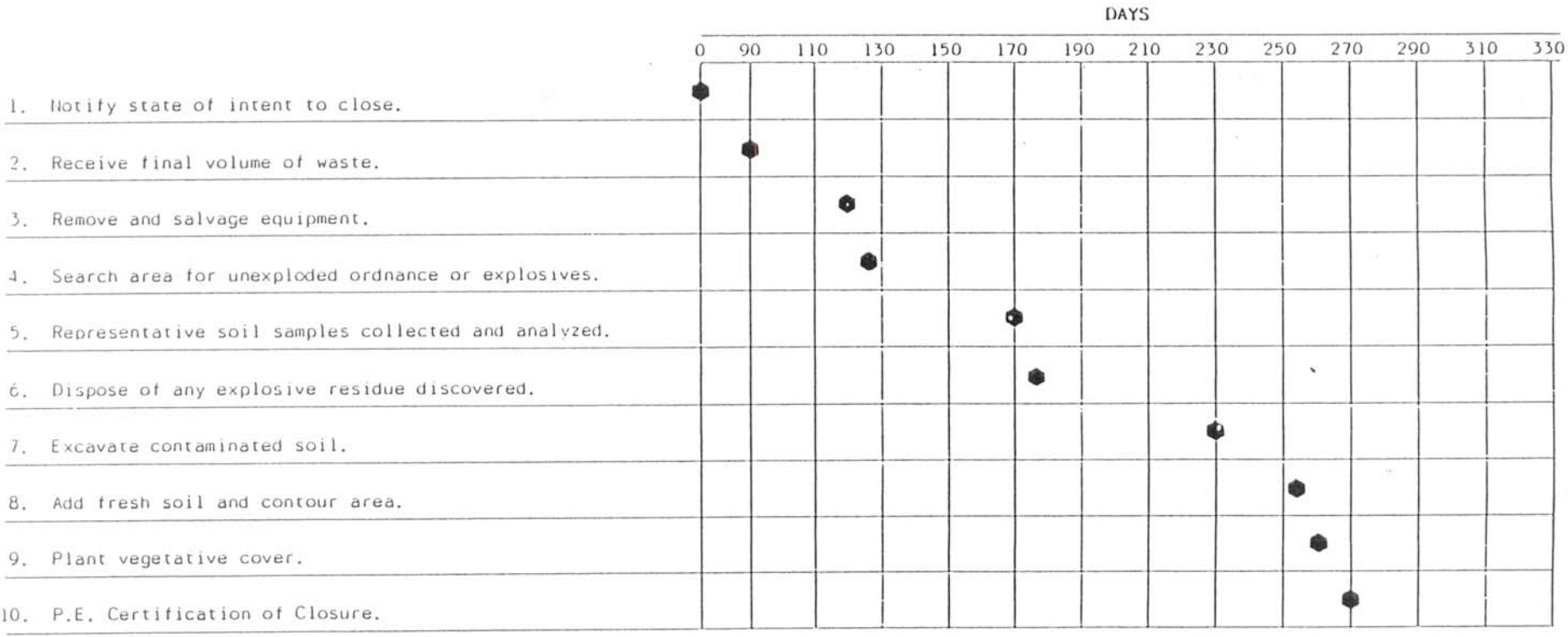
E. Schedule to totally and partially close hazardous waste management facilities (see Attachment A).

ATTACHMENT A

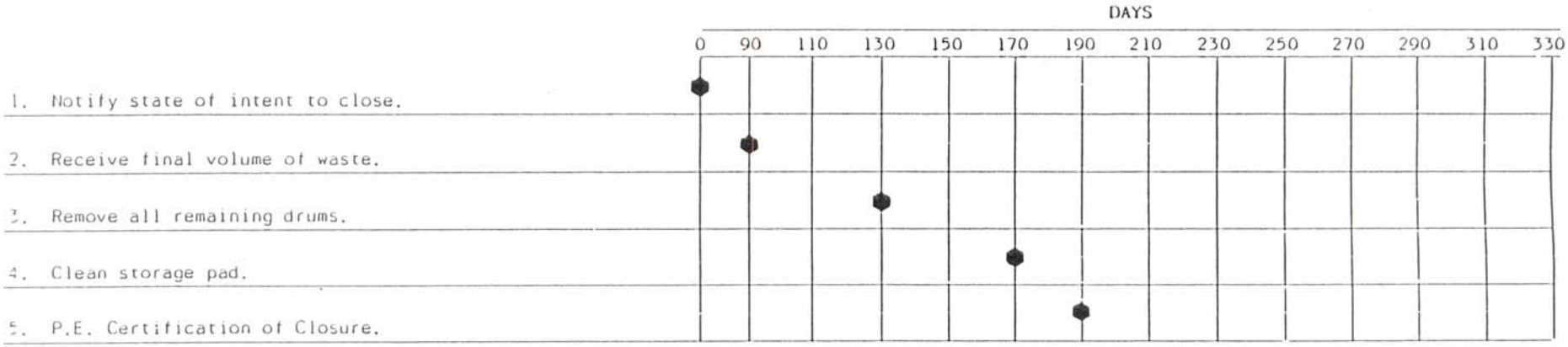
PARTIAL AND FINAL CLOSURE OF DEMOLITION RANGE



PARTIAL AND FINAL CLOSURE OF BURNING GROUND NO. 3



PARTIAL AND FINAL CLOSURE OF DRUM STORAGE BUILDINGS



ATTACHMENT B

CLOSURE COST ESTIMATE AS OF SEPTEMBER 1988

1. Open Burning*

a.	Search and destroy	$ 50,000
b.	Soil samples/burn	110,000
c.	Disc, sample and reburn	275,000
d.	Fill and seed	12,000
e.	Dispose of residue	220,000
f.	Post and secure	25,000
	TOTAL:	$692,000

g. Post Closure

(1)	Inspections	60,000
(2)	Maintenance (Erosion Control & Security)	100,000
(3)	Reports	20,000
	TOTAL:	$180,000
	GRAND TOTAL:	$872,000

2. Sanitary Landfill

a.	Fill and cap	$600,000
b.	Grade and seed	182,000
c.	Post and mark	35,000
	TOTAL:	$817,000

d. Post Closure

(1)	Inspections	36,000
(2)	Monitoring wells	75,000
(3)	Maintenance	121,000
(4)	Reports	25,000
	TOTAL:	$257,000
	GRAND TOTAL:	$1,074,000

*Escalated cost due in part to new Land Ban Restrictions.

3. Air Curtain Destructor

a.	Lay away cleanup	$125,000
b.	Preservation	25,000
c.	Posting	2,000
	TOTAL:	$152,000
d.	Post closure	
	(1) Inspections	6,500
	GRAND TOTAL:	$158,500

4. PCB Pads

a.	Ship transformers	$165,000
b.	Payment for disposal (DRMO)	250,000
c.	Clean pads	25,000
d.	Sample soil	3,000
e.	Remove and ship contaminated soil	18,000
f.	Payment for disposal	30,000
g.	Fill, grade and seed	6,000
h.	Post	2,000
	TOTAL:	$499,000
i.	Post closure	
	(1) Inspections	65,000
	(2) Reports	4,000
	TOTAL:	$69,000
	GRAND TOTAL:	$568,000

5. Demolition Range

a.	Stake and search range	$ 50,000
b.	Core samples/metal analysis	20,000
c.	Removal of contaminated soil/disposal	200,000
d.	Fill and cap with soil	30,000
e.	Grade and seed	15,000
f.	Post and secure	10,000
	TOTAL:	$325,000
g.	Post closure	
	(1) Semiannual inspections	30,000
	(2) Maintenance	40,000
	(3) Reports	15,000
	TOTAL:	$85,000
	GRAND TOTAL:	$410,000

6. Drum Storage Building 31-W*

a.	Remove drums to off-site disposal (DRMO) (1600 drums)	$ 930.000
b.	Sweep/mop floor areas	55,000
c.	Drum and dispose of residue	50,000
d.	Post area	2,200
	TOTAL:	$1,037,000
e.	Post closure	
	(1) Inspections	10,000
	GRAND TOTAL:	$1,047,200

7. Drum Storage Building 49-W*

a.	Remove drums to off-site disposal (DRMO) (2000 drums)	$300,000
b.	Sweep/mop floor areas	75,000
c.	Drum and dispose of residue	15,000
d.	Post area	2,000
	TOTAL:	$392,000
e.	Post closure	
	(1) Inspections	10,000
	GRAND TOTAL:	$402,000

*Escalated cost due in part to new Land Ban Rosrictions.

8. Pilot Wastewater Treatment Plant*

a.	Dispose of remaining sludge and liquid	$250,000
b.	Steam/solvent clean tanks	250,000
c.	Clean/replace piping	75,000
d.	Clean heat exchangers and towers	150,000
e.	Dispose of cleanup residue	75,000
f.	Sample oil	10,000
g.	Remove and dispose of contaminated soil	300,000
h.	Post with signs	1,500
	TOTAL:	$1,111,500
i.	Post closure	
	(1) Inspections	10,000
	GRAND TOTAL:	$1,121,500

9. Construction Materials Landfill

a.	Fill and cap	$350,000
b.	Grade and seed	120,000
c.	Post and mark	50,000
	TOTAL:	$520,000
d.	Post closure	
	(1) Inspections	$ 36,000
	(2) Monitoring wells	72,000
	(3) Maintenance	175,000
	(4) Reports	12,000
	TOTAL:	$295,000
	GRAND TOTAL:	$815,000

10. Explosive Waste Storage 811-1*

a.	Remove drums for on-site treatment (200 drums)	$20,000
b.	Sweep/mop floor area	12,000
c.	Drum and dispose of residue	20,000
d.	Post area	2,200
	TOTAL:	$54,200
e.	Post Closure	
	(1) Inspections	10,000
	GRAND TOTAL:	$64,200

*Escalated cost due in part to new Land Ban Restrictions.

11. Lagoon (Unlined Evaporation Pond)

Closed July 1986

a. Post Closure (30 years)

(1)	Inspections	$ 10,000
(2)	Maintenance	100,000
(3)	Reports	10,000
	TOTAL:	$120,000

SUMMARY

1.	Open Burning	$ 872,000
2.	Sanitary Landfill	1,074,000
3.	Air Curtain Destructor	158,500
4.	PCB Pads	568,000
5.	Demolition Range	410,000
6.	Drum Storage (31-W)	1,047,200
7.	Drum Storage (49-W)	402,000
8.	Pilot Wastewater Treatment Plant	1,121,500
9.	Construction Materials Landfill	815,000
10.	Explosive Waste Storage (811-1)	64,200
11.	Lagoon	120,000
	GRAND TOTAL:	$6,652,400

		Closure	Post Closure
1.	Open Burning	$ 692,000	$ 180,000
2.	Sanitary Landfill	817,000	257,000
3.	Air Curtain Destructor	152,000	6,500
4.	PCB Pads	499,000	69,000
5.	Demo Range	325,000	85,000
6.	Drum Storage (31-W)	1,037,200	10,000
7.	Drum Storage (49-W)	392,000	10,000
8.	Pilot Wastewater Treatment Plant	1,111,500	10,000
9.	Construction Materials Landfill	520,000	295,000
10.	Explosive Waste Storage (811-1)	54,200	10,000
11.	Lagoon	-------	120,000
	SUB-TOTAL:	$5,599,900	$1,052,500
	Contingency (20%):	1,119,980	210,500
	GRAND TOTAL:	$6,719,880	$1,263,000

CLOSURE PLAN
for
PERMIT UNIT NO. 001

HAZARDOUS WASTE
CONTAINER STORAGE AREA 31-W
at
LONGHORN ARMY AMMUNITION PLANT

JULY 1997

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

EPA IDENTIFICATION NO. TX6213820529
HAZARDOUS WASTE PERMIT NO. 50195
SOLID WASTE REGISTRATION NO. 30990

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CLOSURE PLAN FOR HAZARDOUS WASTE STORAGE BUILDING 31-W

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CLOSURE PLAN FOR CONTAINER STORAGE AREA 31-W

(continued)

FIGURES

DRAWINGS

Hazardous Liquid Waste Storage, Drawing No. F-12291, Floor Plan, Sheet 3 of 19

Hazardous Liquid Waste Storage, Drawing No. F-12291, Exterior Elevations, Sheet 5 of 19

1.0 BACKGROUND INFORMATION

1.1 Location of Longhorn Army Ammunition Plant

Longhorn Army Ammunition Plant (LHAAP) is located in the northeast corner of Harrison County, Texas, approximately 3.6 miles from the Louisiana border. LHAAP is bordered by Caddo Lake, Caddo Lake State Park and the small town of Karnack. The plant is located approximately 30 miles west of Shreveport, Louisiana, with the nearest major city being Marshall, Texas, 15 miles to the southwest. Figure 1-1 illustrates the location of LHAAP relative to the state of Texas. The installation has a total area of approximately 8,493 acres. State Highways 43 and 134 access the installation.

1.2 Location of Container Storage Area 31-W

The Container Storage Area 31-W is located on South Crockett Avenue Longhorn Army Ammunition Plant, Harrison County, Texas. South Crockett Avenue is located towards the central area of LHAAP. Figure 1-2 details the location of Storage Area 31-W within Longhorn Army Ammunition Plant

2.0 PURPOSE OF CLOSURE PLAN

References:

1. Permit for Industrial Solid Waste Management Site, Permit Number HW-50195.
2. 30 TAC Subchapter A
3. 40 CFR 264 Subpart G

Longhorn Army Ammunition Plant (LHAAP) received notification in the fall of 1996 that it no longer has a mission requirement and will be excessed in its entirety. In accordance with hazardous waste permit provision IV.A.1.c. (abandonment of the site), LHAAP is proceeding with plans to close container storage area 31-W.

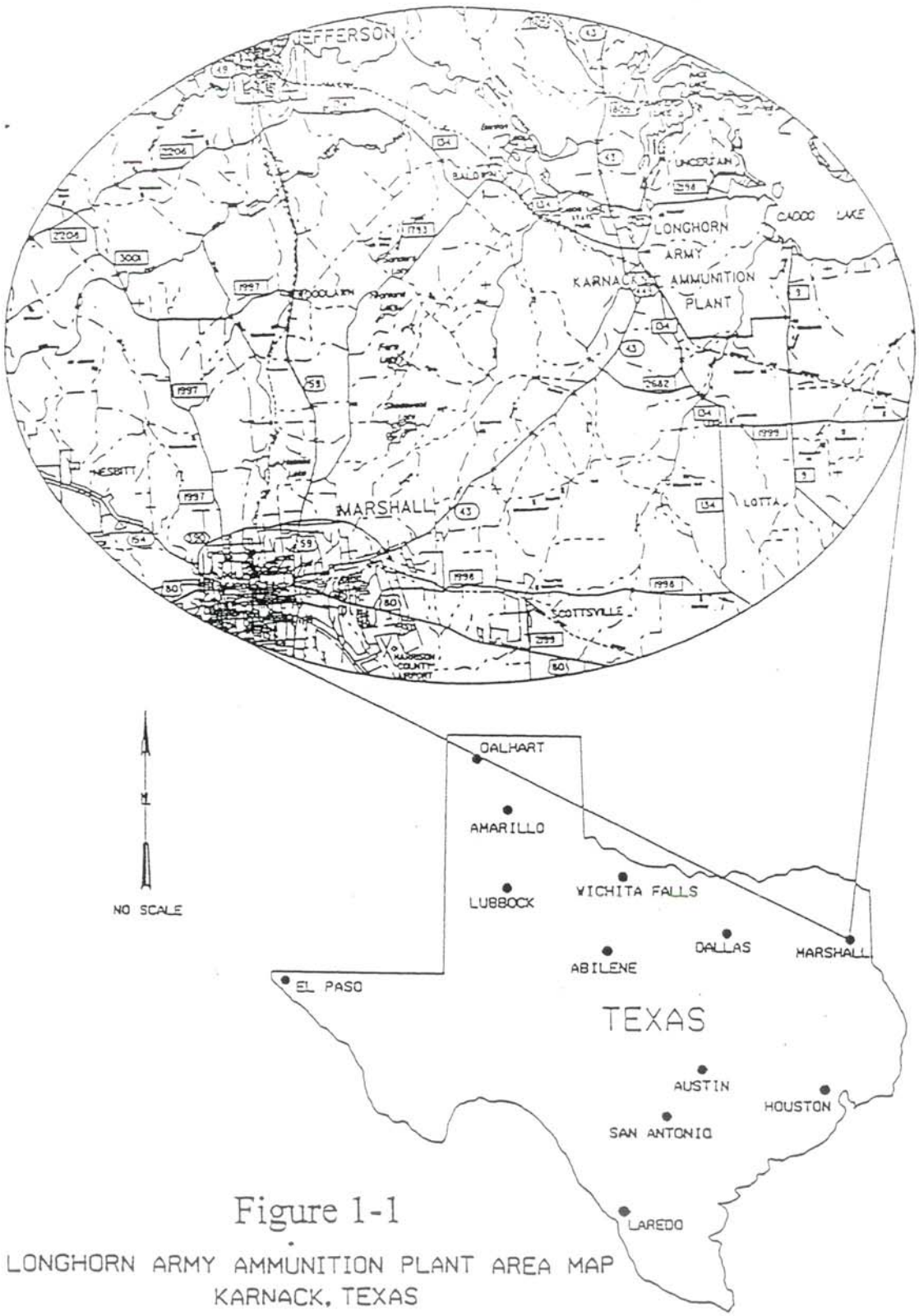
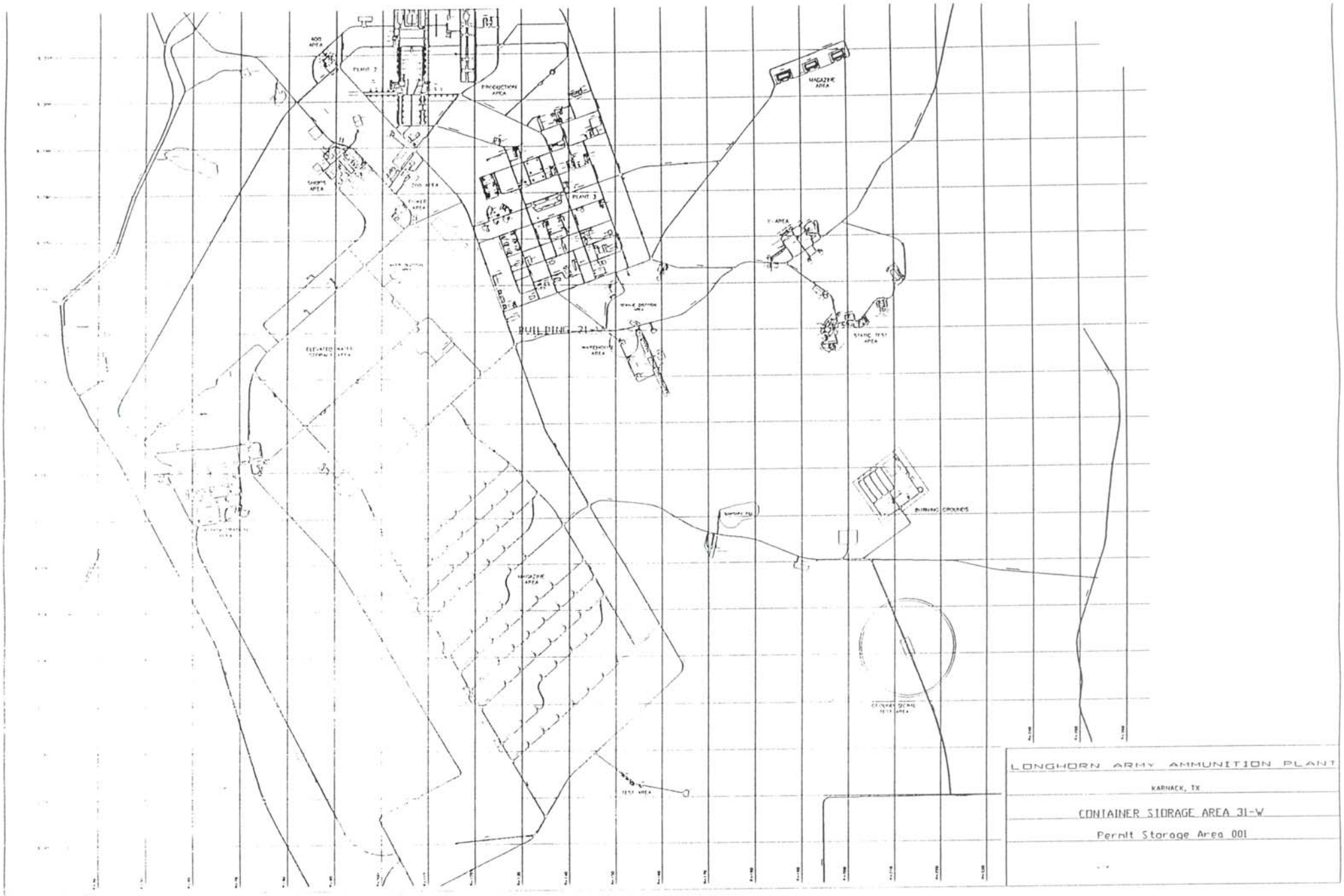


Figure 1-1

LONGHORN ARMY AMMUNITION PLANT AREA MAP
KARNACK, TEXAS

00188692


PLANT 2
PRODUCTION AREA
MAGAZINE AREA
PLANT 3
BUILDING 21
WAREHOUSE AREA
STATIC TEST AREA
BURNING GROUNDS
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TX
CONTAINER STORAGE AREA 31-W
Permit Storage Area 001

3.0 DESCRIPTION OF WASTE MANAGEMENT UNIT

Hazardous Waste Permit Unit Number - 001
Texas Waste Management Unit Registration Number - 008

Building 31-W is located in a warehouse area within the confines of Longhorn AAP. Building 31-W is one of the warehouses that was built in the late 1950's. In 1986, this building was added on to. The addition meets the standards required under RCRA. The addition has sloped concrete floors and diked bays. All hazardous wastes are stored in the part of the building that meets the technical requirements of RCRA.

Building 31-W is described in permit 50195 as follows:

> Container Storage Area, enclosed, capacity 88,000 gallons,(N.O.R. 08) identified as Building 31-W in the application, for storage of the wastes described in Provision II.A.2.b.4.-45., and 47.-109.

Building Description: Building 31-W is an enclosed warehouse structure with a concrete slab and a structural steel roof. The structure has horizontal rolling doors for access for each bay. There are eight bays in the building, each labeled with a letter of the alphabet, "a" through "h". The structure is 10093 square feet large.

4.0 DESCRIPTION AND CLASSIFICATION OF WASTES MANAGED AT STORAGE AREA 31-W

Types and quantities of wastes historically stored at Area 31-W are listed in Appendix III.

The storage area served was utilized to store hazardous waste from manufacturing from the late 1980's until the present time.

Hazardous waste permit No. 50195 Section II.B.3. authorizes the materials listed in Figure 4-1 to be stored in container storage area 31-W.

FIGURE 4-1
WASTES APPROVED FOR STORAGE AT AREA 31-W

(4) & (5) Spent Halogenated Solvents (Ignitable, Toxic)
(6) & (7) Lab Packs (ignitable, corrosive)
(8) & (9) Spent Non-Halogenated Solvents (Ignitable, Toxic)
(10) Paint Wastes, Solids
(11) Oils, waste
(12) Sulfuric Acid
(13) Dye Waste, Organic
(14) Methyl Ethyl Ketone Peroxide
(15) Creosote
(16) Cresols
(17) Dimethylamine
(18) Acetates
(19) Hexachlorobenzene
(20) Maleic Anhydride
(21) Urethane
(22) Chlorine
(23) Dimethyl Formamide
(24) Glycol
(25) Hydrogen
(26) Oxygen
(27) Potassium Iodine
(28) Silver Nitrate
(29) Amines
(30) Benzenamine
(31) Cellulose Sludge
(32) Chromium-Bearing Waste
(33) Isocyanate Waste
(34) Toluene Diisocyanate
(35) Chromium Contaminated Waste
(36) Mercury-contaminated Waste
(37) Silver Wastes
(38) Barium Compounds
(39) Calcium Chromate
(40) Barium nitrate
(41) Chromium Compounds
(42) Diethyl Phthalate
(43) 1,2 Benzene dicarboxylic Acid
(44) Formaldehyde
(45) Brine Sludge
(47) Chemicals, Agricultural
(48) Laminac (polyester resin)
(49) Vinyl Acetate
(50) IMSOL 40% Methylene Chloride & 15% Cresylic Acid
(51) Varnish
(52) Paint Thinner
(53) Resin (liquid) & epoxy resin (wet)
(54) Enamel Thinner
(55) Adhesive (Solvent Based)
(56) Shellac
(57) Amyl Acetate
(58) Aniline
(59) Ethylene Dichloride
(60) Nitromethane
(61) Cyclohexane
(62) Sodium Peroxide
(63) Mercaptan Compounds
(64) Imine Compounds
(65) Cobalt Napthanate
(66) Lacquer
(67) Toluene
(68) Isopropanol
(69) Epoxy Resin
(70) Pine Tar
(71) Turpentine
(72) Butyl Acetate
(73) Titanium Trichloride
(74) Glycidyl Ether (Butyl Glycidyl Ether)
(75) Chromium Oxide
(76) Barium Manganate
(77) Triethylenetetramine
(78) Mercury EDTA
(79) Potassium Chromate
(80) Decane (petroleum distillate)
(81) Methyl Ethyl Ketone
(82) Diesel
(83) Antimony Trichloride
(84) Battery (lead acid)
(85) Nitric Acid
(86) Acetic Acid
(87) Phosphoric Acid

(88) Hydrochloric Acid
(89) Nitrocellulose
(90) Printing Ink (liquid)
(91) Hexane
(92) Vinyl chloride
(93) Molybdenum Trioxide
(94) Lead Waste
(95) Lead Oxide
(96) Hexamine
(97) Methyl Acetate
(98) Polyester Resin
(99) Acetic Anhydride
(100) Ethanol
(101) Kodak Developer Replenisher (Part B)
(102) Sulfuric Acid & Silver
(103) Sodium Nitrate
(104) Strontium Nitrate
(105) Corrosive Waste
(106) Methylene Chloride
(107) Kerosene
(108) Organic Peroxide
(109) Mixed Acids

5.0 CLOSURE PROCEDURE

The closure procedure to be implemented for container storage area building 31-W at LHAAP will generally consist of the following steps:

1. Empty all wastes, pallets, drums, carts, spill kits, etc. out of building.
2. Wash floor with Alconox detergent and water.
3. Squeegee-up/vacuum-up decontamination water from floor.
4. Rinse floor with fresh water.
5. Squeegee-up/vacuum-up rinse water from floor.
6. Sample washwater & perform hazardous waste determination.
7. Repeat steps two through six if necessary.
8. Dispose of all hazardous or non-hazardous waste at authorized offsite solid waste management facility.
9. Sample soil and verify condition.
10. Certification of closure actions.

6.0 WASTES GENERATED DURING 31-W CLOSURE ACTIVITIES

In order to correctly handle and dispose of the waste generated during closure of container storage area 31-W at LHAAP, samples will be collected to classify and categorize waste generated.

6.1 Waste Classification

All waste will be determined to be listed hazardous or characteristically hazardous per 40 CFR 261. If the waste is determined to be nonhazardous per 40 CFR 261, contaminants will be compared to 30 TAC 335 Appendix 1 Table 1 limits of Subchapter R, to determine the correct nonhazardous waste classification.

The following waste samples will be collected:

1. One composite liquid sample from each washing and rinsing of the concrete slab.

All samples will be collected, handled and analyzed in accordance with EPA SW-846 Test Methods for Evaluating Solid Waste Physical/Chemical Methods which satisfies the requirements of 40 CFR Part 261.

Liquid Sample - The liquid sample will be analyzed for totals of constituents listed in Appendix II. The liquid will serve as the TCLP extract. The levels of detectable constituents will be treated as the TCLP level.

6.2 Waste Disposal

Longhorn will obtain TNRCC waste codes for each of the waste streams listed below. If waste streams are generated that are not typical of previously generated waste, Longhorn AAP will either electronically register the waste stream or set up a one time shipment waste code.

CLOSURE GENERATED WASTE	DISPOSAL METHOD
Hazardous Wastewater	Treatment and Discharge to POTW(offsite) or Deep Well Injection (offsite)
Class 1 Non Hazardous Water	
Hazardous Soil	Treatment to LDR & Landfill (offsite)

Shipments of waste offsite will use the Uniform Hazardous Waste Manifest. A Land Disposal Restriction Notification form will accompany each shipment of hazardous waste. Transporters of waste will be registered with the EPA and have a Texas registration number.

Longhorn AAP will only use waste disposal companies that are permitted solid waste treatment and disposal companies. Contracts are awarded according to Federal Acquisition Regulation (FAR). The following companies are presently approved vendors for the treatment and disposal of hazardous waste.

Section 6.2 Continued

APPROVED VENDORS FOR DISPOSAL OF HAZARDOUS WASTE	
Chemical Waste Mgt.	EPA No. LAD000777201
Rollins	EPA No. TXD055141378
Treatment One	EPA No. TXD055135388

7.0 DECONTAMINATION OF CONTAINER STORAGE AREA 31-W

Concrete surfaces will be washed with water mixed with a suitable detergent such as Alconox. Liquid generated from building decontamination will be containerized and handled in the same manner as previously mentioned in section 6.0.

Wastewater will be collected and analyzed for "total" hazardous constituents. If the rinsate analyses indicate a concentration equal to or less than 30 TAC 290.103, Maximum Contaminant Levels, the concrete will be considered clean. In the event that potable wash water exceeds the allowable concentrations for any of the parameters, the concentration limit for considering the concrete clean will be determined by the potable water results. If LHAAP determines that it is not feasible to meet this criteria, container storage area will be closed in accordance with the Texas Risk Reduction Rules.

8.0 EQUIPMENT DECONTAMINATION

Any equipment which has come in contact with hazardous waste will be decontaminated prior to exiting the unit. At a minimum, all contaminated equipment shall be washed sufficiently to remove waste residues. Equipment used in the closure of container storage area 31-W will be decontaminated using a Alconox wash, or by another appropriate method. All water used in the decontamination of the equipment will be collected, containerized, sampled, and transferred to a permitted container storage area until it is classified and shipped offsite for treatment and disposal.

Any equipment that can not be decontaminated will be disposed of at an authorized treatment, storage, or disposal (TSD) facility.

9.0 DISPOSITION OF CONTAINER STORAGE AREA 31-W

Upon decontamination of container storage area 31-W, the building may be utilized for the storage of scrap metals or other recyclable or inert materials.

If the concrete structure cannot be decontaminated, it will be removed and shipped to an authorized treatment, storage, or disposal (TSD) facility.

Provided the concrete floor is decontaminated, and the soil surrounding the area does not meet background, but does meet the criteria of Risk Reduction Standard 2, it will be surveyed and closed in accordance with 30 TAC 335.560. If the area does not meet the Risk Reduction Standard, a work plan will be submitted to further define the extent of contamination and remediate contaminated media as necessary.

10.0 SAMPLING & ANALYSIS PLAN

The objective of soil sampling is to define the extent of contamination, if any, around the container storage area that occurred during past use. Soil sampling will ensure that the area meets the numeric levels of TAC Risk Reduction Standard Number 2 groundwater protection standard for industrial use.

10.1 Specific Data Objectives

1. Determine if the concentration of the contaminants in soil exceed Background levels.
2. If background is exceeded in soil samples, Determine if the concentration exceeds Risk Reduction Standard Number 2 cleanup levels at 31-W.
3. Define the extent of contamination resulting from a release of waste at the container storage area.
4. If contamination is present and within Risk Reduction levels, determine metes and bounds coordinates of the contaminated location. Delineate the contaminated area for a Deed Certification in the county deed records in accordance with Risk reduction Standard Number 2.

10.2 Chemical Data Acquisition

Twelve samples of soil will also be collected from container storage area 31-W. The soil samples will be analyzed for totals of constituents listed in Appendix II. Samples containing any constituents above background and having levels 20 times or greater than the EPA Maximum Contaminant Limit will by analyzed utilizing Method 1312 of SW-846, the Synthetic Precipitation Leaching Procedure (SPLP).

Soil samples will be collected using a stainless steel auger. Sample locations will be marked with a wooden stake. The sample number will be marked on the stake with a permanent marker. These soil samples will be collected from the surface at depth of no more than 12 inches. Soil may be place into a stainless steel bowl and mixed for homogeneity with a stainless steel spoon. Decontamination procedures will be employed to prevent cross contamination during sampling. Samples containers will be sealed, placed in an ice chest on ice, and the ice chest will be sealed. Samples will be shipped under utilizing a chain-of-custody to a COE certified analytical laboratory.

A summary of findings and recommendations will be prepared. Will this summary, soil sampling locations and all analytical results will be submitted with laboratory Quality Assurance and Quality Control to TNRCC for review.

10.3 Determination of Waste Impact on Surrounding Soils

Soil samples will be compared to the Longhorn AAP Soil Concentration Background Report, May 1995 to determine impact of hazardous constituents. If the soils surrounding the unit prove to be impacted by hazardous constituents at levels greater than background or 30 TAC 335.556, an additional work plan will be submitted to the TNRCC. This plan will address further actions to be taken to determine the extent of contamination and remediation necessary.

Soil will be remediated as necessary to achieve the clean-up levels to the industrial levels of Risk Reduction Standard No. 2 of the Texas Administrative Code.

10.3 continued

If soil samples contain detectable amounts of volatiles, additional samples will be taken for further delineation of the area of contamination. If any volatiles levels exceed 100 times the Medium Specific Concentrations (MSC) for groundwater protection standards for residential exposure conditions, the samples will be subjected to Method 1312 of SW-846 (Synthetic Precipitation Leaching Procedure-SPLP) to determine if the concentration produces a leachate in excess of the MSC.

10.4 Data Quality Objectives

The following quality assurance/quality control procedures will be utilized to ensure that all data and decisions based on this data is technically sound.

10.4.1 Field Sampling

1. Field Duplicates: Field duplicate(split) samples will be collected verify the reproducibility of the lab data. Field duplicates will be collected for 10% (1-each) of the samples collected.
2. Equipment Blanks: Equipment blanks will be used to determine the effectiveness of field cleaning procedures as well as to determine whether sampling equipment is causing cross contamination of samples. Equipment blanks will be collected for 5% (1-each) of the samples collected.

10.4.2 Offsite Laboratory

The offsite laboratory will employ the following measures to ensure that data quality objectives are met.

1. Matrix Spikes: A matrix spike and matrix spike duplicate will be used to document the precision of a given sample matrix. A minimum of one matrix spike and matrix spike duplicate shall be analyzed for every 5% (1-each) of samples received.
2. The laboratories quality assurance report will be provided with each set of data.

11.0 HEALTH AND SAFETY PRECAUTIONS

All LHAAP and contractor personnel will abide by Corps of Engineer and Army Safety Regulations. Contractors are briefed on these regulations prior to any work being accomplished.

Level D protection will be worn by decontamination personnel at a minimum with additional protection added as required.

12.0 CERTIFICATION OF CLOSURE ACTIONS

All closure actions associated with this plan will be certified for compliance with this plan and all applicable state and federal regulations by an independent Professional Engineer registered in the State of Texas. The certification will be in the form of a Closure Completion Report. In accordance with 40 CFR Part 265.115, this certification will be submitted to the TNRCC by registered mail. Included with this certification will be all analytical reports, chain-of-custody reports, work done, and the final configuration of the subject unit.

13.0 CLOSURE COST ESTIMATE

Pursuant to 40 CFR Part 265.140(c), federal facilities are exempt from the closure financial requirements. Therefore, LHAAP is not required to provide closure cost estimates.

14.0 NOTIFICATION OF CLOSURE ACTIVITIES

LHAAP is utilizing the submittal of this closure plan as notification to the TNRCC of closure activities associated with Longhorn AAP Container Storage Area 31-W. LHAAP will notify the TNRCC Region 5 office in writing 14 days prior to any sampling or before commencing closure.

15.0 CLOSURE SCHEDULE

The explosive waste storage magazine will be closed within 12 months following the approval of the closure plan.

Milestones

Activity		Time Required
1.	Obtain Funding	6 months
2.	Obtain Contract	3 months
3.	Decontaminate Storage Building	2 weeks
4.	Safety inspection and approval of decontamination	1 day
5.	Collect samples to investigate for soil impact	3 weeks
6.	Dispose of waste as required	1 months
7.	Prepare and send in Completion Certification	1 month
8.	Receive approval of closure from TNRCC	5 months

This schedule does not account for delays which may be caused by force majeure, including without limitations, fires, floods, riots, strikes, or lack of funding. If any of the aforementioned circumstances occur, LHAAP will submit a written request to the TNRCC to extend the time allowed for closure, with the rationale substantiating that request.

16.0 POST CLOSURE REQUIREMENTS

Post closure requirements will be adhered to according to the rules for Risk Reduction Standard No. 2 as specified by 30 TAC 335.8(b)(2)(B), 335.555, 335.556, & 335.557.

16.1 Deed Certification

If required, a deed certification will be filed at the Harrison County Courthouse. Upon approval by the executive director that attainment of Risk Reduction Standard No. 2 for the soils surrounding the Container Storage Area is demonstrated, a document containing the information required in 30 TAC 335.560 (b) (1)-(4) shall be prepared and filed at the Harrison County courthouse. The document will follow the guidelines as provided in 30 TAC 335.569 (Appendix III). A copy of this document will be forwarded to the Executive Director.

APPENDIX I
SAMPLE CONTAINER, PRESERVATION & ANALYSIS REQUIREMENTS

PARAMETER	CONTAINER	PRESERVATIVE	MAXIMUM HOLDING TIME	EXTRACT
pH	1/2 pint glass	N/A	Immediate	
Metals	Plastic 1 liter	Cool 4° C Filter in field HNO_3 to pH<2	6 months (mercury = 28 days)	
(soil)	Plastic	Cool 4° C	6 months	1/2 liter
Semi-volatiles				
(water)	Amber Glass 1 liter	Cool 4° C	7 days	
(soil) Glass	Cool 4° C		14 days	1/2 liter
Volatiles				
(water)	Glass	Cool 4° C 40 ml glass No head space, air bubbles or agitation	7 days	
(soil)	Glass 1/2 liter	Cool 4° C	14 days	
Cyanide				
(water)	Plastic 1 liter	Cool 4° C NaOH to pH>12	14 days	
(soil)	Plastic 250 ml	Cool 4° C	14 days	
TPH				
(water)	Amber glass 1 liter	Cool 4° C HCL to pH<2	28 days	
(soil)	250 ml Plastic	Cool 4° C	28 days	

NOTE: Sample containers for Volatiles have Fluorocarbon resin-lined caps.

APPENDIX I (continued)

ANALYTICAL METHODS

PARAMETER	REQUIRED METHOD
Volatiles	EPA-8260A Gas Chromatographic/ Mass Spectroscopic Methods
Semi-volatiles	EPA-8270A Gas Chromatographic/ Mass Spectroscopic Methods
Metals Barium Chromium Silver Selenium	EPA-6010A Inductive Coupled Plasma Atomic Emission Spectroscopy
Cadmium	EPA-7131 (AA Furnace Technique)
Lead	EPA-7421 (AA Furnace Technique)
Mercury	(liquid) EPA-7470 Manual Cold Vapor Technique (solid) EPA-7471 Manual Cold Vapor Technique
Arsenic	EPA-6010 or 7060 Atomic Absorption Furnace
TPH	EPA-418-1 (Modified for solid material)
Explosives RDX HMX	COE Method

APPENDIX II

HAZARDOUS WASTE STORAGE AREA CONSTITUENTS ANALYSIS

NOR NUMBER	AREA	REQUIRED ANALYSIS
008	31-W	Volatile Organic Compounds Semi-volatile Organic Compounds Metals (8 RCRA), Total Petroleum Hydrocarbons

AMENDMENT ONE

CLOSURE PLAN
for
PERMIT UNIT NO. 001

HAZARDOUS WASTE
CONTAINER STORAGE AREA 31-W
at
LONGHORN ARMY AMMUNITION PLANT

April 1999

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

EPA IDENTIFICATION No. TX6213820529
HAZARDOUS WASTE PERMIT NO. 50195
SOLID WASTE REGISTRATION NO. 30990

1.0 PURPOSE OF CLOSURE PLAN AMENDMENT

References:

1. Closure Plan for Permitted Unit No. 001, dated July 1997.
2. Closure Report for Permitted Unit No. 001, dated December 1998.
3. Addendum One to Closure Report for Permitted Unit No. 001 dated January 1999.

Work to decontaminate and close permitted unit No. 001 in accordance with the closure plan began in July 1998. This work was documented in the Closure Report for Permit Unit No. 001, dated December 1998.

It was obvious from the laboratory QA/QC data from the July sampling event that the rinsewater and soil samples were cross-contaminated with acetone and methylene chloride leading to a false indication of organics in the soil at 31-W. This problem was acutely present during the July sampling event. Additional work was performed in December 1998 to re-decontaminate the unit and collect rinsewater and soil samples. For the December sampling event, the common occurrence of these volatiles being present in the soil at each of three storage areas and the same QA/QC data package used for all three storage areas, likely make these analysis corrupted again.

Investigation of the soils at 31-W during July 1998 and December 1998 determined that levels of total chromium and total lead and exceeded background in one location.

In summary, the decontamination of structure 31-W may or may not be acceptable. One soil sample location at the 31-W site (31-W-10) contained levels of lead and chromium above plant background. Other soil samples collected from the 31-W site might contain levels of acetone and methylene chloride, but this is uncertain because of problems with sample collection and laboratory analysis.

To remedy this situation, the LHAAP intends on performing verification sampling to determine if the structure is adequately decontaminated. LHAAP also intends to remove the soil contaminated with lead and barium. Verification sampling will also be performed to determine whether the soils are contaminated with volatile organic compounds.

The amendment does not supercede nor change procedures as outlined in the closure plan dated April 1997. This amendment to the closure plan only describes additional sampling, decontamination, and remediation work necessary to verify the accuracy of previous environmental sampling performed and to conduct remediation of areas where soil outside the permitted unit was contaminated.

2.0 CLOSURE PROCEDURE

A) Structure

Samples of rinsewater collected during the December sampling event were contaminated with semi-volatiles, phthalates in particular. Phthalate contamination unexplainably increased in concentration from the July sampling event to the December sampling event. It is expected that phthalate contamination was due to inappropriate sampling procedures. Analysis for volatile organics also was not performed within the maximum holding time limit. There are no field notes of where the sample was collected or how. In order to verify whether the structure was correctly decontaminated, the following procedure is recommended.

Rinsewater sampling procedure

1. Two of the eight curbed containment areas will be selected for a random sample.
2. The professional engineer will randomly pick each area.
3. The containment area will be scrubbed with de-mineralized distilled water.
4. The water will be collected and analyzed for volatile and semi-volatile organics.
5. If contaminants are present in either sample, the entire structure will be decontaminated and the rinsewater sampled again.

B) Soils

Discussion of Soil Contamination (Metals)

Soil background levels for lead and chromium were exceeded at sample location 31-W-10 during the July sampling event. The location was sampled again in December and only lead levels were above background levels. It is believed that lead and possibly chromium do exceed background levels at this location. This area will be remediated by removing the contaminated soil.

Remediation Plan

Soils contaminated with lead and chromium will be excavated from location where the contaminated sample number 31-W-10 was collected. A minimum of an eight-foot square around the sample location will be excavated to a one-foot depth.

Areas where soil was removed for disposal will be backfilled with clean soil. The backfill will be certified as non-contaminated with any environmentally hazardous substances.

Discussion of Soil Background

Metals concentration in soil background is based upon the *Soil Background Concentration Report,* prepared by the Tulsa District Corps of Engineers Tulsa District, May 1995.

Excerpts from the report are included as Enclosure "A". The excerpts describe the sampling methodology and methodology for calculating background calculations at LHAAP.

Soil Analysis Plan

It is possible that there is no real contamination in the soil at 31-W from organic compounds. However, to verify the "inaccuracy" of this data, LHAAP intends to collect soil samples from locations 31-W-4, 31-W-6, 31-W-8, 31-W-10, and 31-W-12. Each of these samples will be analyzed for volatiles. In addition, sample 31-W-10 will be collected after soil excavation as a verification sample and will be analyzed for lead and chromium.

3.0 Final Report

A certification will be provided in the closure report in accordance with Section 12.0 of the January 1997 closure plan. This report describing all work done and including all analytical data, etc. will be submitted to the TNRCC for review in accordance with that section. A professional engineer will review the report and certify the closure prior to submittal to the TNRCC. Also included in the closure report will be a certification as stated in 40 CFR 270.11 that will be signed by an authorized federal employee.

Title 30. ENVIRONMENTAL QUALITY

Part I. TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Chapter 335. INDUSTRIAL SOLID WASTE AND MUNICIPAL HAZARDOUS WASTE

Subchapter S. RISK REDUCTION STANDARDS

§ 335.568 Appendix II

Examples of medium-specific concentrations (MSC), standards, and criteria for health-based closure/remediation (see § 335.558 of this title (relating to Medium Specific Concentration of Risk Reduction Standards Number 2.))

T30S335.568

(1) Concentrations for constituents are expressed in scientific notation. Examples 2.20E-00 = 2.2; 2.20E+02 = 220; **and** 2.20E-01 = 0.22.

(2) The development of final cleanup levels may involve other factors as described in this subchapter, such as cumulative health effects, that are not considered in this chapter.

(3) Groundwater concentrations are based on maximum contaminant levels (MCLs) or the formula and parameters for residential use of groundwater which are contained in § 335.567 of this title (relating to Appendix I). For nonresidential exposure conditions, the groundwater concentrations are calculated using the procedures of § 335.559(d)(2) or (3) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standard Number 2).

(4) For some constituents, the practical quantitation limit (PQL) may be the appropriate groundwater MSC as described in § 335.555(d)(1) of this title (relating to Attainment of Risk Reduction Standard Number 2: Closure/Remediation to Health-Based Standards and Criteria). See 40 Code of Federal Regulations Part 264 (Appendix IX) for a list of groundwater PQLs.

(5) Residential soil groundwater protection concentrations are based on a multiplication factor of 100 times the groundwater MSC.

(6) Industrial soil groundwater protection concentrations are based on a multiplication factor of 100 times the MCL or, when an MCL is not available, a factor of 100 times the groundwater concentration calculated using the formula and parameters which are contained in § 335.559(d)(2) or (3) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standard Number 2).

(7) Residential soil concentrations (maximum) are calculated using the formula and parameters for residential land use which are contained in § 335.567 of this title (relating to Appendix I). The person must also demonstrate that groundwater is protected and that no nuisance conditions exist (§ 335.559 (a)-(h) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction

Standard Number 2)).

(8) Industrial soil concentrations (maximum) are calculated using the formula and parameters for industrial land use which are contained in § 335.567 of this title (relating to Appendix I). The person must also demonstrate that groundwater is protected and that no nuisance conditions exist (§ 335.559 (a)-(h) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standard Number 2)).

(9) The final, proposed or listed MCL, from the Federal Safe Drinking Water Act, § 146. For lead, the action level for lead in drinking water is used as the MSC.

(10) All concentrations were calculated using data from the Integrated Risk Information System (IRIS) Chemical Files, or data from the Health Effects Assessment Summary Tables (HEAST), developed by the United States Environmental Protection Agency, Office of Research and Development and Office of Health and Environmental Assessment, Washington, D.C. 20460. The toxicity information, and the MSCs, will be updated as new information becomes available.

(11) In some cases, an oral reference dose (RFD) or an oral slope factor (SF) was substituted for the inhalation RFD or inhalation SF in calculating MSC. This MSC will be updated when this information becomes available.

(12) The MSCs calculated for this compound are based on noncarcinogenic effects. The following formula was used for calculating the soil MSCs: MSC = [(oral RFD)(Body Weight)(ED)(365 days/yr)]/[(EF)(ED)(IR)(CF)]. For residential soils, the following exposure factors were used: BW = 15 Kg; ED = 5 years; EF = 350 days/year; IR = 200 mg/day. For industrial soils, the following exposure factors were used: BW = 70 Kg; ED = 25 years; EF = 250 days/year; IR = 100 mg/day. In both cases, the CF is 0.000001 kg/mg. When oral slope factors become available, these MSCs will be revised.

(13) As described in § 335.559(e) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standard Number 2), the sum of concentrations of the volatile organic compounds in vapor phase in soil shall not exceed 1,000 ppm by weight or volume.

(14) The MSC for lead in soil is based on values calculated by the United States EPA using the Lead Uptake/Biokinetic Model, Version 0.4, which has been developed by the United States EPA Office of Health and Environmental Assessment.

(15) Soil MSCs for polychlorinated biphenyls are based upon the 4/2/87 TSCA regulations, 40 Code of Federal Regulations § 761.125 (see 52 FedReg 10688).

(16) NHHB = Not Human Health Based. The SAI-Ind MSC for this compound exceeds 10e+6 ppm, which means it is not toxic to humans when exposed to soils under these assumptions. Persons must consider other criteria of § 335.559 of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standards Number 2) to develop numeric cleanup values.

Source: The provisions of this § 335.568 adopted to be effective June 28, 1993, 18 TexReg 3814.

Cross Reference: This Section cited in 30 TAC § 335.553, (relating to Required Information); 30 TAC § 335.558, (relating to Medium Specific Concentrations for Risk Reduction Standard Number

CAS #	=	Chemical Abstracts Service Number for the Specific Compound.
GW	=	Ground Water. Maximum Concentration in Ground Water (mg/L) for residential exposure conditions.
GWP-Res	=	Ground-Water Protection Standard for Residential Use. Concentration in Residential Soil Assumed Protective of Ground Water Considering Cross-media Contamination of Ground Water from Contaminated Soil (mg/kg).
GWP-Ind	=	Ground-Water Protection Standard for Industrial Use. Concentration in Industrial Soil Assumed Protective of Ground Water Considering Cross-media Contamination of Ground Water from Contaminated Soil (mg/kg).
SAI-Res	=	Soil/Air and Ingestion Standard for Residential Use. Maximum Concentration in Residential Soil Considering Cross-media Contamination of Air and the Human Ingestion and Inhalation Pathways (mg/kg).
SAI-Ind	=	Soil/Air and Ingestion Standard for Industrial Use. Maximum Concentration in Industrial Soil Considering Cross-media Contamination of Air and the Human Ingestion and Inhalation Pathways (mg/kg).

CONSTITUENT	CAS #	GW (1-4)	GWP-Res (1,5)	GWP-Ind (1,6)	SAI-Res (1,7, 10,11)	SAI-Ind (1,8, 10,11)
Acenaphthene	83-32-9	2.19e+00	2.19e+02	6.13e+02	1.34e+04 (13)	4.43e+04 (13)
Acetone	67-64-1	3.65e+00	3.65e+02	1.02e+03	3.82e+03 (13)	4.16e+03 (13)
Acetonitrile	75-05-8	2.19e-01	2.19e+01	6.13e+01	1.65e+03	1.23e+04
Acetophenone	98-86-2	3.65e+00	3.65e+02	1.02e+03	2.26e+04	8.15e+04
Acrolein	107-02-8	7.30e-01 (12)	7.30e+01	2.04e+02	1.56e+03 (12)	2.04e+04 (12)
Acrylamide	79-06-1	1.89e-05	1.89e-03	6.36e-03	1.42e-01	1.27e+00
Acrylonitrile	107-13-1	1.58e-04	1.58e-02	5.30e-02	1.15e-01 (13)	1.44e-01 (13)
Alachlor	15972-60-8	2.00e-03 (9)	2.00e-01	2.00e-01	7.95e+00	7.10e+01
Aldicarb	116-06-3	3.00e-03 (9)	3.00e-01	3.00e-01	5.49e+01	4.09e+02
Aldicarb Sulfone	1646-88-4	2.00e-03 (9)	2.00e-01	2.00e-01	8.23e+01	6.13e+02
Aldicarb Sulfoxide	1646-88-3	4.00e-03 (9)	4.00e-01	4.00e-01	5.49e+01	4.09e+02
Aldrin	309-00-2	5.01e-06	5.01e-04	1.68e-03	3.77e-02	3.36e-01
Aluminum Phosphide	20859-73-8	1.46e-02	1.46e+00	4.09e+00	1.10e+02	8.18e+02
Aniline	62-53-3	1.49e-02	1.49e+00	5.02e+00	4.18e-02 (13)	4.80e-02 (13)
Anthracene	120-12-7	1.10e+01	1.10e+03	3.07e+03	5.91e+04 (13)	1.51e+05 (13)
Antimony	7440-36-0	6.00e-03 (9)	6.00e-01	6.00e-01	1.10e+02	8.18e+02
Arsenic	7440-38-2	5.00e-02 (9)	5.00e+00	5.00e+00	3.66e-01	3.27e+00
Atrazine	1912-24-9	3.00e-03 (9)	3.00e-01	3.00e-01	2.38e+01	2.58e+02
Barium (ionic)	7440-39-3	2.00e+00 (9)	2.00e+02	2.00e+02	1.91e+04	1.37e+05
Benzene	71-43-2	5.00e-03 (9)	5.00e-01	5.00e-01	1.33e+00 (13)	1.62e+00 (13)
Benzidine	92-87-5	3.70e-07	3.70e-05	1.24e-04	2.78e-03	2.49e-02
Beryllium	7440-41-7	4.00e-03 (9)	4.00e-01	4.00e-01	1.49e-01	1.33e+00
Biphenyl	92-52-4	1.83e+00	1.83e+02	5.11e+02	6.68e+03 (13)	1.11e+04 (13)

Bis (2-chloro-ethyl) ether	111-44-4	7.74e-05	7.74e-03	2.60e-02	2.20e-01 (13)	3.77e-01 (13)
Bis (2-chloroisopropyl) ether	39638-32-9	1.22e-02	1.22e+00	4.09e+00	4.50e+01 (13)	9.05e+01 (13)
Bis (2-ethyl-hexyl) phthalate	117-81-7	6.08e-03	6.08e-01	2.04e+00	4.57e+01	4.09e+02
Bromodichloromethane	75-27-4	1.00e-01 (9)	1.00e+01	1.00e+01	7.19e-01 (13)	9.46e-01 (13)
Bromoform	75-25-2	1.00e-01 (9)	1.00e+01	1.00e+01	8.11e+01	7.24e+02
Bromomethane	74-83-9	5.11e-02	5.11e+00	1.43e+01	2.44e+01 (13)	2.47e+01 (13)
Butyl-4, 6-dinitrophenol, 2-sec-	88-85-7	3.65e-02	3.65e+00	1.02e+01	2.74e+02	2.04e+03
Cadmium	7440-43-9	5.00e-03 (9)	5.00e-01	5.00e-01	1.37e+02	1.02e+03
Carbofuran	1563-66-2	4.00e-02 (9)	4.00e+00	4.00e+00	1.37e+03	1.02e+04
Carbon Disulfide	75-15-0	3.65e+00	3.65e+02	1.02e+03	2.45e+01 (13)	2.34e+01 (13)
Carbontetrachloride	56-23-5	5.00e-03 (9)	5.00e-01	5.00e-01	4.14e-01 (13)	5.13e-01 (13)
Chlordane	57-74-9	2.00e-03 (9)	2.00e-01	2.00e-01	4.93e-01	4.40e+00
Chloroanaline, p-	106-47-8	1.46e-01	1.46e+01	4.09e+01	1.10e+03	8.18e+03
Chlorobenzene	108-90-7	1.00e-01 (9)	1.00e+01	1.00e+01	2.56e+02 (13)	2.56e+02 (13)
Chlorobenzilate	510-15-6	7.30e-01	7.30e+01	2.04e+02	5.49e+03	4.09e+04
Chloroethane (Ethylchloride)	75-00-3	7.30e-01	7.30e+01	2.04e+02	4.99e+03 (13)	2.30e+04 (13)
Chloroform	67-66-3	1.00e-01 (9)	1.00e+01	1.00e+01	4.37e-01 (13)	5.04e-01 (13)
Chloronaphthalene, 2-	91-58-7	2.92e+00	2.92e+02	8.18e+02	2.20e+04	1.64e+05
2-chlorophenol	95-57-8	1.83e-01	1.83e+01	5.11e+01	1.37e+03	1.02e+04
Chromium (total)	7440-47-3	1.00e-01 (9)	1.00e+01	1.00e+01	3.91e+02 (12)	5.11e+03 (12)
Chromium (VI)	7440-47-3	1.00e-01 (9)	1.00e+01	1.00e+01	3.91e+02 (12)	5.11e+03 (12)
Cresol, m-	108-39-4	1.83e+00 (12)	1.83e+02	5.11e+02	3.91e+03 (12)	5.11e+04 (12)
Cresol, o-	95-48-7	1.83e+00 (12)	1.83e+02	5.11e+02	3.91e+03 (12)	5.11e+04 (12)

Cresol, p-	106-44-5	1.83e+00 (12)	1.83e+02	5.11e+02	3.91e+03 (12)	5.11e+04 (12)
Cyanide	57-12-5	2.00e-01 (9)	2.00e+01	2.00e+01	5.49e+03	4.09e+04
DDD	72-54-8	3.55e-04	3.55e-02	1.19e-01	2.67e+00	2.38e+01
DDE	72-55-9	2.50e-04	2.50e-02	8.41e-02	1.88e+00	1.68e+01
DDT	50-29-3	2.50e-04	2.50e-02	8.41e-02	1.88e+00	1.68e+01
Di-n-butyl phthalate	84-74-2	3.65e+00	3.65e+02	1.02e+03	2.74e+04	2.04e+05
Di-n-octyl phthalate	117-81-7	7.30e-01	7.30e+01	2.04e+02	5.49e+03	4.09e+04
Dibromo-3-chloropropane, 1,2-	96-12-8	2.00e-04 (9)	2.00e-02	2.00e-02	4.57e-01	4.09e+00
Dibromochloromethane	124-48-1	1.00e-01 (9)	1.00e+01	1.00e+01	7.62e+01	6.81e+02
Dichlorobenzene (1,2)	95-50-1	6.00e-01 (9)	6.00e+01	6.00e+01	6.69e+03 (13)	8.39e+03 (13)
Dichlorobenzene (1,3)	541-73-1	6.00e-01 (9)	6.00e+01	6.00e+01	7.61e+03 (13)	9.99e+03 (13)
Dichlorobenzene (1,4)	106-46-7	7.50e-02 (9)	7.50e+00	7.50e+00	8.64e+01 (13)	1.38e+02 (13)
Dichlorodifluoromethane	75-71-8	7.30e+00	7.30e+02	2.04e+03	5.00e+01 (13)	4.79e+01 (13)
Dichloroethane (1,1)	75-34-3	3.65e+00	3.65e+02	1.02e+03	7.30e+03 (13)	2.04e+04 (13)
Dichloroethane (1,2)	107-06-2	5.00e-03 (9)	5.00e-01	5.00e-01	4.17e-01 (13)	5.05e-01 (13)
Dichloroethylene (1,1)	75-35-4	7.00e-03 (9)	7.00e-01	7.00e-01	7.15e-01 (13)	8.72e-01 (13)
Dichloroethylene, cis-(1,2)	156-59-2	7.00e-02 (9)	7.00e+00	7.00e+00	1.08e+02 (13)	1.08e+02 (13)
Dichloroethylene, trans-(1,2)	156-60-5	1.00e-01 (9)	1.00e+01	1.00e+01	2.56e+02 (13)	2.56e+02 (13)
Dichlorophenol, 2,4-	120-83-2	1.10e-01	1.10e+01	3.07e+01	8.23e+02	6.13e+03
Dichlorophenoxyacetic acid, 2,4-	94-75-7	7.00e-02 (9)	7.00e+00	7.00e+00	2.74e+03	2.04e+04
Dichloropropane (1,2)	78-87-5	5.00e-03 (9)	5.00e-01	5.00e-01	6.38e-01 (13)	8.43e-01 (13)
Dieldrin	60-57-1	5.32e-06	5.32e-04	1.79e-03	4.00e-02	3.57e-01

Diethyl phthalate	84-66-2	2.92e+01	2.92e+03	8.18e+03	2.20e+05	NHHB (16)
Diethylhexyl adipate	103-23-1	5.00e-01 (9)	5.00e+01	5.00e+01	5.34e+03	4.77e+04
Dimethoate	60-51-5	7.30e-03	7.30e-01	2.04e+00	5.49e+01	4.09e+02
Dimethyl phenol, 2,4-	105-67-9	7.30e-01	7.30e+01	2.04e+02	5.49e+03	4.09e+04
Dinitrobenzene, 1,3-	99-65-0	3.65e-03	3.65e-01	1.02e+00	2.74e+01	2.04e+02
Dinitrophenol, 2,4-	51-28-5	7.30e-02	7.30e+00	2.04e+01	5.49e+02	4.09e+03
Dioxane (1,4)	123-91-1	7.74e-03	7.74e-01	2.60e+00	1.55e+01 (13)	2.31e+01 (13)
Diphenylamine	122-39-4	9.13e-01	9.13e+01	2.56e+02	6.86e+03	5.11e+04
Diphenylhydrazine, 1,2-	122-66-7	1.06e-04	1.06e-02	3.58e-02	8.00e-01	7.15e+00
Disulfoton	298-04-4	1.46e-03	1.46e-01	4.09e-01	1.10e+01	8.18e+01
Endosulfan	115-29-7	1.83e-03	1.83e-01	5.11e-01	1.37e+01	1.02e+02
Endothall	145-73-3	1.00e-01 (9)	1.00e+01	1.00e+01	5.49e+03	4.09e+04
Endrin	72-20-8	2.00e-03 (9)	2.00e-01	2.00e-01	8.23e+01	6.13e+02
Ethoxy ethanol, 2-	110-80-5	1.46e+01	1.46e+03	4.09e+03	1.10e+05	8.17e+05
Ethoxyethanol acetate, 2-	111-15-9	1.10e+01	1.10e+03	3.07e+03	8.23e+04	6.13e+05
Ethyl benzene	100-41-4	7.00e-01 (9)	7.00e+01	7.00e+01	1.14e+04 (13)	1.70e+04 (13)
Ethylene dibromide	106-93-4	5.00e-05 (9)	5.00e-03	5.00e-03	7.09e-03 (13)	4.53e-02 (13)
Ethylene glycol	107-21-1	7.30e+01	7.30e+03	2.04e+04	5.49e+05	NHHB (16)
Ethylene oxide	75-21-8	8.35e-05	8.35e-03	2.30e-02	1.11e-01 (13)	1.51e-01 (13)
Fluoranthene	206-44-0	1.46e+00	1.46e+02	4.09e+02	1.10e+04	8.18e+04
Fluorene	86-73-7	1.46e+00	1.46e+02	4.09e+02	9.60e+03 (13)	3.87e+04 (13)
Fluorides	7782-41-4	4.00e+00 (9)	4.00e+02	4.00e+02	1.65e+04	1.23e+05
Formaldehyde	50-00-0	7.30e+00 (12)	7.30e+02	2.04e+03	1.56e+04 (12)	2.04e+05 (12)

Heptachlor	76-44-8	4.00e-04 (S)	4.00e-02	4.00e-02	1.42e-01	1.27e+00
Heptachlor epoxide	1024-57-3	2.00e-04 (S)	2.00e-02	2.00e-02	7.04e-02	6.29e-01
Hexachlorobenzene	118-74-1	1.00e-03 (S)	1.00e-01	1.00e-01	4.00e-01	3.57e+00
Hexachlorobutadiene	87-68-3	1.09e-02	1.09e+00	3.67e+00	8.21e+01	7.33e+02
Hexachlorocyclohexane, alpha	319-84-6	1.35e-05	1.35e-03	4.54e-03	1.02e-01	9.08e-01
Hexachlorocyclohexane, beta	319-85-7	4.73e-04	4.73e-02	1.59e-01	3.56e+00	3.18e+01
Hexachlorocyclohexane, gamma	58-89-9	2.00e-04 (S)	2.00e-02	2.00e-02	8.23e+01	6.13e+02
Hexachloroethane	67-72-1	6.08e-02	6.08e+00	2.04e+01	4.57e+02	4.09e+03
Isobutyl alcohol	78-83-13	1.10e+01	1.10e+03	3.07e+03	8.23e+04	6.13e+05
Lead (inorganic)	7439-92-1	1.50e-02 (S)	1.50e+00	1.50e+00	5.00e+02 (14)	1.00e+03 (14)
Mercury	7439-97-6	2.00e-03 (S)	2.00e-01	2.00e-01	8.23e+01	6.13e+02
Methomyl	16752-77-5	9.13e-01	9.13e+01	2.56e+02	6.86e+03	5.11e+04
Methoxy ethanol	109-86-4	1.46e-01	1.46e+01	4.09e+01	1.10e+03	8.18e+03
Methoxychlor	72-43-5	4.00e-02 (S)	4.00e+00	4.00e+00	1.37e+03	1.02e+04
Methoxyethanol acetate	110-49-6	7.30e-02	7.30e+00	2.04e+01	5.49e+02	4.09e+03
Methyl Ethyl Ketone	78-93-3	1.83e+00	1.83e+02	5.11e+02	7.58e+03 (13)	1.40e+04 (13)
Methyl isobutyl ketone	108-10-1	1.83e+00	1.83e+02	5.11e+02	1.37e+04	1.02e+05
Methyl methacrylate	80-62-6	2.92e+00	2.92e+02	8.18e+02	6.74e+02 (13)	6.63e+02 (13)
Methylene Chloride	75-09-2	5.00e-03 (S)	5.00e-01	5.00e-01	1.07e+01 (13)	1.38e+01 (13)
Naphthalene	91-20-3	1.46e+00	1.46e+02	4.09e+02	4.91e+03 (13)	7.72e+03 (13)
Nickel	7440-02-0	1.00e-01 (S)	1.00e+01	1.00e+01	1.56e+03 (12)	2.04e+04 (12)
Nitrate	14797-55-8	1.00e+01 (S)	1.00e+03	1.00e+03	4.39e+05	NHHB (16)
Nitrite	14797-65-0	1.00e+00 (S)	1.00e+02	1.00e+02	2.74e+04	2.04e+05

Nitrobenzene	98-95-3	1.83e-02	1.83e+00	5.11e+00	6.48e+01 (13)	1.06e+02 (13)
Nitroso-methyl-ethyl-amine, n-	10595-95-6	3.87e-06	3.87e-04	1.30e-03	2.91e-02	2.60e-01
Nitrosodi-n-propylamine, n-	621-64-7	1.22e-05	1.22e-03	4.09e-03	9.15e-02	8.17e-01
Nitrosodiethylamine, n-	55-18-5	5.68e-07	5.68e-05	1.91e-04	4.27e-03	3.81e-02
Nitrosodimethylamine, n-	62-75-9	1.67e-06	1.67e-04	5.61e-04	1.26e-02	1.12e-01
Nitrosopyrrolidine, n-	930-55-2	4.06e-05	4.06e-03	1.36e-02	3.05e-01	2.72e+00
Pentachloronitrobenzene	82-68-8	3.28e-03	3.28e-01	1.10e+00	2.46e+01	2.20e+02
Pentachlorophenol	87-86-5	1.00e-03 (9)	1.00e-01	1.00e-01	5.34e+00	4.77e+01
Phenol	108-95-2	2.19e+01	2.19e+03	6.13e+03	1.65e+05	NHHB (16)
Phthalic anhydride	85-44-9	7.30e+01	7.30e+03	2.04e+04	5.49e+05	NHHB (16)
Polychlorinated biphenyls	1336-36-3	5.00e-04 (9)	5.00e-02	5.00e-02	1.00e+01 (15)	2.50e+01 (15)
Pronamide	23950-58-5	2.74e+00	2.74e+02	7.67e+02	2.06e+04	1.53e+05
Pyrene	129-00-0	1.10e+00	1.10e+02	3.10e+02	8.20e+03	6.10e+04
Pyridine	110-86-1	3.65e-02	3.65e+00	1.02e+01	2.74e+02	2.04e+03
Selenium	7782-49-2	5.00e-02 (9)	5.00e+00	5.00e+00	1.37e+03	1.02e+04
Silver	7440-22-4	1.83e-01	1.83e+01	5.11e+01	1.37e+03	1.02e+04
Strychnine	57-24-9	1.10e-02	1.10e+00	3.07e+00	8.23e+01	6.13e+02
Styrene	100-42-5	1.00e-01 (9)	1.00e+01	1.00e+01	2.13e+01	1.91e+02
Tetrachlorobenzene, 1,2,4,5-	95-94-3	1.10e-02	1.10e+00	3.07e+00	8.23e+01	6.13e+02
Tetrachloroethane (1,1,1,2)	630-20-6	3.28e-02	3.28e+00	1.10e+01	4.59e+01 (13)	6.39e+01 (13)
Tetrachloroethane (1,1,2,2)	79-34-5	4.26e-03	4.26e-01	1.43e+00	8.00e+00 (13)	1.17e+01 (13)
Tetrachloroethylene	127-18-4	5.00e-03 (9)	5.00e-01	5.00e-01	7.93e+01 (13)	2.07e+02 (13)
Tetrachlorophenol, 2,3,4,6-	58-90-2	1.10e+00	1.10e+02	3.07e+02	8.23e+03	6.13e+04

Tetraethyl dithio pyro phosphate	3689-24-5	1.83e-02	1.83e+00	5.11e+00	1.37e+02	1.02e+03
Toluene	108-88-3	1.00e+00 (9)	1.00e+02	1.00e+02	3.58e+03 (13)	3.63e+03 (13)
Toxaphene	8001-35-2	3.00e-03 (9)	3.00e-01	3.00e-01	5.82e-01	5.20e+00
TP Silvex, 2,4,5-	93-72-1	5.00e-02 (9)	5.00e+00	5.00e+00	2.20e+03	1.64e+04
Trichloro benzene (1,2,4)	120-82-1	7.00e-02 (9)	7.00e+00	7.00e+00	6.78e+02 (13)	8.28e+02 (13)
Trichloroethane (1,1,1)	71-55-6	2.00e-01 (9)	2.00e+01	2.00e+01	9.63e+03 (13)	1.40e+04 (13)
Trichloroethane (1,1,2)	79-00-5	5.00e-03 (9)	5.00e-01	5.00e-01	1.27e+01 (13)	1.62e+01 (13)
Trichloroethylene	79-01-6	5.00e-03 (9)	5.00e-01	5.00e-01	2.40e+00 (13)	2.85e+00 (13)
Trichlorofluoromethane	75-69-4	1.10e+01	1.10e+03	3.07e+03	8.73e+00 (13)	8.36e+00 (13)
Trichloro phenol (2,4,5)	95-95-4	3.65e+00	3.65e+02	1.02e+03	8.08e+03 (13)	1.04e+04 (13)
Trichloro phenol, 2,4,6-	88-06-2	7.74e-03	7.74e-01	2.60e+00	5.82e+01	5.20e+02
Trichloro phenoxyacetic acid, 2,4,5-	93-76-5	3.65e-01	3.65e+01	1.02e+02	2.74e+03	2.04e+04
Trichloro propane, 1,1,2-	598-77-6	1.83e-01	1.83e+01	5.11e+01	1.37e+03	1.02e+04
Trichloro propane, 1,2,3-	96-18-4	2.19e-01	2.19e+01	6.13e+01	1.65e+03	1.23e+04
Trinitro benzene, 1,3,5-	99-35-4	1.83e-03	1.83e-01	5.11e-01	1.37e+01	1.02e+02
Vinyl acetate	108-05-4	3.65e+01	3.65e+03	1.02e+04	2.74e+05	2.04e+06
Vinyl Chloride	75-01-4	2.00e-03 (9)	2.00e-01	2.00e-01	1.99e-02 (13)	2.41e-02 (13)
Xylene	1330-20-7	1.00e+01 (9)	1.00e+03	1.00e+03	5.47e+03 (13)	5.80e+03 (13)

Summary of Updates to the Tables Accompanying the Interoffice Memorandum Entitled Implementation of the Existing Risk Reduction Rule

Original tables current as of July 1, 1998

Date of Change	Change Made
August 1, 1998	SAI-Res, SAI-Ind, and soil risk-based screening values for mercury were revised (based on a change in the Kd value).
September 18, 1998	Remediation-Specific Effects Screening Levels (RS-ESLs) were added as inhalation toxicity factors; this affected the soil SAI and soil risk-based screening values for some of these contaminants.
September 18, 1998	SAI-Ind for arsenic was revised.
September 18, 1998	MCL for nickel was removed.
September 18, 1998	SFo for N-nitrosodimethylamine was corrected.
September 18, 1998	URF for nickel was added.
September 18, 1998	ABS.gi for trichloroethylene was changed from 15% to 100%; this affected the soil SAI and soil risk-based screening value.
September 18, 1998	Kd values presented in Attachment E, Chemical/Physical Properties were corrected. This change did not affect the MSC or Risk-Based Screening Values tables, as the Kd values used to derive the MSCs and risk-based screening values were accurate.
September 18, 1998	RfDo for chromium (III) was revised.
September 18, 1998	RfDo and RfC for chromium (VI) were revised.
September 18, 1998	RfDo and RfC for naphthalene were revised.
September 18, 1998	The text above the Risk-Based Screening Values table was correct to reflect that a HQ of 0.1 (not 1) was used.
September 18, 1998	****Note: In the future, updates to the tables will be made approximately once every six months (not every month). Exceptions to the six month schedule include a change that has been of such a magnitude that the MSCs previously developed for a contaminant would not be adequately protective of human health and the environment.**
September 29, 1998	Toxicity Factors table (SFi and RfDi values) corrected.

Abbreviations:
SFo = Oral Slope Factor
RfDo - Oral Reference Dose
URF - Inhalation Unit Risk Factor
RfC - Inhalation Reference Concentration
RS-ESL - Remediation-Specific Effects Screening Level
RfDi - Inhalation Reference Dose
SFi - Inhalation Slope Factor
MCL - Maximum Contaminant Level

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Acenaphthene	83-32-9	NA	I	---	---	6.0E-02	I	---	---	---	---	---	---	---	---
Acenaphthylene	208-96-8	D	I	---	---	6.0E-02	MA	---	---	---	---	---	---	---	---
Acetaldehyde	75-07-0	B2	I	---	---	---	---	2.2E-06	I	9.0E-03	RfC	I	7.7E-03	2.6E-03	---
Acetone	67-64-1	D	I	---	---	1.0E-01	I	---	---	5.9E-01	RS-ESL	---	---	1.7E-01	---
Acetone cyanohydrin	75-86-5	NA	I	---	---	8.0E-04	H	---	---	4.0E-03	RS-ESL	---	---	1.1E-03	---
Acetonitrile	75-05-8	NA	I	---	---	6.0E-03	I	---	---	3.4E-02	RS-ESL	---	---	9.7E-03	---
Acetophenone	98-86-2	D	I	---	---	1.0E-01	I	---	---	4.9E-02	RS-ESL	---	---	1.4E-02	---
Acifluorfen, sodium	62476-59-9	NA	I	---	---	1.3E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Acrolein	107-02-8	C	I	---	---	2.0E-02	H	---	---	2.0E-05	RfC	I	---	5.7E-06	---
Acrylamide	79-06-1	B2	I	4.5E+00	I	2.0E-04	I	1.3E-03	I	---	---	---	4.6E+00	---	---
Acrylic acid	79-10-7	NA	I	---	---	5.0E-01	I	---	---	1.0E-03	RfC	I	---	2.9E-04	---
Acrylonitrile	107-13-1	B1	I	5.4E-01	I	1.0E-03	H	6.8E-05	I	2.0E-03	RfC	I	2.4E-01	5.7E-04	---
Alachlor	15972-60-8	B2	H	8.0E-02	H	1.0E-02	I	---	---	---	---	---	---	---	2.0E-03
Aldicarb	116-06-3	D	I	---	---	1.0E-03	I	---	---	---	---	---	---	---	7.0E-03
Aldicarb sulfone	1646-88-4	NA	I	---	---	1.0E-03	I	---	---	---	---	---	---	---	7.0E-03
Aldrin	309-00-2	B2	I	1.7E+01	I	3.0E-05	I	4.9E-03	I	---	---	---	1.7E+01	---	---
Allyl alcohol	107-18-6	NA	I	---	---	5.0E-03	I	---	---	4.8E-03	RS-ESL	---	---	1.4E-03	---
Allyl chloride	107-05-1	C	I	---	---	---	---	---	---	1.0E-03	RfC	I	---	2.9E-04	---
Aluminum	7429-90-5	NA	I	---	---	1.0E+00	N	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Aminopyridine, 4-	504-24-5	D	I	---	---	2.0E-05	H	---	---	2.5E-04	RS-ESL	---	---	7.1E-05	---
Ammonia	7664-41-7	NA	I	---	---	---	---	---	---	1.0E-01	RfC	I	---	2.9E-02	---
Aniline	62-53-3	B2	I	5.7E-03	I	---	---	---	---	1.0E-03	RfC	I	---	2.9E-04	---
Anthracene	120-12-7	D	I	---	---	3.0E-01	I	---	---	---	---	---	---	---	---
Antimony	7440-36-0	NA	I	---	---	4.0E-04	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	6.0E-03
Aramite	140-57-8	B2	I	2.5E-02	I	5.0E-02	H	7.1E-06	I	---	---	---	2.5E-02	---	---
Arsenic[e]	7440-38-2	---	---	---	---	---	---	---	---	---	---	---	---	---	5.0E-02
Arsine	7784-42-1	NA	I	---	---	---	---	---	---	5.0E-05	RfC	I	---	1.4E-05	---
Asbestos	1332-21-4	A	I	---	---	---	---	7.7E-03	I	---	---	---	2.7E+01	---	7 mfl

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Atrazine	1912-24-9	C	H	2.2E-01	H	3.5E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	3.0E-03
Barium	7440-39-3	D	I	---	---	7.0E-02	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	2.0E+00
Benzene	71-43-2	A	I	2.9E-02	I	---	---	8.3E-06	I	6.0E-03	RfC	N	2.9E-02	1.7E-03	5.0E-03
Benzenethiol	108-98-5	NA	I	---	---	1.0E-05	H	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
Benzidine	92-87-5	A	I	2.3E+02	I	3.0E-03	I	6.7E-02	I	---	---	---	2.3E+02	---	---
Benz-a-anthracene	56-55-3	B2	I	7.3E-01	EPA-93	---	---	8.8E-05	EPA-93	---	---	---	3.1E-01	---	---
Benzo-a-pyrene	50-32-8	B2	I	7.3E+00	I	---	---	8.8E-04	N	---	---	---	3.1E+00	---	2.0E-04
Benzo-b-fluoranthene	205-99-2	B2	I	7.3E-01	EPA-93	---	---	8.8E-05	EPA-93	---	---	---	3.1E-01	---	---
Benzo-k-fluoranthene	207-08-9	B2	I	7.3E-02	EPA-93	---	---	8.8E-06	EPA-93	---	---	---	3.1E-02	---	---
Benzo-g,h,i-perylene	191-24-2	D	I	---	---	3.0E-02	MA	---	---	---	---	---	---	---	---
Benzoic acid	65-85-0	D	I	---	---	4.0E+00	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Benzotrichloride	98-07-7	B2	I	1.3E+01	I	---	---	---	---	8.0E-04	RS-ESL	---	---	2.3E-04	---
Benzyl alcohol	100-51-6	NA	I	---	---	3.0E-01	H	---	---	5.0E-02	RS-ESL	---	---	1.4E-02	---
Benzyl chloride	100-44-7	B2	I	1.7E-01	I	---	---	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Beryllium	7440-41-7	B1	I	---	---	2.0E-03	I	2.4E-03	I	2.0E+01	RfC	I	8.4E+00	5.7E+00	4.0E-03
Biphenyl, 1,1-	92-52-4	D	I	---	---	5.0E-02	I	---	---	1.3E-03	RS-ESL	---	---	3.7E-04	---
Bis (2-chloro-ethyl) ether	111-44-4	B2	I	1.1E+00	I	---	---	3.3E-04	I	---	---	---	1.2E+00	---	---
Bis (2-chloroisopropyl) ether	39638-32-9	NA	I	---	---	4.0E-02	I	---	---	---	---	---	---	---	---
Bis (2-chloromethyl) ether	542-88-1	A	I	2.2E+02	I	---	---	6.2E-02	I	---	---	---	2.2E+02	---	---
Bis (2-ethyl-hexyl) phthalate	117-81-7	B2	I	1.4E-02	I	2.0E-02	I	---	---	---	---	---	---	---	6.0E-03
Bromodichloromethane	75-27-4	B2	I	6.2E-02	I	2.0E-02	I	---	---	---	---	---	---	---	1.0E-01
Bromoform	75-25-2	B2	I	7.9E-03	I	2.0E-02	I	1.1E-06	I	---	---	---	3.9E-03	---	1.0E-01
Bromomethane	74-83-9	D	I	---	---	1.4E-03	I	---	---	5.0E-03	RfC	I	---	1.4E-03	---
Butadiene, 1,3-	106-99-0	B2	I	---	---	---	---	1.1E-04	Cote & Bayard, 1990	---	---	---	3.9E-01	---	---
Butanol, n-	71-36-3	D	I	---	---	1.0E-01	I	---	---	7.6E-02	RS-ESL	---	---	2.2E-02	---
Butylate	2008-41-5	NA	I	---	---	5.0E-02	I	---	---	---	---	---	---	---	---
Butyl benzyl phthalate	85-68-7	C	I	---	---	2.0E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Cacodylic acid	75-60-5	D	I	---	---	3.0E-03	H	---	---	---	---	---	---	---	---
Cadmium	7440-43-9	B1	I	---	---	1.0E-03/5.0E-04	I	1.8E-03	I	2.0E-04	RfC	A	6.3E+00	5.7E-05	5.0E-03
Captan	133-06-2	B2	H	3.5E-03	H	1.3E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Carbaryl	63-25-2	NA	I	---	---	1.0E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Carbazole	86-74-8	B2	H	2.0E-02	H	---	---	---	---	---	---	---	---	---	---
Carbofuran	1563-66-2	NA	I	---	---	5.0E-03	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	4.0E-02
Carbon disulfide	75-15-0	NA	I	---	---	1.0E-01	I	---	---	7.0E-01	RfC	I	---	2.0E-01	---
Carbon tetrachloride	56-23-5	B2	I	1.3E-01	I	7.0E-04	I	1.5E-05	I	2.0E-03	RfC	N	5.3E-02	5.7E-04	5.0E-03
Carbosulfan	55285-14-8	NA	I	---	---	1.0E-02	I	---	---	---	---	---	---	---	---
Chloral	75-87-6	NA	I	---	---	2.0E-03	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Chlordane	57-74-9	B2	I	3.5E-01	I	5.0E-04	I	1.0E-04	I	7.0E-04	RfC	I	3.5E-01	2.0E-04	2.0E-03
Chlorine	7782-50-5	NA	I	---	---	1.0E-01	I	---	---	1.5E-03	RS-ESL	---	---	4.3E-04	4.0E+00
Chloroanaline, p-	106-47-8	NA	I	---	---	4.0E-03	I	---	---	5.3E-03	RS-ESL	---	---	1.5E-03	---
Chlorobenzene	108-90-7	D	I	---	---	2.0E-02	I	---	---	4.6E-02	RS-ESL	---	---	1.3E-02	1.0E-01
Chlorobenzilate	510-15-6	B2	H	2.7E-01	H	2.0E-02	I	7.8E-05	H	---	---	---	2.7E-01	---	---
Chloro-1,3-butadiene, 2-	126-99-8	NA	I	---	---	---	---	---	---	7.0E-03	RfC	H	---	2.0E-03	---
Chlorodifluoromethane	75-45-6	NA	I	---	---	---	---	---	---	5.0E+01	RfC	I	---	1.4E+01	---
Chloroethane	75-00-3	NA	I	---	---	4.0E-01	N	---	---	1.0E+01	RfC	I	---	2.9E+00	---
Chloroform	67-66-3	B2	I	6.1E-03	I	1.0E-02	I	2.3E-05	I	9.7E-02	RfC	A	8.1E-02	2.8E-02	1.0E-01
Chloromethane	74-87-3	C	H	1.3E-02	H	---	---	1.8E-06	H	8.2E-01	RfC	A	6.3E-03	2.4E-01	---
Chloronaphthalene, 2-	91-58-7	NA	I	---	---	8.0E-02	I	---	---	---	---	---	---	---	---
Chlorophenol, 2-	95-57-8	NA	I	---	---	5.0E-03	I	---	---	3.0E-02	RS-ESL	---	---	8.6E-03	---
Chlorotoluene, o-	95-49-8	NA	I	---	---	2.0E-02	I	---	---	2.6E-01	RS-ESL	---	---	7.4E-02	---
Chlorpyrifos	2921-88-2	NA	I	---	---	3.0E-03	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	---
Chromium (III)	16065-83-1	NA	I	---	---	1.5E+00	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	1.0E-01
Chromium (VI)	18540-29-9	A	I	---	---	3.0E-03	I	1.2E-02	I	1.0E-04	RfC	I	4.2E+01	2.9E-05	1.0E-01
Chrysene	218-01-9	B2	I	7.3E-03	EPA-93	---	---	8.8E-07	EPA-93	---	---	---	3.1E-03	---	---
Cobalt	7440-48-4	NA	I	---	---	6.0E-02	N	---	---	2.0E-05	RS-ESL	---	---	5.7E-06	---
Copper	7440-50-8	D	I	---	---	4.0E-02	N	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	1.3E+00
Cresol, m-	108-39-4	C	I	---	---	5.0E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Cresol, o-	95-48-7	C	I	---	---	5.0E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Cresol, p-	106-44-5	C	I	---	---	5.0E-03	H	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Crotonaldehyde	123-73-9	C	I	1.9E+00	H	---	---	---	---	6.0E-03	RS-ESL	---	---	1.7E-03	---
Cumene	98-82-8	D	I	---	---	1.0E-01	I	---	---	4.0E-01	RfC	I	---	1.1E-01	---
Cyanide	57-12-5	D	I	---	---	2.0E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	2.0E-01
Cyanogen	460-19-5	NA	I	---	---	4.0E-02	I	---	---	2.1E-02	RS-ESL	---	---	6.0E-03	---
Cyclohexanone	108-94-1	NA	I	---	---	5.0E+00	I	---	---	1.0E-01	RS-ESL	---	---	2.9E-02	---
Cyclotrimethylenetrinitramine	121-82-4	C	I	1.1E-01	I	3.0E-03	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
DDD	72-54-8	B2	I	2.4E-01	I	---	---	---	---	---	---	---	---	---	---
DDE	72-55-9	B2	I	3.4E-01	I	---	---	---	---	---	---	---	---	---	---
DDT	50-29-3	B2	I	3.4E-01	I	5.0E-04	I	9.7E-05	I	---	---	---	3.4E-01	---	---
Di-n-butyl phthalate	84-74-2	D	I	---	---	1.0E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Di-n-ootyl phthalate	117-84-0	NA	I	---	---	2.0E-02	H	---	---	---	---	---	---	---	---
Diallate	2303-16-4	B2	H	6.1E-02	H	---	---	---	---	---	---	---	---	---	---
Diazinon	333-41-5	NA	I	---	---	9.0E-04	H	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Dibenz-a,h-anthracene	53-70-3	B2	I	7.3E+00	EPA-93	---	---	8.8E-04	EPA-93	---	---	---	3.1E+00	---	---
Dibromo-3-chloropropane, 1,2-	96-12-8	B2	H	1.4E+00	H	---	---	6.9E-07	H	2.0E-04	RfC	I	2.4E-03	5.7E-05	2.0E-04
Dibromochloromethane	124-48-1	C	I	8.4E-02	I	2.0E-02	I	---	---	---	---	---	---	---	1.0E-01
Dicamba	1918-00-9	NA	I	---	---	3.0E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Dichlorobenzene, 1,2-	95-50-1	D	I	---	---	9.0E-02	I	---	---	1.5E-01	RS-ESL	---	---	4.3E-02	6.0E-01
Dichlorobenzene, 1,4-	106-46-7	C	H	2.4E-02	H	---	---	---	---	8.0E-01	RfC	I	---	2.3E-01	7.5E-02
Dichlorobenzidine, 3,3-	91-94-1	B2	I	4.5E-01	I	---	---	---	---	---	---	---	---	---	---
Dichloro-2-butene, 1,4-	764-41-0	B2	H	---	---	---	---	2.6E-03	H	---	---	---	9.1E+00	---	---
Dichlorodifluoromethane	75-71-8	NA	I	---	---	2.0E-01	I	---	---	5.0E+00	RS-ESL	---	---	1.4E+00	---
Dichloroethane, 1,1-	75-34-3	C	I	---	---	1.0E-01	H	---	---	4.0E-01	RS-ESL	---	---	1.1E-01	---
Dichloroethane, 1,2-	107-06-2	B2	I	9.1E-02	I	---	---	2.6E-05	I	8.1E-01	RfC	A	9.1E-02	2.3E-01	5.0E-03
Dichloroethylene, 1,1-	75-35-4	C	I	6.0E-01	I	9.0E-03	I	5.0E-05	I	---	---	---	1.8E-01	---	7.0E-03
Dichloroethylene, cis-1,2-	156-59-2	D	I	---	---	1.0E-02	H	---	---	7.9E-01	RS-ESL	---	---	2.3E-01	7.0E-02
Dichloroethylene, trans-1,2	156-60-5	NA	I	---	---	2.0E-02	I	---	---	7.9E-01	RS-ESL	---	---	2.3E-01	1.0E-01
Dichlorophenol, 2,4-	120-83-2	NA	I	---	---	3.0E-03	I	---	---	5.3E-02	RS-ESL	---	---	1.5E-02	---
Dichlorophenoxyacetic acid, 2,4-	94-75-7	NA	I	---	---	1.0E-02	I	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	7.0E-02
Dichloropropane, 1,2-	78-87-5	B2	H	6.8E-02	H	9.0E-02	A	---	---	4.0E-03	RfC	I	---	1.1E-03	5.0E-03
Dichloropropanol, 2,3-	616-23-9	NA	I	---	---	3.0E-03	I	---	---	---	---	---	---	---	---
Dichloropropene, 1,3-	542-75-6	B2	I	1.8E-01	H	3.0E-04	I	3.7E-05	H	2.0E-02	RfC	I	1.3E-01	5.7E-03	---
Dichlorvos	62-73-7	B2	I	2.9E-01	I	5.0E-04	I	---	---	5.0E-04	RfC	I	---	1.4E-04	---
Dieldrin	60-57-1	B2	I	1.6E+01	I	5.0E-05	I	4.6E-03	I	---	---	---	1.6E+01	---	---
Diethylhexyl adipate	103-23-1	C	I	1.2E-03	I	6.0E-01	I	---	---	1.2E-01	RS-ESL	---	---	3.5E-02	---
Diethyl phthalate	84-66-2	D	I	---	---	8.0E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Diethylstilbestrol	56-53-1	A	H	4.7E+03	H	---	---	---	---	---	---	---	---	---	---
Dimethoate	60-51-5	NA	I	---	---	2.0E-04	I	---	---	---	---	---	---	---	---
Dimethoxybenzidine, 3,3'-	119-90-4	B2	H	1.4E-02	H	---	---	---	---	---	---	---	---	---	---
Dimethylbenzidine, 3,3'-	119-93-7	B2	H	9.2E+00	H	---	---	---	---	---	---	---	---	---	---
Dimethyl phenol, 2,4-	105-67-9	NA	I	---	---	2.0E-02	I	---	---	1.7E-02	RS-ESL	---	---	4.7E-03	---
Dinitrobenzene, 1,3-	99-65-0	D	I	---	---	1.0E-04	I	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	---
Dinitrobenzene, 1,4-	100-25-4	NA	I	---	---	4.0E-04	H	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	---
Dinitrophenol, 2,4-	51-28-5	NA	I	---	---	2.0E-03	I	---	---	---	---	---	---	---	---
Dinitrotoluene, 2,4-	121-14-2	B2	I	6.8E-01	I (for mixed isomers)	2.0E-03	I	---	---	1.5E-04	RS-ESL	---	---	4.3E-05	---
Dinitrotoluene, 2,6-	606-20-2	B2	I	6.8E-01	I (for mixed isomers)	1.0E-03	H	---	---	1.5E-04	RS-ESL	---	---	4.3E-05	---
Dinoseb	88-85-7	D	I	---	---	1.0E-03	I	---	---	---	---	---	---	---	7.0E-03
Dioxane 1,4-	123-91-1	B2	I	1.1E-02	I	---	---	---	---	9.0E-02	RS-ESL	---	---	2.6E-02	---
Diphenylamine	122-39-4	NA	I	---	---	2.5E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Diphenylhydrazine, 1,2-	122-66-7	B2	I	8.0E-01	I	---	---	2.2E-04	I	---	---	---	7.7E-01	---	---
Diquat	85-00-7	NA	I	---	---	2.2E-03	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	2.0E-02
Disulfoton	298-04-4	NA	I	---	---	4.0E-05	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Diuron	330-54-1	NA	I	---	---	2.0E-03	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Endosulfan	115-29-7	NA	I	---	---	6.0E-03	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Endothall	145-73-3	NA	I	---	---	2.0E-02	I	---	---	---	---	---	---	---	1.0E-01
Endrin	72-20-8	D	I	---	---	3.0E-04	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	2.0E-03
Epichlorohydrin	106-89-8	B2	I	9.9E-03	I	2.0E-03	H	1.2E-06	I	1.0E-03	RfC	I	4.2E-03	2.9E-04	---
Ethion	563-12-2	NA	I	---	---	5.0E-04	I	---	---	4.0E-04	RS-ESL	---	---	1.1E-04	---
Ethoxy ethanol, 2-	110-80-5	NA	I	---	---	4.0E-01	H	---	---	2.0E-01	RfC	I	---	5.7E-02	---
Ethyl acetate	141-78-6	NA	I	---	---	9.0E-01	I	---	---	1.4E+00	RS-ESL	---	---	4.1E-01	---
Ethyl acrylate	140-88-5	B2	H	4.8E-02	H	---	---	---	---	1.6E-02	RS-ESL	---	---	4.6E-03	---
Ethyl benzene	100-41-4	D	I	---	---	1.0E-01	I	---	---	1.0E+00	RfC	I	---	2.9E-01	7.0E-01
Ethyl dipropylthiocarbamate, S-	759-94-4	NA	I	---	---	2.5E-02	I	---	---	---	---	---	---	---	---
Ethyl ether	60-29-7	NA	I	---	---	2.0E-01	I	---	---	1.2E+00	RS-ESL	---	---	3.5E-01	---
Ethyl methacrylate	97-63-2	NA	I	---	---	9.0E-02	H	---	---	5.0E-01	RS-ESL	---	---	1.4E-01	---
Ethyl-2-methyl benzene, 1-	611-14-3	D	(g)	---	---	2.0E-01	(g)	---	---	4.0E-01	RfC	(g)	---	1.1E-01	1.0E+00
Ethyl-4-methyl benzene, 1-	622-96-8	D	(g)	---	---	2.0E-01	(g)	---	---	4.0E-01	RfC	(g)	---	1.1E-01	1.0E+00
Ethylenediamine	107-15-3	D	I	---	---	2.0E-02	H	---	---	2.5E-02	RS-ESL	---	---	7.1E-03	---
Ethylene dibromide	106-93-4	B2	I	8.5E+01	I	---	---	2.2E-04	I	2.0E-04	RfC	H	7.7E-01	5.7E-05	5.0E-05
Ethylene glycol	107-21-1	NA	I	---	---	2.0E+00	I	---	---	2.6E-02	RS-ESL	---	---	7.4E-03	---
Ethylene oxide	75-21-8	B1	H	1.0E+00	H	---	---	1.0E-04	H	---	---	---	3.5E-01	---	---
Ethylene thiourea	96-45-7	B2	H	1.1E-01	H	8.0E-05	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Fluoranthene	206-44-0	D	I	---	---	4.0E-02	I	---	---	---	---	---	---	---	---
Fluorene	86-73-7	D	I	---	---	4.0E-02	I	---	---	---	---	---	---	---	---
Fluorine (soluble fluoride)	7782-41-4	NA	I	---	---	6.0E-02	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	4.0E+00
Formaldehyde	50-00-0	B1	I	---	---	2.0E-01	I	1.3E-05	I	---	---	---	4.6E-02	---	---
Formic acid	64-18-6	NA	I	---	---	2.0E+00	H	---	---	9.4E-03	RS-ESL	---	---	2.7E-03	---
Furan	110-00-9	NA	I	---	---	1.0E-03	I	---	---	2.8E-02	RS-ESL	---	---	8.0E-03	---
Furfural	98-01-1	NA	I	---	---	3.0E-03	I	---	---	8.0E-03	RS-ESL	---	---	2.3E-03	---
Glycidylaldehyde	765-34-4	B2	I	---	---	4.0E-04	I	---	---	1.0E-03	RfC	H	---	2.9E-04	---
Heptachlor	76-44-8	B2	I	4.5E+00	I	5.0E-04	I	1.3E-03	I	---	---	---	4.6E+00	---	4.0E-04
Heptachlor epoxide	1024-57-3	B2	I	9.1E+00	I	1.3E-05	I	2.6E-03	I	---	---	---	9.1E+00	---	2.0E-04
Hexachlorobenzene	118-74-1	B2	I	1.6E+00	I	8.0E-04	I	4.6E-04	I	---	---	---	1.6E+00	---	1.0E-03
Hexachlorobutadiene	87-68-3	C	I	7.8E-02	I	2.0E-04	H	2.2E-05	I	---	---	---	7.7E-02	---	---
Hexachlorocyclohexane, alpha	319-84-6	B2	I	6.3E+00	I	---	---	1.8E-03	I	---	---	---	6.3E+00	---	---
Hexachlorocyclohexane, beta	319-85-7	C	I	1.8E+00	I	---	---	5.3E-04	I	---	---	---	1.9E+00	---	---
Hexachlorocyclohexane, gamma[h]	58-89-9	B2	H	1.3E+00	H	3.0E-04	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
Hexachlorocyclohexane, techn	608-73-1	B2	I	1.8E+00	I	---	---	5.1E-04	I	---	---	---	1.8E+00	---	---
Hexachlorocyclopentadiene	77-47-4	D	I	---	---	7.0E-03	I	---	---	7.0E-05	RfC	H	---	2.0E-05	5.0E-02
Hexachloroethane	67-72-1	C	I	1.4E-02	I	1.0E-03	I	4.0E-06	I	---	---	---	1.4E-02	---	---
Hexachlorophene	70-30-4	NA	I	---	---	3.0E-04	I	---	---	---	---	---	---	---	---
Hexane, n-	110-54-3	NA	I	---	---	6.0E-02	H	---	---	2.0E-01	RfC	I	---	5.7E-02	---
Hexazinone	51235-04-2	NA	I	---	---	3.3E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Hydrazine	302-01-2	B2	I	3.0E+00	I	---	---	4.9E-03	I	---	---	---	1.7E+01	---	---
Indeno-1,2,3-cd-pyrene	193-39-5	B2	I	7.3E-01	EPA-93	---	---	8.8E-05	EPA-93	---	---	---	3.1E-01	---	---
Isobutyl alcohol	78-83-1	NA	I	---	---	3.0E-01	I	---	---	1.5E-01	RS-ESL	---	---	4.3E-02	---
Isophorone	78-59-1	C	I	9.5E-04	I	2.0E-01	I	---	---	2.3E-02	RS-ESL	---	---	6.6E-03	---
Kepone	143-50-0	NA	I	---	---	5.0E-04	A	---	---	---	---	---	---	---	
Lead (inorganic)	7439-92-1	---	---	---	---	---	---	---	---	---	---	---	---	---	1.5E-02
Malathion	121-75-5	NA	I	---	---	2.0E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Maleic anhydride	108-31-6	NA	I	---	---	1.0E-01	I	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	---
Maleic hydrazide	123-33-1	NA	I	---	---	5.0E-01	I	---	---	1.0E-01	RS-ESL	---	---	2.9E-02	---
Malononitrile	109-77-3	NA	I	---	---	2.0E-05	H	---	---	8.0E-03	RS-ESL	---	---	2.3E-03	---
Manganese	7439-96-5	D	I	---	---	1.4E-01/4.7E-02	I	---	---	5.0E-05	RfC	I	---	1.4E-05	---
Mercury	7439-97-6	D	I	---	---	3.0E-04	I (for $HgCl^2$)	---	---	3.0E-04	RfC	I	---	8.6E-05	2.0E-03
Methacrylonitrile	126-98-7	NA	I	---	---	1.0E-04	I	---	---	2.7E-03	RS-ESL	---	---	7.7E-04	---
Methanol	67-56-1	NA	I	---	---	5.0E-01	I	---	---	2.6E-01	RS-ESL	---	---	7.5E-02	---
Methomyl	16752-77-5	NA	I	---	---	2.5E-02	I	---	---	2.5E-03	RS-ESL	---	---	7.1E-04	---
Methoxychlor	72-43-5	D	I	---	---	5.0E-03	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	4.0E-02
Methoxyethanol, 2-	109-86-4	NA	I	---	---	---	---	---	---	2.0E-02	RfC	I	---	5.7E-03	---
Methyl ethyl ketone	78-93-3	D	I	---	---	6.0E-01	I	---	---	1.0E+00	RfC	I	---	2.9E-01	---
Methyl isobutyl ketone	108-10-1	NA	I	---	---	8.0E-02	H	---	---	2.1E-01	RS-ESL	---	---	5.9E-02	---
Methyl mercury	22967-92-6	C	I	---	---	1.0E-04	I	---	---	1.0E-05	RS-ESL	---	---	2.9E-06	---
Methyl methacrylate	80-62-6	E	I	---	---	1.4E+00	I	---	---	7.0E-01	RfC	I	---	2.0E-01	---
Methylnaphthalene, 2-	91-57-6	NA	I	---	---	4.0E-02	MA	---	---	---	---	---	---	---	---
Methyl parathion	298-00-0	NA	I	---	---	2.5E-04	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	---
Methylene-bis (2-chloroaniline) 4,4'-	101-14-4	B2	H	1.3E-01	H	7.0E-04	H	3.7E-05	H	---	---	---	1.3E-01	---	---
Methylene chloride	75-09-2	B2	I	7.5E-03	I	6.0E-02	I	4.7E-07	I	3.0E+00	RfC	H	1.6E-03	8.6E-01	5.0E-03
Molinate	2212-67-1	NA	I	---	---	2.0E-03	I	---	---	---	---	---	---	---	---
Molybdenum	7439-98-7	NA	I	---	---	5.0E-03	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
MTBE	1634-04-4	NA	I	1.7E-03	CA	1.0E-02	CA	4.5E-08	CA	3.0E+00	RfC	I	1.6E-04	8.6E-01	---
Naled	300-76-5	NA	I	---	---	2.0E-03	I	---	---	3.0E-03	RS-ESL	---	---	8.6E-04	---
Naphthalene	91-20-3	D	I	---	---	2.0E-02	I	---	---	3.0E-03	RfC	I	---	8.6E-04	---
Nickel and compounds	7440-02-0	A	I	---	---	2.0E-02	I	4.8E-04	I	---	---	---	1.7E+00	---	---
Nitrate	14797-55-8	NA	I	---	---	1.6E+00	I	---	---	---	---	---	---	---	1.0E+01
Nitrite	14797-65-0	NA	I	---	---	1.0E-01	I	---	---	---	---	---	---	---	1.0E+00
Nitroaniline, 2-	88-74-4	NA	I	---	---	---	---	---	---	2.0E-04	RfC	H	---	5.7E-05	---
Nitrobenzene	98-95-3	D	I	---	---	5.0E-04	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Nitropropane, 2-	79-46-9	B2	H	---	---	---	---	2.7E-03	H	2.0E-02	RfC	I	9.5E+00	5.7E-03	---
Nitroso-n-ethylurea, n-	759-73-9	B2	H	1.4E+02	H	---	---	---	---	---	---	---	---	---	---
Nitroso-methyl-ethyl-amine, n-	10595-95-6	B2	I	2.2E+01	I	---	---	---	---	---	---	---	---	---	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Nitrosodi-n-butylamine, n-	924-16-3	B2	I	5.4E+00	I	---	---	1.6E-03	I	---	---	---	5.6E+00	---	---
Nitrosodi-n-propylamine, n-	621-64-7	B2	I	7.0E+00	I	---	---	---	---	---	---	---	---	---	---
Nitrosodiethanolamine	1116-54-7	B2	I	2.8E+00	I	---	---	---	---	---	---	---	---	---	---
Nitrosodiethylamine, n-	55-18-5	B2	I	1.5E+02	I	---	---	4.3E-02	I	---	---	---	1.5E+02	---	---
Nitrosodimethylamine, n-	62-75-9	B2	I	5.1E+01	I	---	---	1.4E-02	I	---	---	---	4.9E+01	---	---
Nitrosodiphenylamine	86-30-6	B2	I	4.9E-03	I	---	---	---	---	---	---	---	---	---	---
Nitrosopyrrolidine, n-	930-55-2	B2	I	2.1E+00	I	---	---	6.1E-04	I	---	---	---	2.1E+00	---	---
Nitrotoluene, m-	99-08-1	NA	I	---	---	1.0E-02	H	---	---	1.1E-02	RS-ESL	---	---	3.1E-03	---
Nitrotoluene, o-	88-72-2	NA	I	---	---	1.0E-02	H	---	---	1.1E-02	RS-ESL	---	---	3.1E-03	---
Nitrotoluene, p-	99-99-0	NA	I	---	---	1.0E-02	H	---	---	1.1E-02	RS-ESL	---	---	3.1E-03	---
Octamethylpyrophosphoramide	152-16-9	NA	I	---	---	2.0E-03	H	---	---	---	---	---	---	---	---
Oxamyl	23135-22-0	NA	I	---	---	2.5E-02	I	---	---	---	---	---	---	---	2.0E-01
Parathion	56-38-2	C	I	---	---	6.0E-03	H	---	---	5.0E-05	RS-ESL	---	---	1.4E-05	---
Pebulate	1114-71-2	NA	I	---	---	5.0E-02	H	---	---	---	---	---	---	---	---
Pentachlorobenzene	608-93-5	D	I	---	---	8.0E-04	I	---	---	1.0E-01	RS-ESL	---	---	2.9E-02	---
Pentachloronitrobenzene	82-68-8	C	H	2.6E-01	H	3.0E-03	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
Pentachlorophenol	87-86-5	B2	I	1.2E-01	I	3.0E-02	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	1.0E-03
Phenanthrene	85-01-8	D	I	---	---	3.0E-02	MA	---	---	---	---	---	---	---	---
Phenol	108-95-2	D	I	---	---	6.0E-01	I	---	---	1.9E-02	RS-ESL	---	---	5.4E-03	---
Phenyl mercuric acetate	62-38-4	NA	I	---	---	8.0E-05	I	---	---	---	---	---	---	---	---
Phenylene diamine, m-	108-45-2	NA	I	---	---	6.0E-03	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Phenylene diamine, p-	106-50-3	NA	I	---	---	1.9E-01	H	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Phorate	298-02-2	NA	I	---	---	2.0E-04	H	---	---	5.0E-05	RS-ESL	---	---	1.4E-05	---
Phosphine	7803-51-2	D	I	---	---	3.0E-04	I	---	---	3.0E-04	RfC	I	---	8.6E-05	---
Phosphorus, white	7723-14-0	D	I	---	---	2.0E-05	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Phthalic anhydride	85-44-9	NA	I	---	---	2.0E+00	I	---	---	1.2E-01	RfC	H	---	3.4E-02	---
Polybrominated biphenyls	67774-32-7	B2	H	8.9E+00	H	7.0E-06	H	---	---	---	---	---	---	---	---
Polychlorinated biphenyls[j]	1336-36-3	---	---	---	---	---	---	---	---	---	---	---	---	---	5.0E-04
Pronamide	23950-58-5	NA	I	---	---	7.5E-02	I	---	---	---	---	---	---	---	---
Propargite	2312-35-8	NA	I	---	---	2.0E-02	I	---	---	---	---	---	---	---	---
Propargyl alcohol	107-19-7	NA	I	---	---	2.0E-03	I	---	---	2.3E-03	RS-ESL	---	---	6.6E-04	---
Propham	122-42-9	NA	I	---	---	2.0E-02	I	---	---	---	---	---	---	---	---
Propylene oxide	75-56-9	B2	I	2.4E-01	I	---	---	3.7E-06	I	3.0E-02	RfC	I	1.3E-02	8.6E-03	---
Pyrene	129-00-0	D	I	---	---	3.0E-02	I	---	---	---	---	---	---	---	---
Pyridine	110-86-1	NA	I	---	---	1.0E-03	I	---	---	1.5E-02	RS-ESL	---	---	4.3E-03	---
Quinoline	91-22-5	C	H	1.2E+01	H	---	---	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
Selenium	7782-49-2	D	I	---	---	5.0E-03	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	5.0E-02
Selenourea	630-10-4	NA	I	---	---	5.0E-03	H	---	---	---	---	---	---	---	---
Silver	7440-22-4	D	I	---	---	5.0E-03	I	---	---	1.0E-05	RS-ESL	---	---	2.9E-06	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Sodium diethyldithiocarbamate	148-18-5	C	H	2.7E-01	H	3.0E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Strychnine	57-24-9	NA	I	---	---	3.0E-04	I	---	---	---	---	---	---	---	---
Styrene	100-42-5	NA	I	---	---	2.0E-01	I	---	---	1.0E+00	RfC	I	---	2.9E-01	1.0E-01
Tetrachlorobenzene, 1,2,4,5-	95-94-3	NA	I	---	---	3.0E-04	I	---	---	3.5E-01	RS-ESL	---	---	1.0E-01	---
Tetrachloroethane, 1,1,1,2-	630-20-6	C	I	2.6E-02	I	3.0E-02	I	7.4E-06	I	---	---	---	2.6E-02	---	---
Tetrachloroethane, 1,1,2,2-	79-34-5	C	I	2.0E-01	I	3.0E-01	A	5.8E-05	I	---	---	---	2.0E-01	---	---
Tetrachloroethylene[h]	127-18-4	B2	I	5.2E-02	N	1.0E-02	I	5.8E-07	N	2.7E-01	RfC	A	2.0E-03	7.7E-02	5.0E-03
Tetrachlorophenol, 2,3,4,6-	58-90-2	NA	I	---	---	3.0E-02	I	---	---	7.0E-03	RS-ESL	---	---	2.0E-03	---
Tetraethyl dithiopyrophosphate	3689-24-5	NA	I	---	---	5.0E-04	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	---
Tetraethyl lead	78-00-2	NA	I	---	---	1.0E-07	I	---	---	7.5E-05	RS-ESL	---	---	2.1E-05	---
Thallium and compounds (as thallium chloride)	7791-12-0	D	I	---	---	8.0E-05	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	2.0E-03
Thiofanox	39196-18-4	NA	I	---	---	3.0E-04	H	---	---	8.0E-04	RS-ESL	---	---	2.3E-04	---
Thiophanate-methyl	23564-05-8	NA	I	---	---	8.0E-02	I	---	---	---	---	---	---	---	---
Thiram	137-26-8	NA	I	---	---	5.0E-03	I	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	---
Tin	7440-31-5	NA	I	---	---	6.0E-01	H	---	---	2.0E-02	RS-ESL	---	---	5.7E-03	---
Toluene	108-88-3	D	I	---	---	2.0E-01	I	---	---	4.0E-01	RfC	I	---	1.1E-01	1.0E+00
Toluenediamine, 2,4-	95-80-7	B2	H	3.2E+00	H	---	---	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Toluenediamine, 2,6-	823-40-5	NA	I	---	---	2.0E-01	H	---	---	---	---	---	---	---	---
Toluene diisocyanate, 2,4/2,6-	26471-62-5	NA	I	---	---	---	---	---	---	7.0E-05	RfC	I	---	2.0E-05	---
Toluidine, p-	106-49-0	C	H	1.9E-01	H	---	---	---	---	---	---	---	---	---	---
Toxaphene	8001-35-2	B2	I	1.1E+00	I	---	---	3.2E-04	I	---	---	---	1.1E+00	---	3.0E-03
TP Silvex, 2,4,5-	93-72-1	D	I	---	---	8.0E-03	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	5.0E-02
Triallate	2303-17-5	NA	I	---	---	1.3E-02	I	---	---	---	---	---	---	---	---
Tributyltin oxide	56-35-9	D	I	---	---	3.0E-04	I	---	---	5.0E-05	RS-ESL	---	---	1.4E-05	
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	NA	I	---	---	3.0E+01	I	---	---	3.0E+01	RfC	H	---	8.6E+00	---
Trichlorobenzene, 1,2,4-	120-82-1	D	I	---	---	1.0E-02	I	---	---	2.0E-01	RfC	H	---	5.7E-02	7.0E-02
Trichloroethane, 1,1,1-	71-55-6	D	I	---	---	2.0E-01	N	---	---	1.0E+00	RfC	N	---	2.9E-01	2.0E-01
Trichloroethane, 1,1,2-	79-00-5	C	I	5.7E-02	I	4.0E-03	I	1.6E-05	I	---	---	---	5.6E-02	---	5.0E-03
Trichloroethylene[h]	79-01-6	B2	I	1.1E-02	N	6.0E-03	N	1.7E-06	N	---	---	---	6.0E-03	---	5.0E-03
Trichlorofluoromethane	75-69-4	NA	I	---	---	3.0E-01	I	---	---	2.8E+00	RS-ESL	---	---	8.0E-01	---
Trichlorophenol, 2,4,5-	95-95-4	NA	I	---	---	1.0E-01	I	---	---	4.4E-02	RS-ESL	---	---	1.3E-02	---
Trichlorophenol, 2,4,6-	88-06-2	B2	I	1.1E-02	I	---	---	3.1E-06	I	---	---	---	1.1E-02	---	---
Trichlorophenoxyacetic acid, 2,4,5-	93-76-5	NA	I	---	---	1.0E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Trichloropropane, 1,1,2-	598-77-6	NA	I	---	---	5.0E-03	I	---	---	6.0E-02	RS-ESL	---	---	1.7E-02	---
Trichloropropane, 1,2,3-	96-18-4	B2	H	7.0E+00	H	6.0E-03	I	---	---	6.0E-02	RS-ESL	---	---	1.7E-02	---
Triethylamine	121-44-8	NA	I	---	---	---	---	---	---	7.0E-03	RfC	I	---	2.0E-03	---
Trifluralin	1582-09-8	C	I	7.7E-03	I	7.5E-03	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Trimethylbenzene, 1,2,3-	526-73-8	NA	I	---	---	5.0E-02	(k)	---	---	6.0E-03	RfC	(k)	---	1.7E-03	1.0E+00
Trinitrobenzene, 1,3,5-	99-35-4	NA	I	---	---	3.0E-02	I	---	---	---	---	---	---	---	---

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Trinitrophenylmethylnitramine	479-45-8	NA	I	---	---	1.0E-02	H	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Trinitrotoluene, 2,4,6-	118-96-7	C	I	3.0E-02	I	5.0E-04	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Uranium (soluble salts)	7440-61-1	NA	I	---	---	3.0E-03	I	---	---	---	---	---	---	---	2.0E-02
Vanadium	7440-62-2	NA	I	---	---	7.0E-03	H	---	---	5.0E-05	RS-ESL	---	---	1.4E-05	---
Vernam	1929-77-7	NA	I	---	---	1.0E-03	I	---	---	---	---	---	---	---	---
Vinyl acetate	108-05-4	NA	I	---	---	1.0E+00	H	---	---	2.0E-01	RfC	I	---	5.7E-02	---
Vinyl chloride	75-01-4	A	H	1.9E+00	H	2.0E-05	A	8.4E-05	H	---	---	---	2.9E-01	---	2.0E-03
Warfarin	81-81-2	NA	I	---	---	3.0E-04	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Xylene, m-	108-38-3	NA	I	---	---	2.0E+00	H	---	---	4.3E-01	RS-ESL	---	---	1.2E-01	1.0E+01
Xylene, o-	95-47-6	NA	I	---	---	2.0E+00	H	---	---	4.3E-01	RS-ESL	---	---	1.2E-01	1.0E+01
Xylene, p-	106-42-3	NA	I	---	---	2.0E+00	H	---	---	4.3E-01	RS-ESL	---	---	1.2E-01	1.0E+01
Xylenes	1330-20-7	D	I	---	---	2.0E+00	I	---	---	4.3E-01	RS-ESL	---	---	1.2E-01	1.0E+01
Zinc	7440-66-6	D	I	---	---	3.0E-01	I	---	---	---	---	---	---	---	---

Footnotes

[a]The general hierarchy of the sources for the toxicity factors is: USEPA Integrated Risk Information System (IRIS); USEPA Health Effects Assessment Summary Tables (HEAST); USEPA National Center for Environmental Assessment (NCEA); TNRCC Chronic Remediation-Specific Effects Screening Levels (RS-ESLs); Agency for Toxic Substances Disease Registry Minimal Risk Levels (ATSDR MRLs); other scientifically valid sources as approved by the executive director.

[b]Reference (Ref): A = ATSDR MRL, May 23, 1996; H = HEAST, July, 1997; I = IRIS, as of September 29, 1998; N = NCEA. References for SFi and RfDi values are the same as those for URF and RfC values, respectively.

CA = California Evironmental Protection Agency, 1998. *Public Health Goal for Methyl Tertiary Butyl Ether (MTBE) in Drinking Water*, Review Draft, Office of Environmental Health Hazard Assessment, April.

Cote and Bayard, 1990. Cancer Risk Assessment of 1,3-Butadiene, *Eviron. Health Perspect.*, 86:149-153.

EPA, 1993. *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons*, Office of Research and Development, EPA/600/R-93/089, July.

MA = MADEP, 1995. *Petroleum Hydrocarbon Toxicity Project Report: Polycyclic Aromatic Hydrocarbon Cancer Risk Evaluation Methods*, Massachusetts Department of Environmental Protection, Peer Review Draft, September.

[c]SFi and RfDi values are only applicable to Standard No. 2 of the existing Risk Reduction Rule. The SFi and RfDi values were calculated using the following equations: SFi = (URF x 1000 µg/mg x 70 kg) / (20 m^3/day); RfDi = (RfC x 20 m3/day) / (70 kg). URF and RfC values should be used in all cases under Standard No. 3 of the existing Risk Reduction Rule.

[d]MCLs listed for copper and lead are EPA action levels.

[e]Toxicity factors for arsenic not presented, as a policy level is employed as the Standard No. 2 Soil MSC values.

[f]The first value represents the toxicity value to be used for evaluating all residential and commercial/industrial soil pathways for cadmium; the second value represents the toxicity value to be used for evaluating the groundwater dermal pathway (if applicable) for cadmium; as an MCL is available, a risk-based calculation for the groundwater ingestion and groundwater protection pathways is not appropriate.

[g]Toluene was used as a surrogate for 1-ethyl-2-methyl benzene and 1-ethyl-4-methyl benzene due to a lack of chemical-specific information for these contaminants.

[h]These contaminants have been classified as B2/C carcinogens. For the purpose of calculating updated Standard No. 2 MSCs, Class B2 was assumed and a risk level of 10^{-6} was used for these contaminants.

[i]The first value represents the toxicity value to be used for evaluating all residential and commercial/industrial soil pathways and all commercial/industrial groundwater pathways for manganese; the second value represents the toxicity value to be used for evaluating all residential groundwater pathways for manganese.

[j]Toxicity factors for PCBs are not presented, as TSCA limits are employed as the Standard No. 2 Soil MSC values.

[k]1,2,4-Trimethylbenzene (NCEA) was used as a surrogate for 1,2,3-trimethylbenzene due to a lack of chemical-specific information for this contaminant.

STATE OF TEXAS

HARRISON COUNTY

INDUSTRIAL SOLID WASTE
CERTIFICATION OF REMEDIATION

KNOW ALL MEN BY THESE PRESENTS THAT:

Pursuant to the Rules of the Texas Natural Resource Conservation Commission pertaining to Industrial Solid Waste Management, this document is hereby filed in the Public Records of Harrison County, Texas in compliance with the recordation requirements of said rules:

I

United States Army, United States Department of Defense, has performed a remediation of the land described herein. A copy of the Notice of Registration No. 30990, including a description of the facility, is attached hereto and is made part of this filing. A list of the known waste constituents, including known concentrations, which have been left in place is attached hereto and is made part of this filing. Further information concerning this matter may be found by an examination of Installation records or in the Notice of Registration No. 30990 files, which are available for inspection upon request at the central office of the Texas Natural Resource Conservation Commission in Austin, Texas.

The Texas Natural Resource Conservation Commission derives its authority to review the remediation of this tract of land from the Texas Solid Waste Disposal Act, § 361.002, Texas Health and Safety Code, Chapter 361, which enables the Texas Natural Resource Conservation Commission to promulgate closure and remediation standards to safeguard the health, welfare and physical property of the people of the State and to protect the environment by controlling the management of solid waste. In addition, pursuant to the Texas Water Code, § 5.012 and § 5.013, Texas Water Code, Annotated, Chapter 5, the Texas Natural Resource Conservation Commission is given primary responsibility for implementing the laws of the State of Texas relating to water and shall adopt any rules necessary to carry out its powers and duties under the Texas Water Code. In accordance with this authority, the Texas Natural Resource Conservation Commission requires certain persons to provide certification and/or recordation in the real property records to notify the public of the conditions of the land and/or the occurrence of remediation. This deed certification is not a representation or warranty by the Texas Natural Resource Conservation Commission of the suitability of this land for any purpose, nor does it constitute any guarantee by the Texas Natural Resource Conservation Commission that the remediation standards specified in this certification have been met by United States Army.

II

Being a 0.634 acre tract, more or less, out of the United State Army, Longhorn Army Ammunition Plant's 8,823.96 acre tract lying in Harrison County, State of Texas, said 0.634 acre tract being more particularly described as Attachment One.

Contaminants deposited hereon have been remediated to meet "Ground Water and Soil Protection Standards for Residential Use", in accordance with a plan designed to meet the Texas Natural Resource Conservation Commission's requirements in 31 Texas Administrative Code §335.555 which mandates that the remedy be designed to eliminate substantial present or future risk such that no post-closure care or engineering or institutional control measures are required to protect human health and the environment. Future use of the property is considered appropriate for residential use in accordance with risk reduction standards applicable at the time of filing.

III

The owner of the site is United States Army, Department of Defense, and its address is Attn: SMCLO-CO, P.O. Box 658, Doyline, LA 71023, where more specific information may be obtained from the owner.

EXECUTED this the 12th day of October, 1999.

United States Army
United States Department of
Defense

Ira Nathan
Chief of Operations Review

BEFORE ME, on this the 12th day of October, personally appeared Ira Nathan, Chief of Operations Review of United States Army, United States Department of Defense, known to me to be the person and agent of said corporation whose name is subscribed to the foregoing instrument, and he acknowledged to me that he executed the same for the purposes and in the capacity therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the 12th day of October, 1999.

LAWRENCE LEE NOTARY PUBLIC STATE OF TEXAS EXPIRES 10-4-2002

Notary Public in and
for the State of Texas,
County of

Harrison

My Commission Expires
10-4-02

7.0 QUALIFICATION OF PERMIT UNIT 001 FOR CLOSURE TO RESIDENTIAL RISK REDUCTION STANDARD No. 2

After decontamination, one semi-volatile constituent remains in the concrete at container storage area 31-W, bis(2-ethylhexyl)phthalate. Bis(2-ethylhexyl)phthalate was a common plasticizer used in catalyst C-5 (lead peroxide) that was used to initiate the cure cycle of common resin compounds.

Because of the presence of bis(2-ethylhexyl)phthalate, barium, and cadmium, a deed record has been prepared and made part of this closure report. The deed record has been filed at the Harrison County Courthouse as a permanent record.

Bis(2-ethylhexyl)phthalate has been compared to TNRCC 30 TAC 335.568 Appendix II Ground-Water Protection Standards for Residential Use (GWP-Res) and to the Soil/Air and Ingestion Standards for Residential Use (SAI-Res). Levels of bis(2-ethylhexyl)phthalate in the concrete at container storage area 31-W are well below the risk-based concentration in the RBC Table dated October 1998.

Soils containing cadmium and barium have been left in place at container storage area 31-W. Concentrations left in place have been compared to TNRCC 30 TAC 335.568 Appendix II Ground-Water Protection Standards for Residential Use (GWP-Res) and to the Soil/Air and Ingestion Standards for Residential Use (SAI-Res).

Levels of barium in the soil at container storage area 31-W are well below the risk-based concentration in the RBC Table dated October 1998.

Levels of total cadmium in the soil, although above acceptable concentrations for health-based closure, do not leach detectable concentrations of cadmium at a concentration of 0.005 mg/l, the EPA maximum contaminant limit (MCL) for groundwater. Therefore, cadmium is considered to be acceptable for closure for Ground-Water Protection Standards for Residential Use (GWP-Res) and to the Soil/Air and Ingestion Standards for Residential Use (SAI-Res).

The table below lists the constituents left in place at storage area 31-W.

TABLE 7.0-1
CONTAMINANTS AT CONTAINER STORAGE AREA 31-W

Location	Contaminant	Detection Limit	Unit	Concentration
Concrete	bis(2-ethylhexyl)phthalate	10.0	Ug/L	105.0
Soil	Cadmium	.5	Mg/Kg	1.4 to 2.88
Soil	Barium	2.5	Mg/Kg	167 to 303

In accordance with the described rationale, it is believed that Permit Unit 001, container storage area 31-W, meets the requirements for closure. A Deed Certification in accordance with 30 TAC 335.560 has been placed in the county records. A copy of the deed certification is included in Appendix V of this report.

00188734

MWO20 *** TEXAS NATURAL RESOURCE CONSERVATION COMMISSION *** Page: 1
Notice of Registration Date: 06/16/99
Industrial and Hazardous Waste

This registration does not constitute authorization of any waste management activities or facilites listed below. The registration reflects hazardous and/or industrial waste generation and management activities for which the registrant has provided notification. Requirements for solid waste management are provided by Texas Administrative code section 335 of the rules of the Texas Natural Resource Conservation Commission (TNRCC). Changes or additions to waste management methods referred to in this notice require written notification to the TNRCC.

Solid Waste Registration Number: 30990 EPA Id: TX6213820529

The Solid Waste Registration Number provides access to computerized and filed information pertaining to your operation. Please refer to that number in any correspondence.

Company Name: Longhorn Army Ammunition Plant ATTN: SIOLH-OR
Site Name: Longhorn Army Ammunition Plant ATTN: SIOLH-OR
Site Location: Highway 134 & Spur 449, Karnack, TX
Contact: Mucklerath, Lynn

Region: 5
County: 102 Harrison
Title: Envir. Cordinator

Initial Registration Date: 04/12/1977
Last Amendment Date: 06/10/1999
Last Date NOR Computer update: 06/16/1999
Phone: 903-679-2047

Mailing Address: P.O. Box 658
Doyline, LA 71023-0658

Site Street Address: Highway 134 & Spur 449
Karnack, TX 75661

Reporting Method: STEERS

Registration Status: Active HW Permit #: 50195
Registration Type: Generator Transporter
Generator Type: Industrial
Transport Wst Class: H

Hazardous Waste Generation Status: Large Quantity Generator

Business Description: National Security

Primary SIC Code: 9711 National Security
Handler Status:

Operator Information
Name: United States Army, DOD
Phone: 318-459-5100
Address: PO Box 658
Doyline, LA, 71028-0658

Owner Information
Name: United States Army, DOD
Phone: 318-459-5100
Address: 658
Doyline, LA, 71028-0658

As of 06/10/1999 - the next unassigned sequence number for WASTES is 0126 and
the next unassigned sequence number for UNITS is 161.

Section 335, Chapter 31 of the Texas Adminstrative Code specifies the notification, record keeping, manifesting and reporting requirements for hazardous and industrial solid wastes.

00188735

30990 Longhorn Army Ammunition Plant ATTN: SIOLH-OR

Unit Number	Unit Type	Unit Status	Date of Status	Classes of Waste Managed in Unit Onsite / Offsite	Unit Permit Number	Unit # on Permit	Regulatory Status	Deed Recording Needed/Date

** 'Active' & 'Closure Pending' Units **

Description from Company: Bldg 49-W
Capacity: 72500.0000 Capacity Unit of Measure: G
System Types: 014 Other metals recovery for reuse
Biennial System Regulatory Status: Regulatory status unknown
Wastes Currently Managed in Unit:
Wastes Previously Managed in Unit:

0030303H	00383082	00393081	0040309H	00563032	00689012	01024891	01143031	113050	114210	150030
170260	171580	173240	177090	177530	179390	180400	182280	280590	370330	370360
370370	370520	370910	371290	900670	902700	903230	903270	904410	904730	905350
908210	909110	910140	910640	911150	911980	912030	912900	913250	913490	913860
916250	917260	917500	940470	942490	952620	970260	970503	971120	973080	974270
974530	974610	975930	976240	978030	978400	978850	980450	982810	984820	985710
985810	990005	990007	993051	993052	993092	993160				

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008 Contain Store Area Active 1 2 H/ NA NA 001 RCRA Permitted NA /

Description from Company: Bldg. 31-W
Capacity: 88000.0000 Capacity Unit of Measure: G
System Types: 141 Storage
Biennial System Regulatory Status: Regulatory status unknown
Wastes Currently Managed in Unit:

0001212H Richcoat B	0002103H Fixer Repl	0005110H Caustic Ch	0006219H Acetone/Co	0008203H Ethyl Alco	0009219H Water, Hal	00313011 Soil, petr	00383082 Drums that
00393081 Aerosol co	0040309H Batteries.	0064001H Lab pack.	00883111 Asbestos,	01016081 Untreated	01024891 Oil soaked	01113112 Transite s	01132191 Diesel. W
0116302H Contaminat	0121002H Lab Pack.						

Wastes Previously Managed in Unit:

0007219H	0010212H	0011212H	00121011	0013519H	00142101	00152031	00164971	00174961	0025106H	00262961
00281131	0029509H	0030303H	00334031	00344091	00354091	00364092	00374091	00412961	00422061	00433101
0044202H	0045203H	0047104H	0050203H	0051202H	0052202H	0053203H	0054203H	0055204H	0057212H	0058101H
0059101H	0060219H	0061201H	0062203H	0063219H	00704071	00713941	0072119H	00772191	00782191	00792191
0080105H	0081203H	0082209H	0083319H	00842121	00862191	00872121	0090204H	0091203H	0092202H	00932971
00942981	0095219H	00964032	00993191	01006961	0103203H	0105210H	01072091	0108319H	01093193	01122191
01143031	0115212H	0117609H	0118203H	0119203H	0120202H	101690	108320	110121	110450	110720
110910	113050	114210	114410	114950	149970	150030	150480	177090	177530	178160
179430	182280	184990	900050	900060	900070	900410	900670	901390	901690	902700
903230	903270	905350	905420	906810	908210	909110	910050	910060	910070	910110
910140	910450	910620	910640	910720	910750	910850	910870	910910	911150	911670
911980	912010	912030	912570	912850	912900	912920	913050	913180	913220	913230
913250	913260	913290	913490	913650	913700	913860	914380	914950	915010	915700
916250	917140	917180	917260	917340	917540	918670	919540	920010	920170	920180
940470	942490	951240	952620	970503	971120	973080	974270	974610	975930	976240
978030	978400	978850	980360	980450	982810	984220	984820	985810	990005	990007
993051	993052	993092	993102	993158	993160					

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009 Contain Store Area Closure Pending 04/20/94 / NA NA NA NA /

Description from Company: Bldg. 701
System Types: 141 Storage
Biennial System Regulatory Status: Regulatory status unknown
Wastes Currently Managed in Unit:
Wastes Previously Managed in Unit: 178160 179430

00188736

Index to NOR for Solid Waste Registration Number 30990 Longhorn Army Ammunition Plant ATTN: SIOLH-OR
for wastes and units

Wastes

00188737

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for wastes and units

Wastes

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for wastes and units

Wastes

Waste Code	Waste Description	NOR Page	Old Texas Waste Code
0092202H	Halogenated Solvents from chemical laboratory. Ch	26	
0093297 1	Transformer Oil from waste transformers. PCB Cont	26	
0094298 1	PCB Oil from PCB waste transformers emptied before	27	
0095219H	Vinyl Acetate Alcohol Resin. Binder in pyrotechni	27	
00964032	Cellulose Acetate Butyrate. Plasticizer for pyrot	27	
0097219H	Diethylene Glycol Dinitrate. Excess from cleanup	27	
0098219H	Triethylene Glycol dinitrate. Waste from process e	28	
0100696 1	Grease. Used or excess grease from garage. Waste	28	
0103203H	Pettman Cement. Excess for disposal from direct m	28	
0104315H	Ammonium Perchlorate. Excess for disposal. Waste	28	
0105210H	Cellulose Nitrate Binder. Dried out or excess for	29	
01063042	Magnesium Oxide Ash/Dust. Baghouse ash from the t	29	
01072091	Electrical motor varnish. Generated from rewindi	29	
01093193	Teflon, powdered, Out of specification particle si	29	
01122191	Triethylenetetramine. Excess or out of specificat	29	
01143031	Cage ash. Residue from deactivation of explosives	30	
0115212H	Lead Peroxide. Excess or out of spec. material.	30	
0118203H	Methanol/nitro-propane,& inorganics from DMNB synt	30	
0119203H	Heptane/Ethyl Acetate waste from CL-20 process. G	30	
0120202H	Methylene Chloride. Excess due to closure of faci	31	
0122319H	Solvent contaminated concrete debris from closure	31	
01233902	Concrete Debris. From demolition of sumps per sum	31	
0125301H	Generated in 1996. Clay removed from sumps during	31	
101690	PHOTOGRAPHIC DEVELOPER	32	
108320	ANTIFREEZE	32	
109680	GLUE WASTE, WATER BASE	32	
110121	POLYMER, LIQUID	32	
110450	OIL, WASTE	32	
110720	RESIN, EPOXY (WET)	32	
110910	ADHESIVE, LIQUID	32	
113050	ETHERS	32	
114210	ANTIOXIDANT	33	
114410	AROMATICS	33	
114950	RESIN, ORGANIC	33	
149970	PAINT SLUDGE, WATER BASE	33	
150030	GREASES	33	
150480	ORGANIC SLUDGES	33	
152430	SEWAGE SLUDGE	33	
170260	ASH, INCINERATOR	33	
171580	MAGNESIUM OXIDE DUST	34	
173240	SILICONE RUBBER	34	
177090	TITANIUM DIOXIDE	34	
177530	BORON COMPOUNDS, SOLIDS	34	
178160	PCB TRANSFORMER	34	
179390	ASBESTOS INSULATON	34	
179430	PCB CONTAMINATED SOLIDS	34	
180370	ASPHALT	34	
180400	RUBBER	35	
180610	WAX	35	
181450	EXPLOSIVES, CONTAMINATED AND EXPLOSIVE CONTAMINAT	35	
182280	INK, PASTE	35	

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Wastes

Waste Code	Waste Description	NOR Page	Old Texas Waste Code
182660	WOOD WITH TREATMENT CHEMICALS	35	
184990	ADHESIVE WASTE	35	
201560	WASTEWATER FROM ION-EXCHANGE UNIT RECHARGE	35	
212610	SILICATES	35	
270050	ALUMINUM SULFATE AL(SO4)3 ALUM	36	
275240	PHOSPHATES, INORGANIC	36	
279760	PLANT REFUSE, GENERAL MISC.	36	
280240	PAPER TRASH	36	
280590	CORRUGATE (CARDBOARD)	36	
340150	WATER TREATMENT SLUDGE	36	
370330	METAL, IRON SCRAP	36	
370360	METAL, BRASS SCRAP	36	
370370	COPPER SCRAP	37	
370510	CONSTRUCTION DEBRIS AND NON-COMBUSTIBLE WASTE	37	
370520	ALUMINUM SCRAP	37	
370910	METAL, BASE SCRAP	37	
371290	CONTAINERS, METAL (DRUMS, CANS, ETC.)	37	
380200	WOOD/LUMBER SCRAP	37	
900050	ACID, NITRIC (HNO3)	38	
900060	ACID, HYDROCHLORIC (HCL)	38	
900070	ACID, PHOSPHORIC (H3PO4)	38	
900410	OXIDIZING AGENT	38	
900670	ACID, MIXED	38	
901390	ACID, HYDROCHLORIC STEEL PICKLE SOLUTIO	39	
901690	PHOTOGRAPHIC DEVELOPER	39	
902700	TITANIUM TRICHLORIDE	39	
903230	LEAD CONTAMINATED WASTE, LIQUID	39	
903270	REACTIVE WASTES	39	
904410	POTASSIUM IODIDE/IODINE SOLUTION	40	
904730	BARIUM NITRATE	40	
905350	MERCURY CONTAMINATED LIQUID	40	
905420	SILVER NITRATE	40	
906810	ACID, ACETIC (GLACIAL)	40	
908210	CHROMIUM BEARING WASTE	41	
909110	DYE WASTE, ORGANIC	41	
909800	WASHWATER EQUIPMENT/SHOP WITH WATER, OIL, DIRT, SO	41	
910050	METHYL ETHYL KETONE	41	
910060	TOLUENE	41	
910070	HEXANE	42	
910110	PAINT THINNER	42	
910140	KEROSENE	42	
910450	OIL, WASTE	42	
910620	ALCOHOL, ISOPROPYL	43	
910640	ISOCYANATE WASTES	43	
910720	RESIN, EPOXY (WET)	43	
910750	ACID, ACETIC (HAC)	43	
910850	INK AND SOLVENTS, PRINTING	43	
910870	METHYLENE CHLORIDE	44	
910910	ADHESIVE, LIQUID	44	
911150	SOLVENTS, HALOGENATED	44	
911670	ETHYLENE DICHLORIDE	44	

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Wastes

Waste Code	Waste Description	NOR Page	Old Texas Waste Code
911980	OFF-SPEC LIQUIDS	44	
912010	FREON	45	
912030	VINYL CHLORIDE	45	
912570	DIETHYL PHTHALATE	45	
912850	GLYCOLS	45	
912900	DIESEL	45	
912920	CYCLOHEXANE	46	
913050	ETHERS	46	
913180	AMINES	46	
913220	BUTYL ACETATE	46	
913230	PHOTOGRAPHIC DEVELOPER	46	
913250	METHYL ACETATE	47	
913260	VINYL ACETATE	47	
913290	LACQUER, LIQUID	47	
913490	ACETATES	47	
913650	FORMALDEHYDE	47	
913700	RESIN WASTE, LIQUID	48	
913860	SOLVENTS, NON-HALOGENATED	48	
914380	MERCAPTANS	48	
914950	RESIN, ORGANIC	48	
915010	ANILINE	48	
915700	VARNISH	49	
916250	PEROXIDE, ORGANIC, LIQUID	49	
917140	TOLUENE DIISOCYANATE	49	
917180	ORGANICS, MISC.	49	
917260	CHEMICALS, AGRICULTURAL	49	
917340	ALCOHOL, STRAIGHT CHAIN	50	
917500	HEXACHLOROBENZENE	50	
917540	COBALT NAPHTHANATE	50	
918670	ACETIC ANHYDRIDE	50	
919540	TRIETHYLENE TETRAAMINE	50	
920010	CHLORINE	51	
920170	HYDROGEN	51	
920180	OXYGEN	51	
940470	SLUDGE, BRINE	51	
942490	NITRATE WASTE	51	
951240	DIMETHYL FORMAMIDE	51	
951270	WASTEWATER TREATMENT SLUDGE FROM EXPLOSIVES	52	
952620	SLUDGE, CELLULOSE	52	
970260	ASH, INCINERATOR	52	
970503	MOLYBDENUM COMPOUNDS	52	
971120	LEAD WASTE	52	
973080	SILVER CONTAINING SOLID	53	
974270	SODIUM NITRATE	53	
974530	CALCIUM CHROMATE	53	
974610	BATTERIES, ACID-FILLED	53	
975930	CHROMIUM CONTAMINATED MATERIAL	53	
976240	POTASSIUM CHROMATE, SOLID	54	
978030	SOIL, LEAD CONTAMINATED	54	
978400	LAB-PACKS	54	
978850	MERCURY CONTAMINATED SOLID	54	

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Wastes

Units

ARK-LA-TEX SURVEYING CO., INC.
P.O. Box 910 • 315 N. Alamo Blvd. • Marshall, Texas 75671 • 903/938-9939 • FAX 903/938-0601

FIELD NOTES
Container Storage Area 31-W

All that certain lot, tract, or parcel of land situated in Harrison County, Texas, about 16 miles Northeast of the Courthouse in the City of Marshall, being 0.634 acre of land, a part of the JAMES C. HAWLEY SURVEY, A –324, and a part of the GEORGE W. LEWIS SURVEY, A – 426, and being a part of that certain called 2887.6 acre tract described in deed from T.J. Taylor to the United States of America, dated August 5, 1942, and recorded in Volume 249, Page 415 of the Harrison County Deed Records, said 0.634 acres being more particularly described as follows:

Beginning at a ½" iron rod with surveyor's cap set for corner having State Plane Coordinates of North = 6956866.62 and East = 3308796.67, said rod bears North 45 deg 58'07" West, 412.68 feet from Corps of Engineers Concrete Monument "C-21" ;

Thence North 39 deg 28'26" West - 260.60 feet to a ½" iron rod with surveyor's cap set for corner;

Thence North 53 deg 41'56" East - 108.26 feet to a ½" iron rod with surveyor's cap set for corner;

Thence South 38 deg 39'38" East - 258.89 feet to a ½" iron rod with surveyor's cap set for corner;

Thence South 52 deg 51'26" West - 104.51 feet to the place of beginning and containing 0.634 acre of land.
Bearing Basis: Bearings and coordinates are based on NAD 83, Texas North Central Zone.

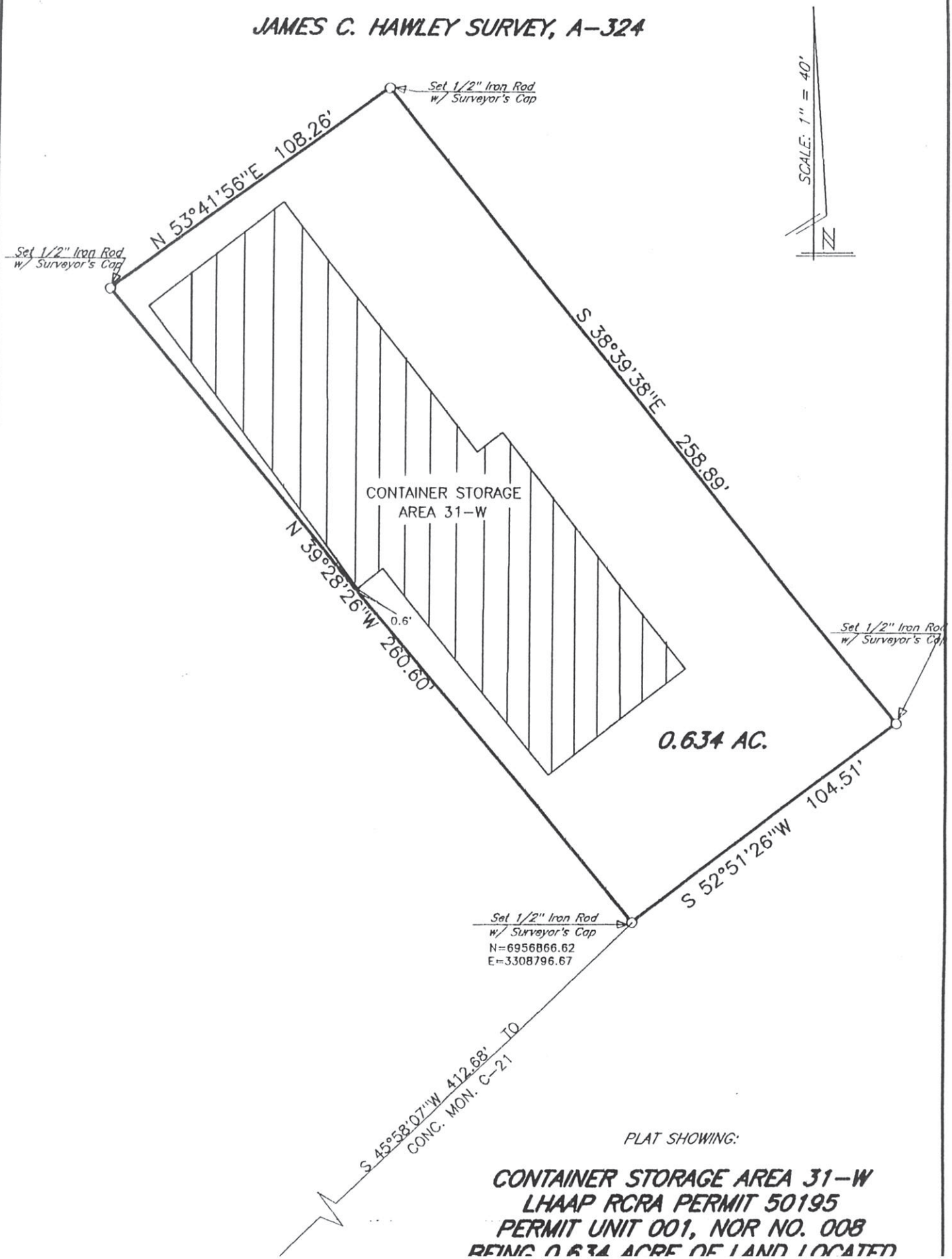
Surveyed: August 25, 1999

Mark H. Catheal, R.P.L.S. #4528

Job #17206a.

HARRISON COUNTY, TEXAS

JAMES C. HAWLEY SURVEY, A-324



PLAT SHOWING:

CONTAINER STORAGE AREA 31-W
LHAAP RCRA PERMIT 50195
PERMIT UNIT 001, NOR NO. 008
BEING 0.634 ACRE OF LAND LOCATED

LHAAP SOIL BACKGROUND

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121-0061

REPLY TO
ATTENTION OF:

CESWT-PP-EA

25 May 1995

MEMORANDUM FOR Commander, Longhorn Army Ammunition Plant,
ATTN: SMCLO-EV (Mr. David Tolbert),
Marshall, TX 75670

SUBJECT: Final Soil Background Concentration Report for Longhorn Army Ammunition Plant, Marshall, Texas

1. Enclosed are two copies of the Final Soil Background Concentration Report for Longhorn Army Ammunition Plant, Marshall, Texas.

2. Please refer any questions to the Tulsa District, U.S. Army Corps of Engineers Project Manager, Ms. Jonna Polk at 918-669-7480.

Encls

JOHN R. WAGNER
Lead Project Manager
Army Team

4.0 RISK ASSESSMENT BACKGROUND VALUES

The background values contained in this section are those to be used for risk assessment evaluations. The results are divided into two tables. Table 4.1 presents the results for surface samples and Table 4.2 presents the results for subsurface samples. As stated in Section 2.3, surface samples were collected from the interval from ground surface to six inches below ground surface.

The categories of data that are presented in the following two tables are detailed below. The intent of presenting the data in these tables is to provide values that will be useful when comparing site derived samples to background values. The categories presented are:

Sample Population/Number of Detections/Number of Detections Above SQL: The sample population indicates the number of samples that taken from the particular interval (surface or subsurface). The number of detections indicates the number of sample analytical results for the given analyte that had quantified results. The number of detections above SQL represents the number of quantified analytical results that were above sample quantitation limit (SQL).

SQL: This column lists the sample quantitation limit (SQL) in units of mg/kg for the majority of the given analyte. The SQL may vary for a given analyte depending on any variations, such as dilution, that may be required in the analysis of that sample. Out of the 46 samples that were analyzed for the 21 metals, less than 2 adjustments per metal were required with no analytical result of an adjusted procedure being less than the adjusted SQL.

Range of Detections: Presented in these two columns are the minimum and maximum detected (quantified) values for the given analyte. If an outlier was identified for a data set, the maximum value ignored the outlier value with the next largest value presented. A superscripted asterisk(*) indicates situations where

outliers were identified. For a more detailed description of the outlier identification the narative at the end of Appendix F may be consulted. The minimum value does not tak into consideration substitutions for non-quantified values which are less than the SQL.

Mean and Standard Deviation: These two values were calculated on the data set using the methods for dealing with non-detect values listed in Section 3.1.2. The mean and standard deviation represent the arithmetic mean and standard deviation of the data set. Prior to calculating the mean and standard deviation, the outlier values, if any, were omitted.

Distribution type: This column indicates the distribution type that was identified for the analyte data set using the Shapiro-Wilk statistic. A footnote reference symbol was placed in this column if an insufficient number of quantified points were available to calculate a distribution type.

UCL: The upper confidence limit (UCL) was calculated on the mean and standard deviation (log transformed or non transformed, adjusted or unadjusted). If insufficient quantified values below the SQL were available, the UCL was calculated as one-half of the SQL. As stated in Section 3.1.4, four metals - antimony, cadmium, mercury, and selenium- had no quantified results. Three metals - arsenic, silver and thallium - had five or less quantified results in surface and subsurface samples. As mentioned in Section 3.1.4, five or less quantified samples are too few to reliably use the line fitting regression method for the calculation of an estimated mean and standard deviation. For those metals, the UCL was assigned a value of one-half the SQL.

Table 4-1 - Summary Statistics Of Surface Sample Population To Be Used For Risk Assessment Evaluations.

Metal	Sample Population/ Number of Detections/ Number of Detections Above SQL	SQL (mg/kg)	Range of Detections (mg/kg) Minimum	Maximum	Mean (mg/kg)	Standard Deviation	Distribution Type N=Normal L=Lognormal	UCL (mg/kg)
Aluminum	15/ 15 /15	100	1270	20700	6218	5375	L	9881
Antimony	15/ 0 / 0	15	----	----	----	----	♦	7.5
Arsenic	15/ 3 / 3	1	2.3	29.7	15.2	13.8	♦	7.0†
Barium	15/ 15 / 15	1	35.1	287	107.3	80	L	161.8
Cadmium	15/ 0 / 0	2.5	----	----	----	----	♦	1.25
Calcium	15/ 15 / 15	50	124	1090*	459	283.6	L	675
Chromium	15/ 15 / 15	2.5	3.2	22.8	11.7	6.1	L	16.7
Cobalt	15/ 15 / 13	2.5	1.5	19.1	6.8	5.1	L	10.8
Copper	15/ 15 / 11	2.5	0.88	6.7	2.4	1.7	L	3.5
Iron	15/ 15 / 15	5	2450	31000	10515	8311	L	17300
Lead	15/ 14 / 14	1	2.6	17.4*	6.8	4.5	L	14.6
Magnesium	15/ 15 / 15	50	68.4	474*	219	103.7	L	302
Manganese	15/ 15 / 15	2.5	10.9	2330	818.1	770.6	L	4646
Mercury	15/ 0 /0	0.5	----	----	----	----	♦	0.25
Nickel	15/ 15 / 15	4.0	1.5	6.3*	3.9	1.3	L	4.8
Potassium	15/ 15 / 15	50.0	133	481*	247.9	113.8	L	313
Selenium	15/ 0 / 0	1	----	----	----	----	♦	0.5
Silver	15/ 1 / 0	2.5	2.3	2.3	2.3	----	♦	1.3
Strontium	15/ 15 / 14	2.5	2.3	13.3*	5.7	3.0	L	7.8
Thallium	15/ 1 / 0	15	14.1	14.1	14.1	---	♦	7.5
Zinc	15/ 15 / 15	2.5	3.4	16.2	8.4	3.9	L	10.7

† See note on page 30.
♦ Indicates metals with insufficient quantified values to calculate distribution probability values.
* Indicates data sets with outlier values omitted.

Table 4-2 - Summary Statistics Of Subsurface Sample Population To Be Used For Risk Assessment Evaluations.

Metal	Sample Population/ Number of Detections/ Number of Detections Above SQL	SQL (mg/kg)	Range of Detections (mg/kg) Minimum	Maximum	Mean (mg/kg)	Standard Deviation	Distribution Type N=Normal L=Lognormal	UCL (mg/kg)
Aluminum	31/31/31	100	1830	23900	9959.7	4969.1	L	12627
Antimony	31/0/0	15.0	----	----	----	----	♦	7.5
Arsenic	31/5/5	1.0	1.7	36.8	13.0	14.5	♦	7.0†
Barium	31/31/31	1.0	22.0	138*	57.6	25.0	L	68.7
Cadmium	31/0/0	2.5	----	----	----	----	♦	1.25
Calcium	31/31/31	50.0	81.9	2740	716.8	652.2	L	1147
Chromium	31/31/31	2.5	3.9	26.2*	12.3	5.4	L	14.5
Cobalt	31/31/21	2.5	0.8	12.5*	4.5	3.0	L	5.9
Copper	31/31/24	2.5	1.4	10.7*	4.3	2.5	L	5.3
Iron	31/31/31	5.0	2890	42300	15979	8650	L	20198
Lead	31/30/30	1.0	1.0	13.0	4.7	3.3	L	6.3
Magnesium	31/31/31	50.0	116	2240*	1042	575	L	1467
Manganese	31/31/31	2.5	9.1	376*	82.2	94.0	L	140
Mercury	31/0/0	0.5	----	----	----	----	♦	0.25
Nickel	31/31/23	4.0	2.23	19.1*	7.0	4.3	L	8.6
Potassium	31/31/31	50.0	162	887	497.8	217.3	L	589
Selenium	31/0/0	1.0	----	----	----	----	♦	0.5
Silver	31/1/0	2.5	1.6	1.6	1.6	----	♦	1.25
Strontium	31/31/29	2.5	2.1	39.1*	17.7	10.6	L	24.9
Thallium	31/2/0	15.0	9.6	10.6	10.1	0.71	♦	7.5
Zinc	31/31/31	2.5	5.4	84.5	22.3	20	L	28.4

♦ Indicates metals with insufficient quantified values to calculate distribution probability values.
* Indicates data sets with outlier value(s) omitted.
† See the comment on page 30.

5.0 SUPPLEMENTAL SOIL BACKGROUND VALUES

This section contains a compilation of values that can be used for the comparison of specific site-derived soil samples to background values for LHAAP. These values may be used as a reference for future studies in which the comparison to background is needed to determine potential impact of plant operations. The majority of information presented in this section will have been presented in the previous section but is repeated in this section to serve as a reference for other investigations.

The categories of data that are presented in the following two tables are detailed below. The intent of presenting the data in these tables is to provide values that will be useful when comparing site derived samples to background values. The categories presented are:

Sample Population/Number of Detections/Number of Detections Above SQL: The sample population indicates the number of samples that taken from the particular interval (surface or subsurface). The number of detections indicates the number of sample analytical results for the given analyte that had quantified results. The number of detections above SQL represents the number of quantified analytical results that were above sample quantitation limit (SQL).

SQL: This column lists the sample quantitation limit (SQL) in units of mg/kg for the majority of the given analyte. The SQL may vary for a given analyte depending on any variations, such as dilution, that may be required in the analysis of that sample. Out of the 46 samples that were analyzed for the 21 metals, less than 2 adjustments per metal were required with no analytical result of an adjusted procedure being less than the adjusted SQL.

Maximum Concentration Detected: The maximum detected (non-outlier) value for each metal is presented in this column. If an outlier was identified for a data set, the maximum value ignored the outlier value and presents the next largest value.

Mean and Standard Deviation: These two values were calculated on the data set using the methods for dealing with non-detect values listed in Section 3.1.2. The mean and standard deviation represent the arithmetic mean and standard deviation of the data set. Prior to calculating the mean and standard deviation, the outlier values, if any, were omitted.

Distribution type: This column indicates the distribution type that was identified for the analyte data set using the Shapiro-Wilk statistic. A footnote reference symbol was placed in this column if an insufficient number of quantified points were available to calculate a distribution type.

UCL: The upper confidence limit (UCL) was calculated on the mean and standard deviation (log transformed or non transformed, adjusted or unadjusted). If insufficient quantified values below the SQL were available, the UCL was calculated as one-half of the SQL. As stated in Section 3.1.4, four metals - antimony, cadmium, mercury, and selenium- had no quantified results. Three metals - arsenic, silver and thallium - had five or less quantified results in surface and subsurface samples. As mentioned in Section 3.1.4, five or less quantified samples are too few to reliably use a line fitting regression method for the calculation of an estimated mean and standard deviation. For those metals, the UCL was assigned a value of one-half the SQL.

UTL: For normal or lognormal distributions, the upper tolerance limit (UTL) was calculated. If insufficient quantified points were available to determine the distribution or the distribution was determined to be neither normal or lognormal, the non-parametric UTL was utilized.

Table 5-1 - Summary Statistics Of Surface Sample Population

Metal	Sample Population/ Number of Detections/ Number of Detections Above SQL	SQL (mg/kg)	Maximum Detected Concentra-tion (mg/kg)	Mean (mg/kg)	Standard Deviation	Distribution Type N=Normal L=Lognormal	UCL (mg/kg)	UTL (mg/kg)
Aluminum	15/ 15 /15	100	20700	6218	5375	L	9881	31,387
Antimony	15/ 0 / 0	15	----	----	----	♦	7.5	15
Arsenic	15/ 3 / 3	1	29.7	15.2	13.8	♦	7.0†	†
Barium	15/ 15 / 15	1	287	107.3	80	L	162	482
Cadmium	15/ 0 / 0	2.5	----	----	----	♦	1.3	2.5
Calcium	15/ 15 / 15	50	1090*	459	283.6	L	675	1883
Chromium	15/ 15 / 15	2.5	22.8	11.7	6.1	L	17	45
Cobalt	15/ 15 / 13	2.5	19.1	6.8	5.1	L	11	34
Copper	15/ 15 / 11	2.5	6.7	2.4	1.7	L	3.5	9.6
Iron	15/ 15 / 15	5	31000	10515	8311	L	17300	55766
Lead	15/ 14 / 14	1	17.4*	6.8	4.5	L	15	52
Magnesium	15/ 15 / 15	50	474*	219	103.7	L	302	739
Manganese	15/ 15 / 15	2.5	2330	818.1	770.6	L	4646	17272
Mercury	15/ 0 /0	0.5	----	----	----	♦	0.3	0.5
Nickel	15/ 15 / 15	4	6.3*	3.9	1.3	L	4.8	9.4
Potassium	15/ 15 / 15	50	481*	247.9	113.8	L	313	674
Selenium	15/ 0 / 0	1	----	----	----	♦	0.5	1.0
Silver	15/ 1 / 0	2.5	2.3	2.3	----	♦	1.3	2.5
Strontium	15/ 15 / 14	2.5	13.3*	5.7	3.0	L	7.8	19.2
Thallium	15/ 1 / 0	15	14.1	14.1	---	♦	7.5	15
Zinc	15/ 15 / 15	2.5	16.2	8.4	3.9	L	11	24

♦ Indicates metals with insufficient quantified values to calculate distribution probability values.
* Indicates outlier value(s) have been omitted.
† See comment on page 30.

Table 5-2 - Summary Statistics Of Subsurface Sample Population

Metal	Sample Population/ Number of Detections/ Number of Detections Above SQL	SQL (mg/kg)	Maximum Detected Concentration (mg/kg)	Mean (mg/kg)	Standard Deviation	Distribution Type N=Normal L=Lognormal	UCL (mg/kg)	UTL (mg/kg)
Aluminum	31/31/31	100	23900	9959.7	4969.1	L	12627	31,072
Antimony	31/0/0	15	----	----	----	♦	7.5	15
Arsenic	31/5/5	1	36.8	13	14.5	♦	7.0†	†
Barium	31/31/31	1	138*	57.6	30.0	L	68.7	151
Cadmium	31/0/0	2.5	----	----	----	♦	1.3	2.5
Calcium	31/31/31	50	2740	716.8	652.2	L	1147	3987
Chromium	31/31/31	2.5	26.2*	12.3	5.4	L	14.5	30.6
Cobalt	31/31/21	2.5	12.5*	4.5	3.0	L	5.9	16.2
Copper	31/31/24	2.5	10.7*	4.3	2.5	L	5.3	13.0
Iron	31/31/31	5	42300	15979	8650	L	20198	50,073
Lead	31/30/30	1	13	4.7	3.3	L	6.3	19.6
Magnesium	31/31/31	50	2240*	1042	575	L	1467	4186
Manganese	31/31/31	2.5	376*	82.2	94.0	L	140	513
Mercury	31/0/0	0.5	----	----	----	♦	0.3	0.5
Nickel	31/31/23	4	19.1*	7.0	4.3	L	8.6	20.5
Potassium	31/31/31	50	887	497.8	217.3	L	589	1252
Selenium	31/0/0	1	----	----	----	♦	0.5	1.0
Silver	31/1/0	2.5	1.6	1.6	----	♦	1.3	2.5
Strontium	31/31/29	2.5	39.1*	17.7	10.6	L	25	75
Thallium	31/2/0	15	10.6	10.1	0.71	♦	7.5	15
Zinc	31/31/31	2.5	84.5	22.3	20	L	28	80

♦ Indicates metals with insufficient quantified values to calculate distribution probability values.
* Indicates outlier values have been omitted from background calculation.
† See comment on page 30.

Comment: Problems were encountered in the analyses of background samples for arsenic. Recoveries were judged to be low as evidenced by the excessive number of results which were below the detection limit of 1 mg/kg. Studies performed in East Texas indicate that a value above that limit are normally expected as background. Two such studies were published as the *Interim Technical Memorandum: Determination of the Background Distribution for Arsenic in Surficial Soils at the Hi-Yield State Superfund Site, Commerce, Texas*; prepared for Texas Natural Resource Conservation Commission, October 1994 and *A Comprehensive Study of Texas Watersheds and Their Impacts on Water Quality and Water Quantity* published by the Texas State Soil and Water Conservation Board, Temple, Texas, January 1991.

Mr. Michael Moore of the Pollution Cleanup Division, Texas Natural Resource Conservation Commission in comments received May 2, 1995 recommended the usage of a value of 7 mg/kg as a upper limit for background concentrations of arsenic. That comment letter, cover letter and responses are included at the end of Appendix C. For this study, the value of 7 mg/kg will be used as the background reference value (UCL).

6.0 REFERENCES

1 U.S. Environmental Protection Agency, Guidance for Data Useability in Risk Assessment (Part A), Publication 9285.7-09A, Washington, D.C., July 1992.

2 U.S. Environmental Protection Agency, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities. Interim Final Guidance, Washington, D.C., April 1989.

3 U.S. Environmental Protection Agency, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities. Addendum to Interim Final Guidance, Washington, D.C., July 1992.

4 Gilbert, R.O., Statistical Methods For Environmental Pollution Monitoring, Van Nostrand Reinhold Company, New York, 1987.

5 U.S. Environmental Protection Agency, Supplemental Guidance to RAGS: Calculating the Concentration Term, Publication 9285.7-081, Washington, D.C., May 1992.

6 Gilliom, R.J. and Helsel, D.R., Estimation of Distributional Parameters for Censored Trace Level Water Quality Data 1. Estimation Techniques, Water Resources Research, **22**:2, February, 1988, pp 135-146.

7 U.S. Environmental Protection Agency memorandum, Ghassan Koury, author, Statistical Evaluation of Background Groundwater at Longhorn Army Ammunition Plant, December 21, 1994.

LHAAP GROUNDWATER BACKGROUND

LONGHORN ARMY AMMUNITION PLANT

FINAL SUMMARY REPORT

GROUNDWATER BACKGROUND CONCENTRATION REPORT

Prepared For:
Longhorn Army Ammunition Plant
Karnack, Texas

Prepared By:
U.S. Army Corps of Engineers
Tulsa District

JUNE 1995

4.0 CALCULATIONS OF BACKGROUND CONCENTRATIONS

4.1 Summary Statistics for Parameters and Chemicals Sampled

Table 4-1 summarizes the analytical data collected for the determination of the facility-wide background values and concentrations. The calculated upper tolerance limit (UTL) and upper confidence limit (UCL) are included. A description of the contents of each column is provided below.

No. of Samples: This column contains the total number of analyses reported for the applicable analyte or parameter.

No. of Values Above Detection Limit: This column contains the total number of analyses that were reported to be above the detection limit (SQL for analyses performed September/October 1994 and January 1995) for the given analysis. This number includes all analyses above the detection limit including any possible outliers.

No. of Outliers [Outlier Value(s)]: The number of outliers that were identified using the calculation described in Section 3.1.3 are listed in this column. Additionally, the values of the identified outliers are listed in parentheses.

Mean and Standard Deviation: These descriptive statistics were calculated upon the analytical values reported above the applicable detection limit after the outliers had been excluded. Since the results which were less than the detection limit(s) are not considered in these calculations resulting in means which are biased toward the values greater than or equal to the detection limits, these values should not necessarily be considered to represent the sample population.

Maximum Detected Value: Provided in this column are the maximum values that reported for each analyte or parameter. Values that were designated to be outliers were omitted prior to determining the maximum detected value. Therefore, these values are the maximum values that are included in the calculation of the listed means

and standard deviations.

Minimum Detected Value: The smallest reported value for each analyte or parameter is listed in this column. These values will be equal to or larger than the detection limit or SQL used for the particular analysis. Analytical results may have been reported as less than the applicable detection limit or SQL. Those results are assumed to be less than the detection limit or SQL but were not quantified.

Detection Limit(s): The detection limit or limits used for the analyses evaluated for this report are listed in this column to provide a reference of the limits (SQLs) applied to these evaluations.

MCL or *SMCL*: As a reference to compare the calculated background value, the maximum contaminant level or the secondary maximum contaminant level is provided for each constituents with values published in *Drinking Water Regulations and Health Advisories, Office of Water, U.S. Environmental Protection Agency, November 1994.* Underlined values are MCL values.

UTL: Provided in this column is the calculated Upper Tolerance Limit (UTL). The discussion of the rationale of the calculation of the UTL for each constituent is provided in Appendix D.

UCL: Provided in this column is the calculated Upper Confidence Limit (UTL). The discussion of the rationale of the calculation of the UCL for each constituent is provided in Appendix D.

Table 4-1 Groundwater Summary Statistics and Background Values*

	No. of Samples	No. of Values Above Detection Limit	No. of Outliers [Outlier Value(s)]	Mean	Standard Deviation	Maximum Detected Value	Minimum Detected Value	Detection Limit(s)	MCL or *SMCL*	UTL	UCL
Water Quality Parameters											
pH	38	38	1 (10.8)	6.3	0.373	6.8	5.2		*6.5-8.5*	6.4	6.8
Specific Conductivity (umhos/cm)	38	38	0	3185	2673	8140	47		---	8140	3917
Anions (mg/L)											
Chloride	35	35	0	710	470	1416	10.2	1	*250*	1416	845
Nitrate/ nitrite	36	22	3 (1.7, 2.4, 10.5)	0.076	0.0462	0.18	0.03	0.01/0.5	10	0.27	0.06
Sulfate	35	33	0	893	825	3475	3	1.0 / 2.0	*250*	3475	1079
Metals (mg/L)											
Aluminum	38	38	4 (32.1, 47.0, 81.0, 90.0)	4.59	3.7	13.4	0.3	0.1/ 0.01/ 0.005	*0.05-0.2*	28.4	8.0
Antimony	5	0	0	---	---	---	---	0.1	0.006	0.05	0.1
Arsenic	38	12	0	0.011	0.005	0.022	0.0036	0.05/ 0.002/ 0.005	0.05	0.03	0.01
Barium	38	38	0	0.44	0.5	1.99	0.02	0.01/ 0.02	2.0	3.3	0.9
Cadmium	38	19	0	0.026	0.014	0.055	0.01	0.01	0.005	0.09	0.018
Calcium	10	10	0	139	116	320	6.8	0.1	---	478	207
Chromium	38	25	1 (0.29)	0.035	0.029	0.11	0.01	0.02/ 0.05	0.1	0.16	0.03
Cobalt	10	4	0	0.029	0.018	0.053	0.012	0.01/ 0.05	---	0.39	0.03
Copper	10	4	0	0.026	0.013	0.043	0.012	0.01	*1.0*	0.20	0.02
Iron	38	38	1 (160)	20.35	20.1	68	0.85	0.05/ 0.1	*0.3*	148	39

Table 4-1 Groundwater Summary Statistics and Background Values*

	No. of Samples	No. of Values Above Detection Limit	No. of Outliers [Outlier Value(s)]	Mean	Standard Deviation	Maximum Detected Value	Minimum Detected Value	Detection Limit(s)	MCL or *SMCL*	UTL	UCL
Lead	38	23	0	0.155	0.091	0.3	0.003	0.002/ 0.005/ 0.1	---	2.31	0.29
Magnesium	38	38	0	124.5	88.7	277	5.07	0.01/ 0.5	---	277	149
Manganese	38	38	0	3.9	2.78	11.8	0.21	0.01/ 0.02	*0.05*	11.8	4.6
Mercury	38	3	0	0.001	0	0.001	0.01	0.001	0.002	0.001	0.0005
Nickel	10	9	0	0.039	0.017	0.06	0.02	0.01	0.1	0.09	0.05
Potassium	5	5	1 (92.7)	4.45	0.968	5.5	3.2	0.2	---	9.4	5.6
Selenium	38	3	0	0.08	0.06	0.14	0.02	0.005/ 0.02	0.05	0.005	0.003
Silver	38	8	0	0.017	0.007	0.03	0.01	0.005/ 0.01	*0.1*	0.03	0.01
Sodium	33	33	0	563	455	1470	13.6	1.0	---	1470	697
Strontium	10	10	0	3.1	2.37	6.15	0.18	0.01	---	10.0	4.5
Thallium	10	0	0	---	---	---	---	0.1	0.002	0.1	0.05
Zinc	10	6	0	0.09	0.08	0.23	0.025	0.015/ 0.05	*5*	1.62	0.14

* Data to be used as guidelines to determine possible impact.

5.0 CONCLUSION

The Wilcox Group is a highly variable strata consisting of interbedded sandstones, siltstones, and shales. Background calculations for two water quality parameters, three anions, and twenty-two metals were calculated for groundwater, despite the naturally occurring variability of the groundwater quality across LHAAP. This data is intended to be used as a guideline to determine the impact that reported or suspected site activities and/or production operations may have had on groundwater in an area or areas under investigations at LHAAP. As additional information is obtained through the course of investigations, background concentrations may be reevaluated, therefore, allowing for the proper identification and delineation of any release of metals and/or anions associated with reported or suspected site activities and or production operations.

ADDENDUM ONE

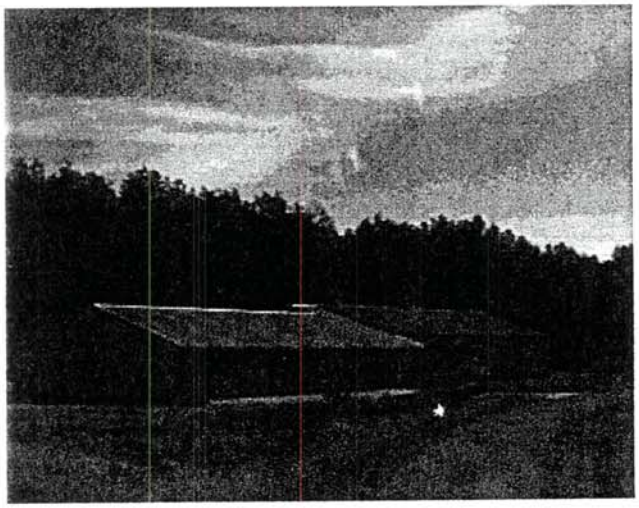
CLOSURE REPORT

HAZARDOUS WASTE STORAGE AREA 31-W

RCRA PERMITTED UNIT NO. 001

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TX

JANUARY 1999



Permitted Hazardous Waste
Container Storage Area 31-W

INTRODUCTION

Decontamination and closure of permitted storage area 31-W was performed on July 28, 1998. This information gathered from the closure process is documented in a closure report entitled "Closure Report Hazardous Waste Storage Area 31-W, December 1998". Results of verification sampling of decontamination water and soils from around the unit during closure revealed the following:

1) ***Decontamination of Container Storage Area 31-W*** – Storage Area 31-W does not meet the decontamination goals of the LHAAP RCRA permit or the closure plan. Storage area 31-W needs to be decontaminated again and the rinsewater analyzed for chromium, volatiles, and semi-volatiles.

2) ***Soil Contamination (Volatiles)*** – Acetone, methylene chloride and various other volatiles were detected in the soil and the same volatiles were detected in all of the method blanks in the laboratory. It appears that all of the contamination in the soils is from contamination at the laboratory, and not actual contamination in the soil. Verification sampling should be performed in order to establish whether there is actually contamination from volatiles in the soil at the container storage area 31-W.

3) ***Soil Contamination (Metals)*** – Levels of barium, cadmium and lead are above plant background levels for total metals. Leachate from all of the soil samples that exceeded soil background for total metals was below plant groundwater background levels. Levels meet TNRCC RRS 2 standards. Deed recording of the area will be required.

Due to detections of the hazardous constituents in the rinsewater samples and laboratory error analyzing the volatiles in the soil, the storage area was re-decontaminated and the soil sampled again. This work took place on December 3, 1998.

2.0 DATA QUALITY

The following procedures were followed in order to ensure that data from sampling is of acceptable quality.

2.1 Quality Assurance Samples

Approximately 10% of the field samples were split for QC samples. The field sample, 31-W-12-S was split into two parts. Samples collected for VOCs were not homogenized but were obtained by alternately filling the VOC sample containers until all containers required were full. The field sample and its duplicate were submitted to Chemron Inc. Analysis of the QC duplicate provides a measure of sample homogeneity.

2.2 Matrix Spike/Matrix Spike Duplicate Samples.

One matrix spike and matrix spike duplicate (MS/MSD) were collected for approximately 5% of the samples taken. MS/MSD's are samples of the environmental media that are spiked in the laboratory with a known concentration of a target analyte(s) to verify percent recoveries. They are primarily used to check sample matrix interference's and the precision of a given sample matrix. A MS/MSD is analyzed with every batch of samples; however, it is selected randomly by the laboratory and may not be from the same group of samples as those submitted for a particular project. The results for MS/MSD's are included in the lab report provided with the laboratory results.

2.3 Trip Blank Results

One trip blank was collected from deionized water and placed into the ice-chest with the samples for shipment to the laboratory. No volatiles were detected in the trip blank sample.

2.4 Discussion of Quality Assurance Sample Results

No volatiles were detected in the method blank results for the trip blank analysis.

No contaminants were detected in the method blank results for the rinsewater analysis.

No contaminants were detected in the method blank results for the soil analysis.

It appears that there has been no cross contamination of the rinsewater or soil samples due to laboratory cross contamination.

3.0 DECONTAMINATION OF CONTAINER STORAGE AREA 31-W

The slab was washed down with Alconox and water. The building slab was then rinsed with potable water from a pressure sprayer. This water was collected into drums. Rinsewater from the decontamination procedure was collected and analyzed for all constituents of concern to verify decontamination of storage area 31-W. Potable water was sampled and analyzed for the same constituents as the decontamination water. Decontamination water analysis was then compared with the LHAAP groundwater background and MCL's to accurately assess if the building was completely decontaminated. This action was performed in accordance with Provision IV.B.4 of the Longhorn RCRA permit 50195 and the supplemental closure plan. Decontamination of the storage area took place on December 3, 1998.

3.1 Disposition of Waste Streams

All washwater and rinsewater collected from the decontamination of the container storage area 31-W was classified in accordance with 40 CFR part 261 and 30 TAC Subchapter R. Neither the washwater nor the rinsewater met the conditions to be classified at a hazardous or class 1 non-hazardous waste. The washwater and the rinsewater were both classified as a class II non-hazardous wastewater. Anderson Columbia Environmental disposed of this water as required in their contract.

3.2 Discussion of Decontamination Results

Table 3-1 lists the rinsewater sample analysis results. Only the metals and other detected constituents are listed in the table. Chemical constituents analyzed for and below the method detection limit are not listed in the table. The constituents detected in the rinsewater were compared to the Longhorn AAP Groundwater background and EPA drinking water Maximum Contaminant Limits (MCL) in order to verify if the permitted storage area was decontaminated properly.

TABLE 3-1
DECONTAMINATION WATER ANALYSIS RESULTS

Parameter	EPA Test Method	Detection Limit	Units	Drinking Water MCL's	LHAAP Groundwater Background Sampled: 12/03/98	RinseWater Analysis Results Sampled: 12/02/98/98
Metals						
Chromium	3005/6010B	.01	MG/L	0.005	0.018	<0.01
Volatiles						
None Detected			Ug/L		ND	ND
Semi-Volatiles						
Benzoic Acid	8270C	20	Ug/L	NR	ND	130
Bis(2-ethylhexyl)phthalate	8270C	10	Ug/L	NR	ND	133
Diethyl phthalate	8270C	10	Ug/L	NR	ND	12.2
Di-methylphthalate	8270C	10	Ug/L	NR	ND	37.5

ND: Not Detected
NR: Not Regulated

Looking at the rinsewater analysis results we find that several constituents have been detected in the water. Strictly comparing the rinsewater to potable water and the MCL's, we find that concentrations of metals and volatiles are below plant groundwater background. As indicated in table 3-1, some semi-volatiles exceed plant groundwater background with the exception of benzoic acid. Benzoic acid is naturally occurring in berries and bird droppings.

4.0 INVESTIGATION OF SOILS

Soil samples were collected after decontamination of the storage area and in accordance with the approved closure plan. The soil samples were collected on December 3, 1998.

Soil sampling was performed in order to determine if the soils at storage area 31-W were impacted from waste storage during past use. Due to laboratory contamination of the samples during the first sampling event, LHAAP was unable to determine if volatiles were present in the soil or from laboratory cross-contamination. Investigation for impact of soils from waste storage during the December 3, 1998 sampling event included volatiles and semi-volatiles. No other waste constituents were detected during the first sampling event in July 1998.

Each sample was collected in accordance with SW-846. Quality of the samples and analysis was ensured by the collection of a quality assurance/quality control (QA/QC) sample. Sample twelve was collected and split in duplicate as a QA/QC sample.

An equipment blank for the soil samples was also collected. The sample consisted of ASTM Type II water which was poured over the soil auger and stainless steel bowl. The equipment blank was handled in the same manner as the water samples and was shipped in the same ice chest as the other samples from the site.

Soil samples were collected using a stainless steel auger. The auger was decontaminated between collection of each sample to prevent cross contamination. Sample containers were sealed and placed into an ice chest on ice for shipment to the laboratory. Samples were shipped utilizing a chain-of-custody. No compositing of the soil samples was performed.

4.1 Soil Sample Locations

Twelve soil samples were collected from the perimeter of the permitted storage area. Each soil sample was collected adjacent to the location where the soil samples were collected during the first sampling event in July 1998. Soil samples were numbered the same with the except the soil samples collected during the December, 1998 sampling event had an "s" added to the sample number.

4.2 Discussion of Metals Analysis Results

Soil sample results from the July sampling event had the analytes barium and lead in sample 31-W-10 that far exceeded the analysis results from the other eleven soil samples. Although leachate of barium and lead from these soil samples were far below plant groundwater concentrations, it was decided at that time to collect another soil sample from that location although the results of the analysis were probably just outliers.

Soil sample 31-W-10-S, collected December 3, was collected from the same location as 31-W-10, the sample collected in July. Analytical results are as follows:

TABLE 4-1
BARIUM AND LEAD ANALYSIS RESULTS

Analyte	EPA Test Method	Detection Limit	Units	Analysis Results Sample 31-W-10 Sampled: 07/30/98	Analysis Results Sample 31-W-10-S Sampled: 12/03/98
Barium	6010B	0.5	MG/KG	303	99.9
Lead	6010B	1.5	MG/KG	450	31.8

As indicated in the table, the soil sample collected in December had levels of lead that are elevated above plant background. Barium levels were below plant background. Concentrations of both metals in the December analysis are far below concentrations in the July analysis. These results provide more indication that there is not an area of gross contamination at soil sample location 31-W-10 and supports the assumption as stated in the 31-W closure report that lead in the soils as 31-W will not present a risk to human health.

4.3 Discussion of Volatiles Analysis Results

The volatile acetone was detected in the soil samples above the detection limit. Methylene chloride at a level of 0.005 was detected in soil sample 31-W-8-S. No other volatiles were detected.

TABLE 4-1
SOIL ANALYSIS RESULTS FOR VOLATILES
SECOND SAMPLING EVENT

Parameter (Volatiles) EPA Test Method 8260A	Detection Limit	Units	Sample ID 31-W-1-S Sampled: 12/03/98	Sample ID 31-W-2-S Sampled: 12/03/98	Sample ID 31-W-3-S Sampled: 12/03/98	Sample ID 31-W-4-S Sampled: 12/03/98	Sample ID 31-W-5-S Sampled: 12/03/98	Sample ID 31-W-6-S Sampled: 12/03/98	Sample ID 31-W-7-S Sampled: 12/03/98
Acetone All other volatiles were below method detection limits.	0.01 <.002-0.01	MG/KG	ND	ND	ND	.058	ND	ND	.0521

Parameter (Volatiles) EPA Test Method 8260A	Detection Limit	Units	Sample ID 31-W-8-S Sampled: 12/03/98	Sample ID 31-W-9-S Sampled: 12/03/98	Sample ID 31-W-10-S Sampled: 12/03/98	Sample ID 31-W-11-S Sampled: 12/03/98	Sample ID 31-W-12-S Sampled: 12/03/98	Sample ID 31-W-13-S Duplicate Sampled: 12/03/98
Acetone Methylene Chloride All other volatiles were below method detection limits.	0.01 0.004 <.002-0.01	MG/KG MG/KG	.011 0.005	0.089 ND	0.0309 ND	ND ND	0.168 ND	0.635 ND

The detection of methylene chloride in soil sample 31-W-8-S is so near to the detection limit that the methylene chloride is not really present.

5.0 CONCLUSIONS

Levels of chromium in the rinsewater have been reduced to background levels at container storage area 31-W. Levels of volatiles in the rinsewater are below background levels. Some concentrations of semi-volatiles remain in the rinsewater. Concentrations of various semi-volatiles actually increased in the rinsewater in December from the concentrations in the July rinsewater.

Acetone was present in the soil around storage area 31-W. Concentrations are well below 30 TAC Chapter 335 Subchapter S medium specific concentrations for risk reduction standard number 2 levels for groundwater protection as of July 1, 1998.

Methylene chloride was detected in soil sample 31-W-8-S. Although it is expected that the .005 mg/kg is a false reading, this level is also below 30 TAC Chapter 335 Subchapter S medium specific concentrations for risk reduction standard number 2 levels for groundwater protection as of July 1, 1998.

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COC #: 6306
Job# 12614

CHAIN OF CUSTODY RECORD

Chemron's Client: ANDERSON COLUMBIA	Client's P.O. #: ENVIRONMENTAL
Project Manager: DAVID BLACK	Phone #: (904) 755-1196
Address: P.O. BOX 1386	FAX #: (904) [illegible]
Project Number: 8503-	[illegible]
Project Location: LONGHORN ARMY AMMUNITION PLANT	Sampler Signature: [illegible]

ID # LAB USE ONLY	Sampling Date	Sampling Time	Matrix	Composite	[illegible]	[illegible]	FIELD ID #	FIELD DESCRIPTION	No. of Containers	TPH / BTEX	SVOA / TRPH	VOA	LEAD	BARIUM	ARSENIC	CHROMIUM	REMARKS (Preservation, Size/Amount, Etc.)
75050	12/3/98	12:15	W	✓			[illegible]		3			✓					HCL
75051	12/3/98	1505	W				[illegible]		7	✓	✓	✓	✓	✓	✓	✓	
75052												✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
[signature]	12/3/98	[illegible]	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
[illegible]	Date	Time	[illegible]

Remarks:

	Yes	No	
Headspace			If Yes, Amt
Properly Sealed			If No, Explain
Chilled to 40°F			If No, Temp

Type of Container ____________

Additional comments:

00188770

00188771

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SAMPLE LOG-IN CHECKLIST

DATE: 12/4/98 TIME: 09:00 a.m. / p.m. INITIALS: LA

CLIENT: ACE LHAAP PROJECT: LONGHORN ARMY AMMUNITION PLANT

1. Is a Chain of Custody present? Yes No
2. Is the Chain of Custody properly completed? Yes No
3. Are custody seals present? Yes No
   If yes, are they intact? Yes No
   Are they on: Sample ____ *or on* Shipping Container ✓
4. Are all samples tagged or labeled? Yes No
   If yes, do the labels match the Chain of Custody? Yes No
5. Do all shipping documents agree (i.e, number of coolers arrived vs. on tickets?) *If not*, describe below.
6. Are samples preserved properly? *If not*, describe below.
7. Are all samples within holding times on COC? *If not*, describe below.

8. Condition of shipping container: Intact ✓ or _____
9. Condition of samples: Intact ✓ or _____
10. Temperature of samples: _____
11. Delivery agent: Client ___ UPS ___ Fed-Ex ✓ or _____
12. Sample disposal: Return to client ____ Chemron disposal ✓

COMMENTS (Reference checklist item number from above, or for comments on resolution below)

_____

_____

_____

_____

MW

Record of contacting client for resolution of sample discrepancies (first and retry contact)

Contacted How?

Name: _____ Phone ___ Fax ___ Date: ___/___ Time: _____

Name: _____ Phone ___ Fax ___ Date: ___/___ Time: _____

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COC #: 6673
Job#12613
p 1 of 2

CHAIN OF CUSTODY RECORD

Chemron's Client: ANDERSON COLUMBIA ENVIRONMENTAL	Client's P.O. #
Project Manager: DAVID BLACK	Phone #: (901) 755-1196
Address: P.O. BOX 1386	FAX #: (901) 758-9050
Project Number: 8503 31-10	Project Name:
Project Location: LONGHORN ARMY AMMUNITION PLANT	

ID # LAB USE ONLY	Sampling Date	Sampling Time	Matrix	No. of Containers	FIELD DESCRIPTION	ANALYSIS: BTEX	TRPH	VOA	SVOA		
75034				6				✓	✓		
75035				1				✓			
75036				1				✓			
75037				1				✓			
75038				1				✓			
75039				1				✓			
75040				1				✓			
75041				1				✓			
75042				1				✓			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)

Remarks:

	Yes	No	
Headspace			If Yes, Amt
Properly Sealed			If No, Explain
Chilled to 40°F			If No, Temp

Type of Container _____

Additional comments:

00188772

00188773

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(210) 340-8121 (800) 372-6955

COC #: 6672

Job # 12613

P 2/2

CHAIN OF CUSTODY RECORD

Chemron's Client: ANDERSON COLUMBIA [illegible]	Client's P.O. #:
Project Manager: DAVID BLACK	Phone #: ([illegible]) [illegible] 1196
Address: P.O. BOX 1386	Fax: ([illegible]) [illegible]-4050
Project Number: 8503 31-W	Project Name:
Project Location: LONGHORN ARMY AMMUNITION PLANT	Sampler Signature: [illegible]

ID # LAB USE ONLY	Sampling Date	Sampling Time	Matrix (S,W,A)	Composite	Grab	Boring	FIELD ID #	DESCRIPTION	No. of Containers	BTEX	TRPH	VOA	LEAD	BARIUM		REMARKS (Preservation, Size/Amount, Etc.)
75044	12/3/98	1408	[illegible]		[illegible]		[illegible]		1		✓	✓	✓			
75045	12/3/98	1411	S				[illegible]		1		✓					
75046	12/3/98	1415	S				[illegible]		1		✓					
75047	12/3/98	1425	S				[illegible]		1		✓					
75048	12/3/98	1430	W	✓			[illegible]		3		✓					HCL
—	12/3/98						[illegible]		1							
75049	12/3/98						TRIP BLANK		2		✓					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
[signature]	[illegible]	[illegible]	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Remarks:	Yes	No	
Headspace			If Yes, Amt
Properly Sealed			If No, Explain
Chilled to 40°F			If No, Temp

Type of Container ______

Additional comments:

00188774

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SAMPLE LOG-IN CHECKLIST

DATE: 12 / 4 / 98 TIME: 09:30 a.m. / p.m. INITIALS: [illegible]

CLIENT: ACE PROJECT: LONGHORN ARMY AMMUNITION P

1. Is a Chain of Custody present? Yes No
2. Is the Chain of Custody properly completed? Yes No
3. Are custody seals present? Yes No
   Are they intact? Yes No
   Are they on: Sample ____ *or on* Shipping Container ✓
4. Are all samples tagged or labeled? Yes No
   If yes, do the labels match the Chain of Custody? Yes No
5. Do all shipping documents agree (i.e, number of coolers arrived vs. on tickets?) *If not*, describe below. Yes No N/A
6. Are samples preserved properly? *If not*, describe below. Yes No
7. Are all samples within holding times on arrival? *If not*, describe below. Yes No

			Other
8.	Condition of shipping container:	Intact ✓ *or*	____
9.	Condition of samples:	Intact ✓ *or*	____
10.	Temperature of samples:	1 °C	
11.	Delivery agent:	Client ___ UPS ___ Fed-Ex ✓ *or*	____

12. Sample disposal: Return to client ____ Chemron disposal ✓

COMMENTS (Reference checklist item number from above, or for comments on resolution below):

N/A.

Record of contacting client for resolution

Name: ____ Phone ___ Fax ___ Date ___ Time ___

Name: ____ Phone ___ Fax ___ Date ___ Time ___

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Client:	Anderson Columbia Environmental, Inc.	Date:	*17-Dec-98*
Lab Order:	9812025	Client Sample ID:	8503-31-W-RW
Project Name:	8503-31-W	Collection Date:	12/3/98 12:30:00 PM
Project No.:		Matrix:	WATER
Lab ID:	9812025-01A	Batch ID:	VOC1_981209C
Chemron ID:	75034	**Prep Date:**	12/10/98 3:42:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260B** — **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 10	10	ug/L	1	12/10/98 3:42:00 AM
Acrolein	< 5	5	ug/L	1	12/10/98 3:42:00 AM
Acrylonitrile	< 4	4	ug/L	1	12/10/98 3:42:00 AM
Allyl chloride	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Benzene	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Bromodichloromethane	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Bromoform	< 2	2	ug/L	1	12/10/98 3:42:00 AM
Bromomethane	< 6	6	ug/L	1	12/10/98 3:42:00 AM
2-Butanone	< 10	10	ug/L	1	12/10/98 3:42:00 AM
Carbon disulfide	< 5	5	ug/L	1	12/10/98 3:42:00 AM
Carbon tetrachloride	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Chlorobenzene	< 4	4	ug/L	1	12/10/98 3:42:00 AM
Chloroethane	< 2	2	ug/L	1	12/10/98 3:42:00 AM
2-Chloroethylvinylether	< 10	10	ug/L	1	12/10/98 3:42:00 AM
Chloroform	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Chloromethane	< 5	5	ug/L	1	12/10/98 3:42:00 AM
Dibromochloromethane	< 3	3	ug/L	1	12/10/98 3:42:00 AM
1,2-Dibromo-3-chloropropane	< 6	6	ug/L	1	12/10/98 3:42:00 AM
1,2-Dibromoethane	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Dibromomethane	< 2	2	ug/L	1	12/10/98 3:42:00 AM
1,2-Dichlorobenzene	< 5	5	ug/L	1	12/10/98 3:42:00 AM
1,3-Dichlorobenzene	< 5	5	ug/L	1	12/10/98 3:42:00 AM
1,4-Dichlorobenzene	< 6	6	ug/L	1	12/10/98 3:42:00 AM
trans-1,4-Dichloro-2-butene	< 4	4	ug/L	1	12/10/98 3:42:00 AM
Dichlorodifluoromethane	< 3	3	ug/L	1	12/10/98 3:42:00 AM
1,1-Dichloroethane	< 3	3	ug/L	1	12/10/98 3:42:00 AM
1,2-Dichloroethane	< 3	3	ug/L	1	12/10/98 3:42:00 AM
1,1-Dichloroethene	< 3	3	ug/L	1	12/10/98 3:42:00 AM
cis-1,2-Dichloroethene	< 4	4	ug/L	1	12/10/98 3:42:00 AM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812025
Project Name: 8503-31-W
Project No.:
Lab ID: 9812025-01A
Chemron ID: 75034

Date: 17-Dec-98
Client Sample ID: 8503-31-W-R/W
Collection Date: 12/3/98 12:00:00 PM
Matrix: WATER
Batch ID: VOC1_981209C
Prep Date: 12/10/98 3:42:00 AM
Loc. ID:

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 4	4	ug/L	1	12/10/98 3:42:00 AM
Methylene chloride	< 4	4	ug/L	1	12/10/98 3:42:00 AM
1,2-Dichloropropane	< 2	2	ug/L	1	12/10/98 3:42:00 AM
cis-1,3-Dichloropropene	< 2	2	ug/L	1	12/10/98 3:42:00 AM
trans-1,3-Dichloropropene	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Diethyl ether	< 5	5	ug/L	1	12/10/98 3:42:00 AM
Ethylbenzene	< 5	5	ug/L	1	12/10/98 3:42:00 AM
Ethyl methacrylate	< 5	5	ug/L	1	12/10/98 3:42:00 AM
2-Hexanone	< 6	6	ug/L	1	12/10/98 3:42:00 AM
Methacrylonitrile	< 5	5	ug/L	1	12/10/98 3:42:00 AM
Iodomethane	< 5	5	ug/L	1	12/10/98 3:42:00 AM
Methyl methacrylate	< 4	4	ug/L	1	12/10/98 3:42:00 AM
4-Methyl-2-pentanone	< 10	10	ug/L	1	12/10/98 3:42:00 AM
Propionitrile	< 10	10	ug/L	1	12/10/98 3:42:00 AM
Styrene	< 4	4	ug/L	1	12/10/98 3:42:00 AM
1,1,1,2-Tetrachloroethane	< 5	5	ug/L	1	12/10/98 3:42:00 AM
1,1,2,2-Tetrachloroethane	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Tetrachloroethene	< 5	5	ug/L	1	12/10/98 3:42:00 AM
Toluene	< 3	3	ug/L	1	12/10/98 3:42:00 AM
1,1,1-Trichloroethane	< 5	5	ug/L	1	12/10/98 3:42:00 AM
1,1,2-Trichloroethane	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Trichloroethene	< 2	2	ug/L	1	12/10/98 3:42:00 AM
Trichlorofluoromethane	< 5	5	ug/L	1	12/10/98 3:42:00 AM
1,2,3-Trichloropropane	< 3	3	ug/L	1	12/10/98 3:42:00 AM
Vinyl acetate	< 10	10	ug/L	1	12/10/98 3:42:00 AM
Vinyl chloride	< 3	3	ug/L	1	12/10/98 3:42:00 AM
m,p-Xylene	< 5	5	ug/L	1	12/10/98 3:42:00 AM
o-Xylene	< 4	4	ug/L	1	12/10/98 3:42:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	17-Dec-98
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-RW
Project Name:	8503-31-W	**Collection Date:**	12/3/98 12:30:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812025-01A	**Batch ID:**	VOC1_981209C
Chemron ID:	75034	**Prep Date:**	12/10/98 3:42:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	Date:	17-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W-RW
Project Name:	8503-31-W	Collection Date:	12/3/98 12:30:00 PM
Project ID:		Matrix:	WATER
Lab ID:	9812025-01A	Batch ID:	VOC1_981209C
Chemron ID:	75034	Prep Date:	12/10/98 3:42:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	106.	62-125
4-Bromofluorobenzene	98.	75-125
Dibromofluoromethane	113.	75-125
Toluene-d8	107.	75-125

[illegible] Qualifiers: D = Dil. Out

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date: 17-Dec-98
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 12:50:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
Acetone	< 10	10	ug/L
Acrolein	< 5	5	ug/L
Acrylonitrile	< 4	4	ug/L
Allyl chloride	< 3	3	ug/L
Benzene	< 3	3	ug/L
Bromodichloromethane	< 3	3	ug/L
Bromoform	< 2	2	ug/L
Bromomethane	< 6	6	ug/L
2-Butanone	< 10	10	ug/L
Carbon disulfide	< 5	5	ug/L
Carbon tetrachloride	< 3	3	ug/L
Chlorobenzene	< 4	4	ug/L
Chloroethane	< 2	2	ug/L
2-Chloroethylvinylether	< 10	10	ug/L
Chloroform	< 3	3	ug/L
Chloromethane	< 5	5	ug/L
Dibromochloromethane	< 3	3	ug/L
1,2-Dibromo-3-chloropropane	< 6	6	ug/L
1,2-Dibromoethane	< 3	3	ug/L
Dibromomethane	< 2	2	ug/L
1,2-Dichlorobenzene	< 5	5	ug/L
1,3-Dichlorobenzene	< 5	5	ug/L
1,4-Dichlorobenzene	< 6	6	ug/L
trans-1,4-Dichloro-2-butene	< 4	4	ug/L
Dichlorodifluoromethane	< 3	3	ug/L
1,1-Dichloroethane	< 3	3	ug/L
1,2-Dichloroethane	< 3	3	ug/L
1,1-Dichloroethene	< 5	5	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date: 17-Dec-98
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 12:50:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 4	4	ug/L
trans-1,2-Dichloroethene	< 4	4	ug/L
Methylene chloride	< 4	4	ug/L
1,2-Dichloropropane	< 2	2	ug/L
cis-1,3-Dichloropropene	< 2	2	ug/L
trans-1,3-Dichloropropene	< 3	3	ug/L
Diethyl ether	< 5	5	ug/L
Ethylbenzene	< 5	5	ug/L
Ethyl methacrylate	< 5	5	ug/L
2-Hexanone	< 6	6	ug/L
Methacrylonitrile	< 5	5	ug/L
Iodomethane	< 5	5	ug/L
Methyl methacrylate	< 4	4	ug/L
4-Methyl-2-pentanone	< 10	10	ug/L
Propionitrile	< 10	10	ug/L
Styrene	< 4	4	ug/L
1,1,1,2-Tetrachloroethane	< 5	5	ug/L
1,1,2,2-Tetrachloroethane	< 3	3	ug/L
Tetrachloroethene	< 5	5	ug/L
Toluene	< 3	3	ug/L
1,1,1-Trichloroethane	< 5	5	ug/L
1,1,2-Trichloroethane	< 3	3	ug/L
Trichloroethene	< 2	2	ug/L
Trichlorofluoromethane	< 5	5	ug/L
1,2,3-Trichloropropane	< 3	3	ug/L
Vinyl acetate	< 10	10	ug/L
Vinyl chloride	< 3	3	ug/L
m,p-Xylene	< 5	5	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date: 17-Dec-98
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 12:50:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
o-Xylene	< 4	4	ug/L

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Client:	Anderson Columbia Environ	Date:	17-Dec-98
Lab Order:	9812025	Matrix:	Water
Project:	3503-31-W	Batch ID:	VOC1_981209C
Lab ID:	BLANK	Prep Date:	12/10/98
		Date Analyzed:	12/10/98 12:50:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	108	62-125
4-Bromofluorobenzene	94	75-125
Dibromofluoromethane	109	75-125
Toluene-d8	112	75-125

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: 9812026-02A

Date: 17-Dec-98
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 8:40:00 A

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Acetone	50	30.83	50	40-140	31.1	51	1	20	ug/L
Acrolein	50	28.97	58	75-125	26.3	53	10	20	ug/L
Acrylonitrile	50	40.33	81	75-125	36.9	74	9	20	ug/L
Allyl chloride	50	33.26	67	75-125	38.5	77	15	20	ug/L
Benzene	50	51.21	102	75-125	56.7	113	10	20	ug/L
Bromodichloromethane	50	59.67	119	75-125	58.7	117	2	20	ug/L
Bromoform	50	54.76	110	75-125	57.5	115	5	20	ug/L
Bromomethane	50	48.23	96	72-125	47.6	95	1	20	ug/L
2-Butanone	50	45.7	91	40-140	44.5	89	3	20	ug/L
Carbon disulfide	50	57.26	115	75-125	58.8	118	3	20	ug/L
Carbon tetrachloride	50	52.7	105	62-125	56.6	113	7	20	ug/L
Chlorobenzene	50	55.05	110	75-125	57.8	116	5	20	ug/L
Chloroethane	50	41.57	83	66-125	42.1	84	1	20	ug/L
Chloroform	50	50.15	100	74-125	51.9	104	3	20	ug/L
Chloromethane	50	48.36	97	75-125	34.9	70	32	20	ug/L
Dibromochloromethane	50	61.04	122	73-125	62.7	125	3	20	ug/L
1,2-Dibromo-3-chloropropane	50	46.19	92	59-125	53.3	107	14	20	ug/L
1,2-Dibromoethane	50	64.01	128	75-125	63.3	127	1	20	ug/L
Dibromomethane	50	65.28	131	69-127	61.3	123	6	20	ug/L
1,2-Dichlorobenzene	50	56.87	114	75-125	56.5	113	1	20	ug/L
1,3-Dichlorobenzene	50	53.96	108	75-125	51.4	103	5	20	ug/L
1,4-Dichlorobenzene	50	56.53	113	75-125	55.3	111	2	20	ug/L
trans-1,4-Dichloro-2-butene	50	43.92	88	75-125	46.7	93	6	20	ug/L
Dichlorodifluoromethane	50	42.69	85	75-125	46	92	7	20	ug/L
1,1-Dichloroethane	50	40.41	81	75-125	43.6	87	7	20	ug/L
1,2-Dichloroethane	50	49.03	98	75-125	48.4	97	1	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: 9812026-02A

Date: 17-Dec-98
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 8:40:00 A

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
1,1-Dichloroethene	50	46.47	93	75-125	49.9	100	7	20	ug/L
cis-1,2-Dichloroethene	50	43.06	86	75-125	46.4	93	8	20	ug/L
trans-1,2-Dichloroethene	50	56.57	113	75-125	59.4	119	5	20	ug/L
Methylene chloride	50	35.42	71	75-125	36.5	73	3	20	ug/L
1,2-Dichloropropane	50	42.11	84	70-125	44.2	88	5	20	ug/L
cis-1,3-Dichloropropene	50	44.58	89	74-125	46	92	3	20	ug/L
trans-1,3-Dichloropropene	50	48.72	97	66-125	49.7	99	2	20	ug/L
Diethyl ether	50	58.68	117	75-125	54.3	109	8	20	ug/L
Ethylbenzene	50	52.11	104	75-125	45.1	90	14	20	ug/L
Ethyl methacrylate	50	44.42	89	75-125	41.3	83	7	20	ug/L
2-Hexanone	50	46.91	94	75-125	45.3	91	3	20	ug/L
Methacrylonitrile	50	60.26	121	75-125	65.4	131	8	20	ug/L
Iodomethane	100	125.2	125	75-125	173	173	32	20	ug/L
Methyl methacrylate	50	44.3	89	75-125	42	84	5	20	ug/L
4-Methyl-2-pentanone	50	48.89	98	75-125	45.6	91	7	20	ug/L
Propionitrile	50	39.55	79	75-125	38.2	77	3	20	ug/L
Styrene	50	52.73	105	75-125	59.6	119	12	20	ug/L
1,1,1,2-Tetrachloroethane	50	63.42	127	72-125	65.6	131	3	20	ug/L
1,1,2,2-Tetrachloroethane	50	47.12	94	74-125	49.4	99	5	20	ug/L
Tetrachloroethene	50	61.32	123	71-125	55.1	110	11	20	ug/L
Toluene	50	46.37	93	74-125	49.3	99	6	20	ug/L
1,1,1-Trichloroethane	50	48.53	97	75-125	56.4	113	15	20	ug/L
1,1,2-Trichloroethane	50	52.82	106	75-125	53.4	107	1	20	ug/L
Trichloroethene	50	50.16	100	71-125	54.6	109	9	20	ug/L
Trichlorofluoromethane	50	59.57	119	67-125	63.6	127	6	20	ug/L
1,2,3-Trichloropropane	50	58.61	117	75-125	56.9	114	3	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: 9812026-02A

Date: 17-Dec-98
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 8:40:00 A

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Vinyl acetate	50	39.11	78	75-125	38.3	77	2	20	ug/L
Vinyl chloride	50	36.38	73	46-134	37.2	74	2	20	ug/L
m,p-Xylene	100	104.9	105	75-125	101	101	3	20	ug/L
o-Xylene	50	51.99	104	75-125	55	110	6	20	ug/L

*** MS/MSD results reflect the amount spiked – the parent sample concentration.**

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Client:	Anderson Columbia Environ	Date:	17-Dec-98
Lab Order:	9812025	Matrix:	Water
Project:	8503-31-W	Batch ID:	VOC1_981209C
Lab ID:	9812026-02A	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 8:40:00 A

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	MS % Recovery	Control Limits	MSD % Recovery
1,2-Dichloroethane-d4	108	62-139	124
4-Bromofluorobenzene	113	75-125	113
Dibromofluoromethane	105	75-125	107
Toluene-d8	98	75-125	110

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: 17-Dec-98
Matrix: Water
Batch ID: VCC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 12:08:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	50	43.5	87	40-140	ug/L
Acrolein	50	42.8	86	75-125	ug/L
Acrylonitrile	50	40.6	81	75-125	ug/L
Allyl chloride	50	60.6	121	75-125	ug/L
Benzene	50	53.4	107	75-125	ug/L
Bromodichloromethane	50	54.3	109	75-125	ug/L
Bromoform	50	55.9	112	75-125	ug/L
Bromomethane	50	40.9	82	72-125	ug/L
2-Butanone	50	46.8	89	40-140	ug/L
Carbon disulfide	50	42.6	85	75-125	ug/L
Carbon tetrachloride	50	57.2	115	62-125	ug/L
Chlorobenzene	50	50.7	101	75-125	ug/L
Chloroethane	50	40.8	82	65-125	ug/L
2-Chloroethylvinylether	50	51.4	103	75-125	ug/L
Chloroform	50	38	76	74-125	ug/L
Chloromethane	50	40.8	82	75-125	ug/L
Dibromochloromethane	50	56.4	113	73-125	ug/L
1,2-Dibromo-3-chloropropane	50	42.7	85	59-125	ug/L
1,2-Dibromoethane	50	53.1	106	75-125	ug/L
Dibromomethane	50	57.5	115	69-127	ug/L
1,2-Dichlorobenzene	50	48.2	96	75-125	ug/L
1,3-Dichlorobenzene	50	44.6	89	75-125	ug/L
1,4-Dichlorobenzene	50	45.1	90	75-125	ug/L
trans-1,4-Dichloro-2-butene	50	43.4	87	75-125	ug/L
Dichlorodifluoromethane	50	40.4	81	75-125	ug/L
1,1-Dichloroethane	50	42.1	84	75-125	ug/L
1,2-Dichloroethane	50	50.5	101	75-125	ug/L
1,1-Dichloroethene	50	40.9	82	75-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: *17-Dec-98*
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 12:08:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	50	40.1	80	75-125	ug/L
trans-1,2-Dichloroethene	50	47	94	75-125	ug/L
Methylene chloride	50	42.5	85	75-125	ug/L
1,2-Dichloropropane	50	39.9	80	70-125	ug/L
cis-1,3-Dichloropropene	50	45.5	91	74-125	ug/L
trans-1,3-Dichloropropene	50	46.6	93	66-125	ug/L
Diethyl ether	50	46.2	93	75-125	ug/L
Ethylbenzene	50	48	96	75-125	ug/L
Ethyl methacrylate	50	40.8	82	75-125	ug/L
2-Hexanone	50	50.8	102	75-125	ug/L
Methacrylonitrile	50	38.9	78	75-125	ug/L
Iodomethane	100	119	119	75-125	ug/L
Methyl methacrylate	50	42.4	85	75-125	ug/L
4-Methyl-2-pentanone	50	42.2	85	75-125	ug/L
Propionitrile	50	42.5	85	75-125	ug/L
Styrene	50	48.7	97	75-125	ug/L
1,1,1,2-Tetrachloroethane	50	55.6	111	72-125	ug/L
1,1,2,2-Tetrachloroethane	50	40.9	82	74-125	ug/L
Tetrachloroethene	50	60.8	122	71-125	ug/L
Toluene	50	47.2	94	74-125	ug/L
1,1,1-Trichloroethane	50	41.2	82	75-125	ug/L
1,1,2-Trichloroethane	50	47.1	94	75-125	ug/L
Trichloroethene	50	51.1	102	71-125	ug/L
Trichlorofluoromethane	50	50	100	67-125	ug/L
1,2,3-Trichloropropane	50	39.3	79	75-125	ug/L
Vinyl acetate	50	47.9	96	75-125	ug/L
Vinyl chloride	50	55.3	111	46-134	ug/L
m,p-Xylene	100	103	103	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812025	**Matrix:**	Water
Project:	8503-31-W	**Batch ID:**	VOC1_981209C
Lab ID:	LCS	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 12:08:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	50	49.5	99	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812025	**Matrix:**	Water
Project:	8503-31-W	**Batch ID:**	VOC1_981209C
Lab ID:	LCS	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 12:08:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	114	62-139
4-Bromofluorobenzene	87	75-125
Dibromofluoromethane	109	75-125
Toluene-d8	109	75-125

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-RW
Project Name:	8503-31-W	**Collection Date:**	12/3/98 12:30:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812025-01A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75034	**Prep Date:**	12/4/98 1:00:00 PM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Acenaphthylene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Acetophenone	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Aniline	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Anthracene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
4-Aminobiphenyl	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Benzidine	< 50	50	ug/L	1	12/8/98 12:41:00 AM
Benzo[a]anthracene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Benzo[b]fluoranthene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Benzo[k]fluoranthene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Benzo[g,h,i]perylene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Benzo[a]pyrene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Benzoic acid	130	20	ug/L	1	12/8/98 12:41:00 AM
Benzyl alcohol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Bis(2-chloroethoxy)methane	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Bis(2-chloroethyl)ether	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Bis(2-chloroisopropyl)ether	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Bis(2-ethylhexyl)phthalate	133	10	ug/L	1	12/8/98 12:41:00 AM
4-Bromophenyl phenyl ether	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Butyl benzyl phthalate	< 10	10	ug/L	1	12/8/98 12:41:00 AM
4-Chloroaniline	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2-Chloronaphthalene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
4-Chloro-3-methylphenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2-Chlorophenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
4-Chlorophenyl phenyl ether	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Chrysene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Dibenz[a,h]anthracene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Dibenzofuran	< 10	10	ug/L	1	12/8/98 12:41:00 AM
1,3-Dichlorobenzene	< 10	10	ug/L	1	12/8/98 12:41:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-RW
Project Name:	8503-31-W	**Collection Date:**	12/3/98 12:30:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812025-01A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75034	**Prep Date:**	12/4/98 1:00:00 PM
		Loc. ID:	

SEMIVOLATILE ORGANICS SW8270C **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
3,3´-Dichlorobenzidine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
1,2-Dichlorobenzene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2,4-Dichlorophenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2,6-Dichlorophenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Diethyl phthalate	12.2	10	ug/L	1	12/8/98 12:41:00 AM
a,a-Dimethylphenethylamine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2,4-Dimethylphenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Dimethyl phthalate	37.5	10	ug/L	1	12/8/98 12:41:00 AM
Di-n-butyl phthalate	< 10	10	ug/L	1	12/8/98 12:41:00 AM
4,6-Dinitro-2-methylphenol	< 20	20	ug/L	1	12/8/98 12:41:00 AM
2,4-Dinitrophenol	< 20	20	ug/L	1	12/8/98 12:41:00 AM
2,4-Dinitrotoluene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2,6-Dinitrotoluene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Di-n-octyl phthalate	< 10	10	ug/L	1	12/8/98 12:41:00 AM
1,2-Diphenylhydrazine	< 20	20	ug/L	1	12/8/98 12:41:00 AM
Fluoranthene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Fluorene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Hexachlorobenzene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Hexachlorobutadiene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Hexachlorocyclopentadiene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Hexachloroethane	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Isophorone	< 10	10	ug/L	1	12/8/98 12:41:00 AM
3-Methylcholanthrene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2-Methylnaphthalene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2-Methylphenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
4-Methylphenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Naphthalene	< 10	10	ug/L	1	12/8/98 12:41:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-RW
Project Name:	8503-31-W	**Collection Date:**	12/3/98 12:30:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812025-01A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75034	**Prep Date:**	12/4/98 1:00:00 PM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2-Naphthylamine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2-Nitroaniline	< 10	10	ug/L	1	12/8/98 12:41:00 AM
3-Nitroaniline	< 10	10	ug/L	1	12/8/98 12:41:00 AM
4-Nitroaniline	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Nitrobenzene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2-Nitrophenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
4-Nitrophenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
N-Nitroso-di-n-butylamine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
N-Nitrosodiethylamine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
N-Nitrosodimethylamine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
N-Nitrosodiphenylamine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
N-Nitrosodi-n-propylamine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
N-Nitrosomethylethylamine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Pentachlorobenzene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Pentachloronitrobenzene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Pentachlorophenol	< 20	20	ug/L	1	12/8/98 12:41:00 AM
Phenacetin	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Phenanthrene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Phenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Pyrene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
Pyridine	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2,4,5-Trichlorophenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM
1,2,4-Trichlorobenzene	< 10	10	ug/L	1	12/8/98 12:41:00 AM
2,4,6-Trichlorophenol	< 10	10	ug/L	1	12/8/98 12:41:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-RW
Project Name:	8503-31-W	**Collection Date:**	12/3/98 12:30:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812025-01A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75034	**Prep Date:**	12/4/98 1:00:00 PM
		Loc. ID:	

SEMIVOLATILE ORGANICS SW8270C **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-RW
Project Name:	8503-31-W	**Collection Date:**	12/3/98 12:30:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9812025-01A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75034	**Prep Date:**	12/4/98 1:00:00 PM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	56.	25-134
2-Fluorobiphenyl	84.	43-125
2-Fluorophenol	50.	25-125
Nitrobenzene-d5	78.	32-125
Phenol-d5	36.	25-125
Terphenyl-d14	86.	42-126

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date: *10-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
Acenaphthene	< 10	10	ug/L
Acenaphthylene	< 10	10	ug/L
Acetophenone	< 10	10	ug/L
Aniline	< 10	10	ug/L
Anthracene	< 10	10	ug/L
4-Aminobiphenyl	< 10	10	ug/L
Benzidine	< 50	50	ug/L
Benzo[a]anthracene	< 10	10	ug/L
Benzo[b]fluoranthene	< 10	10	ug/L
Benzo[k]fluoranthene	< 10	10	ug/L
Benzo[g,h,i]perylene	< 10	10	ug/L
Benzo[a]pyrene	< 10	10	ug/L
Benzoic acid	< 20	20	ug/L
Benzyl alcohol	< 10	10	ug/L
Bis(2-chloroethoxy)methane	< 10	10	ug/L
Bis(2-chloroethyl)ether	< 10	10	ug/L
Bis(2-chloroisopropyl)ether	< 10	10	ug/L
Bis(2-ethylhexyl)phthalate	< 10	10	ug/L
4-Bromophenyl phenyl ether	< 10	10	ug/L
Butyl benzyl phthalate	< 10	10	ug/L
4-Chloroaniline	< 10	10	ug/L
2-Chloronaphthalene	< 10	10	ug/L
4-Chloro-3-methylphenol	< 10	10	ug/L
2-Chlorophenol	< 10	10	ug/L
4-Chlorophenyl phenyl ether	< 10	10	ug/L
Chrysene	< 10	10	ug/L
Dibenz[a,h]anthracene	< 10	10	ug/L
Dibenzofuran	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812025	**Matrix:**	Water
Project:	8503-31-W	**Batch ID:**	SVOC1_981207A
Lab ID:	BLANK	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS SW8270C **Analyst:** DLS

Analyte	Result	Report Limit	Units:
1,3-Dichlorobenzene	< 10	10	ug/L
1,4-Dichlorobenzene	< 10	10	ug/L
1,2-Dichlorobenzene	< 10	10	ug/L
3,3´-Dichlorobenzidine	< 10	10	ug/L
2,4-Dichlorophenol	< 10	10	ug/L
2,6-Dichlorophenol	< 10	10	ug/L
Diethyl phthalate	< 10	10	ug/L
a,a-Dimethylphenethylamine	< 10	10	ug/L
2,4-Dimethylphenol	< 10	10	ug/L
Dimethyl phthalate	< 10	10	ug/L
Di-n-butyl phthalate	< 10	10	ug/L
4,6-Dinitro-2-methylphenol	< 20	20	ug/L
2,4-Dinitrophenol	< 20	20	ug/L
2,4-Dinitrotoluene	< 10	10	ug/L
2,6-Dinitrotoluene	< 10	10	ug/L
Di-n-octyl phthalate	< 10	10	ug/L
1,2-Diphenylhydrazine	< 20	20	ug/L
Fluoranthene	< 10	10	ug/L
Fluorene	< 10	10	ug/L
Hexachlorobenzene	< 10	10	ug/L
Hexachlorobutadiene	< 10	10	ug/L
Hexachlorocyclopentadiene	< 10	10	ug/L
Hexachloroethane	< 10	10	ug/L
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L
Isophorone	< 10	10	ug/L
3-Methylcholanthrene	< 10	10	ug/L
2-Methylnaphthalene	< 10	10	ug/L
2-Methylphenol	< 10	10	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date: *10-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
4-Methylphenol	< 10	10	ug/L
Naphthalene	< 10	10	ug/L
1-Naphthylamine	< 10	10	ug/L
2-Naphthylamine	< 10	10	ug/L
2-Nitroaniline	< 10	10	ug/L
3-Nitroaniline	< 10	10	ug/L
4-Nitroaniline	< 10	10	ug/L
Nitrobenzene	< 10	10	ug/L
2-Nitrophenol	< 10	10	ug/L
4-Nitrophenol	< 10	10	ug/L
N-Nitroso-di-n-butylamine	< 10	10	ug/L
N-Nitrosodiethylamine	< 10	10	ug/L
N-Nitrosodimethylamine	< 10	10	ug/L
N-Nitrosodiphenylamine	< 10	10	ug/L
N-Nitrosodi-n-propylamine	< 10	10	ug/L
N-Nitrosomethylethylamine	< 10	10	ug/L
Pentachlorobenzene	< 10	10	ug/L
Pentachloronitrobenzene	< 10	10	ug/L
Pentachlorophenol	< 20	20	ug/L
Phenacetin	< 10	10	ug/L
Phenanthrene	< 10	10	ug/L
Phenol	< 10	10	ug/L
Pyrene	< 10	10	ug/L
Pyridine	< 10	10	ug/L
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L
1,2,4-Trichlorobenzene	< 10	10	ug/L
2,4,5-Trichlorophenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812025	**Matrix:**	Water
Project:	8503-31-W	**Batch ID:**	SVOC1_981207A
Lab ID:	BLANK	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
2,4,6-Trichlorophenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812025	**Matrix:**	Water
Project:	8503-31-W	**Batch ID:**	SVOC1_981207A
Lab ID:	BLANK	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	78	25-134
2-Fluorobiphenyl	86	43-125
2-Fluorophenol	58	25-125
Nitrobenzene-d5	76	32-125
Phenol-d5	29	25-125
Terphenyl-d14	50	42-126

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: 9812024-01A

Date: *18-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Acenaphthene	50	40.18	80	49-125	39.3	79	2	20	ug/L
Acenaphthylene	50	36.83	74	47-125	35.9	72	3	20	ug/L
Acetophenone	50	43.92	88	25-175	44	88	0	20	ug/L
Aniline	50	40.2	80	25-175	34	68	17	20	ug/L
Anthracene	50	43.17	86	45-165	40.4	81	7	20	ug/L
4-Aminobiphenyl	50	3.56	7	25-175	3.3	7	0	20	ug/L
Benzo[a]anthracene	50	35.37	71	51-133	35.7	71	1	20	ug/L
Benzo[b]fluoranthene	50	25.92	52	37-125	25.9	52	0	20	ug/L
Benzo[k]fluoranthene	50	48.75	98	25-175	47.8	96	2	20	ug/L
Benzo[g,h,i]perylene	50	60.6	121	34-149	65	130	7	20	ug/L
Benzo[a]pyrene	50	42.25	85	41-125	41	82	3	20	ug/L
Benzyl alcohol	50	35.46	71	35-125	34.6	69	2	20	ug/L
Bis(2-chloroethoxy)methane	50	47.17	94	49-125	45.8	92	3	20	ug/L
Bis(2-chloroethyl)ether	50	49.49	99	44-125	43.7	87	12	20	ug/L
Bis(2-chloroisopropyl)ether	50	48.37	97	36-166	46.2	92	5	20	ug/L
Bis(2-ethylhexyl)phthalate	50	70.67	62	33-129	82.4	85	15	20	ug/L
4-Bromophenyl phenyl ether	50	50.38	101	53-127	52.7	105	4	20	ug/L
Butyl benzyl phthalate	50	49.19	98	26-125	47.4	95	4	20	ug/L
4-Chloroaniline	50	18.2	36	45-136	18.6	37	2	20	ug/L
2-Chloronaphthalene	50	44.75	90	60-125	41.4	83	8	20	ug/L
4-Chloro-3-methylphenol	50	40.57	81	44-125	38	76	7	20	ug/L
2-Chlorophenol	50	40.04	80	41-125	39	78	3	20	ug/L
4-Chlorophenyl phenyl ether	50	40.79	82	51-132	39.2	78	4	20	ug/L
Chrysene	50	60.32	121	55-133	58.5	117	3	20	ug/L
Dibenz[a,h]anthracene	50	63.06	126	50-125	65.7	131	4	20	ug/L
Dibenzofuran	50	43.77	88	52-125	43.4	87	1	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: 9812024-01A

Date: *18-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
1,3-Dichlorobenzene	50	41.89	84	36-125	41	82	2	20	ug/L
1,4-Dichlorobenzene	50	42.45	85	30-125	41	82	4	20	ug/L
1,2-Dichlorobenzene	50	44.32	89	42-155	41.6	83	6	20	ug/L
2,4-Dichlorophenol	50	41.1	82	46-125	39.4	79	4	20	ug/L
2,6-Dichlorophenol	50	48.83	98	25-175	48.1	96	2	20	ug/L
Diethyl phthalate	50	42.21	81	37-125	41	78	3	20	ug/L
2,4-Dimethylphenol	50	14.66	29	45-139	9.6	19	0	20	ug/L
Dimethyl phthalate	50	78.4	66	25-175	74.9	59	5	20	ug/L
Di-n-butyl phthalate	50	37.54	75	34-126	36	72	4	20	ug/L
4,6-Dinitro-2-methylphenol	50	34.64	69	26-134	32.8	66	6	20	ug/L
2,4-Dinitrophenol	50	18.25	37	30-151	18	35	0	20	ug/L
2,4-Dinitrotoluene	50	34.68	69	39-139	32.9	66	5	20	ug/L
2,6-Dinitrotoluene	50	39.22	78	51-125	36.3	73	8	20	ug/L
Di-n-octyl phthalate	50	48.8	98	38-127	55.2	110	12	20	ug/L
1,2-Diphenylhydrazine	100	92.12	92	25-175	100	100	9	20	ug/L
Fluoranthene	50	24.74	49	47-125	21.6	43	14	20	ug/L
Fluorene	50	37.9	76	48-139	38	76	0	20	ug/L
Hexachlorobenzene	50	47.32	95	46-133	50.2	100	6	20	ug/L
Hexachlorobutadiene	50	41.83	84	25-125	42	84	0	20	ug/L
Hexachlorocyclopentadiene	50	40.88	82	41-125	35	70	15	20	ug/L
Hexachloroethane	50	40.38	81	25-153	39.3	79	3	20	ug/L
Indeno[1,2,3-cd]pyrene	50	57.69	115	27-160	57.8	116	0	20	ug/L
Isophorone	50	43.37	87	26-175	41.5	83	4	20	ug/L
3-Methylcholanthrene	50	21.73	43	25-175	26.1	52	18	20	ug/L
2-Methylnaphthalene	50	47.2	94	41-125	45.5	91	4	20	ug/L
2-Methylphenol	50	33.37	67	25-125	31.7	63	5	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: 9812024-01A

Date: *18-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
4-Methylphenol	100	62.14	62	33-125	60.6	61	2	20	ug/L
Naphthalene	50	48.96	95	50-125	49.9	97	2	20	ug/L
1-Naphthylamine	50	2.85	6	25-175	2.8	6	0	20	ug/L
2-Naphthylamine	50	1.2	2	25-175	1.3	3	0	20	ug/L
2-Nitroaniline	50	30.42	61	50-125	25.9	52	16	20	ug/L
Nitrobenzene	50	56.34	113	46-133	56.5	113	0	20	ug/L
2-Nitrophenol	50	45.11	90	44-125	44.9	90	0	20	ug/L
4-Nitrophenol	50	36.33	73	25-131	25.9	52	34	20	ug/L
N-Nitroso-di-n-butylamine	50	44.32	89	25-175	40.4	81	9	20	ug/L
N-Nitrosodiethylamine	50	40.31	81	25-175	37.2	74	8	20	ug/L
N-Nitrosodimethylamine	50	40.08	80	25-175	37.3	75	7	20	ug/L
N-Nitrosodiphenylamine	100	106	106	27-125	123	123	15	20	ug/L
N-Nitrosodi-n-propylamine	50	40.97	82	37-125	40	80	2	20	ug/L
N-Nitrosomethylethylamine	50	42.57	85	25-175	39.1	78	9	20	ug/L
Pentachlorobenzene	50	38.52	77	25-175	37.9	76	2	20	ug/L
Pentachloronitrobenzene	50	43.58	87	25-175	43.7	87	0	20	ug/L
Pentachlorophenol	50	71.4	75	28-136	67.9	68	5	20	ug/L
Phenacetin	50	40.5	81	25-175	39.2	78	3	20	ug/L
Phenanthrene	50	43.7	84	54-125	43.2	83	1	20	ug/L
Phenol	50	21.59	43	25-125	21.4	43	1	20	ug/L
Pyrene	50	58.74	114	47-136	55.3	107	6	20	ug/L
Pyridine	50	30.99	62	25-175	29.5	59	5	20	ug/L
1,2,4,5-Tetrachlorobenzene	50	43.15	86	25-175	41.1	82	5	20	ug/L
2,3,4,6-Tetrachlorophenol	50	41	82	25-175	39.4	79	4	20	ug/L
1,2,4-Trichlorobenzene	50	41.7	83	44-142	40.9	82	2	20	ug/L
2,4,5-Trichlorophenol	50	43.35	87	25-175	40.8	82	6	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: 9812024-01A

Date: *18-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
2,4,6-Trichlorophenol	50	44.69	89	39-128	41	82	9	20	ug/L

* MS/MSD results reflect the amount spiked + the parent sample concentration.

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Water
Project:	8503-31-W	**Batch ID:**	SVOC1_981207A
Lab ID:	9812024-01A	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	MS % Recovery	Control Limits	MSD % Recovery
2,4,6-Tribromophenol	66	25-134	60
2-Fluorobiphenyl	75	43-125	70
2-Fluorophenol	49	25-125	48
Nitrobenzene-d5	72	32-125	72
Phenol-d5	31	25-125	31
Terphenyl-d14	65	42-126	61

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: *10-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS SW8270C **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acenaphthene	50	44.9	90	49-125	ug/L
Acenaphthylene	50	43.7	87	47-125	ug/L
Acetophenone	50	43.9	88	25-175	ug/L
Aniline	50	41.6	83	25-175	ug/L
Anthracene	50	46.3	93	45-165	ug/L
4-Aminobiphenyl	50	67.5	135	25-175	ug/L
Benzidine	100	62	62	25-175	ug/L
Benzo[a]anthracene	50	44	88	51-133	ug/L
Benzo[b]fluoranthene	50	32.2	64	37-125	ug/L
Benzo[k]fluoranthene	50	61.5	123	25-175	ug/L
Benzo[g,h,i]perylene	50	47.2	95	34-149	ug/L
Benzo[a]pyrene	50	49.2	98	41-125	ug/L
Benzoic acid	100	13	13	25-162	ug/L
Benzyl alcohol	50	36	72	35-125	ug/L
Bis(2-chloroethoxy)methane	50	50.1	100	49-125	ug/L
Bis(2-chloroethyl)ether	50	52.9	106	44-125	ug/L
Bis(2-chloroisopropyl)ether	50	49.7	99	36-166	ug/L
Bis(2-ethylhexyl)phthalate	50	52.4	105	33-129	ug/L
4-Bromophenyl phenyl ether	50	48	96	53-127	ug/L
Butyl benzyl phthalate	50	49	98	26-125	ug/L
4-Chloroaniline	50	53.8	108	45-136	ug/L
2-Chloronaphthalene	50	45	90	60-125	ug/L
4-Chloro-3-methylphenol	50	44	88	44-125	ug/L
2-Chlorophenol	50	42.8	86	41-125	ug/L
4-Chlorophenyl phenyl ether	50	47.6	95	51-132	ug/L
Chrysene	50	56.1	112	55-133	ug/L
Dibenz[a,h]anthracene	50	55.1	110	50-125	ug/L
Dibenzofuran	50	51.3	103	52-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: 10-[illegible]-98
Matrix: Water
Batch ID: SVC-31_981207A
Prep Date: 12/[illegible]/98
Date Analyzed: 12/7/98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS	SW8270C			Analyst: DLS	
Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
1,3-Dichlorobenzene	50	38.7	77	36-125	ug/L
1,4-Dichlorobenzene	50	39	78	30-125	ug/L
1,2-Dichlorobenzene	50	42.2	84	42-155	ug/L
3,3'-Dichlorobenzidine	50	49.3	99	29-175	ug/L
2,4-Dichlorophenol	50	44.1	88	46-125	ug/L
2,6-Dichlorophenol	50	51.1	102	25-175	ug/L
Diethyl phthalate	50	49.9	100	37-125	ug/L
a,a-Dimethylphenethylamine	50	32.4	65	25-175	ug/L
2,4-Dimethylphenol	50	42.9	86	45-139	ug/L
Dimethyl phthalate	50	46.7	93	25-175	ug/L
Di-n-butyl phthalate	50	43.3	87	34-126	ug/L
4,6-Dinitro-2-methylphenol	50	43.6	87	26-134	ug/L
2,4-Dinitrophenol	50	32	64	30-151	ug/L
2,4-Dinitrotoluene	50	45.3	91	39-139	ug/L
2,6-Dinitrotoluene	50	46.2	92	51-125	ug/L
Di-n-octyl phthalate	50	53.7	107	38-127	ug/L
1,2-Diphenylhydrazine	100	76.7	77	25-175	ug/L
Fluoranthene	50	40.5	81	47-125	ug/L
Fluorene	50	47.4	95	48-139	ug/L
Hexachlorobenzene	50	45.7	91	46-133	ug/L
Hexachlorobutadiene	50	36.5	73	25-125	ug/L
Hexachlorocyclopentadiene	50	34.7	69	41-125	ug/L
Hexachloroethane	50	35.3	71	25-153	ug/L
Indeno[1,2,3-cd]pyrene	50	46.1	92	27-160	ug/L
Isophorone	50	46.7	93	26-175	ug/L
3-Methylcholanthrene	50	24.8	50	25-175	ug/L
2-Methylnaphthalene	50	47.4	95	41-125	ug/L
2-Methylphenol	50	39.2	78	25-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: [illegible]-Dec-98
Matrix: W[illegible]er
Batch ID: S[illegible]DC1_981207A
Prep Date: 12/[illegible]/98
Date Analyzed: 12/7/98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS SW8270C Analyst: DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
4-Methylphenol	100	70.4	70	33-125	ug/L
Naphthalene	50	41.9	84	50-125	ug/L
1-Naphthylamine	50	45.4	91	25-175	ug/L
2-Naphthylamine	50	48.5	97	25-175	ug/L
2-Nitroaniline	50	50.9	102	50-125	ug/L
3-Nitroaniline	50	49.9	100	51-125	ug/L
4-Nitroaniline	50	43	86	40-143	ug/L
Nitrobenzene	50	45.8	92	46-133	ug/L
2-Nitrophenol	50	42.8	86	44-125	ug/L
4-Nitrophenol	50	12.9	26	25-131	ug/L
N-Nitroso-di-n-butylamine	50	42	84	25-175	ug/L
N-Nitrosodiethylamine	50	41.3	83	25-175	ug/L
N-Nitrosodimethylamine	50	42.5	85	25-175	ug/L
N-Nitrosodiphenylamine	100	103	103	27-125	ug/L
N-Nitrosodi-n-propylamine	50	40.6	81	37-125	ug/L
N-Nitrosomethylethylamine	50	45	90	25-175	ug/L
Pentachlorobenzene	50	46.1	92	25-175	ug/L
Pentachloronitrobenzene	50	46.9	94	25-175	ug/L
Pentachlorophenol	50	40.3	81	28-136	ug/L
Phenacetin	50	49	98	25-175	ug/L
Phenanthrene	50	45.1	90	54-125	ug/L
Phenol	50	24.6	49	25-125	ug/L
Pyrene	50	50.4	101	47-136	ug/L
Pyridine	50	34.8	70	25-175	ug/L
1,2,4,5-Tetrachlorobenzene	50	43.8	88	25-175	ug/L
2,3,4,6-Tetrachlorophenol	50	43.4	87	25-175	ug/L
1,2,4-Trichlorobenzene	50	39.3	79	44-142	ug/L
2,4,5-Trichlorophenol	50	47.7	95	25-175	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: 10-Dec-98
Matrix: Water
Batch ID: SW[illegible]21_981207A
Prep Date: 12-[illegible]-98
Date Analyzed: 12-[illegible]-98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS — SW8270C — Analyst: DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
2,4,6-Trichlorophenol	50	45.9	92	39-128	ug/L

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Client:	Anderson Columbia Environ	Date:	10-Dec-98
Lab Order:	9812025	Matrix:	Water
Project:	8503-31-W	Batch ID:	SVOC1_981207A
Lab ID:	LCS	Prep Date:	12/4/98
		Date Analyzed:	12/7/98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS | SW8270C | Analyst: DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	90	25-134
2-Fluorobiphenyl	75	43-125
2-Fluorophenol	59	25-125
Nitrobenzene-d5	79	32-125
Phenol-d5	35	25-125
Terphenyl-d14	56	42-126

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Client:	Anderson Columbia Environmental, Inc.	Date:	*01-Feb-99*
Lab Order:	9901088	Client Sample ID:	8503-31-W-RW
Project:	8503-31-W	Collection Date:	12/3/98
Lab ID:	9901088-01A	Matrix:	WATER
Chemron ID:	75034	Batch ID:	ICP_990128F
		Prep Date:	1/27/99

CHROMIUM, TOTAL **SW6010B** **Analyst: JOL**

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Chromium	0.01	0.01	mg/L	1	1/28/99

Approved by: R. Eldridge

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812025
Project Name: 8503-31-W
Project No.:
Lab ID: 9812025-02A
Chemron ID: 75035

Date: 17-Dec-98
Client Sample ID: 8503-31-W-1-S
Collection Date: 12/3/98 12:50:00 PM
Matrix: SOIL
Batch ID: VOC1_981208B
Prep Date: 12/8/98 7:46:00 PM
Loc. ID:

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 0.01	0.01	mg/Kg-dry	1	12/8/98 7:46:00 PM
Acrolein	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
Acrylonitrile	< 0.004	0.004	mg/Kg-dry	1	12/8/98 7:46:00 PM
Allyl chloride	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Benzene	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Bromodichloromethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Bromoform	< 0.002	0.002	mg/Kg-dry	1	12/8/98 7:46:00 PM
Bromomethane	< 0.006	0.006	mg/Kg-dry	1	12/8/98 7:46:00 PM
2-Butanone	< 0.01	0.01	mg/Kg-dry	1	12/8/98 7:46:00 PM
Carbon disulfide	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
Carbon tetrachloride	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Chlorobenzene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 7:46:00 PM
Chloroethane	< 0.002	0.002	mg/Kg-dry	1	12/8/98 7:46:00 PM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg-dry	1	12/8/98 7:46:00 PM
Chloroform	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Chloromethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
Dibromochloromethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Dibromomethane	< 0.002	0.002	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg-dry	1	12/8/98 7:46:00 PM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 7:46:00 PM

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Client:	Anderson Columbia Environmental, Inc.	Date:	12-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W-1-S
Project Name:	8503-31-W	Collection Date:	12/3/98 12:30:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-02A	Batch ID:	VOC1_981208B
Chemron ID:	75035	Prep Date:	12/8/98 7:46:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 7:46:00 PM
Methylene chloride	< 0.004	0.004	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg-dry	1	12/8/98 7:46:00 PM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg-dry	1	12/8/98 7:46:00 PM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Diethyl ether	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
Ethylbenzene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
Ethyl methacrylate	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
2-Hexanone	< 0.006	0.006	mg/Kg-dry	1	12/8/98 7:46:00 PM
Methacrylonitrile	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
Iodomethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
Methyl methacrylate	< 0.004	0.004	mg/Kg-dry	1	12/8/98 7:46:00 PM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg-dry	1	12/8/98 7:46:00 PM
Propionitrile	< 0.01	0.01	mg/Kg-dry	1	12/8/98 7:46:00 PM
Styrene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Tetrachloroethene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
Toluene	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Trichloroethene	< 0.002	0.002	mg/Kg-dry	1	12/8/98 7:46:00 PM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
Vinyl acetate	< 0.01	0.01	mg/Kg-dry	1	12/8/98 7:46:00 PM
Vinyl chloride	< 0.003	0.003	mg/Kg-dry	1	12/8/98 7:46:00 PM
m,p-Xylene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 7:46:00 PM
o-Xylene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 7:46:00 PM

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Client:	Anderson Columbia Environmental, Inc.	Date:	*17-Dec-98*
Lab Order:	9812025	Client Sample ID:	8503-31-W-1-S
Project Name:	8503-31-W	Collection Date:	12/3/98 12:50:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-02A	Batch ID:	VOC1_981208B
Chemron ID:	75035	Prep Date:	12/8/98 7:46:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Aldana

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W[illegible]-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 12:[illegible]:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-02A	**Batch ID:**	VOC1_981208B
Chemron ID:	75035	**Prep Date:**	12/8/98 7:[illegible]:00 PM
		Loc ID:	

VOLATILES BY GC/MS SW8260B Analyst: JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	119.	52-149
4-Bromofluorobenzene	98.	65-135
Dibromofluoromethane	99.	65-135
Toluene-d8	115.	65-135

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-2-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:10:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-03A	**Batch ID:**	VOC1_981208B
Chemron ID:	75036	**Prep Date:**	12/8/98 8:29:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 0.01	0.01	mg/Kg-dry	1	12/8/98 8:29:00 PM
Acrolein	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
Acrylonitrile	< 0.004	0.004	mg/Kg-dry	1	12/8/98 8:29:00 PM
Allyl chloride	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
Benzene	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
Bromodichloromethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
Bromoform	< 0.002	0.002	mg/Kg-dry	1	12/8/98 8:29:00 PM
Bromomethane	< 0.006	0.006	mg/Kg-dry	1	12/8/98 8:29:00 PM
2-Butanone	< 0.01	0.01	mg/Kg-dry	1	12/8/98 8:29:00 PM
Carbon disulfide	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
Carbon tetrachloride	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
Chlorobenzene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 8:29:00 PM
Chloroethane	< 0.002	0.002	mg/Kg-dry	1	12/8/98 8:29:00 PM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg-dry	1	12/8/98 8:29:00 PM
Chloroform	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
Chloromethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
Dibromochloromethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg-dry	1	12/8/98 8:29:00 PM
romoethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
	< 0.002	0.002	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,3-Dichlorobenzene			mg/Kg-dry	1	12/8/98 8:29:00 PM
trans-1,4-Dichloro-2-butene	< 0.004			1	12/8/98 8:29:00 PM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg-dry	1	12/8/98 8:29:00 PM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 8:29:00 PM

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Client:	Anderson Columbia Environmental, Inc.	Date:	17-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W-2-S
Project Name:	8503-31-W	Collection Date:	12/3/98 1:10:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-03A	Batch ID:	VOC1_981208B
Chemron ID:	75036	Prep Date:	12/8/98 8:29:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 8:29:00 PM
Methylene chloride	< 0.004	0.004	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg-dry	1	12/8/98 8:29:00 PM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg-dry	1	12/8/98 8:29:00 PM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
Diethyl ether	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
Ethylbenzene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
Ethyl methacrylate	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
2-Hexanone	< 0.006	0.006	mg/Kg-dry	1	12/8/98 8:29:00 PM
Methacrylonitrile	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
Iodomethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
Methyl methacrylate	< 0.004	0.004	mg/Kg-dry	1	12/8/98 8:29:00 PM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg-dry	1	12/8/98 8:29:00 PM
Propionitrile	< 0.01	0.01	mg/Kg-dry	1	12/8/98 8:29:00 PM
Styrene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
Tetrachloroethene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
Toluene	< 0.003			1	12/8/98 8:29:00 PM
[illegible]chloroethane	< 0.01	[illegible]	mg/Kg-dry	[illegible]	12/8/98 8:29:00 PM
1,1,2-Tri[illegible]ethane	[illegible]	0.01	mg/Kg-dry	1	12/8/98 8:29:00 PM
Trichloroethene	< 0.002	0.002	mg/Kg-dry	1	12/8/98 8:29:00 PM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
Vinyl acetate	< 0.01	0.01	mg/Kg-dry	1	12/8/98 8:29:00 PM
Vinyl chloride	< 0.003	0.003	mg/Kg-dry	1	12/8/98 8:29:00 PM
m,p-Xylene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 8:29:00 PM
o-Xylene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 8:29:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-1-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:10:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-03A	**Batch ID:**	VOC1_981208B
Chemron ID:	75036	**Prep Date:**	12/8/98 8:29:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-2-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:10:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-03A	**Batch ID:**	VOC1_981208B
Chemron ID:	75036	**Prep Date:**	12/8/98 8:29:00 PM
		Loc ID:	

VOLATILES BY GC/MS SW8260B Analyst: JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	123.	52-149
4-Bromofluorobenzene	102.	65-136
Dibromofluoromethane	118.	65-136
Toluene-d8	112.	65-136

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environmental, Inc.	Date:	17-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W-3-S
Project Name:	8503-31-W	Collection Date:	12/3/98 1:23:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-04A	Batch ID:	VOC1_981208B
Chemron ID:	75037	Prep Date:	12/8/98 9:12:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 0.01	0.01	mg/Kg-dry	1	12/8/98 9:12:00 PM
Acrolein	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
Acrylonitrile	< 0.004	0.004	mg/Kg-dry	1	12/8/98 9:12:00 PM
Allyl chloride	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Benzene	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Bromodichloromethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Bromoform	< 0.002	0.002	mg/Kg-dry	1	12/8/98 9:12:00 PM
Bromomethane	< 0.006	0.006	mg/Kg-dry	1	12/8/98 9:12:00 PM
2-Butanone	< 0.01	0.01	mg/Kg-dry	1	12/8/98 9:12:00 PM
Carbon disulfide	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
Carbon tetrachloride	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Chlorobenzene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 9:12:00 PM
Chloroethane	< 0.002	0.002	mg/Kg-dry	1	12/8/98 9:12:00 PM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg-dry	1	12/8/98 9:12:00 PM
Chloroform	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Chloromethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
Dibr[illegible]chloromethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
[illegible]	[illegible]06	0.006	mg/Kg-dry	1	12/8/98 9:12:00 PM
[illegible]omoethe	[illegible]	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Dibromomethane	< 0.002	0.002	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,2-Dichlorobenzene	[illegible]	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,3-Dichlorobenzene	< 0.005	[illegible]	mg/Kg-dry	1	12/8/98 9:12:00 PM
trans-1,4-Dichloro-2-butene	< 0.004	[illegible]	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg-dry	1	12/8/98 9:12:00 PM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 9:12:00 PM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812025
Project Name: 8503-31-W
Project No.:
Lab ID: 9812025-04A
Chemron ID: 75037

Date: 17-Dec-98
Client Sample ID: 8503-31-W-3-S
Collection Date: 12/3/98 1:23:00 PM
Matrix: SOIL
Batch ID: VOC1_981208B
Prep Date: 12/8/98 9:12:00 PM
Loc. ID:

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 9:12:00 PM
Methylene chloride	< 0.004	0.004	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg-dry	1	12/8/98 9:12:00 PM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg-dry	1	12/8/98 9:12:00 PM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Diethyl ether	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
Ethylbenzene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
Ethyl methacrylate	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
2-Hexanone	< 0.006	0.006	mg/Kg-dry	1	12/8/98 9:12:00 PM
Methacrylonitrile	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
Iodomethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
Methyl methacrylate	< 0.004	0.004	mg/Kg-dry	1	12/8/98 9:12:00 PM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg-dry	1	12/8/98 9:12:00 PM
Propionitrile	< 0.01	0.01	mg/Kg-dry	1	12/8/98 9:12:00 PM
Styrene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Tetrachloroethene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
Toluene	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Trichloroethene	< 0.002	0.002	mg/Kg-dry	1	12/8/98 9:12:00 PM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
Vinyl acetate	< 0.01	0.01	mg/Kg-dry	1	12/8/98 9:12:00 PM
Vinyl chloride	< 0.003	0.003	mg/Kg-dry	1	12/8/98 9:12:00 PM
m,p-Xylene	< 0.005	0.005	mg/Kg-dry	1	12/8/98 9:12:00 PM
o-Xylene	< 0.004	0.004	mg/Kg-dry	1	12/8/98 9:12:00 PM

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Client:	Anderson Columbia Environmental, Inc.	Date:	17-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W-3-S
Project Name:	8503-31-W	Collection Date:	12/3/98 1:00:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-04A	Batch ID:	VOC1_981208B
Chemron ID:	75037	Prep Date:	12/8/98 9:12:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Oldham

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Client:	Anderson Columbia Environmental, Inc.	Date:	*17-Dec-98*
Lab Order:	9812025	Client Sample ID:	8503-31-W-0-S
Project Name:	8503-31-W	Collection Date:	12/3/98 1:22:00 PM
Project ID:		Matrix:	SOIL
Lab ID:	9812025-04A	Batch ID:	VOC1_981208B
Chemron ID:	75037	Prep Date:	12/8/98 9:12:00 PM
		Loc ID:	

VOLATILES BY GC/MS SW8260B Analyst: JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	110.	52-149
4-Bromofluorobenzene	99.	65-135
Dibromofluoromethane	98.	65-135
Toluene-d8	114.	65-135

For Surrogates: 0 = Dil. Out

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date: 17-Dec-98
Matrix: Soil
Batch ID: VOC_8120SB
Prep Date: 12/8/98
Date Analyzed: 12/8/98 12:34:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units:
Acetone	< 0.01	0.01	mg/Kg
Acrolein	< 0.005	0.005	mg/Kg
Acrylonitrile	< 0.004	0.004	mg/Kg
Allyl chloride	< 0.003	0.003	mg/Kg
Benzene	< 0.003	0.003	mg/Kg
Bromodichloromethane	< 0.003	0.003	mg/Kg
Bromoform	< 0.002	0.002	mg/Kg
Bromomethane	< 0.006	0.006	mg/Kg
2-Butanone	< 0.01	0.01	mg/Kg
Carbon disulfide	< 0.005	0.005	mg/Kg
Carbon tetrachloride	< 0.003	0.003	mg/Kg
Chlorobenzene	< 0.004	0.004	mg/Kg
Chloroethane	< 0.002	0.002	mg/Kg
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg
Chloroform	< 0.003	0.003	mg/Kg
Chloromethane	< 0.005	0.005	mg/Kg
Dibromochloromethane	< 0.003	0.003	mg/Kg
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg
1,2-Dibromoethane	< 0.003	0.003	mg/Kg
Dibromomethane	< 0.002	0.002	mg/Kg
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethane	< 0.003	0.003	mg/Kg
1,2-Dichloroethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethene	< 0.005	0.005	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date: 17-Dec-98
Matrix: Soil
Batch ID: VOC1_981208B
Prep Date: 12/8/98
Date Analyzed: 12/8/98 12:34:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
Methylene chloride	< 0.004	0.004	mg/Kg
1,2-Dichloropropane	< 0.002	0.002	mg/Kg
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg
Diethyl ether	< 0.005	0.005	mg/Kg
Ethylbenzene	< 0.005	0.005	mg/Kg
Ethyl methacrylate	< 0.005	0.005	mg/Kg
2-Hexanone	< 0.006	0.006	mg/Kg
Methacrylonitrile	< 0.005	0.005	mg/Kg
Iodomethane	< 0.005	0.005	mg/Kg
Methyl methacrylate	< 0.004	0.004	mg/Kg
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg
Propionitrile	< 0.01	0.01	mg/Kg
Styrene	< 0.004	0.004	mg/Kg
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg
Tetrachloroethene	< 0.005	0.005	mg/Kg
Toluene	< 0.003	0.003	mg/Kg
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg
Trichloroethene	< 0.002	0.002	mg/Kg
Trichlorofluoromethane	< 0.005	0.005	mg/Kg
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg
Vinyl acetate	< 0.01	0.01	mg/Kg
Vinyl chloride	< 0.003	0.003	mg/Kg
m,p-Xylene	< 0.005	0.005	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date: *17-Dec-98*
Matrix: Soil
Batch ID: VOC1_981208B
Prep Date: 12/8/98
Date Analyzed: 12/8/98 12:34:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units:
o-Xylene	< 0.004	0.004	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date: 17-Dec-98
Matrix: Soil
Batch ID: VOC1_981208B
Prep Date: 12/8/98
Date Analyzed: 12/8/98 12:34:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS | SW8260B | Analyst: JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	101	52-149
4-Bromofluorobenzene	95	65-135
Dibromofluoromethane	95	65-135
Toluene-d8	114	65-135

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: 17-Dec-98
Matrix: Soil
Batch ID: VOC1_981208B
Prep Date: 12/8/98
Date Analyzed: 12/8/98 11:53:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — SW8260B — Analyst: JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	0.08	0.0503	63	33-175	mg/Kg
Acrolein	0.08	0.0439	55	33-175	mg/Kg
Acrylonitrile	0.08	0.0429	54	33-175	mg/Kg
Allyl chloride	0.05	0.0485	97	65-135	mg/Kg
Benzene	0.05	0.0468	94	65-135	mg/Kg
Bromodichloromethane	0.05	0.0548	110	65-135	mg/Kg
Bromoform	0.05	0.0457	91	65-135	mg/Kg
Bromomethane	0.05	0.05	100	62-135	mg/Kg
2-Butanone	0.08	0.0564	70	40-173	mg/Kg
Carbon disulfide	0.05	0.0502	100	65-135	mg/Kg
Carbon tetrachloride	0.05	0.0618	124	52-135	mg/Kg
Chlorobenzene	0.05	0.0588	118	65-135	mg/Kg
Chloroethane	0.05	0.0418	84	55-135	mg/Kg
2-Chloroethylvinylether	0.05	0.0502	100	25-175	mg/Kg
Chloroform	0.05	0.0488	98	65-135	mg/Kg
Chloromethane	0.05	0.0392	78	65-135	mg/Kg
Dibromochloromethane	0.05	0.0587	117	63-135	mg/Kg
1,2-Dibromo-3-chloropropane	0.05	0.0432	86	49-135	mg/Kg
1,2-Dibromoethane	0.05	0.0553	111	65-135	mg/Kg
Dibromomethane	0.05	0.0607	121	59-137	mg/Kg
1,2-Dichlorobenzene	0.05	0.045	90	65-135	mg/Kg
1,3-Dichlorobenzene	0.05	0.0481	96	65-135	mg/Kg
1,4-Dichlorobenzene	0.05	0.0493	99	65-135	mg/Kg
trans-1,4-Dichloro-2-butene	0.05	0.0499	100	65-135	mg/Kg
Dichlorodifluoromethane	0.05	0.0421	84	65-135	mg/Kg
1,1-Dichloroethane	0.05	0.0416	83	65-135	mg/Kg
1,2-Dichloroethane	0.05	0.0469	94	58-137	mg/Kg
1,1-Dichloroethene	0.05	0.0509	102	65-135	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: 17-Dec-98
Matrix: Soil
Batch ID: VCC1_981208B
Prep Date: 12/8/98
Date Analyzed: 12/8/98 11:53:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — SW8260B — Analyst: JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	0.05	0.0429	86	65-135	mg/Kg
trans-1,2-Dichloroethene	0.05	0.0584	117	65-135	mg/Kg
Methylene chloride	0.05	0.0403	81	59-137	mg/Kg
1,2-Dichloropropane	0.05	0.0412	82	60-135	mg/Kg
cis-1,3-Dichloropropene	0.05	0.048	96	64-135	mg/Kg
trans-1,3-Dichloropropene	0.05	0.0533	107	56-135	mg/Kg
Diethyl ether	0.08	0.0552	69	65-135	mg/Kg
Ethylbenzene	0.05	0.0408	82	65-135	mg/Kg
Ethyl methacrylate	0.05	0.0518	104	65-135	mg/Kg
2-Hexanone	0.08	0.0447	56	65-135	mg/Kg
Methacrylonitrile	0.08	0.0619	77	65-135	mg/Kg
Iodomethane	0.05	0.0887	177	65-135	mg/Kg
Methyl methacrylate	0.08	0.0512	64	65-135	mg/Kg
4-Methyl-2-pentanone	0.08	0.0451	56	65-135	mg/Kg
Propionitrile	0.08	0.0433	54	65-135	mg/Kg
Styrene	0.05	0.0554	111	65-135	mg/Kg
1,1,1,2-Tetrachloroethane	0.05	0.0566	113	62-108	mg/Kg
1,1,2,2-Tetrachloroethane	0.05	0.0439	88	64-135	mg/Kg
Tetrachloroethene	0.05	0.0578	116	61-135	mg/Kg
Toluene	0.05	0.0507	101	64-135	mg/Kg
1,1,1-Trichloroethane	0.05	0.0526	105	65-135	mg/Kg
1,1,2-Trichloroethane	0.05	0.0516	103	65-135	mg/Kg
Trichloroethene	0.05	0.0532	106	65-135	mg/Kg
Trichlorofluoromethane	0.05	0.0586	117	57-135	mg/Kg
1,2,3-Trichloropropane	0.05	0.0442	88	65-135	mg/Kg
Vinyl acetate	0.05	0.0429	86	65-135	mg/Kg
Vinyl chloride	0.05	0.0397	79	36-144	mg/Kg
m,p-Xylene	0.1	0.11	110	65-135	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: 17-Dec-98
Matrix: Soil
Batch ID: VOC1_981208B
Prep Date: 12/8/98
Date Analyzed: 12/8/98 11:53:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — SW8260B — Analyst: JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	0.05	0.0541	108	65-135	mg/Kg

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Client:	Anderson Columbia Environ	Date:	17-Dec-98
Lab Order:	9812025	Matrix:	Soil
Project:	8503-31-W	Batch ID:	VOC1_981208E
Lab ID:	LCS	Prep Date:	12/8/98
		Date Analyzed:	12/8/98 11:53:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS | SW8260B | Analyst: JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	98	52-149
4-Bromofluorobenzene	91	65-135
Dibromofluoromethane	121	65-135
Toluene-d8	109	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-4-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:30:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-05A	**Batch ID:**	VOC1_981216B
Chemron ID:	75038	**Prep Date:**	
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.058	0.01	mg/Kg	1	12/16/98 5:39:00 PM
Acrolein	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	12/16/98 5:39:00 PM
Allyl chloride	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Benzene	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Bromoform	< 0.002	0.002	mg/Kg	1	12/16/98 5:39:00 PM
Bromomethane	< 0.006	0.006	mg/Kg	1	12/16/98 5:39:00 PM
2-Butanone	< 0.01	0.01	mg/Kg	1	12/16/98 5:39:00 PM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	12/16/98 5:39:00 PM
Chloroethane	< 0.002	0.002	mg/Kg	1	12/16/98 5:39:00 PM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	12/16/98 5:39:00 PM
Chloroform	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Chloromethane	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	12/16/98 5:39:00 PM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Dibromomethane	< 0.002	0.002	mg/Kg	1	12/16/98 5:39:00 PM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	12/16/98 5:39:00 PM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	12/16/98 5:39:00 PM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	12/16/98 5:39:00 PM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812025
Project Name: 8503-31-W
Project No.:
Lab ID: 9812025-05A
Chemron ID: 75038

Date: 18-Dec-98
Client Sample ID: 8503-31-W-4-S
Collection Date: 12/3/98 1:30:00 PM
Matrix: SOIL
Batch ID: VOC1_981216B
Prep Date:
Loc. ID:

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	12/16/98 5:39:00 PM
Methylene chloride	< 0.004	0.004	mg/Kg	1	12/16/98 5:39:00 PM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	12/16/98 5:39:00 PM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	12/16/98 5:39:00 PM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Diethyl ether	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
2-Hexanone	< 0.006	0.006	mg/Kg	1	12/16/98 5:39:00 PM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
Iodomethane	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	12/16/98 5:39:00 PM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	12/16/98 5:39:00 PM
Propionitrile	< 0.01	0.01	mg/Kg	1	12/16/98 5:39:00 PM
Styrene	< 0.004	0.004	mg/Kg	1	12/16/98 5:39:00 PM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
Toluene	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Trichloroethene	< 0.002	0.002	mg/Kg	1	12/16/98 5:39:00 PM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	12/16/98 5:39:00 PM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	12/16/98 5:39:00 PM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	12/16/98 5:39:00 PM
o-Xylene	< 0.004	0.004	mg/Kg	1	12/16/98 5:39:00 PM

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Client:	Anderson Columbia Environmental, Inc.	Date:	*18-Dec-98*
Lab Order:	9812025	Client Sample ID:	8503-31-[illegible]4-S
Project Name:	8503-31-W	Collection Date:	12/3/98 [illegible]:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-05A	Batch ID:	VOC1_98[illegible]16B
Chemron ID:	75038	Prep Date:	
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Adams

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W ---S
Project:	8503-31-W	**Collection Date:**	12/3/98 1:[illegible]00 PM
Lab ID:	9812025-05A	**Matrix:**	SOIL
Chemron ID:	75038	**Batch ID:**	VOC1_9812[illegible]9B
		Prep Date:	12/9/98 1:[illegible]00 AM

VOLATILES BY GC/MS SW8260B **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	101.	52-149
4-Bromofluorobenzene	91.	65-135
Dibromofluoromethane	115.	65-135
Toluene-d8	109.	65-135

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Client:	Anderson Columbia Environmental, Inc.	Date:	18-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W-5-S
Project Name:	8503-31-W	Collection Date:	12/3/98 1:13:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-06A	Batch ID:	VOC1_981209B
Chemron ID:	75039	Prep Date:	12/9/98 2:10:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 0.0125	0.0125	mg/Kg-dry	1	12/9/98 2:10:00 AM
Acrolein	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
Acrylonitrile	< 0.005	0.005	mg/Kg-dry	1	12/9/98 2:10:00 AM
Allyl chloride	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Benzene	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Bromodichloromethane	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Bromoform	< 0.0025	0.0025	mg/Kg-dry	1	12/9/98 2:10:00 AM
Bromomethane	< 0.0075	0.0075	mg/Kg-dry	1	12/9/98 2:10:00 AM
2-Butanone	< 0.0125	0.0125	mg/Kg-dry	1	12/9/98 2:10:00 AM
Carbon disulfide	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
Carbon tetrachloride	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Chlorobenzene	< 0.005	0.005	mg/Kg-dry	1	12/9/98 2:10:00 AM
Chloroethane	< 0.0025	0.0025	mg/Kg-dry	1	12/9/98 2:10:00 AM
2-Chloroethylvinylether	< 0.0125	0.0125	mg/Kg-dry	1	12/9/98 2:10:00 AM
Chloroform	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Chloromethane	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
Dibromochloromethane	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,2-Dibromo-3-chloropropane	< 0.0075	0.0075	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,2-Dibromoethane	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Dibromomethane	< 0.0025	0.0025	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,2-Dichlorobenzene	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,3-Dichlorobenzene	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
trans-1,4-Dichloro-2-butene	< 0.005	0.005	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,4-Dichlorobenzene	< 0.0075	0.0075	mg/Kg-dry	1	12/9/98 2:10:00 AM
Dichlorodifluoromethane	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,1-Dichloroethane	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,2-Dichloroethane	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,1-Dichloroethene	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
cis-1,2-Dichloroethene	< 0.005	0.005	mg/Kg-dry	1	12/9/98 2:10:00 AM

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Client:	Anderson Columbia Environmental, Inc.	Date:	18-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W-3-S
Project Name:	8503-31-W	Collection Date:	12/3/98 1:3[illegible]:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-06A	Batch ID:	VOC1_981209B
Chemron ID:	75039	Prep Date:	12/9/98 2:10:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.005	0.005	mg/Kg-dry	1	12/9/98 2:10:00 AM
Methylene chloride	< 0.005	0.005	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,2-Dichloropropane	< 0.0025	0.0025	mg/Kg-dry	1	12/9/98 2:10:00 AM
cis-1,3-Dichloropropene	< 0.0025	0.0025	mg/Kg-dry	1	12/9/98 2:10:00 AM
trans-1,3-Dichloropropene	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Diethyl ether	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
Ethylbenzene	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
Ethyl methacrylate	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
2-Hexanone	< 0.0075	0.0075	mg/Kg-dry	1	12/9/98 2:10:00 AM
Methacrylonitrile	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
Iodomethane	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
Methyl methacrylate	< 0.005	0.005	mg/Kg-dry	1	12/9/98 2:10:00 AM
4-Methyl-2-pentanone	< 0.0125	0.0125	mg/Kg-dry	1	12/9/98 2:10:00 AM
Propionitrile	< 0.0125	0.0125	mg/Kg-dry	1	12/9/98 2:10:00 AM
Styrene	< 0.005	0.005	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,1,1,2-Tetrachloroethane	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,1,2,2-Tetrachloroethane	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Tetrachloroethene	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
Toluene	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,1,1-Trichloroethane	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,1,2-Trichloroethane	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Trichloroethene	< 0.0025	0.0025	mg/Kg-dry	1	12/9/98 2:10:00 AM
Trichlorofluoromethane	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
1,2,3-Trichloropropane	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
Vinyl acetate	< 0.0125	0.0125	mg/Kg-dry	1	12/9/98 2:10:00 AM
Vinyl chloride	< 0.00375	0.00375	mg/Kg-dry	1	12/9/98 2:10:00 AM
m,p-Xylene	< 0.00625	0.00625	mg/Kg-dry	1	12/9/98 2:10:00 AM
o-Xylene	< 0.005	0.005	mg/Kg-dry	1	12/9/98 2:10:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-3-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:[illegible]:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-06A	**Batch ID:**	VOC1_981209B
Chemron ID:	75039	**Prep Date:**	12/9/98 2:10:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Adhami

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-[illegible]-3
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:38:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-06A	**Batch ID:**	VOC1_981209B
Chemron ID:	75039	**Prep Date:**	12/9/98 2:10:00 AM
		Loc ID:	

VOLATILES BY GC/MS | SW8260B | Analyst: JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	112.	52-149
4-Bromofluorobenzene	93.	65-135
Dibromofluoromethane	107.	65-135
Toluene-d8	107.	65-135

For Surrogates: 0 = Dil. Out

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812025
Project Name: 8503-31-W
Project No.:
Lab ID: 9812025-07A
Chemron ID: 75040

Date: 18-Dec-98
Client Sample ID: 8503-31-W-[illegible]-S
Collection Date: 12/3/98 1:45:00 PM
Matrix: SOIL
Batch ID: VOC1_981209B
Prep Date: 12/9/98 2:53:00 AM
Loc. ID:

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 0.0118	0.0118	mg/Kg-dry	1	12/9/98 2:53:00 AM
Acrolein	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
Acrylonitrile	< 0.00471	0.00471	mg/Kg-dry	1	12/9/98 2:53:00 AM
Allyl chloride	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Benzene	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Bromodichloromethane	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Bromoform	< 0.00235	0.00235	mg/Kg-dry	1	12/9/98 2:53:00 AM
Bromomethane	< 0.00706	0.00706	mg/Kg-dry	1	12/9/98 2:53:00 AM
2-Butanone	< 0.0118	0.0118	mg/Kg-dry	1	12/9/98 2:53:00 AM
Carbon disulfide	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
Carbon tetrachloride	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Chlorobenzene	< 0.00471	0.00471	mg/Kg-dry	1	12/9/98 2:53:00 AM
Chloroethane	< 0.00235	0.00235	mg/Kg-dry	1	12/9/98 2:53:00 AM
2-Chloroethylvinylether	< 0.0118	0.0118	mg/Kg-dry	1	12/9/98 2:53:00 AM
Chloroform	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Chloromethane	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
Dibromochloromethane	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,2-Dibromo-3-chloropropane	< 0.00706	0.00706	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,2-Dibromoethane	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Dibromomethane	< 0.00235	0.00235	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,2-Dichlorobenzene	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,3-Dichlorobenzene	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
trans-1,4-Dichloro-2-butene	< 0.00471	0.00471	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,4-Dichlorobenzene	< 0.00706	0.00706	mg/Kg-dry	1	12/9/98 2:53:00 AM
Dichlorodifluoromethane	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,1-Dichloroethane	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,2-Dichloroethane	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,1-Dichloroethene	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
cis-1,2-Dichloroethene	< 0.00471	0.00471	mg/Kg-dry	1	12/9/98 2:53:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-3-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:45:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-07A	**Batch ID:**	VOC1_981209B
Chemron ID:	75040	**Prep Date:**	12/9/98 2:53:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.00471	0.00471	mg/Kg-dry	1	12/9/98 2:53:00 AM
Methylene chloride	< 0.00471	0.00471	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,2-Dichloropropane	< 0.00235	0.00235	mg/Kg-dry	1	12/9/98 2:53:00 AM
cis-1,3-Dichloropropene	< 0.00235	0.00235	mg/Kg-dry	1	12/9/98 2:53:00 AM
trans-1,3-Dichloropropene	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Diethyl ether	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
Ethylbenzene	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
Ethyl methacrylate	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
2-Hexanone	< 0.00706	0.00706	mg/Kg-dry	1	12/9/98 2:53:00 AM
Methacrylonitrile	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
Iodomethane	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
Methyl methacrylate	< 0.00471	0.00471	mg/Kg-dry	1	12/9/98 2:53:00 AM
4-Methyl-2-pentanone	< 0.0118	0.0118	mg/Kg-dry	1	12/9/98 2:53:00 AM
Propionitrile	< 0.0118	0.0118	mg/Kg-dry	1	12/9/98 2:53:00 AM
Styrene	< 0.00471	0.00471	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,1,1,2-Tetrachloroethane	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,1,2,2-Tetrachloroethane	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Tetrachloroethene	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
Toluene	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,1,1-Trichloroethane	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,1,2-Trichloroethane	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Trichloroethene	< 0.00235	0.00235	mg/Kg-dry	1	12/9/98 2:53:00 AM
Trichlorofluoromethane	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
1,2,3-Trichloropropane	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
Vinyl acetate	< 0.0118	0.0118	mg/Kg-dry	1	12/9/98 2:53:00 AM
Vinyl chloride	< 0.00353	0.00353	mg/Kg-dry	1	12/9/98 2:53:00 AM
m,p-Xylene	< 0.00588	0.00588	mg/Kg-dry	1	12/9/98 2:53:00 AM
o-Xylene	< 0.00471	0.00471	mg/Kg-dry	1	12/9/98 2:53:00 AM

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Client:	Anderson Columbia Environmental, Inc.	Date:	18-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W[illegible]-S
Project Name:	8503-31-W	Collection Date:	12/3/98 1[illegible]:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-07A	Batch ID:	VOC1_981[illegible]09B
Chemron ID:	75040	Prep Date:	12/9/98 2[illegible]:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Oldham

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-4-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:40:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-07A	**Batch ID:**	VOC1_981209B
Chemron ID:	75040	**Prep Date:**	12/9/98 2:53:00 AM
		Loc ID:	

VOLATILES BY GC/MS SW8260B

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	113.	52-140
4-Bromofluorobenzene	91.	65-136
Dibromofluoromethane	108.	65-135
Toluene-d8	113.	65-135

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environmental, Inc.	Date:	18-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W[illegible]S
Project Name:	8503-31-W	Collection Date:	12/3/98 1:50:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-08A	Batch ID:	VOC1_98[illegible]B
Chemron ID:	75041	Prep Date:	12/9/98 3:[illegible]0 AM
		Loc. ID:	

VOLATILES BY GC/MS	SW8260B				Analyst: JSS
Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.0521	0.0127	mg/Kg-dry	1	12/9/98 3:35:00 AM
Acrolein	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
Acrylonitrile	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 3:35:00 AM
Allyl chloride	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
Benzene	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
Bromodichloromethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
Bromoform	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 3:35:00 AM
Bromomethane	< 0.00759	0.00759	mg/Kg-dry	1	12/9/98 3:35:00 AM
2-Butanone	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 3:35:00 AM
Carbon disulfide	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
Carbon tetrachloride	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
Chlorobenzene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 3:35:00 AM
Chloroethane	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 3:35:00 AM
2-Chloroethylvinylether	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 3:35:00 AM
Chloroform	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
Chloromethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
Dibromochloromethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,2-Dibromo-3-chloropropane	< 0.00759	0.00759	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,2-Dibromoethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
Dibromomethane	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,2-Dichlorobenzene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,3-Dichlorobenzene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
trans-1,4-Dichloro-2-butene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,4-Dichlorobenzene	< 0.00759	0.00759	mg/Kg-dry	1	12/9/98 3:35:00 AM
Dichlorodifluoromethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,1-Dichloroethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,2-Dichloroethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,1-Dichloroethene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
cis-1,2-Dichloroethene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 3:35:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	18-Dec-98
Lab Order:	9812025	**Client Sample ID:**	8503-31-MW-8
Project Name:	8503-31-W	**Collection Date:**	12/2/98 [illegible] PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-08A	**Batch ID:**	VOC1_[illegible]B
Chemron ID:	75041	**Prep Date:**	12/9/98 [illegible] AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B**

Analyte	Result	Report Limit	Units	Dilution	Analyzed
trans-1,2-Dichloroethene	< 0.00506	0.00506	mg/Kg-dry	1	[illegible]
Methylene chloride	< 0.00506	0.00506	mg/Kg-dry	1	[illegible]
1,2-Dichloropropane	< 0.00253	0.00253	mg/Kg-dry	1	[illegible]
cis-1,3-Dichloropropene	< 0.00253	0.00253	mg/Kg-dry	1	[illegible]
trans-1,3-Dichloropropene	< 0.0038	0.0038	mg/Kg-dry	1	[illegible]/98 3:35:00 AM
Diethyl ether	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
Ethylbenzene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
Ethyl methacrylate	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
2-Hexanone	< 0.00759	0.00759	mg/Kg-dry	1	12/9/98 3:35:00 AM
Methacrylonitrile	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
Iodomethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
Methyl methacrylate	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 3:35:00 AM
4-Methyl-2-pentanone	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 3:35:00 AM
Propionitrile	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 3:35:00 AM
Styrene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,1,1,2-Tetrachloroethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,1,2,2-Tetrachloroethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
Tetrachloroethene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
Toluene	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,1,1-Trichloroethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,1,2-Trichloroethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
Trichloroethene	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 3:35:00 AM
Trichlorofluoromethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
1,2,3-Trichloropropane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
Vinyl acetate	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 3:35:00 AM
Vinyl chloride	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 3:35:00 AM
m,p-Xylene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 3:35:00 AM
o-Xylene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 3:35:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-7-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-08A	**Batch ID:**	VOC1_981209B
Chemron ID:	75041	**Prep Date:**	12/9/98 8:00:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Oldham

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10526 Gulfdale • San Antonio, Texas 78216-26[illegible] • (210) 340-8121

Client:	Anderson Columbia Environmental, Inc.	Date:	18-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W-S
Project Name:	8503-31-W	Collection Date:	12/3/98 [illegible] PM
Project ID:		Matrix:	SOIL
Lab ID:	9812025-08A	Batch ID:	VOC1_9812[illegible]9B
Chemron ID:	75041	Prep Date:	12/9/98 [illegible] AM
		Loc ID:	

VOLATILES BY GC/MS SW8260B Analyst: [illegible]

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	105.	52-148
4-Bromofluorobenzene	120.	65-135
Dibromofluoromethane	117.	65-135
Toluene-d8	93.	65-135

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-8-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-09A	**Batch ID:**	VOC1_981216B
Chemron ID:	75042	**Prep Date:**	12/16/98 4:14:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.011	0.01	mg/Kg-dry	1	12/16/98 4:14:00 PM
Acrolein	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
Acrylonitrile	< 0.004	0.004	mg/Kg-dry	1	12/16/98 4:14:00 PM
Allyl chloride	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Benzene	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Bromodichloromethane	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Bromoform	< 0.002	0.002	mg/Kg-dry	1	12/16/98 4:14:00 PM
Bromomethane	< 0.006	0.006	mg/Kg-dry	1	12/16/98 4:14:00 PM
2-Butanone	< 0.01	0.01	mg/Kg-dry	1	12/16/98 4:14:00 PM
Carbon disulfide	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
Carbon tetrachloride	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Chlorobenzene	< 0.004	0.004	mg/Kg-dry	1	12/16/98 4:14:00 PM
Chloroethane	< 0.002	0.002	mg/Kg-dry	1	12/16/98 4:14:00 PM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg-dry	1	12/16/98 4:14:00 PM
Chloroform	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Chloromethane	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
Dibromochloromethane	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Dibromomethane	< 0.002	0.002	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg-dry	1	12/16/98 4:14:00 PM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg-dry	1	12/16/98 4:14:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	18-Dec-98
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-8-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-09A	**Batch ID:**	VOC1_981216B
Chemron ID:	75042	**Prep Date:**	12/16/98 4:14:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg-dry	1	12/16/98 4:14:00 PM
Methylene chloride	0.005	0.004	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg-dry	1	12/16/98 4:14:00 PM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg-dry	1	12/16/98 4:14:00 PM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Diethyl ether	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
Ethylbenzene	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
Ethyl methacrylate	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
2-Hexanone	< 0.006	0.006	mg/Kg-dry	1	12/16/98 4:14:00 PM
Methacrylonitrile	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
Iodomethane	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
Methyl methacrylate	< 0.004	0.004	mg/Kg-dry	1	12/16/98 4:14:00 PM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg-dry	1	12/16/98 4:14:00 PM
Propionitrile	< 0.01	0.01	mg/Kg-dry	1	12/16/98 4:14:00 PM
Styrene	< 0.004	0.004	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Tetrachloroethene	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
Toluene	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Trichloroethene	< 0.002	0.002	mg/Kg-dry	1	12/16/98 4:14:00 PM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
Vinyl acetate	< 0.01	0.01	mg/Kg-dry	1	12/16/98 4:14:00 PM
Vinyl chloride	< 0.003	0.003	mg/Kg-dry	1	12/16/98 4:14:00 PM
m,p-Xylene	< 0.005	0.005	mg/Kg-dry	1	12/16/98 4:14:00 PM
o-Xylene	< 0.004	0.004	mg/Kg-dry	1	12/16/98 4:14:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-3-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-09A	**Batch ID:**	VOC1_981216B
Chemron ID:	75042	**Prep Date:**	12/16/98 4:14:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-3-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 1:55:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-09A	**Batch ID:**	VOC1_981216B
Chemron ID:	75042	**Prep Date:**	12/16/98 4:14:00 PM
		Loc ID:	

VOLATILES BY GC/MS | SW8260B | Analyst: JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	110.	52-149
4-Bromofluorobenzene	103.	65-135
Dibromofluoromethane	106.	65-135
Toluene-d8	110.	65-135

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-4-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:02:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-10A	**Batch ID:**	VOC1_981216B
Chemron ID:	75043	**Prep Date:**	
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.089	0.01	mg/Kg	1	12/16/98 4:57:00 PM
Acrolein	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	12/16/98 4:57:00 PM
Allyl chloride	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Benzene	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Bromoform	< 0.002	0.002	mg/Kg	1	12/16/98 4:57:00 PM
Bromomethane	< 0.006	0.006	mg/Kg	1	12/16/98 4:57:00 PM
2-Butanone	< 0.01	0.01	mg/Kg	1	12/16/98 4:57:00 PM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	12/16/98 4:57:00 PM
Chloroethane	< 0.002	0.002	mg/Kg	1	12/16/98 4:57:00 PM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	12/16/98 4:57:00 PM
Chloroform	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Chloromethane	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	12/16/98 4:57:00 PM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Dibromomethane	< 0.002	0.002	mg/Kg	1	12/16/98 4:57:00 PM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	12/16/98 4:57:00 PM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	12/16/98 4:57:00 PM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	12/16/98 4:57:00 PM

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Client:	Anderson Columbia Environmental, Inc.	Date:	18-Dec-98
Lab Order:	9812025	Client Sample ID:	8503-31-W-9-S
Project Name:	8503-31-W	Collection Date:	12/3/98 2:02:00 PM
Project No.:		Matrix:	SOIL
Lab ID:	9812025-10A	Batch ID:	VOC1_981216B
Chemron ID:	75043	Prep Date:	
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	12/16/98 4:57:00 PM
Methylene chloride	< 0.004	0.004	mg/Kg	1	12/16/98 4:57:00 PM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	12/16/98 4:57:00 PM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	12/16/98 4:57:00 PM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Diethyl ether	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
2-Hexanone	< 0.006	0.006	mg/Kg	1	12/16/98 4:57:00 PM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
Iodomethane	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	12/16/98 4:57:00 PM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	12/16/98 4:57:00 PM
Propionitrile	< 0.01	0.01	mg/Kg	1	12/16/98 4:57:00 PM
Styrene	< 0.004	0.004	mg/Kg	1	12/16/98 4:57:00 PM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
Toluene	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Trichloroethene	< 0.002	0.002	mg/Kg	1	12/16/98 4:57:00 PM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	12/16/98 4:57:00 PM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	12/16/98 4:57:00 PM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	12/16/98 4:57:00 PM
o-Xylene	< 0.004	0.004	mg/Kg	1	12/16/98 4:57:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-9-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-10A	**Batch ID:**	VOC1_981216B
Chemron ID:	75043	**Prep Date:**	
		Loc. ID:	

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	Date:	[illegible]
Lab Order:	9812025	Client Sample ID:	[illegible]
Project:	8503-31-W	Collection Date:	[illegible]
Lab ID:	9812025-10A	Matrix:	SOIL
Chemron ID:	75042	Batch ID:	[illegible]
		Prep Date:	[illegible]

VOLATILES BY GC/MS | SW8260B | Analyst: JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	109.	52-149
4-Bromofluorobenzene	98.	65-135
Dibromofluoromethane	102.	65-135
Toluene-d8	108.	65-135

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: BLANK

Date [illegible]
Matrix: [illegible]
Batch ID: [illegible] 31213B
Prep Date: [illegible]
Date Analyzed: [illegible]

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS	SW8260B		Analyst: JSS
Analyte	Result	Report Limit	Units:
Acetone	< 0.01	0.01	mg/Kg
Acrolein	< 0.005	0.005	mg/Kg
Acrylonitrile	< 0.004	0.004	mg/Kg
Allyl chloride	< 0.003	0.003	mg/Kg
Benzene	< 0.003	0.003	mg/Kg
Bromodichloromethane	< 0.003	0.003	mg/Kg
Bromoform	< 0.002	0.002	mg/Kg
Bromomethane	< 0.006	0.006	mg/Kg
2-Butanone	< 0.01	0.01	mg/Kg
Carbon disulfide	< 0.005	0.005	mg/Kg
Carbon tetrachloride	< 0.003	0.003	mg/Kg
Chlorobenzene	< 0.004	0.004	mg/Kg
Chloroethane	< 0.002	0.002	mg/Kg
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg
Chlororom	< 0.003	0.003	mg/Kg
Chloromethane	< 0.005	0.005	mg/Kg
Dibromochloromethane	< 0.003	0.003	mg/Kg
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg
1,2-Dibromoethane	< 0.003	0.003	mg/Kg
Dibromomethane	< 0.002	0.002	mg/Kg
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethane	< 0.003	0.003	mg/Kg
1,2-Dichloroethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethene	< 0.005	0.005	mg/Kg

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Lab ID: BLANK

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS	SW8260B		Analyst: JSS
Analyte	**Result**	**Report Limit**	**Units:**
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
Methylene chloride	< 0.004	0.004	mg/Kg
1,2-Dichloropropane	< 0.002	0.002	mg/Kg
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg
Diethyl ether	< 0.005	0.005	mg/Kg
Ethylbenzene	< 0.005	0.005	mg/Kg
Ethyl methacrylate	< 0.005	0.005	mg/Kg
2-Hexanone	< 0.006	0.006	mg/Kg
Methacrylonitrile	< 0.005	0.005	mg/Kg
Iodomethane	< 0.005	0.005	mg/Kg
Methyl methacrylate	< 0.004	0.004	mg/Kg
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg
Propionitrile	< 0.01	0.01	mg/Kg
Styrene	< 0.004	0.004	mg/Kg
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg
Tetrachloroethene	< 0.005	0.005	mg/Kg
Toluene	< 0.003	0.003	mg/Kg
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg
Trichloroethene	< 0.002	0.002	mg/Kg
Trichlorofluoromethane	< 0.005	0.005	mg/Kg
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg
Vinyl acetate	< 0.01	0.01	mg/Kg
Vinyl chloride	< 0.003	0.003	mg/Kg
m,p-Xylene	< 0.005	0.005	mg/Kg

[illegible]

Client:	Anderson Columbia Environ	Date:	18-Dec-98
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981216B
Lab ID:	BLANK	**Prep Date:**	12/16/98
		Date Analyzed:	12/16/98 1:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS	**SW8260B**		**Analyst:** JSS
Analyte	**Result**	**Report Limit**	**Units:**
o-Xylene	< 0.004	0.004	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981216B
Lab ID:	BLANK	**Prep Date:**	12/16/98
		Date Analyzed:	12/16/98 1:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	113	52-149
4-Bromofluorobenzene	117	65-135
Dibromofluoromethane	100	65-135
Toluene-d8	110	65-135

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: *18-Dec-98*
Matrix: Soil
Batch ID: VOC1_981216B
Prep Date: 12/16/98
Date Analyzed: 12/16/98 12:51:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	0.05	0.0471	94	33-175	mg/Kg
Acrolein	0.05	0.0499	100	33-175	mg/Kg
Acrylonitrile	0.05	0.0606	121	33-175	mg/Kg
Allyl chloride	0.05	0.048	96	65-135	mg/Kg
Benzene	0.05	0.0469	94	65-135	mg/Kg
Bromodichloromethane	0.05	0.0468	94	65-135	mg/Kg
Bromoform	0.05	0.0543	109	65-135	mg/Kg
Bromomethane	0.05	0.0441	88	62-135	mg/Kg
2-Butanone	0.05	0.0418	84	40-173	mg/Kg
Carbon disulfide	0.05	0.0623	125	65-135	mg/Kg
Carbon tetrachloride	0.05	0.0565	113	52-135	mg/Kg
Chlorobenzene	0.05	0.0528	106	65-135	mg/Kg
Chloroethane	0.05	0.0465	93	55-135	mg/Kg
2-Chloroethylvinylether	0.05	0.0509	102	25-175	mg/Kg
Chloroform	0.05	0.0541	108	65-135	mg/Kg
Chloromethane	0.05	0.0554	111	65-135	mg/Kg
Dibromochloromethane	0.05	0.0406	81	63-135	mg/Kg
1,2-Dibromo-3-chloropropane	0.05	0.0527	105	49-135	mg/Kg
1,2-Dibromoethane	0.05	0.0581	116	65-135	mg/Kg
Dibromomethane	0.05	0.0523	105	59-137	mg/Kg
1,2-Dichlorobenzene	0.05	0.0526	105	65-135	mg/Kg
1,3-Dichlorobenzene	0.05	0.0512	102	65-135	mg/Kg
1,4-Dichlorobenzene	0.05	0.052	104	65-135	mg/Kg
trans-1,4-Dichloro-2-butene	0.05	0.0549	110	65-135	mg/Kg
Dichlorodifluoromethane	0.05	0.0599	120	65-135	mg/Kg
1,1-Dichloroethane	0.05	0.0494	99	65-135	mg/Kg
1,2-Dichloroethane	0.05	0.047	94	58-137	mg/Kg
1,1-Dichloroethene	0.05	0.0489	98	65-135	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: *18-Dec-98*
Matrix: Soil
Batch ID: VOC1_981216B
Prep Date: 12/16/98
Date Analyzed: 12/16/98 12:51:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260B** — **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	0.05	0.0535	107	65-135	mg/Kg
trans-1,2-Dichloroethene	0.05	0.0528	106	65-135	mg/Kg
Methylene chloride	0.05	0.0396	79	59-137	mg/Kg
1,2-Dichloropropane	0.05	0.0516	103	60-135	mg/Kg
cis-1,3-Dichloropropene	0.05	0.0524	105	64-135	mg/Kg
trans-1,3-Dichloropropene	0.05	0.0582	116	56-135	mg/Kg
Diethyl ether	0.05	0.0623	125	65-135	mg/Kg
Ethylbenzene	0.05	0.0496	99	65-135	mg/Kg
Ethyl methacrylate	0.05	0.0481	96	65-135	mg/Kg
2-Hexanone	0.05	0.0576	115	65-135	mg/Kg
Methacrylonitrile	0.05	0.0539	108	65-135	mg/Kg
Iodomethane	0.05	0.101	202	65-135	mg/Kg
Methyl methacrylate	0.05	0.049	98	65-135	mg/Kg
4-Methyl-2-pentanone	0.05	0.0462	92	65-135	mg/Kg
Propionitrile	0.05	0.0501	100	65-135	mg/Kg
Styrene	0.05	0.0591	118	65-135	mg/Kg
1,1,1,2-Tetrachloroethane	0.05	0.0467	93	62-108	mg/Kg
1,1,2,2-Tetrachloroethane	0.05	0.0582	116	64-135	mg/Kg
Tetrachloroethene	0.05	0.054	108	61-135	mg/Kg
Toluene	0.05	0.057	114	64-135	mg/Kg
1,1,1-Trichloroethane	0.05	0.0502	100	65-135	mg/Kg
1,1,2-Trichloroethane	0.05	0.0514	103	65-135	mg/Kg
Trichloroethene	0.05	0.057	114	65-135	mg/Kg
Trichlorofluoromethane	0.05	0.0478	96	57-135	mg/Kg
1,2,3-Trichloropropane	0.05	0.0472	94	65-135	mg/Kg
Vinyl acetate	0.05	0.0563	113	65-135	mg/Kg
Vinyl chloride	0.05	0.0482	96	36-144	mg/Kg
m,p-Xylene	0.1	0.105	105	65-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981216B
Lab ID:	LCS	**Prep Date:**	12/16/98
		Date Analyzed:	12/16/98 12:51:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	0.05	0.0566	113	65-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981216B
Lab ID:	LCS	**Prep Date:**	12/16/98
		Date Analyzed:	12/16/98 12:51:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	103	52-149
4-Bromofluorobenzene	98	65-135
Dibromofluoromethane	102	65-135
Toluene-d8	113	65-135

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812025
Project Name: 8503-31-W
Project No.:
Lab ID: 9812025-11A
Chemron ID: 75044

Date: *21-Dec-98*
Client Sample ID: 8503-31-W-10-S
Collection Date: 12/3/98 2:08:00 PM
Matrix: SOIL
Batch ID: VOC1_981209B
Prep Date: 12/9/98 5:43:00 AM
Loc. ID:

VOLATILES BY GC/MS — SW8260B — Analyst: JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.0309	0.0122	mg/Kg-dry	1	12/9/98 5:43:00 AM
Acrolein	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
Acrylonitrile	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 5:43:00 AM
Allyl chloride	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Benzene	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Bromodichloromethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Bromoform	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 5:43:00 AM
Bromomethane	< 0.00732	0.00732	mg/Kg-dry	1	12/9/98 5:43:00 AM
2-Butanone	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 5:43:00 AM
Carbon disulfide	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
Carbon tetrachloride	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Chlorobenzene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 5:43:00 AM
Chloroethane	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 5:43:00 AM
2-Chloroethylvinylether	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 5:43:00 AM
Chloroform	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Chloromethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
Dibromochloromethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,2-Dibromo-3-chloropropane	< 0.00732	0.00732	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,2-Dibromoethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Dibromomethane	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,2-Dichlorobenzene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,3-Dichlorobenzene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
trans-1,4-Dichloro-2-butene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,4-Dichlorobenzene	< 0.00732	0.00732	mg/Kg-dry	1	12/9/98 5:43:00 AM
Dichlorodifluoromethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,1-Dichloroethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,2-Dichloroethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,1-Dichloroethene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
cis-1,2-Dichloroethene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 5:43:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*21-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-10-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:08:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-11A	**Batch ID:**	VOC1_981209B
Chemron ID:	75044	**Prep Date:**	12/9/98 5:43:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 5:43:00 AM
Methylene chloride	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,2-Dichloropropane	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 5:43:00 AM
cis-1,3-Dichloropropene	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 5:43:00 AM
trans-1,3-Dichloropropene	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Diethyl ether	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
Ethylbenzene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
Ethyl methacrylate	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
2-Hexanone	< 0.00732	0.00732	mg/Kg-dry	1	12/9/98 5:43:00 AM
Methacrylonitrile	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
Iodomethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
Methyl methacrylate	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 5:43:00 AM
4-Methyl-2-pentanone	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 5:43:00 AM
Propionitrile	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 5:43:00 AM
Styrene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,1,1,2-Tetrachloroethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,1,2,2-Tetrachloroethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Tetrachloroethene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
Toluene	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,1,1-Trichloroethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,1,2-Trichloroethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Trichloroethene	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 5:43:00 AM
Trichlorofluoromethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
1,2,3-Trichloropropane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
Vinyl acetate	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 5:43:00 AM
Vinyl chloride	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 5:43:00 AM
m,p-Xylene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 5:43:00 AM
o-Xylene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 5:43:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*21-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-10-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:08:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-11A	**Batch ID:**	VOC1_981209B
Chemron ID:	75044	**Prep Date:**	12/9/98 5:43:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*21-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-10-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:08:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-11A	**Batch ID:**	VOC1_981209B
Chemron ID:	75044	**Prep Date:**	12/9/98 5:43:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	117.	52-149
4-Bromofluorobenzene	101.	65-135
Dibromofluoromethane	108.	65-135
Toluene-d8	111.	65-135

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-11-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:14:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-12A	**Batch ID:**	VOC1_981209B
Chemron ID:	75045	**Prep Date:**	12/9/98 6:25:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 0.0123	0.0123	mg/Kg-dry	1	12/9/98 6:25:00 AM
Acrolein	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
Acrylonitrile	< 0.00494	0.00494	mg/Kg-dry	1	12/9/98 6:25:00 AM
Allyl chloride	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Benzene	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Bromodichloromethane	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Bromoform	< 0.00247	0.00247	mg/Kg-dry	1	12/9/98 6:25:00 AM
Bromomethane	< 0.00741	0.00741	mg/Kg-dry	1	12/9/98 6:25:00 AM
2-Butanone	< 0.0123	0.0123	mg/Kg-dry	1	12/9/98 6:25:00 AM
Carbon disulfide	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
Carbon tetrachloride	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Chlorobenzene	< 0.00494	0.00494	mg/Kg-dry	1	12/9/98 6:25:00 AM
Chloroethane	< 0.00247	0.00247	mg/Kg-dry	1	12/9/98 6:25:00 AM
2-Chloroethylvinylether	< 0.0123	0.0123	mg/Kg-dry	1	12/9/98 6:25:00 AM
Chloroform	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Chloromethane	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
Dibromochloromethane	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,2-Dibromo-3-chloropropane	< 0.00741	0.00741	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,2-Dibromoethane	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Dibromomethane	< 0.00247	0.00247	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,2-Dichlorobenzene	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,3-Dichlorobenzene	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
trans-1,4-Dichloro-2-butene	< 0.00494	0.00494	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,4-Dichlorobenzene	< 0.00741	0.00741	mg/Kg-dry	1	12/9/98 6:25:00 AM
Dichlorodifluoromethane	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,1-Dichloroethane	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,2-Dichloroethane	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,1-Dichloroethene	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
cis-1,2-Dichloroethene	< 0.00494	0.00494	mg/Kg-dry	1	12/9/98 6:25:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-11-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:14:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-12A	**Batch ID:**	VOC1_981209B
Chemron ID:	75045	**Prep Date:**	12/9/98 6:25:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.00494	0.00494	mg/Kg-dry	1	12/9/98 6:25:00 AM
Methylene chloride	< 0.00494	0.00494	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,2-Dichloropropane	< 0.00247	0.00247	mg/Kg-dry	1	12/9/98 6:25:00 AM
cis-1,3-Dichloropropene	< 0.00247	0.00247	mg/Kg-dry	1	12/9/98 6:25:00 AM
trans-1,3-Dichloropropene	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Diethyl ether	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
Ethylbenzene	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
Ethyl methacrylate	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
2-Hexanone	< 0.00741	0.00741	mg/Kg-dry	1	12/9/98 6:25:00 AM
Methacrylonitrile	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
Iodomethane	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
Methyl methacrylate	< 0.00494	0.00494	mg/Kg-dry	1	12/9/98 6:25:00 AM
4-Methyl-2-pentanone	< 0.0123	0.0123	mg/Kg-dry	1	12/9/98 6:25:00 AM
Propionitrile	< 0.0123	0.0123	mg/Kg-dry	1	12/9/98 6:25:00 AM
Styrene	< 0.00494	0.00494	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,1,1,2-Tetrachloroethane	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,1,2,2-Tetrachloroethane	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Tetrachloroethene	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
Toluene	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,1,1-Trichloroethane	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,1,2-Trichloroethane	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Trichloroethene	< 0.00247	0.00247	mg/Kg-dry	1	12/9/98 6:25:00 AM
Trichlorofluoromethane	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
1,2,3-Trichloropropane	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
Vinyl acetate	< 0.0123	0.0123	mg/Kg-dry	1	12/9/98 6:25:00 AM
Vinyl chloride	< 0.0037	0.0037	mg/Kg-dry	1	12/9/98 6:25:00 AM
m,p-Xylene	< 0.00617	0.00617	mg/Kg-dry	1	12/9/98 6:25:00 AM
o-Xylene	< 0.00494	0.00494	mg/Kg-dry	1	12/9/98 6:25:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-11-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:14:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-12A	**Batch ID:**	VOC1_981209B
Chemron ID:	75045	**Prep Date:**	12/9/98 6:25:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-11-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:14:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-12A	**Batch ID:**	VOC1_981209B
Chemron ID:	75045	**Prep Date:**	12/9/98 6:25:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	105.	52-149
4-Bromofluorobenzene	96.	65-135
Dibromofluoromethane	106.	65-135
Toluene-d8	109.	65-135

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*21-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-12-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:25:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-13A	**Batch ID:**	VOC1_981209B
Chemron ID:	75046	**Prep Date:**	12/9/98 7:08:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.168	0.0122	mg/Kg-dry	1	12/9/98 7:08:00 AM
Acrolein	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
Acrylonitrile	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 7:08:00 AM
Allyl chloride	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Benzene	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Bromodichloromethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Bromoform	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 7:08:00 AM
Bromomethane	< 0.00732	0.00732	mg/Kg-dry	1	12/9/98 7:08:00 AM
2-Butanone	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 7:08:00 AM
Carbon disulfide	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
Carbon tetrachloride	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Chlorobenzene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 7:08:00 AM
Chloroethane	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 7:08:00 AM
2-Chloroethylvinylether	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 7:08:00 AM
Chloroform	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Chloromethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
Dibromochloromethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,2-Dibromo-3-chloropropane	< 0.00732	0.00732	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,2-Dibromoethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Dibromomethane	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,2-Dichlorobenzene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,3-Dichlorobenzene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
trans-1,4-Dichloro-2-butene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,4-Dichlorobenzene	< 0.00732	0.00732	mg/Kg-dry	1	12/9/98 7:08:00 AM
Dichlorodifluoromethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,1-Dichloroethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,2-Dichloroethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,1-Dichloroethene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
cis-1,2-Dichloroethene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 7:08:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*21-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-12-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:25:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-13A	**Batch ID:**	VOC1_981209B
Chemron ID:	75046	**Prep Date:**	12/9/98 7:08:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 7:08:00 AM
Methylene chloride	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,2-Dichloropropane	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 7:08:00 AM
cis-1,3-Dichloropropene	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 7:08:00 AM
trans-1,3-Dichloropropene	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Diethyl ether	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
Ethylbenzene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
Ethyl methacrylate	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
2-Hexanone	< 0.00732	0.00732	mg/Kg-dry	1	12/9/98 7:08:00 AM
Methacrylonitrile	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
Iodomethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
Methyl methacrylate	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 7:08:00 AM
4-Methyl-2-pentanone	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 7:08:00 AM
Propionitrile	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 7:08:00 AM
Styrene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,1,1,2-Tetrachloroethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,1,2,2-Tetrachloroethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Tetrachloroethene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
Toluene	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,1,1-Trichloroethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,1,2-Trichloroethane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Trichloroethene	< 0.00244	0.00244	mg/Kg-dry	1	12/9/98 7:08:00 AM
Trichlorofluoromethane	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
1,2,3-Trichloropropane	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
Vinyl acetate	< 0.0122	0.0122	mg/Kg-dry	1	12/9/98 7:08:00 AM
Vinyl chloride	< 0.00366	0.00366	mg/Kg-dry	1	12/9/98 7:08:00 AM
m,p-Xylene	< 0.0061	0.0061	mg/Kg-dry	1	12/9/98 7:08:00 AM
o-Xylene	< 0.00488	0.00488	mg/Kg-dry	1	12/9/98 7:08:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*21-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-12-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:25:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-13A	**Batch ID:**	VOC1_981209B
Chemron ID:	75046	**Prep Date:**	12/9/98 7:08:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*21-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-12-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:25:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-13A	**Batch ID:**	VOC1_981209B
Chemron ID:	75046	**Prep Date:**	12/9/98 7:08:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	109.	52-149
4-Bromofluorobenzene	94.	65-135
Dibromofluoromethane	109.	65-135
Toluene-d8	99.	65-135

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-13-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:25:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-14A	**Batch ID:**	VOC1_981209B
Chemron ID:	75047	**Prep Date:**	12/9/98 7:50:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.635	0.0127	mg/Kg-dry	1	12/9/98 7:50:00 AM
Acrolein	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
Acrylonitrile	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 7:50:00 AM
Allyl chloride	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Benzene	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Bromodichloromethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Bromoform	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 7:50:00 AM
Bromomethane	< 0.00759	0.00759	mg/Kg-dry	1	12/9/98 7:50:00 AM
2-Butanone	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 7:50:00 AM
Carbon disulfide	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
Carbon tetrachloride	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Chlorobenzene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 7:50:00 AM
Chloroethane	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 7:50:00 AM
2-Chloroethylvinylether	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 7:50:00 AM
Chloroform	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Chloromethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
Dibromochloromethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,2-Dibromo-3-chloropropane	< 0.00759	0.00759	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,2-Dibromoethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Dibromomethane	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,2-Dichlorobenzene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,3-Dichlorobenzene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
trans-1,4-Dichloro-2-butene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,4-Dichlorobenzene	< 0.00759	0.00759	mg/Kg-dry	1	12/9/98 7:50:00 AM
Dichlorodifluoromethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,1-Dichloroethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,2-Dichloroethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,1-Dichloroethene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
cis-1,2-Dichloroethene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 7:50:00 AM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812025
Project Name: 8503-31-W
Project No.:
Lab ID: 9812025-14A
Chemron ID: 75047

Date: *18-Dec-98*
Client Sample ID: 8503-31-W-13-S
Collection Date: 12/3/98 2:25:00 PM
Matrix: SOIL
Batch ID: VOC1_981209B
Prep Date: 12/9/98 7:50:00 AM
Loc. ID:

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 7:50:00 AM
Methylene chloride	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,2-Dichloropropane	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 7:50:00 AM
cis-1,3-Dichloropropene	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 7:50:00 AM
trans-1,3-Dichloropropene	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Diethyl ether	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
Ethylbenzene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
Ethyl methacrylate	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
2-Hexanone	< 0.00759	0.00759	mg/Kg-dry	1	12/9/98 7:50:00 AM
Methacrylonitrile	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
Iodomethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
Methyl methacrylate	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 7:50:00 AM
4-Methyl-2-pentanone	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 7:50:00 AM
Propionitrile	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 7:50:00 AM
Styrene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,1,1,2-Tetrachloroethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,1,2,2-Tetrachloroethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Tetrachloroethene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
Toluene	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,1,1-Trichloroethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,1,2-Trichloroethane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Trichloroethene	< 0.00253	0.00253	mg/Kg-dry	1	12/9/98 7:50:00 AM
Trichlorofluoromethane	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
1,2,3-Trichloropropane	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
Vinyl acetate	< 0.0127	0.0127	mg/Kg-dry	1	12/9/98 7:50:00 AM
Vinyl chloride	< 0.0038	0.0038	mg/Kg-dry	1	12/9/98 7:50:00 AM
m,p-Xylene	< 0.00633	0.00633	mg/Kg-dry	1	12/9/98 7:50:00 AM
o-Xylene	< 0.00506	0.00506	mg/Kg-dry	1	12/9/98 7:50:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-13-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:25:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9812025-14A	**Batch ID:**	VOC1_981209B
Chemron ID:	75047	**Prep Date:**	12/9/98 7:50:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-13-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:25:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-14A	**Batch ID:**	VOC1_981209B
Chemron ID:	75047	**Prep Date:**	12/9/98 7:50:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	108.	52-149
4-Bromofluorobenzene	90.	65-135
Dibromofluoromethane	111.	65-135
Toluene-d8	103.	65-135

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981209B
Lab ID:	BLANK	**Prep Date:**	12/9/98
		Date Analyzed:	12/9/98 12:45:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
Acetone	< 0.01	0.01	mg/Kg
Acrolein	< 0.005	0.005	mg/Kg
Acrylonitrile	< 0.004	0.004	mg/Kg
Allyl chloride	< 0.003	0.003	mg/Kg
Benzene	< 0.003	0.003	mg/Kg
Bromodichloromethane	< 0.003	0.003	mg/Kg
Bromoform	< 0.002	0.002	mg/Kg
Bromomethane	< 0.006	0.006	mg/Kg
2-Butanone	< 0.01	0.01	mg/Kg
Carbon disulfide	< 0.005	0.005	mg/Kg
Carbon tetrachloride	< 0.003	0.003	mg/Kg
Chlorobenzene	< 0.004	0.004	mg/Kg
Chloroethane	< 0.002	0.002	mg/Kg
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg
Chloroform	< 0.003	0.003	mg/Kg
Chloromethane	< 0.005	0.005	mg/Kg
Dibromochloromethane	< 0.003	0.003	mg/Kg
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg
1,2-Dibromoethane	< 0.003	0.003	mg/Kg
Dibromomethane	< 0.002	0.002	mg/Kg
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethane	< 0.003	0.003	mg/Kg
1,2-Dichloroethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethene	< 0.005	0.005	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981209B
Lab ID:	BLANK	**Prep Date:**	12/9/98
		Date Analyzed:	12/9/98 12:45:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
Methylene chloride	< 0.004	0.004	mg/Kg
1,2-Dichloropropane	< 0.002	0.002	mg/Kg
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg
Diethyl ether	< 0.005	0.005	mg/Kg
Ethylbenzene	< 0.005	0.005	mg/Kg
Ethyl methacrylate	< 0.005	0.005	mg/Kg
2-Hexanone	< 0.006	0.006	mg/Kg
Methacrylonitrile	< 0.005	0.005	mg/Kg
Iodomethane	< 0.005	0.005	mg/Kg
Methyl methacrylate	< 0.004	0.004	mg/Kg
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg
Propionitrile	< 0.01	0.01	mg/Kg
Styrene	< 0.004	0.004	mg/Kg
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg
Tetrachloroethene	< 0.005	0.005	mg/Kg
Toluene	< 0.003	0.003	mg/Kg
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg
Trichloroethene	< 0.002	0.002	mg/Kg
Trichlorofluoromethane	< 0.005	0.005	mg/Kg
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg
Vinyl acetate	< 0.01	0.01	mg/Kg
Vinyl chloride	< 0.003	0.003	mg/Kg
m,p-Xylene	< 0.005	0.005	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981209B
Lab ID:	BLANK	**Prep Date:**	12/9/98
		Date Analyzed:	12/9/98 12:45:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
o-Xylene	< 0.004	0.004	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981209B
Lab ID:	BLANK	**Prep Date:**	12/9/98
		Date Analyzed:	12/9/98 12:45:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	107	52-149
4-Bromofluorobenzene	98	65-135
Dibromofluoromethane	104	65-135
Toluene-d8	111	65-135

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: *18-Dec-98*
Matrix: Soil
Batch ID: VOC1_981209B
Prep Date: 12/9/98
Date Analyzed: 12/9/98 12:02:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	0.05	0.0426	70	33-175	mg/Kg
Acrolein	0.05	0.0412	82	33-175	mg/Kg
Acrylonitrile	0.05	0.0486	97	33-175	mg/Kg
Allyl chloride	0.05	0.0497	99	65-135	mg/Kg
Benzene	0.05	0.058	116	65-135	mg/Kg
Bromodichloromethane	0.05	0.0592	118	65-135	mg/Kg
Bromoform	0.05	0.0464	93	65-135	mg/Kg
Bromomethane	0.05	0.0591	118	62-135	mg/Kg
2-Butanone	0.05	0.0428	86	40-173	mg/Kg
Carbon disulfide	0.05	0.0561	112	65-135	mg/Kg
Carbon tetrachloride	0.05	0.0587	117	52-135	mg/Kg
Chlorobenzene	0.05	0.059	118	65-135	mg/Kg
Chloroethane	0.05	0.0507	101	55-135	mg/Kg
2-Chloroethylvinylether	0.05	0.051	102	25-175	mg/Kg
Chloroform	0.05	0.0498	100	65-135	mg/Kg
Chloromethane	0.05	0.0454	91	65-135	mg/Kg
Dibromochloromethane	0.05	0.0472	94	63-135	mg/Kg
1,2-Dibromo-3-chloropropane	0.05	0.043	86	49-135	mg/Kg
1,2-Dibromoethane	0.05	0.0547	109	65-135	mg/Kg
Dibromomethane	0.05	0.0516	103	59-137	mg/Kg
1,2-Dichlorobenzene	0.05	0.0516	103	65-135	mg/Kg
1,3-Dichlorobenzene	0.05	0.0507	101	65-135	mg/Kg
1,4-Dichlorobenzene	0.05	0.0529	106	65-135	mg/Kg
trans-1,4-Dichloro-2-butene	0.05	0.0445	89	65-135	mg/Kg
Dichlorodifluoromethane	0.05	0.0497	99	65-135	mg/Kg
1,1-Dichloroethane	0.05	0.0419	84	65-135	mg/Kg
1,2-Dichloroethane	0.05	0.0501	100	58-137	mg/Kg
1,1-Dichloroethene	0.05	0.0429	86	65-135	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: *18-Dec-98*
Matrix: Soil
Batch ID: VOC1_981209B
Prep Date: 12/9/98
Date Analyzed: 12/9/98 12:02:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	0.05	0.0473	95	65-135	mg/Kg
trans-1,2-Dichloroethene	0.05	0.0516	103	65-135	mg/Kg
Methylene chloride	0.05	0.0412	82	59-137	mg/Kg
1,2-Dichloropropane	0.05	0.0447	89	60-135	mg/Kg
cis-1,3-Dichloropropene	0.05	0.0484	97	64-135	mg/Kg
trans-1,3-Dichloropropene	0.05	0.0505	101	56-135	mg/Kg
Diethyl ether	0.05	0.0583	117	65-135	mg/Kg
Ethylbenzene	0.05	0.0544	109	65-135	mg/Kg
Ethyl methacrylate	0.05	0.0498	100	65-135	mg/Kg
2-Hexanone	0.05	0.058	116	65-135	mg/Kg
Methacrylonitrile	0.05	0.0592	118	65-135	mg/Kg
Iodomethane	0.05	0.107	215	65-135	mg/Kg
Methyl methacrylate	0.05	0.0496	99	65-135	mg/Kg
4-Methyl-2-pentanone	0.05	0.0594	119	65-135	mg/Kg
Propionitrile	0.05	0.0424	85	65-135	mg/Kg
Styrene	0.05	0.0548	110	65-135	mg/Kg
1,1,1,2-Tetrachloroethane	0.05	0.0548	110	62-108	mg/Kg
1,1,2,2-Tetrachloroethane	0.05	0.0404	81	64-135	mg/Kg
Tetrachloroethene	0.05	0.0528	106	61-135	mg/Kg
Toluene	0.05	0.0513	103	64-135	mg/Kg
1,1,1-Trichloroethane	0.05	0.0516	103	65-135	mg/Kg
1,1,2-Trichloroethane	0.05	0.0523	105	65-135	mg/Kg
Trichloroethene	0.05	0.0571	114	65-135	mg/Kg
Trichlorofluoromethane	0.05	0.0538	108	57-135	mg/Kg
1,2,3-Trichloropropane	0.05	0.0492	98	65-135	mg/Kg
Vinyl acetate	0.05	0.0522	105	65-135	mg/Kg
Vinyl chloride	0.05	0.0505	101	36-144	mg/Kg
m,p-Xylene	0.1	0.104	104	65-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981209B
Lab ID:	LCS	**Prep Date:**	12/9/98
		Date Analyzed:	12/9/98 12:02:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	0.05	0.0573	115	65-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	VOC1_981209B
Lab ID:	LCS	**Prep Date:**	12/9/98
		Date Analyzed:	12/9/98 12:02:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	118	52-149
4-Bromofluorobenzene	101	65-135
Dibromofluoromethane	115	65-135
Toluene-d8	96	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*16-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-10-S
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:08:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9812025-11A	**Loc. ID:**	
Chemron ID:	75044		

Analyses	Result	Report Limit	Units	Dilution	Date Analyzed
BARIUM, TOTAL		SW6010B		Analyst: JOL	
Barium	99.9	0.5	mg/Kg-dry	1	12/7/98
LEAD, TOTAL		SW6010B		Analyst: JOL	
Lead	31.8	1.5	mg/Kg-dry	1	12/14/98

Approved by: R. Eldridge

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Client:	Anderson Columbia Environ	**Date:**	*21-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	ICP_981208B
Lab ID:	MBlank	**Prep Date:**	12/7/98
		Date Analyzed:	12/7/98

QUALITY CONTROL REPORT

Method Blank

BARIUM, Total **SW6010B** **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Barium	< 0.5	0.5	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: *21-Dec-98*
Matrix: Soil
Batch ID: ICP_981208B
Prep Date: 12/7/98
Date Analyzed: 12/7/98

QUALITY CONTROL REPORT

Laboratory Control Sample

BARIUM, Total **SW6010B** **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Barium	50	47.2	94	80-120	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812025	**Matrix:**	Soil
Project:	8503-31-W	**Batch ID:**	ICP_981214A
Lab ID:	MBlank	**Prep Date:**	12/7/98
		Date Analyzed:	12/14/98

QUALITY CONTROL REPORT

Method Blank

LEAD, Total **SW6010B** **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Lead	< 1.5	1.5	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9812025
Project: 8503-31-W
Lab ID: LCS

Date: *17-Dec-98*
Matrix: Soil
Batch ID: ICP_981214A
Prep Date: 12/7/98
Date Analyzed: 12/14/98

QUALITY CONTROL REPORT

Laboratory Control Sample

LEAD, Total — **SW6010B** — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Lead	25	22.4	90	80-120	mg/Kg

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812025
Project Name: 8503-31-W
Project No.:
Lab ID: 9812025-15A
Chemron ID: 75048

Date: *17-Dec-98*
Client Sample ID: 8503-31-W-EQUIPBLANK
Collection Date: 12/3/98 2:30:00 PM
Matrix: WATER
Batch ID: VOC1_981209C
Prep Date: 12/10/98 4:24:00 AM
Loc. ID:

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	132	10	ug/L	1	12/10/98 4:24:00 AM
Acrolein	< 5	5	ug/L	1	12/10/98 4:24:00 AM
Acrylonitrile	< 4	4	ug/L	1	12/10/98 4:24:00 AM
Allyl chloride	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Benzene	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Bromodichloromethane	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Bromoform	< 2	2	ug/L	1	12/10/98 4:24:00 AM
Bromomethane	< 6	6	ug/L	1	12/10/98 4:24:00 AM
2-Butanone	< 10	10	ug/L	1	12/10/98 4:24:00 AM
Carbon disulfide	< 5	5	ug/L	1	12/10/98 4:24:00 AM
Carbon tetrachloride	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Chlorobenzene	< 4	4	ug/L	1	12/10/98 4:24:00 AM
Chloroethane	< 2	2	ug/L	1	12/10/98 4:24:00 AM
2-Chloroethylvinylether	< 10	10	ug/L	1	12/10/98 4:24:00 AM
Chloroform	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Chloromethane	< 5	5	ug/L	1	12/10/98 4:24:00 AM
Dibromochloromethane	< 3	3	ug/L	1	12/10/98 4:24:00 AM
1,2-Dibromo-3-chloropropane	< 6	6	ug/L	1	12/10/98 4:24:00 AM
1,2-Dibromoethane	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Dibromomethane	< 2	2	ug/L	1	12/10/98 4:24:00 AM
1,2-Dichlorobenzene	< 5	5	ug/L	1	12/10/98 4:24:00 AM
1,3-Dichlorobenzene	< 5	5	ug/L	1	12/10/98 4:24:00 AM
1,4-Dichlorobenzene	< 6	6	ug/L	1	12/10/98 4:24:00 AM
trans-1,4-Dichloro-2-butene	< 4	4	ug/L	1	12/10/98 4:24:00 AM
Dichlorodifluoromethane	< 3	3	ug/L	1	12/10/98 4:24:00 AM
1,1-Dichloroethane	< 3	3	ug/L	1	12/10/98 4:24:00 AM
1,2-Dichloroethane	< 3	3	ug/L	1	12/10/98 4:24:00 AM
1,1-Dichloroethene	< 5	5	ug/L	1	12/10/98 4:24:00 AM
cis-1,2-Dichloroethene	< 4	4	ug/L	1	12/10/98 4:24:00 AM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812025
Project Name: 8503-31-W
Project No.:
Lab ID: 9812025-15A
Chemron ID: 75048

Date: *17-Dec-98*
Client Sample ID: 8503-31-W-EQUIPBLANK
Collection Date: 12/3/98 2:30:00 PM
Matrix: WATER
Batch ID: VOC1_981209C
Prep Date: 12/10/98 4:24:00 AM
Loc. ID:

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 4	4	ug/L	1	12/10/98 4:24:00 AM
Methylene chloride	< 4	4	ug/L	1	12/10/98 4:24:00 AM
1,2-Dichloropropane	< 2	2	ug/L	1	12/10/98 4:24:00 AM
cis-1,3-Dichloropropene	< 2	2	ug/L	1	12/10/98 4:24:00 AM
trans-1,3-Dichloropropene	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Diethyl ether	< 5	5	ug/L	1	12/10/98 4:24:00 AM
Ethylbenzene	< 5	5	ug/L	1	12/10/98 4:24:00 AM
Ethyl methacrylate	< 5	5	ug/L	1	12/10/98 4:24:00 AM
2-Hexanone	< 6	6	ug/L	1	12/10/98 4:24:00 AM
Methacrylonitrile	< 5	5	ug/L	1	12/10/98 4:24:00 AM
Iodomethane	< 5	5	ug/L	1	12/10/98 4:24:00 AM
Methyl methacrylate	< 4	4	ug/L	1	12/10/98 4:24:00 AM
4-Methyl-2-pentanone	< 10	10	ug/L	1	12/10/98 4:24:00 AM
Propionitrile	< 10	10	ug/L	1	12/10/98 4:24:00 AM
Styrene	< 4	4	ug/L	1	12/10/98 4:24:00 AM
1,1,1,2-Tetrachloroethane	< 5	5	ug/L	1	12/10/98 4:24:00 AM
1,1,2,2-Tetrachloroethane	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Tetrachloroethene	< 5	5	ug/L	1	12/10/98 4:24:00 AM
Toluene	< 3	3	ug/L	1	12/10/98 4:24:00 AM
1,1,1-Trichloroethane	< 5	5	ug/L	1	12/10/98 4:24:00 AM
1,1,2-Trichloroethane	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Trichloroethene	< 2	2	ug/L	1	12/10/98 4:24:00 AM
Trichlorofluoromethane	< 5	5	ug/L	1	12/10/98 4:24:00 AM
1,2,3-Trichloropropane	< 3	3	ug/L	1	12/10/98 4:24:00 AM
Vinyl acetate	< 10	10	ug/L	1	12/10/98 4:24:00 AM
Vinyl chloride	< 3	3	ug/L	1	12/10/98 4:24:00 AM
m,p-Xylene	< 5	5	ug/L	1	12/10/98 4:24:00 AM
o-Xylene	< 4	4	ug/L	1	12/10/98 4:24:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-EQUIPBLANK
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:30:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812025-15A	**Batch ID:**	VOC1_981209C
Chemron ID:	75048	**Prep Date:**	12/10/98 4:24:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812025	**Client Sample ID:**	8503-31-W-EQUIPBLANK
Project Name:	8503-31-W	**Collection Date:**	12/3/98 2:30:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9812025-15A	**Batch ID:**	VOC1_981209C
Chemron ID:	75048	**Prep Date:**	12/10/98 4:24:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	102.	62-125
4-Bromofluorobenzene	99.	75-125
Dibromofluoromethane	111.	75-125
Toluene-d8	107.	75-125

For Surrogates: 0 = Dil. Out

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9812026
Project Name: 8503 LONGHORN ARMY AMMO PLA
Project No.:
Lab ID: 9812026-03A
Chemron ID: 75052

Date: *17-Dec-98*
Client Sample ID: TRIP BLANK
Collection Date:
Matrix: WATER
Batch ID: VOC1_981209C
Prep Date: 12/10/98 7:15:00 AM
Loc. ID:

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 10	10	ug/L	1	12/10/98 7:15:00 AM
Acrolein	< 5	5	ug/L	1	12/10/98 7:15:00 AM
Acrylonitrile	< 4	4	ug/L	1	12/10/98 7:15:00 AM
Allyl chloride	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Benzene	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Bromodichloromethane	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Bromoform	< 2	2	ug/L	1	12/10/98 7:15:00 AM
Bromomethane	< 6	6	ug/L	1	12/10/98 7:15:00 AM
2-Butanone	< 10	10	ug/L	1	12/10/98 7:15:00 AM
Carbon disulfide	< 5	5	ug/L	1	12/10/98 7:15:00 AM
Carbon tetrachloride	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Chlorobenzene	< 4	4	ug/L	1	12/10/98 7:15:00 AM
Chloroethane	< 2	2	ug/L	1	12/10/98 7:15:00 AM
2-Chloroethylvinylether	< 10	10	ug/L	1	12/10/98 7:15:00 AM
Chloroform	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Chloromethane	< 5	5	ug/L	1	12/10/98 7:15:00 AM
Dibromochloromethane	< 3	3	ug/L	1	12/10/98 7:15:00 AM
1,2-Dibromo-3-chloropropane	< 6	6	ug/L	1	12/10/98 7:15:00 AM
1,2-Dibromoethane	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Dibromomethane	< 2	2	ug/L	1	12/10/98 7:15:00 AM
1,2-Dichlorobenzene	< 5	5	ug/L	1	12/10/98 7:15:00 AM
1,3-Dichlorobenzene	< 5	5	ug/L	1	12/10/98 7:15:00 AM
1,4-Dichlorobenzene	< 6	6	ug/L	1	12/10/98 7:15:00 AM
trans-1,4-Dichloro-2-butene	< 4	4	ug/L	1	12/10/98 7:15:00 AM
Dichlorodifluoromethane	< 3	3	ug/L	1	12/10/98 7:15:00 AM
1,1-Dichloroethane	< 3	3	ug/L	1	12/10/98 7:15:00 AM
1,2-Dichloroethane	< 3	3	ug/L	1	12/10/98 7:15:00 AM
1,1-Dichloroethene	< 5	5	ug/L	1	12/10/98 7:15:00 AM
cis-1,2-Dichloroethene	< 4	4	ug/L	1	12/10/98 7:15:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	TRIP BLANK
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	
Project No.:		**Matrix:**	WATER
Lab ID:	9812026-03A	**Batch ID:**	VOC1_981209C
Chemron ID:	75052	**Prep Date:**	12/10/98 7:15:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 4	4	ug/L	1	12/10/98 7:15:00 AM
Methylene chloride	< 4	4	ug/L	1	12/10/98 7:15:00 AM
1,2-Dichloropropane	< 2	2	ug/L	1	12/10/98 7:15:00 AM
cis-1,3-Dichloropropene	< 2	2	ug/L	1	12/10/98 7:15:00 AM
trans-1,3-Dichloropropene	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Diethyl ether	< 5	5	ug/L	1	12/10/98 7:15:00 AM
Ethylbenzene	< 5	5	ug/L	1	12/10/98 7:15:00 AM
Ethyl methacrylate	< 5	5	ug/L	1	12/10/98 7:15:00 AM
2-Hexanone	< 6	6	ug/L	1	12/10/98 7:15:00 AM
Methacrylonitrile	< 5	5	ug/L	1	12/10/98 7:15:00 AM
Iodomethane	< 5	5	ug/L	1	12/10/98 7:15:00 AM
Methyl methacrylate	< 4	4	ug/L	1	12/10/98 7:15:00 AM
4-Methyl-2-pentanone	< 10	10	ug/L	1	12/10/98 7:15:00 AM
Propionitrile	< 10	10	ug/L	1	12/10/98 7:15:00 AM
Styrene	< 4	4	ug/L	1	12/10/98 7:15:00 AM
1,1,1,2-Tetrachloroethane	< 5	5	ug/L	1	12/10/98 7:15:00 AM
1,1,2,2-Tetrachloroethane	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Tetrachloroethene	< 5	5	ug/L	1	12/10/98 7:15:00 AM
Toluene	< 3	3	ug/L	1	12/10/98 7:15:00 AM
1,1,1-Trichloroethane	< 5	5	ug/L	1	12/10/98 7:15:00 AM
1,1,2-Trichloroethane	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Trichloroethene	< 2	2	ug/L	1	12/10/98 7:15:00 AM
Trichlorofluoromethane	< 5	5	ug/L	1	12/10/98 7:15:00 AM
1,2,3-Trichloropropane	< 3	3	ug/L	1	12/10/98 7:15:00 AM
Vinyl acetate	< 10	10	ug/L	1	12/10/98 7:15:00 AM
Vinyl chloride	< 3	3	ug/L	1	12/10/98 7:15:00 AM
m,p-Xylene	< 5	5	ug/L	1	12/10/98 7:15:00 AM
o-Xylene	< 4	4	ug/L	1	12/10/98 7:15:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	TRIP BLANK
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	
Project No.:		**Matrix:**	WATER
Lab ID:	9812026-03A	**Batch ID:**	VOC1_981209C
Chemron ID:	75052	**Prep Date:**	12/10/98 7:15:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	TRIP BLANK
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	
Project ID:		**Matrix:**	WATER
Lab ID:	9812026-03A	**Batch ID:**	VOC1_981209C
Chemron ID:	75052	**Prep Date:**	12/10/98 7:15:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	102.	62-125
4-Bromofluorobenzene	92.	75-125
Dibromofluoromethane	114.	75-125
Toluene-d8	106.	75-125

For Surrogates: 0 = Dil. Out

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AMMO PLANT
Lab ID: BLANK

Date: *17-Dec-98*
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 12:50:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
Acetone	< 10	10	ug/L
Acrolein	< 5	5	ug/L
Acrylonitrile	< 4	4	ug/L
Allyl chloride	< 3	3	ug/L
Benzene	< 3	3	ug/L
Bromodichloromethane	< 3	3	ug/L
Bromoform	< 2	2	ug/L
Bromomethane	< 6	6	ug/L
2-Butanone	< 10	10	ug/L
Carbon disulfide	< 5	5	ug/L
Carbon tetrachloride	< 3	3	ug/L
Chlorobenzene	< 4	4	ug/L
Chloroethane	< 2	2	ug/L
2-Chloroethylvinylether	< 10	10	ug/L
Chloroform	< 3	3	ug/L
Chloromethane	< 5	5	ug/L
Dibromochloromethane	< 3	3	ug/L
1,2-Dibromo-3-chloropropane	< 6	6	ug/L
1,2-Dibromoethane	< 3	3	ug/L
Dibromomethane	< 2	2	ug/L
1,2-Dichlorobenzene	< 5	5	ug/L
1,3-Dichlorobenzene	< 5	5	ug/L
1,4-Dichlorobenzene	< 6	6	ug/L
trans-1,4-Dichloro-2-butene	< 4	4	ug/L
Dichlorodifluoromethane	< 3	3	ug/L
1,1-Dichloroethane	< 3	3	ug/L
1,2-Dichloroethane	< 3	3	ug/L
1,1-Dichloroethene	< 5	5	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC1_981209C
Lab ID:	BLANK	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 12:50:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 4	4	ug/L
trans-1,2-Dichloroethene	< 4	4	ug/L
Methylene chloride	< 4	4	ug/L
1,2-Dichloropropane	< 2	2	ug/L
cis-1,3-Dichloropropene	< 2	2	ug/L
trans-1,3-Dichloropropene	< 3	3	ug/L
Diethyl ether	< 5	5	ug/L
Ethylbenzene	< 5	5	ug/L
Ethyl methacrylate	< 5	5	ug/L
2-Hexanone	< 6	6	ug/L
Methacrylonitrile	< 5	5	ug/L
Iodomethane	< 5	5	ug/L
Methyl methacrylate	< 4	4	ug/L
4-Methyl-2-pentanone	< 10	10	ug/L
Propionitrile	< 10	10	ug/L
Styrene	< 4	4	ug/L
1,1,1,2-Tetrachloroethane	< 5	5	ug/L
1,1,2,2-Tetrachloroethane	< 3	3	ug/L
Tetrachloroethene	< 5	5	ug/L
Toluene	< 3	3	ug/L
1,1,1-Trichloroethane	< 5	5	ug/L
1,1,2-Trichloroethane	< 3	3	ug/L
Trichloroethene	< 2	2	ug/L
Trichlorofluoromethane	< 5	5	ug/L
1,2,3-Trichloropropane	< 3	3	ug/L
Vinyl acetate	< 10	10	ug/L
Vinyl chloride	< 3	3	ug/L
m,p-Xylene	< 5	5	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC1_981209C
Lab ID:	BLANK	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 12:50:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
o-Xylene	< 4	4	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AM	**Batch ID:**	VOC1_981209C
Lab ID:	BLANK	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 12:50:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	108	62-125
4-Bromofluorobenzene	94	75-125
Dibromofluoromethane	109	75-125
Toluene-d8	112	75-125

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AMMO PLANT
Lab ID: 9812026-02A

Date: *17-Dec-98*
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 8:40:00 A

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Acetone	50	30.83	50	40-140	31.1	51	1	20	ug/L
Acrolein	50	28.97	58	75-125	26.3	53	10	20	ug/L
Acrylonitrile	50	40.33	81	75-125	36.9	74	9	20	ug/L
Allyl chloride	50	33.26	67	75-125	38.5	77	15	20	ug/L
Benzene	50	51.21	102	75-125	56.7	113	10	20	ug/L
Bromodichloromethane	50	59.67	119	75-125	58.7	117	2	20	ug/L
Bromoform	50	54.76	110	75-125	57.5	115	5	20	ug/L
Bromomethane	50	48.23	96	72-125	47.6	95	1	20	ug/L
2-Butanone	50	45.7	91	40-140	44.5	89	3	20	ug/L
Carbon disulfide	50	57.26	115	75-125	58.8	118	3	20	ug/L
Carbon tetrachloride	50	52.7	105	62-125	56.6	113	7	20	ug/L
Chlorobenzene	50	55.05	110	75-125	57.8	116	5	20	ug/L
Chloroethane	50	41.57	83	65-125	42.1	84	1	20	ug/L
Chloroform	50	50.15	100	74-125	51.9	104	3	20	ug/L
Chloromethane	50	48.36	97	75-125	34.9	70	32	20	ug/L
Dibromochloromethane	50	61.04	122	73-125	62.7	125	3	20	ug/L
1,2-Dibromo-3-chloropropane	50	46.19	92	59-125	53.3	107	14	20	ug/L
1,2-Dibromoethane	50	64.01	128	75-125	63.3	127	1	20	ug/L
Dibromomethane	50	65.28	131	69-127	61.3	123	6	20	ug/L
1,2-Dichlorobenzene	50	56.87	114	75-125	56.5	113	1	20	ug/L
1,3-Dichlorobenzene	50	53.96	108	75-125	51.4	103	5	20	ug/L
1,4-Dichlorobenzene	50	56.53	113	75-125	55.3	111	2	20	ug/L
trans-1,4-Dichloro-2-butene	50	43.92	88	75-125	46.7	93	6	20	ug/L
Dichlorodifluoromethane	50	42.69	85	75-125	46	92	7	20	ug/L
1,1-Dichloroethane	50	40.41	81	75-125	43.6	87	7	20	ug/L
1,2-Dichloroethane	50	49.03	98	75-125	48.4	97	1	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AMMO PLANT
Lab ID: 9812026-02A

Date: *17-Dec-98*
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 8:40:00 A

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
1,1-Dichloroethene	50	46.47	93	75-125	49.9	100	7	20	ug/L
cis-1,2-Dichloroethene	50	43.06	86	75-125	46.4	93	8	20	ug/L
trans-1,2-Dichloroethene	50	56.57	113	75-125	59.4	119	5	20	ug/L
Methylene chloride	50	35.42	71	75-125	36.5	73	3	20	ug/L
1,2-Dichloropropane	50	42.11	84	70-125	44.2	88	5	20	ug/L
cis-1,3-Dichloropropene	50	44.58	89	74-125	46	92	3	20	ug/L
trans-1,3-Dichloropropene	50	48.72	97	66-125	49.7	99	2	20	ug/L
Diethyl ether	50	58.68	117	75-125	54.3	109	8	20	ug/L
Ethylbenzene	50	52.11	104	75-125	45.1	90	14	20	ug/L
Ethyl methacrylate	50	44.42	89	75-125	41.3	83	7	20	ug/L
2-Hexanone	50	46.91	94	75-125	45.3	91	3	20	ug/L
Methacrylonitrile	50	60.26	121	75-125	65.4	131	8	20	ug/L
Iodomethane	100	125.2	125	75-125	173	173	32	20	ug/L
Methyl methacrylate	50	44.3	89	75-125	42	84	5	20	ug/L
4-Methyl-2-pentanone	50	48.89	98	75-125	45.6	91	7	20	ug/L
Propionitrile	50	39.55	79	75-125	38.2	77	3	20	ug/L
Styrene	50	52.73	105	75-125	59.6	119	12	20	ug/L
1,1,1,2-Tetrachloroethane	50	63.42	127	72-125	65.6	131	3	20	ug/L
1,1,2,2-Tetrachloroethane	50	47.12	94	74-125	49.4	99	5	20	ug/L
Tetrachloroethene	50	61.32	123	71-125	55.1	110	11	20	ug/L
Toluene	50	46.37	93	74-125	49.3	99	6	20	ug/L
1,1,1-Trichloroethane	50	48.53	97	75-125	56.4	113	15	20	ug/L
1,1,2-Trichloroethane	50	52.82	106	75-125	53.4	107	1	20	ug/L
Trichloroethene	50	50.16	100	71-125	54.6	109	9	20	ug/L
Trichlorofluoromethane	50	59.57	119	67-125	63.6	127	6	20	ug/L
1,2,3-Trichloropropane	50	58.61	117	75-125	56.9	114	3	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC1_981209C
Lab ID:	9812026-02A	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 8:40:00 A

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Vinyl acetate	50	39.11	78	75-125	38.3	77	2	20	ug/L
Vinyl chloride	50	36.38	73	46-134	37.2	74	2	20	ug/L
m,p-Xylene	100	104.9	105	75-125	101	101	3	20	ug/L
o-Xylene	50	51.99	104	75-125	55	110	6	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AM	**Batch ID:**	VOC1_981209C
Lab ID:	9812026-02A	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 8:40:00 A

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	MS % Recovery	Control Limits	MSD % Recovery
1,2-Dichloroethane-d4	108	62-139	124
4-Bromofluorobenzene	113	75-125	113
Dibromofluoromethane	105	75-125	107
Toluene-d8	98	75-125	110

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC1_981209C
Lab ID:	LCS	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 12:08:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	50	43.5	87	40-140	ug/L
Acrolein	50	42.8	86	75-125	ug/L
Acrylonitrile	50	40.6	81	75-125	ug/L
Allyl chloride	50	60.6	121	75-125	ug/L
Benzene	50	53.4	107	75-125	ug/L
Bromodichloromethane	50	54.3	109	75-125	ug/L
Bromoform	50	55.9	112	75-125	ug/L
Bromomethane	50	40.9	82	72-125	ug/L
2-Butanone	50	46.8	89	40-140	ug/L
Carbon disulfide	50	42.6	85	75-125	ug/L
Carbon tetrachloride	50	57.2	115	62-125	ug/L
Chlorobenzene	50	50.7	101	75-125	ug/L
Chloroethane	50	40.8	82	65-125	ug/L
2-Chloroethylvinylether	50	51.4	103	75-125	ug/L
Chloroform	50	38	76	74-125	ug/L
Chloromethane	50	40.8	82	75-125	ug/L
Dibromochloromethane	50	56.4	113	73-125	ug/L
1,2-Dibromo-3-chloropropane	50	42.7	85	59-125	ug/L
1,2-Dibromoethane	50	53.1	106	75-125	ug/L
Dibromomethane	50	57.5	115	69-127	ug/L
1,2-Dichlorobenzene	50	48.2	96	75-125	ug/L
1,3-Dichlorobenzene	50	44.6	89	75-125	ug/L
1,4-Dichlorobenzene	50	45.1	90	75-125	ug/L
trans-1,4-Dichloro-2-butene	50	43.4	87	75-125	ug/L
Dichlorodifluoromethane	50	40.4	81	75-125	ug/L
1,1-Dichloroethane	50	42.1	84	75-125	ug/L
1,2-Dichloroethane	50	50.5	101	75-125	ug/L
1,1-Dichloroethene	50	40.9	82	75-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AMMO PLANT
Lab ID: LCS

Date: *17-Dec-98*
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 12:08:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	50	40.1	80	75-125	ug/L
trans-1,2-Dichloroethene	50	47	94	75-125	ug/L
Methylene chloride	50	42.5	85	75-125	ug/L
1,2-Dichloropropane	50	39.9	80	70-125	ug/L
cis-1,3-Dichloropropene	50	45.5	91	74-125	ug/L
trans-1,3-Dichloropropene	50	46.6	93	66-125	ug/L
Diethyl ether	50	46.2	93	75-125	ug/L
Ethylbenzene	50	48	96	75-125	ug/L
Ethyl methacrylate	50	40.8	82	75-125	ug/L
2-Hexanone	50	50.8	102	75-125	ug/L
Methacrylonitrile	50	38.9	78	75-125	ug/L
Iodomethane	100	119	119	75-125	ug/L
Methyl methacrylate	50	42.4	85	75-125	ug/L
4-Methyl-2-pentanone	50	42.2	85	75-125	ug/L
Propionitrile	50	42.5	85	75-125	ug/L
Styrene	50	48.7	97	75-125	ug/L
1,1,1,2-Tetrachloroethane	50	55.6	111	72-125	ug/L
1,1,2,2-Tetrachloroethane	50	40.9	82	74-125	ug/L
Tetrachloroethene	50	60.8	122	71-125	ug/L
Toluene	50	47.2	94	74-125	ug/L
1,1,1-Trichloroethane	50	41.2	82	75-125	ug/L
1,1,2-Trichloroethane	50	47.1	94	75-125	ug/L
Trichloroethene	50	51.1	102	71-125	ug/L
Trichlorofluoromethane	50	50	100	67-125	ug/L
1,2,3-Trichloropropane	50	39.3	79	75-125	ug/L
Vinyl acetate	50	47.9	96	75-125	ug/L
Vinyl chloride	50	55.3	111	46-134	ug/L
m,p-Xylene	100	103	103	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC1_981209C
Lab ID:	LCS	**Prep Date:**	12/10/98
		Date Analyzed:	12/10/98 12:08:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	50	49.5	99	75-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AM
Lab ID: LCS

Date: *17-Dec-98*
Matrix: Water
Batch ID: VOC1_981209C
Prep Date: 12/10/98
Date Analyzed: 12/10/98 12:08:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	114	62-139
4-Bromofluorobenzene	87	75-125
Dibromofluoromethane	109	75-125
Toluene-d8	109	75-125

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Batch ID:**	VOC1_981209C
Chemron ID:	75051	**Prep Date:**	12/10/98 6:32:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 10	10	ug/L	1	12/10/98 6:32:00 AM
Acrolein	< 5	5	ug/L	1	12/10/98 6:32:00 AM
Acrylonitrile	< 4	4	ug/L	1	12/10/98 6:32:00 AM
Allyl chloride	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Benzene	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Bromodichloromethane	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Bromoform	< 2	2	ug/L	1	12/10/98 6:32:00 AM
Bromomethane	< 6	6	ug/L	1	12/10/98 6:32:00 AM
2-Butanone	< 10	10	ug/L	1	12/10/98 6:32:00 AM
Carbon disulfide	< 5	5	ug/L	1	12/10/98 6:32:00 AM
Carbon tetrachloride	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Chlorobenzene	< 4	4	ug/L	1	12/10/98 6:32:00 AM
Chloroethane	< 2	2	ug/L	1	12/10/98 6:32:00 AM
2-Chloroethylvinylether	< 10	10	ug/L	1	12/10/98 6:32:00 AM
Chloroform	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Chloromethane	< 5	5	ug/L	1	12/10/98 6:32:00 AM
Dibromochloromethane	< 3	3	ug/L	1	12/10/98 6:32:00 AM
1,2-Dibromo-3-chloropropane	< 6	6	ug/L	1	12/10/98 6:32:00 AM
1,2-Dibromoethane	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Dibromomethane	< 2	2	ug/L	1	12/10/98 6:32:00 AM
1,2-Dichlorobenzene	< 5	5	ug/L	1	12/10/98 6:32:00 AM
1,3-Dichlorobenzene	< 5	5	ug/L	1	12/10/98 6:32:00 AM
1,4-Dichlorobenzene	< 6	6	ug/L	1	12/10/98 6:32:00 AM
trans-1,4-Dichloro-2-butene	< 4	4	ug/L	1	12/10/98 6:32:00 AM
Dichlorodifluoromethane	< 3	3	ug/L	1	12/10/98 6:32:00 AM
1,1-Dichloroethane	< 3	3	ug/L	1	12/10/98 6:32:00 AM
1,2-Dichloroethane	< 3	3	ug/L	1	12/10/98 6:32:00 AM
1,1-Dichloroethene	< 5	5	ug/L	1	12/10/98 6:32:00 AM
cis-1,2-Dichloroethene	< 4	4	ug/L	1	12/10/98 6:32:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Batch ID:**	VOC1_981209C
Chemron ID:	75051	**Prep Date:**	12/10/98 6:32:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 4	4	ug/L	1	12/10/98 6:32:00 AM
Methylene chloride	< 4	4	ug/L	1	12/10/98 6:32:00 AM
1,2-Dichloropropane	< 2	2	ug/L	1	12/10/98 6:32:00 AM
cis-1,3-Dichloropropene	< 2	2	ug/L	1	12/10/98 6:32:00 AM
trans-1,3-Dichloropropene	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Diethyl ether	< 5	5	ug/L	1	12/10/98 6:32:00 AM
Ethylbenzene	< 5	5	ug/L	1	12/10/98 6:32:00 AM
Ethyl methacrylate	< 5	5	ug/L	1	12/10/98 6:32:00 AM
2-Hexanone	< 6	6	ug/L	1	12/10/98 6:32:00 AM
Methacrylonitrile	< 5	5	ug/L	1	12/10/98 6:32:00 AM
Iodomethane	< 5	5	ug/L	1	12/10/98 6:32:00 AM
Methyl methacrylate	< 4	4	ug/L	1	12/10/98 6:32:00 AM
4-Methyl-2-pentanone	< 10	10	ug/L	1	12/10/98 6:32:00 AM
Propionitrile	< 10	10	ug/L	1	12/10/98 6:32:00 AM
Styrene	< 4	4	ug/L	1	12/10/98 6:32:00 AM
1,1,1,2-Tetrachloroethane	< 5	5	ug/L	1	12/10/98 6:32:00 AM
1,1,2,2-Tetrachloroethane	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Tetrachloroethene	< 5	5	ug/L	1	12/10/98 6:32:00 AM
Toluene	< 3	3	ug/L	1	12/10/98 6:32:00 AM
1,1,1-Trichloroethane	< 5	5	ug/L	1	12/10/98 6:32:00 AM
1,1,2-Trichloroethane	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Trichloroethene	< 2	2	ug/L	1	12/10/98 6:32:00 AM
Trichlorofluoromethane	< 5	5	ug/L	1	12/10/98 6:32:00 AM
1,2,3-Trichloropropane	< 3	3	ug/L	1	12/10/98 6:32:00 AM
Vinyl acetate	< 10	10	ug/L	1	12/10/98 6:32:00 AM
Vinyl chloride	< 3	3	ug/L	1	12/10/98 6:32:00 AM
m,p-Xylene	< 5	5	ug/L	1	12/10/98 6:32:00 AM
o-Xylene	< 4	4	ug/L	1	12/10/98 6:32:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Batch ID:**	VOC1_981209C
Chemron ID:	75051	**Prep Date:**	12/10/98 6:32:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Aldrich

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Batch ID:**	VOC1_981209C
Chemron ID:	75051	**Prep Date:**	12/10/98 6:32:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	113.	62-125
4-Bromofluorobenzene	98.	75-125
Dibromofluoromethane	104.	75-125
Toluene-d8	102.	75-125

For Surrogates: 0 = Dil. Out

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Lab ID:	9812026-02A	**Matrix:**	WATER
Chemron ID:	75051	**Batch ID:**	IR_981208A
		Prep Date:	12/7/98 2:00:00 PM

PETROLEUM HYDROCARBONS, T/R E418.1 **Analyst:** SLF

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Petroleum Hydrocarbons, TR	< 0.5	0.5	mg/L	1	12/8/98 11:00:00 A

Approved by: R. Eldridge

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_981208A
Lab ID:	MBlank	**Prep Date:**	12/7/98
		Date Analyzed:	12/8/98 11:00:00 A

QUALITY CONTROL REPORT

Method Blank

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Result	Report Limit	Units:
Petroleum Hydrocarbons, TR	< 0.5	0.5	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_981208A
Lab ID:	9812024-01A	**Prep Date:**	12/7/98
		Date Analyzed:	12/8/98 11:00:00 A

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Petroleum Hydrocarbons, TR	2	17.3	-20	73-119	18.5	40	7	15	mg/L

* MS/MSD results reflect the amount spiked + the parent sample concentration.

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_981208A
Lab ID:	LCS	**Prep Date:**	12/7/98
		Date Analyzed:	12/8/98 11:00:00 A

QUALITY CONTROL REPORT

Laboratory Control Sample

PETROLEUM HYDROCARBONS, T/R E418.1 **Analyst:** SLF

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Petroleum Hydrocarbons, TR	2	2.15	108	73-119	mg/L

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75051	**Prep Date:**	12/4/98 1:00:00 PM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Acenaphthylene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Acetophenone	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Aniline	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Anthracene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
4-Aminobiphenyl	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Benzidine	< 50	50	ug/L	1	12/8/98 1:37:00 AM
Benzo[a]anthracene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Benzo[b]fluoranthene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Benzo[k]fluoranthene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Benzo[g,h,i]perylene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Benzo[a]pyrene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Benzoic acid	< 20	20	ug/L	1	12/8/98 1:37:00 AM
Benzyl alcohol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Bis(2-chloroethoxy)methane	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Bis(2-chloroethyl)ether	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Bis(2-chloroisopropyl)ether	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Bis(2-ethylhexyl)phthalate	< 10	10	ug/L	1	12/8/98 1:37:00 AM
4-Bromophenyl phenyl ether	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Butyl benzyl phthalate	< 10	10	ug/L	1	12/8/98 1:37:00 AM
4-Chloroaniline	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2-Chloronaphthalene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
4-Chloro-3-methylphenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2-Chlorophenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
4-Chlorophenyl phenyl ether	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Chrysene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Dibenz[a,h]anthracene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Dibenzofuran	< 10	10	ug/L	1	12/8/98 1:37:00 AM
1,3-Dichlorobenzene	< 10	10	ug/L	1	12/8/98 1:37:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75051	**Prep Date:**	12/4/98 1:00:00 PM
		Loc. ID:	

SEMIVOLATILE ORGANICS SW8270C **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
3,3´-Dichlorobenzidine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
1,2-Dichlorobenzene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2,4-Dichlorophenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2,6-Dichlorophenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Diethyl phthalate	< 10	10	ug/L	1	12/8/98 1:37:00 AM
a,a-Dimethylphenethylamine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2,4-Dimethylphenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Dimethyl phthalate	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Di-n-butyl phthalate	< 10	10	ug/L	1	12/8/98 1:37:00 AM
4,6-Dinitro-2-methylphenol	< 20	20	ug/L	1	12/8/98 1:37:00 AM
2,4-Dinitrophenol	< 20	20	ug/L	1	12/8/98 1:37:00 AM
2,4-Dinitrotoluene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2,6-Dinitrotoluene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Di-n-octyl phthalate	< 10	10	ug/L	1	12/8/98 1:37:00 AM
1,2-Diphenylhydrazine	< 20	20	ug/L	1	12/8/98 1:37:00 AM
Fluoranthene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Fluorene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Hexachlorobenzene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Hexachlorobutadiene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Hexachlorocyclopentadiene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Hexachloroethane	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Isophorone	< 10	10	ug/L	1	12/8/98 1:37:00 AM
3-Methylcholanthrene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2-Methylnaphthalene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2-Methylphenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
4-Methylphenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Naphthalene	< 10	10	ug/L	1	12/8/98 1:37:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75051	**Prep Date:**	12/4/98 1:00:00 PM
		Loc. ID:	

SEMIVOLATILE ORGANICS — SW8270C — Analyst: DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2-Naphthylamine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2-Nitroaniline	< 10	10	ug/L	1	12/8/98 1:37:00 AM
3-Nitroaniline	< 10	10	ug/L	1	12/8/98 1:37:00 AM
4-Nitroaniline	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Nitrobenzene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2-Nitrophenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
4-Nitrophenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
N-Nitroso-di-n-butylamine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
N-Nitrosodiethylamine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
N-Nitrosodimethylamine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
N-Nitrosodiphenylamine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
N-Nitrosodi-n-propylamine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
N-Nitrosomethylethylamine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Pentachlorobenzene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Pentachloronitrobenzene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Pentachlorophenol	< 20	20	ug/L	1	12/8/98 1:37:00 AM
Phenacetin	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Phenanthrene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Phenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Pyrene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
Pyridine	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2,4,5-Trichlorophenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM
1,2,4-Trichlorobenzene	< 10	10	ug/L	1	12/8/98 1:37:00 AM
2,4,6-Trichlorophenol	< 10	10	ug/L	1	12/8/98 1:37:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75051	**Prep Date:**	12/4/98 1:00:00 PM
		Loc. ID:	

SEMIVOLATILE ORGANICS — SW8270C — Analyst: DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Oldham

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLA	**Collection Date:**	12/3/98 3:05:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Batch ID:**	SVOC1_981207A
Chemron ID:	75051	**Prep Date:**	12/4/98 1:00:00 PM
		Loc ID:	

SEMIVOLATILE ORGANICS SW8270C Analyst: DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	32.	25-134
2-Fluorobiphenyl	74.	43-125
2-Fluorophenol	48.	25-125
Nitrobenzene-d5	59.	32-125
Phenol-d5	28.	25-125
Terphenyl-d14	67.	42-126

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC1_981207A
Lab ID:	BLANK	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS SW8270C **Analyst:** DLS

Analyte	Result	Report Limit	Units:
Acenaphthene	< 10	10	ug/L
Acenaphthylene	< 10	10	ug/L
Acetophenone	< 10	10	ug/L
Aniline	< 10	10	ug/L
Anthracene	< 10	10	ug/L
4-Aminobiphenyl	< 10	10	ug/L
Benzidine	< 50	50	ug/L
Benzo[a]anthracene	< 10	10	ug/L
Benzo[b]fluoranthene	< 10	10	ug/L
Benzo[k]fluoranthene	< 10	10	ug/L
Benzo[g,h,i]perylene	< 10	10	ug/L
Benzo[a]pyrene	< 10	10	ug/L
Benzoic acid	< 20	20	ug/L
Benzyl alcohol	< 10	10	ug/L
Bis(2-chloroethoxy)methane	< 10	10	ug/L
Bis(2-chloroethyl)ether	< 10	10	ug/L
Bis(2-chloroisopropyl)ether	< 10	10	ug/L
Bis(2-ethylhexyl)phthalate	< 10	10	ug/L
4-Bromophenyl phenyl ether	< 10	10	ug/L
Butyl benzyl phthalate	< 10	10	ug/L
4-Chloroaniline	< 10	10	ug/L
2-Chloronaphthalene	< 10	10	ug/L
4-Chloro-3-methylphenol	< 10	10	ug/L
2-Chlorophenol	< 10	10	ug/L
4-Chlorophenyl phenyl ether	< 10	10	ug/L
Chrysene	< 10	10	ug/L
Dibenz[a,h]anthracene	< 10	10	ug/L
Dibenzofuran	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC1_981207A
Lab ID:	BLANK	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** DLS

Analyte	Result	Report Limit	Units:
1,3-Dichlorobenzene	< 10	10	ug/L
1,4-Dichlorobenzene	< 10	10	ug/L
1,2-Dichlorobenzene	< 10	10	ug/L
3,3´-Dichlorobenzidine	< 10	10	ug/L
2,4-Dichlorophenol	< 10	10	ug/L
2,6-Dichlorophenol	< 10	10	ug/L
Diethyl phthalate	< 10	10	ug/L
a,a-Dimethylphenethylamine	< 10	10	ug/L
2,4-Dimethylphenol	< 10	10	ug/L
Dimethyl phthalate	< 10	10	ug/L
Di-n-butyl phthalate	< 10	10	ug/L
4,6-Dinitro-2-methylphenol	< 20	20	ug/L
2,4-Dinitrophenol	< 20	20	ug/L
2,4-Dinitrotoluene	< 10	10	ug/L
2,6-Dinitrotoluene	< 10	10	ug/L
Di-n-octyl phthalate	< 10	10	ug/L
1,2-Diphenylhydrazine	< 20	20	ug/L
Fluoranthene	< 10	10	ug/L
Fluorene	< 10	10	ug/L
Hexachlorobenzene	< 10	10	ug/L
Hexachlorobutadiene	< 10	10	ug/L
Hexachlorocyclopentadiene	< 10	10	ug/L
Hexachloroethane	< 10	10	ug/L
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L
Isophorone	< 10	10	ug/L
3-Methylcholanthrene	< 10	10	ug/L
2-Methylnaphthalene	< 10	10	ug/L
2-Methylphenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC1_981207A
Lab ID:	BLANK	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** DLS

Analyte	Result	Report Limit	Units:
4-Methylphenol	< 10	10	ug/L
Naphthalene	< 10	10	ug/L
1-Naphthylamine	< 10	10	ug/L
2-Naphthylamine	< 10	10	ug/L
2-Nitroaniline	< 10	10	ug/L
3-Nitroaniline	< 10	10	ug/L
4-Nitroaniline	< 10	10	ug/L
Nitrobenzene	< 10	10	ug/L
2-Nitrophenol	< 10	10	ug/L
4-Nitrophenol	< 10	10	ug/L
N-Nitroso-di-n-butylamine	< 10	10	ug/L
N-Nitrosodiethylamine	< 10	10	ug/L
N-Nitrosodimethylamine	< 10	10	ug/L
N-Nitrosodiphenylamine	< 10	10	ug/L
N-Nitrosodi-n-propylamine	< 10	10	ug/L
N-Nitrosomethylethylamine	< 10	10	ug/L
Pentachlorobenzene	< 10	10	ug/L
Pentachloronitrobenzene	< 10	10	ug/L
Pentachlorophenol	< 20	20	ug/L
Phenacetin	< 10	10	ug/L
Phenanthrene	< 10	10	ug/L
Phenol	< 10	10	ug/L
Pyrene	< 10	10	ug/L
Pyridine	< 10	10	ug/L
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L
1,2,4-Trichlorobenzene	< 10	10	ug/L
2,4,5-Trichlorophenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC1_981207A
Lab ID:	BLANK	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
2,4,6-Trichlorophenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AM	**Batch ID:**	SVOC1_981207A
Lab ID:	BLANK	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 4:21:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	78	25-134
2-Fluorobiphenyl	86	43-125
2-Fluorophenol	58	25-125
Nitrobenzene-d5	76	32-125
Phenol-d5	29	25-125
Terphenyl-d14	50	42-126

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AMMO PLANT
Lab ID: 9812024-01A

Date: *18-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Acenaphthene	50	40.18	80	49-125	39.3	79	2	20	ug/L
Acenaphthylene	50	36.83	74	47-125	35.9	72	3	20	ug/L
Acetophenone	50	43.92	88	25-175	44	88	0	20	ug/L
Aniline	50	40.2	80	25-175	34	68	17	20	ug/L
Anthracene	50	43.17	86	45-165	40.4	81	7	20	ug/L
4-Aminobiphenyl	50	3.56	7	25-175	3.3	7	0	20	ug/L
Benzo[a]anthracene	50	35.37	71	51-133	35.7	71	1	20	ug/L
Benzo[b]fluoranthene	50	25.92	52	37-125	25.9	52	0	20	ug/L
Benzo[k]fluoranthene	50	48.75	98	25-175	47.8	96	2	20	ug/L
Benzo[g,h,i]perylene	50	60.6	121	34-149	65	130	7	20	ug/L
Benzo[a]pyrene	50	42.25	85	41-125	41	82	3	20	ug/L
Benzyl alcohol	50	35.46	71	35-125	34.6	69	2	20	ug/L
Bis(2-chloroethoxy)methane	50	47.17	94	49-125	45.8	92	3	20	ug/L
Bis(2-chloroethyl)ether	50	49.49	99	44-125	43.7	87	12	20	ug/L
Bis(2-chloroisopropyl)ether	50	48.37	97	36-166	46.2	92	5	20	ug/L
Bis(2-ethylhexyl)phthalate	50	70.67	62	33-129	82.4	85	15	20	ug/L
4-Bromophenyl phenyl ether	50	50.38	101	53-127	52.7	105	4	20	ug/L
Butyl benzyl phthalate	50	49.19	98	26-125	47.4	95	4	20	ug/L
4-Chloroaniline	50	18.2	36	45-136	18.6	37	2	20	ug/L
2-Chloronaphthalene	50	44.75	90	60-125	41.4	83	8	20	ug/L
4-Chloro-3-methylphenol	50	40.57	81	44-125	38	76	7	20	ug/L
2-Chlorophenol	50	40.04	80	41-125	39	78	3	20	ug/L
4-Chlorophenyl phenyl ether	50	40.79	82	51-132	39.2	78	4	20	ug/L
Chrysene	50	60.32	121	55-133	58.5	117	3	20	ug/L
Dibenz[a,h]anthracene	50	63.06	126	50-125	65.7	131	4	20	ug/L
Dibenzofuran	50	43.77	88	52-125	43.4	87	1	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AMMO PLANT
Lab ID: 9812024-01A

Date: *18-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
1,3-Dichlorobenzene	50	41.89	84	36-125	41	82	2	20	ug/L
1,4-Dichlorobenzene	50	42.45	85	30-125	41	82	4	20	ug/L
1,2-Dichlorobenzene	50	44.32	89	42-155	41.6	83	6	20	ug/L
2,4-Dichlorophenol	50	41.1	82	46-125	39.4	79	4	20	ug/L
2,6-Dichlorophenol	50	48.83	98	25-175	48.1	96	2	20	ug/L
Diethyl phthalate	50	42.21	81	37-125	41	78	3	20	ug/L
2,4-Dimethylphenol	50	14.66	29	45-139	9.6	19	0	20	ug/L
Dimethyl phthalate	50	78.4	66	25-175	74.9	59	5	20	ug/L
Di-n-butyl phthalate	50	37.54	75	34-126	36	72	4	20	ug/L
4,6-Dinitro-2-methylphenol	50	34.64	69	26-134	32.8	66	6	20	ug/L
2,4-Dinitrophenol	50	18.25	37	30-151	18	35	0	20	ug/L
2,4-Dinitrotoluene	50	34.68	69	39-139	32.9	66	5	20	ug/L
2,6-Dinitrotoluene	50	39.22	78	51-125	36.3	73	8	20	ug/L
Di-n-octyl phthalate	50	48.8	98	38-127	55.2	110	12	20	ug/L
1,2-Diphenylhydrazine	100	92.12	92	25-175	100	100	9	20	ug/L
Fluoranthene	50	24.74	49	47-125	21.6	43	14	20	ug/L
Fluorene	50	37.9	76	48-139	38	76	0	20	ug/L
Hexachlorobenzene	50	47.32	95	46-133	50.2	100	6	20	ug/L
Hexachlorobutadiene	50	41.83	84	25-125	42	84	0	20	ug/L
Hexachlorocyclopentadiene	50	40.88	82	41-125	35	70	15	20	ug/L
Hexachloroethane	50	40.38	81	25-153	39.3	79	3	20	ug/L
Indeno[1,2,3-cd]pyrene	50	57.69	115	27-160	57.8	116	0	20	ug/L
Isophorone	50	43.37	87	26-175	41.5	83	4	20	ug/L
3-Methylcholanthrene	50	21.73	43	25-175	26.1	52	18	20	ug/L
2-Methylnaphthalene	50	47.2	94	41-125	45.5	91	4	20	ug/L
2-Methylphenol	50	33.37	67	25-125	31.7	63	5	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AMMO PLANT
Lab ID: 9812024-01A

Date: *18-Dec-98*
Matrix: Water
Batch ID: SVOC1_981207A
Prep Date: 12/4/98
Date Analyzed: 12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
4-Methylphenol	100	62.14	62	33-125	60.6	61	2	20	ug/L
Naphthalene	50	48.96	95	50-125	49.9	97	2	20	ug/L
1-Naphthylamine	50	2.85	6	25-175	2.8	6	0	20	ug/L
2-Naphthylamine	50	1.2	2	25-175	1.3	3	0	20	ug/L
2-Nitroaniline	50	30.42	61	50-125	25.9	52	16	20	ug/L
Nitrobenzene	50	56.34	113	46-133	56.5	113	0	20	ug/L
2-Nitrophenol	50	45.11	90	44-125	44.9	90	0	20	ug/L
4-Nitrophenol	50	36.33	73	25-131	25.9	52	34	20	ug/L
N-Nitroso-di-n-butylamine	50	44.32	89	25-175	40.4	81	9	20	ug/L
N-Nitrosodiethylamine	50	40.31	81	25-175	37.2	74	8	20	ug/L
N-Nitrosodimethylamine	50	40.08	80	25-175	37.3	75	7	20	ug/L
N-Nitrosodiphenylamine	100	106	106	27-125	123	123	15	20	ug/L
N-Nitrosodi-n-propylamine	50	40.97	82	37-125	40	80	2	20	ug/L
N-Nitrosomethylethylamine	50	42.57	85	25-175	39.1	78	9	20	ug/L
Pentachlorobenzene	50	38.52	77	25-175	37.9	76	2	20	ug/L
Pentachloronitrobenzene	50	43.58	87	25-175	43.7	87	0	20	ug/L
Pentachlorophenol	50	71.4	75	28-136	67.9	68	5	20	ug/L
Phenacetin	50	40.5	81	25-175	39.2	78	3	20	ug/L
Phenanthrene	50	43.7	84	54-125	43.2	83	1	20	ug/L
Phenol	50	21.59	43	25-125	21.4	43	1	20	ug/L
Pyrene	50	58.74	114	47-136	55.3	107	6	20	ug/L
Pyridine	50	30.99	62	25-175	29.5	59	5	20	ug/L
1,2,4,5-Tetrachlorobenzene	50	43.15	86	25-175	41.1	82	5	20	ug/L
2,3,4,6-Tetrachlorophenol	50	41	82	25-175	39.4	79	4	20	ug/L
1,2,4-Trichlorobenzene	50	41.7	83	44-142	40.9	82	2	20	ug/L
2,4,5-Trichlorophenol	50	43.35	87	25-175	40.8	82	6	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC1_981207A
Lab ID:	9812024-01A	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
2,4,6-Trichlorophenol	50	44.69	89	39-128	41	82	9	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*18-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AM	**Batch ID:**	SVOC1_981207A
Lab ID:	9812024-01A	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 7:08:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	MS % Recovery	Control Limits	MSD % Recovery
2,4,6-Tribromophenol	66	25-134	60
2-Fluorobiphenyl	75	43-125	70
2-Fluorophenol	49	25-125	48
Nitrobenzene-d5	72	32-125	72
Phenol-d5	31	25-125	31
Terphenyl-d14	65	42-126	61

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC1_981207A
Lab ID:	LCS	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acenaphthene	50	44.9	90	49-125	ug/L
Acenaphthylene	50	43.7	87	47-125	ug/L
Acetophenone	50	43.9	88	25-175	ug/L
Aniline	50	41.6	83	25-175	ug/L
Anthracene	50	46.3	93	45-165	ug/L
4-Aminobiphenyl	50	67.5	135	25-175	ug/L
Benzidine	100	62	62	25-175	ug/L
Benzo[a]anthracene	50	44	88	51-133	ug/L
Benzo[b]fluoranthene	50	32.2	64	37-125	ug/L
Benzo[k]fluoranthene	50	61.5	123	25-175	ug/L
Benzo[g,h,i]perylene	50	47.2	95	34-149	ug/L
Benzo[a]pyrene	50	49.2	98	41-125	ug/L
Benzoic acid	100	13	13	25-162	ug/L
Benzyl alcohol	50	36	72	35-125	ug/L
Bis(2-chioroethoxy)methane	50	50.1	100	49-125	ug/L
Bis(2-chloroethyl)ether	50	52.9	106	44-125	ug/L
Bis(2-chloroisopropyl)ether	50	49.7	99	36-166	ug/L
Bis(2-ethylhexyl)phthalate	50	52.4	105	33-129	ug/L
4-Bromophenyl phenyl ether	50	48	96	53-127	ug/L
Butyl benzyl phthalate	50	49	98	26-125	ug/L
4-Chloroaniline	50	53.8	108	45-136	ug/L
2-Chloronaphthalene	50	45	90	60-125	ug/L
4-Chloro-3-methylphenol	50	44	88	44-125	ug/L
2-Chlorophenol	50	42.8	86	41-125	ug/L
4-Chlorophenyl phenyl ether	50	47.6	95	51-132	ug/L
Chrysene	50	56.1	112	55-133	ug/L
Dibenz[a,h]anthracene	50	55.1	110	50-125	ug/L
Dibenzofuran	50	51.3	103	52-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC1_981207A
Lab ID:	LCS	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS SW8270C **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
1,3-Dichlorobenzene	50	38.7	77	36-125	ug/L
1,4-Dichlorobenzene	50	39	78	30-125	ug/L
1,2-Dichlorobenzene	50	42.2	84	42-155	ug/L
3,3'-Dichlorobenzidine	50	49.3	99	29-175	ug/L
2,4-Dichlorophenol	50	44.1	88	46-125	ug/L
2,6-Dichlorophenol	50	51.1	102	25-175	ug/L
Diethyl phthalate	50	49.9	100	37-125	ug/L
a,a-Dimethylphenethylamine	50	32.4	65	25-175	ug/L
2,4-Dimethylphenol	50	42.9	86	45-139	ug/L
Dimethyl phthalate	50	46.7	93	25-175	ug/L
Di-n-butyl phthalate	50	43.3	87	34-126	ug/L
4,6-Dinitro-2-methylphenol	50	43.6	87	26-134	ug/L
2,4-Dinitrophenol	50	32	64	30-151	ug/L
2,4-Dinitrotoluene	50	45.3	91	39-139	ug/L
2,6-Dinitrotoluene	50	46.2	92	51-125	ug/L
Di-n-octyl phthalate	50	53.7	107	38-127	ug/L
1,2-Diphenylhydrazine	100	76.7	77	25-175	ug/L
Fluoranthene	50	40.5	81	47-125	ug/L
Fluorene	50	47.4	95	48-139	ug/L
Hexachlorobenzene	50	45.7	91	46-133	ug/L
Hexachlorobutadiene	50	36.5	73	25-125	ug/L
Hexachlorocyclopentadiene	50	34.7	69	41-125	ug/L
Hexachloroethane	50	35.3	71	25-153	ug/L
Indeno[1,2,3-cd]pyrene	50	46.1	92	27-160	ug/L
Isophorone	50	46.7	93	26-175	ug/L
3-Methylcholanthrene	50	24.8	50	25-175	ug/L
2-Methylnaphthalene	50	47.4	95	41-125	ug/L
2-Methylphenol	50	39.2	78	25-125	ug/L

CHEMRON
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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC1_981207A
Lab ID:	LCS	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS — SW8270C — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
4-Methylphenol	100	70.4	70	33-125	ug/L
Naphthalene	50	41.9	84	50-125	ug/L
1-Naphthylamine	50	45.4	91	25-175	ug/L
2-Naphthylamine	50	48.5	97	25-175	ug/L
2-Nitroaniline	50	50.9	102	50-125	ug/L
3-Nitroaniline	50	49.9	100	51-125	ug/L
4-Nitroaniline	50	43	86	40-143	ug/L
Nitrobenzene	50	45.8	92	46-133	ug/L
2-Nitrophenol	50	42.8	86	44-125	ug/L
4-Nitrophenol	50	12.9	26	25-131	ug/L
N-Nitroso-di-n-butylamine	50	42	84	25-175	ug/L
N-Nitrosodiethylamine	50	41.3	83	25-175	ug/L
N-Nitrosodimethylamine	50	42.5	85	25-175	ug/L
N-Nitrosodiphenylamine	100	103	103	27-125	ug/L
N-Nitrosodi-n-propylamine	50	40.6	81	37-125	ug/L
N-Nitrosomethylethylamine	50	45	90	25-175	ug/L
Pentachlorobenzene	50	46.1	92	25-175	ug/L
Pentachloronitrobenzene	50	46.9	94	25-175	ug/L
Pentachlorophenol	50	40.3	81	28-136	ug/L
Phenacetin	50	49	98	25-175	ug/L
Phenanthrene	50	45.1	90	54-125	ug/L
Phenol	50	24.6	49	25-125	ug/L
Pyrene	50	50.4	101	47-136	ug/L
Pyridine	50	34.8	70	25-175	ug/L
1,2,4,5-Tetrachlorobenzene	50	43.8	88	25-175	ug/L
2,3,4,6-Tetrachlorophenol	50	43.4	87	25-175	ug/L
1,2,4-Trichlorobenzene	50	39.3	79	44-142	ug/L
2,4,5-Trichlorophenol	50	47.7	95	25-175	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC1_981207A
Lab ID:	LCS	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS	SW8270C				Analyst: DLS
Analyte	**Amt. Spiked**	**Result**	**% Recovery**	**Control Limits**	**Units:**
2,4,6-Trichlorophenol	50	45.9	92	39-128	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*10-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AM	**Batch ID:**	SVOC1_981207A
Lab ID:	LCS	**Prep Date:**	12/4/98
		Date Analyzed:	12/7/98 5:17:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	90	25-134
2-Fluorobiphenyl	75	43-125
2-Fluorophenol	59	25-125
Nitrobenzene-d5	79	32-125
Phenol-d5	35	25-125
Terphenyl-d14	56	42-126

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*16-Dec-98*
Lab Order:	9812026	**Client Sample ID:**	8503-FIRESTATION
Project Name:	8503 LONGHORN ARMY AMMO PLAN	**Collection Date:**	12/3/98 3:05:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9812026-02A	**Loc. ID:**	
Chemron ID:	75051		

Analyses	Result	Report Limit	Units	Dilution	Date Analyzed
BARIUM, TOTAL		SW6010B		Analyst: JOL	
Barium	0.158	0.01	mg/L	1	12/9/98
CADMIUM, TOTAL		SW6010B		Analyst: JOL	
Cadmium	< 0.005	0.005	mg/L	1	12/9/98
ARSENIC, TOTAL		SW7060A		Analyst: JOL	
Arsenic	< 0.002	0.002	mg/L	1	12/11/98
LEAD, TOTAL		SW7421		Analyst: JOL	
Lead	< 0.002	0.002	mg/L	1	12/11/98

Approved by: R. Adams

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	GFAA_981211A
Lab ID:	MBlank	**Prep Date:**	12/7/98
		Date Analyzed:	12/11/98

QUALITY CONTROL REPORT

Method Blank

ARSENIC, Total **SW7060A** **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Arsenic	< 0.002	0.002	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	GFAA_981211A
Lab ID:	9812026-02A	**Prep Date:**	12/7/98
		Date Analyzed:	12/11/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

ARSENIC, Total **SW7060A** **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Arsenic	0.05	0.053	106	80-120	0.053	106	0	15	mg/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	GFAA_981211A
Lab ID:	LCS	**Prep Date:**	12/7/98
		Date Analyzed:	12/11/98

QUALITY CONTROL REPORT

Laboratory Control Sample

ARSENIC, Total — **SW7060A** — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Arsenic	0.05	0.05	100	80-120	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	GFAA_981211B
Lab ID:	MBlank	**Prep Date:**	12/7/98
		Date Analyzed:	12/11/98

QUALITY CONTROL REPORT

Method Blank

LEAD, Total SW7421 **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Lead	< 0.002	0.002	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AMMO PLANT
Lab ID: 9812026-02A

Date: *17-Dec-98*
Matrix: Water
Batch ID: GFAA_981211B
Prep Date: 12/7/98
Date Analyzed: 12/11/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

LEAD, Total — **SW7421** — **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Lead	0.05	0.056	112	80-120	0.0557	111	1	15	mg/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	GFAA_981211B
Lab ID:	LCS	**Prep Date:**	12/7/98
		Date Analyzed:	12/11/98

QUALITY CONTROL REPORT

Laboratory Control Sample

LEAD, Total — **SW7421** — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Lead	0.05	0.0505	101	80-120	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	ICP_981209C
Lab ID:	MBlank	**Prep Date:**	12/7/98
		Date Analyzed:	12/9/98

QUALITY CONTROL REPORT

Method Blank

CADMIUM, Total **SW6010B** **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Cadmium	< 0.005	0.005	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9812026
Project: 8503 LONGHORN ARMY AMMO PLANT
Lab ID: 9812026-02A

Date: *17-Dec-98*
Matrix: Water
Batch ID: ICP_981209C
Prep Date: 12/7/98
Date Analyzed: 12/9/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

CADMIUM, Total **SW6010B** **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Cadmium	0.05	0.046	92	75-125	0.045	90	2	15	mg/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*17-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	ICP_981209C
Lab ID:	LCS	**Prep Date:**	12/7/98
		Date Analyzed:	12/9/98

QUALITY CONTROL REPORT

Laboratory Control Sample

CADMIUM, Total — **SW6010B** — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Cadmium	0.05	0.0458	92	80-120	mg/L

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environ	**Date:**	*21-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	ICP_981209B
Lab ID:	9812026-02A	**Prep Date:**	12/7/98
		Date Analyzed:	12/9/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

BARIUM, Total **SW6010B** **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Barium	0.25	0.397	96	75-125	0.406	99	2	15	mg/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

CHEMRON
INCORPORATED

10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environ	**Date:**	*21-Dec-98*
Lab Order:	9812026	**Matrix:**	Water
Project:	8503 LONGHORN ARMY AMMO PLANT	**Batch ID:**	ICP_981209B
Lab ID:	LCS	**Prep Date:**	12/7/98
		Date Analyzed:	12/9/98

QUALITY CONTROL REPORT

Laboratory Control Sample

BARIUM, Total — **SW6010B** — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Barium	0.25	0.242	97	80-120	mg/L

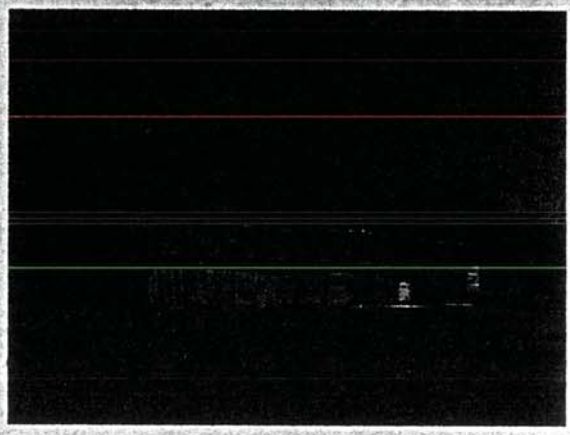
CLOSURE REPORT

HAZARDOUS WASTE STORAGE AREA 31-W

RCRA PERMITTED

EPA ID No. TX6213820529
Texas Registration No. 30990

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
December 1998



Hazardous Waste Storage Area
Building 31-W

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APPENDIX

1.0 INTRODUCTION

The U.S. Army has declared Longhorn Army Ammunition Plant excess and there is no further use for permitted hazardous waste management units. To satisfy the requirements of their RCRA permit, each of these units will be decontaminated and closed.

A closure plan dated July 1997 was prepared in addition to the September 1988 closure plan approved in the Longhorn AAP Hazardous Waste Permit 50195. The July closure plan follows more rigid closure standards than those found in the 1988 closure plan. Each of these plans is located in an appendix of this report.

This report documents the decontamination and sampling activities performed by Anderson Columbia Environmental for the closure of the container storage area known as building 31-W located at Longhorn Army Ammunition Plant. The report serves mainly to establish the work accomplished and any additional work necessary to complete closure.

In accordance with the approved closure plan the storage area was decontaminated with Alconox and water, and then rinsed. All washwater and rinsewater was collected and sampled for contaminants. Decontamination of the storage area took place on July 30, 1998.

2.0 BACKGROUND INFORMATION

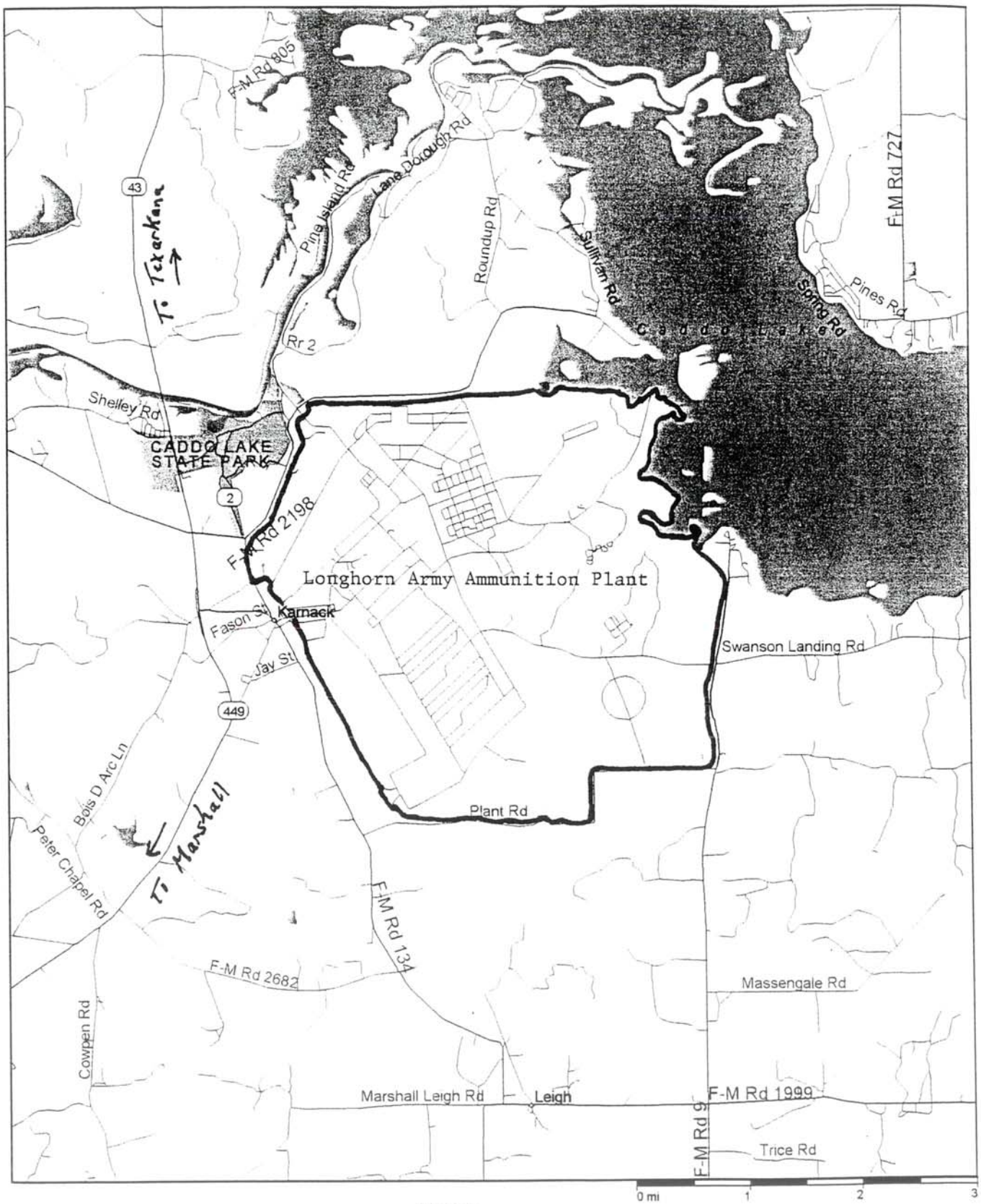
2.1 Location of Longhorn Army Ammunition Plant

Longhorn Army Ammunition Plant (LHAAP) is located in the northeast corner of Harrison County, Texas, approximately 3.6 miles from the Louisiana border. LHAAP is bordered by Caddo Lake, Caddo Lake State Park and the small town of Karnack. The plant is located approximately 30 miles west of Shreveport, Louisiana, with the nearest major city being Marshall, Texas, 15 miles to the southwest. Figure 1-1 illustrates the location of LHAAP. The installation has a total area of approximately 8,493 acres. State Highways 43 and 134 access the installation.

2.2 Location of Container Storage Area 31-W

Permitted storage area 31-W is located on 51st street within the confines of Longhorn Army Ammunition Plant, Harrison County, Texas. The storage area is located near the central portion of LHAAP.

Longhorn Army Ammunition Plant



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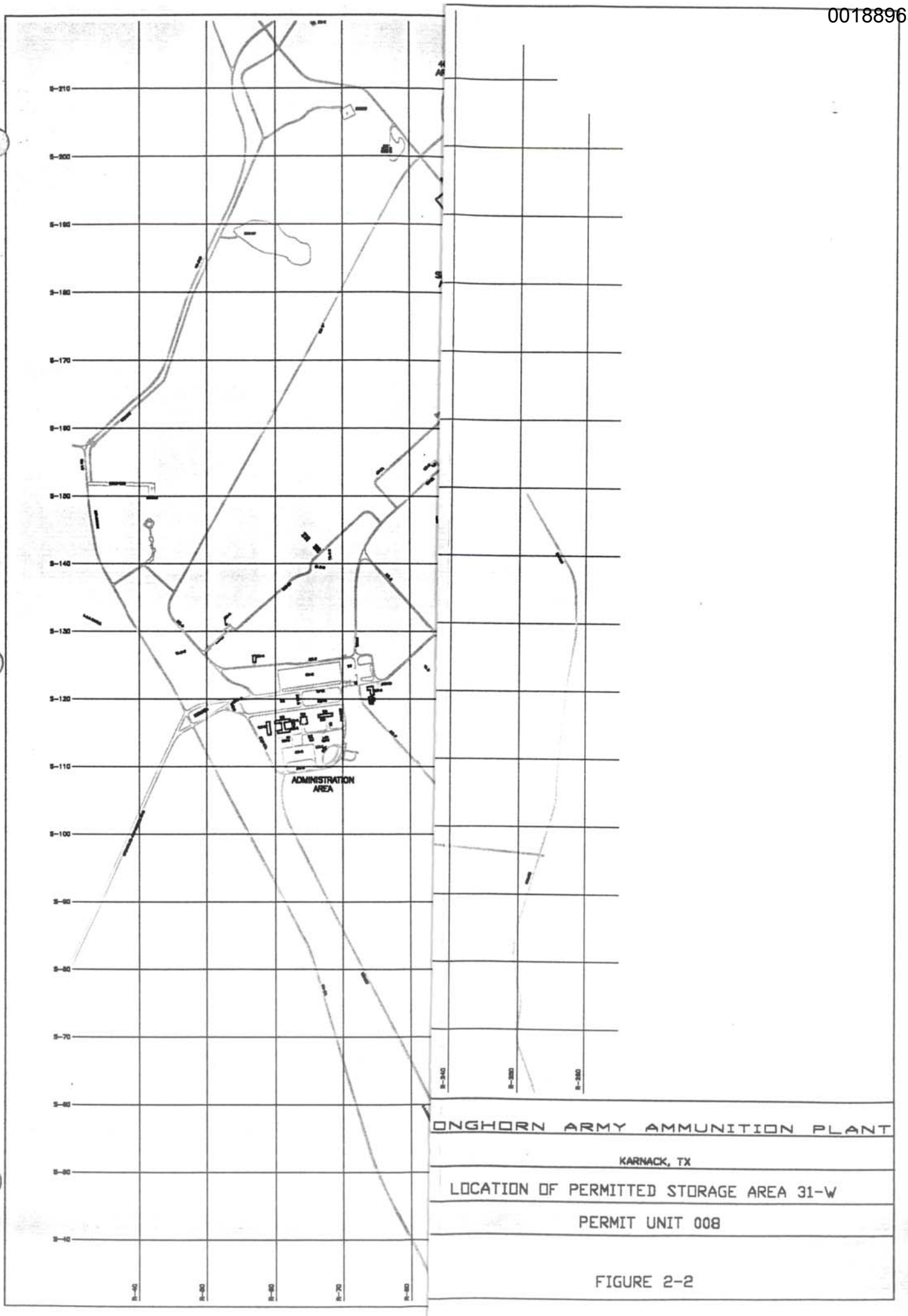


LONGHORN ARMY AMMUNITION PLANT

KARNACK, TX

LOCATION OF PERMITTED STORAGE AREA 31-W

PERMIT UNIT 008

FIGURE 2-2

2.3 Description of Storage Area 31-W

Container storage area 31-W is described in the Longhorn AAP RCRA permits as permit unit number 001. The storage area is designated as waste management unit number 008 in the Longhorn AAP Notice of Registration.

The 31-W area is a fenced in site and is in an area generally known as the "W" area. The site consists of building 31-W which has eight containment bays in the newer part of the warehouse which were used for drum storage. The older section of the 31-W warehouse has containment bays for PCB transformer storage and is also used for storage of spill clean-up supplies.

2.4 Description of Wastestreams

The following wastestreams are listed in the Longhorn AAP Notice of Registration as having been stored at 31-W. Both the older type and the newer type waste codes are listed. Some wastes are registered under two or more waste codes.

0001212H	Richcoat Base	0002103H	Fixer Replinisher
0005110H	Caustic	0006219H	Acetone/Copolymer Solution
0007219H	Gasoline	0008203H	Ethyl Alcohol
0009219H	Water, Halogen Contaminated	0010212H	Roofing Material
0011212H	Resin Roofing Material	00121011	Aqueous Acedic Solution
0013519H	Barium/Chromium Solids	00142101	Epon 828 Resin
00152031	PF Degreaser	00164971	PCB Transformers
00174961	PCB Contaminated Transformers	0025106H 101690	Photographic Developer
00262961	Antifreeze	00281131	Process wastewater
0029509H	K044 Sludge	0030303H	Barium Contaminated Ash
00313011	Soil, Petroleum contaminated	00334031	Cyanoethylated Polyamine
00344091	Triphenyl Bismuth	00354091	Sym-di-Beta-naphthyl-para-phenylenediamine
00364092	Oxamid Antioxidant	00374091	Out of specification materials
00383082	Drums that have been emptied	00393081	Empty Aerosol Containers
0040309H, 974610	Batteries, Lead	00412961 108320	Antifreeze
00422061	Oil waste	00433011	Oil filters
0044202H	Trichloroethane	0045203H	Isopropyl Alcohol
0047104H	Nitric/sulfuric acid mixture	0050203H	Toluene
0051202H	Methylene Chloride	0052202H	Chloroform
0053203H	Acetonitrile	0054203H	Methyl-tert-butyl-ether
0055204H	Chloroform/Ethyl Acetate Mixture	00563032, 170260, 970260	Non-hazardous Incinerator Ash
0057212H	Laminac	0058101H	Ecco 72F
0059101H	Alcohol & Water	0060219H	Safety Solvent
0061201H	Waste Acetone	0062203H	Fluorolastomer
0063219H	Richcoat Silver	0064001H	Labpack
00704071	Pallets, treated	00713941	PCB Debris
0072119H	Chromium contaminated water	0077219H	Plasthall Doz
00782191	Versamid	00792191	Epon V-25
0080105H	Acetic Aqueous Solution	0081203H	Hexane/Acetone solution
0082209H	Paint Waste	0083319H	Lead Based Paint
00842121	R-45 Hydroxyterminated polybutadiene	00862191	N-Methyl-2-pryllidone

00872121	Isophorone Diisocyanate	00883111	Asbestos
0090204H	Mixed Organic Solvents	0091203H	Non-halogenated Solvents
0092202H	Halogenated Solvents	00932971	Transformers, non PCB
00942981	PCB Oil from transformers	0095219H	Vinyl Acetate Alcohol Resin
00964032	Cellulose	00993191	Transformers
01006961	Grease	01016081	Untreated Sewage Sludge
01024891	Oil Soaked Rags	0103203H	Pettman Cement
0105205H	Cellulose Nitrate Binder	01072091	Electricl Varnish
0108319H	Solvent	01093193	Teflon powder
01113112	Transite siding	01122191	Triethylenetetramine
01132191	Diesel, water contaminated	01143031	Cage Ash
0115212H	Lead Peroxide	0116302H	Contaminated soil (fails TCLP)
0117609H	Sludge from closure of sumps	0118203H	Methanol
0119203H	Heptane/Ethyl Acetate	0120202H	Methylene Chloride
0121002H	Lab Pack	01244951	Fluoroscent light ballasts
0126219H	Mercaptan	01271191	Coolant Waste
110121	Polymer, Liquid	110450	Oil Waste
110720	Resin, Epoxy, wet	110910	Adhesive, liquid
113050	Ethers	114210	Antioxidant
114410	Aromatics	114950	Resin, Organic
149970	Paint Sludge, Water Base	150030	Greases
150480	Organic Sludges	177090	Titanium Dioxide
177530	Boron Compounds, Solids	178160	PCB Transformer
179430	PCB Contaminated Solids	182280	Ink, Paste
184990	Adhesive Waste	900050	Nitric Acid
900060	Hydrochloric Acid	900070	Phosphoric Acid
900410	Oxidizing Agent	900670	Mixed Acids
901390	Hydrochloric Acid	901690	Photographic Developer
902700	Titanium Trichloride	903230	Lead Contaminated Waste, Liquid
903270	Reactive Wastes	905350	Mercury Contaminated Liquid
905420	Silver Nitrate	906810	Acetic Acid, Glacial
908210	Chromium Bearing Waste	909110	Dye Waste, Organic
910050	Methyl Ethyl Ketone	910060	Toluene
910070	Hexane	910110	Paint Thinner
910140	Kerosine	910450	Oil Waste
910620	Isopropyl Alcohol	910640	Isocyanate Wastes
910720	Resin, Epoxy, wet	910750	Acetic Acid
910850	Ink and Solvents, Printing	910870	Methylene Chloride
910910	Adhesive, Liquid	911150	Solvents, Halogenated
911670	Ethylene Dichloride	911980	Off-Specification Liquids
912010	Freon	912030	Vinyl Chloride
912570	Diethyl Phthalate	912850	Glycols
912900	Diesel	912920	Cyclohexane
913050	Ethers	913180	Amines
913220	Butyl Acetate	913230	Photographic Developer
913250	Methyl Acetate	913260	Vinyl Acetate
913290	Lacquer, Liquid	913490	Acetates
913650	Formaldehyde	913700	Resin Waste, Liquid
913860	Solvents, Non-Halogenated	914380	Mercaptans
914950	Resin, Organic	915010	Aniline
915700	Varnish	916250	Peroxide, Organic Liquid
917140	Toluene Diisocyanate	917180	Organics, Misc.
917260	Chemicals, Agricultural	917340	Alcohol, Straight Chain

917540	Cobalt Naphthanate	918670	Acetic Anhydride
919540	Triethylene Tetraamine	920010	Chlorine
920170	Hydrogen	920180	Oxygen
940470	Sludge, Brine	942490	Nitrate Waste
951240	Dimethyl Formamide	952620	Sludge, Cellulose
970503	Molybdenum Compounds	971120	Lead Waste
973080	Silver Containing Solid	974270	Sodium Nitrate
974610	Batteries, Acid Filled	975930	Chromium Contaminated Waste
975930	Chromium Contaminated Material	976240	Potassium Chromate, Solid
978030	Soil, Lead Contaminated	978400	Lab-Packs
978850	Mercury Contaminated Solid	980360	Tar
980450	Paint Waste, Solid	982810	Nitrocellulose
984220	Urethane	984820	Corrosive Solid
985810	Off-Specification Products	990005	D005, Characteristic of EP Toxicity
990007	D007, Characteristic of EP Toxicity	993051	U051, Creosote
993052	U052, Cresols or Cresylic Acid	993092	U092, Dimethylamine or Methanamine
993102	U102, 1,2-Benzene Dicarboxylic Acid, Dimethyl Ester	993158	U158, Benzenamine, 4,4-Methylenebis(2-Chloro)-..
993160	U160, 2-Butanone Peroxide or Methyl Ethyl Ketone Peroxide	985710	Maleic Anhydride

2.5 Narrative of Closure Events

July 29-30, 1998: Materials (not waste) stored in the building were moved to the old warehouse 31-W or were moved from bay to bay as cleaning of the bays proceeded. A high-pressure water sprayer was used to both wash and rinse the floor. The wash was a mixture of Alconox and water and the rinse was clean water. The wash and rinse water were vacuumed up and stored in 55-gallon drums. Liquid samples of the wash and rinse water were taken. Thirteen soil samples were taken from around both the new and old warehouse 31-W. The thirteenth soil sample was taken and split as a quality control sample.

All drums containing the wash and rinse water from building 31-W were stored in cell C of 31-W until final disposition.

3.0 SPILL EVENTS

Due to the large volume of containers received and processed through the 31-W storage area, spill events were common within the containment areas. Drums that began leaking were routinely overpacked or the contents were transferred into other containers. Releases of the contents of any drum onto the floor were promptly cleaned-up when they occurred.

4.0 DATA QUALITY

The following procedures were followed in order to ensure that data from sampling is of acceptable quality.

4.1 Quality Assurance Samples

Approximately 10% of the field samples were split for QC samples. The field sample, 49-W-12 was split into two parts. Samples collected for VOCs were not homogenized but were obtained by alternately filling the VOC sample containers until all containers required were full. The field sample and its duplicate were submitted to Chemron Inc. Analysis of the QC duplicate provides a measure of sample homogeneity.

4.2 Matrix Spike/Matrix Spike Duplicate Samples.

One matrix spike and matrix spike duplicate (MS/MSD) were collected for approximately 5% of the samples taken. MS/MSD's are samples of the environmental media that are spiked in the laboratory with a known concentration of a target analyte(s) to verify percent recoveries. They are primarily used to check sample matrix interference's and the precision of a given sample matrix. A MS/MSD is analyzed with every batch of samples; however, it is selected randomly by the laboratory and may not be from the same group of samples as those submitted for a particular project. The results for MS/MSD's are included in the lab report provided in Appendix II.

4.3 Discussion of Trip Blank Results

Three trip blanks were collected from deionized water and placed into the ice-chest with the samples. Acetone and methylene chloride were detected in the trip blank samples. Due to contamination of method blanks at the laboratory, it is expected that contamination in trip blanks was not due to cross contamination during transit, but from contamination at the laboratory.

Parameter (Volatiles)	EPA Test Method	Detection Limit	Units	Sample ID Trip Blank 07/30/98	Sample ID Trip Blank 2 07/30/98	Sample ID Trip Blank 3 07/30/98
Acetone	8260A	10	ug/L	16.9	301	52.8
Methylene Chloride	8260A	4	Ug/L	ND	ND	86.1
All other Volatiles were below method detection limits.						

4.4 Discussion of QA Sample Results

The method blank samples prepared in the laboratory for the water and soil analysis were contaminated with acetone, 2-butanone, methylene chloride, 2-hexanone and 4-methyl-2-pentanone. Due to these chemicals being present in both the method blanks and various soil samples there is some potential for obtaining false data from the water and soil samples.

Washwater and Rinsewater Quality Control Results

Parameter (Volatiles)	EPA Test Method	Detection Limit	Units	Sample ID Method Blank VOC2_980810A
Acetone	8260A	10	Ug/L	61.94
2-Butanone	8260A	10	Ug/L	27.18
Methylene Chloride	8260A	4	Ug/L	8.05
All other volatiles were below method detection limits.				

Parameter (Semi-Volatiles)	EPA Test Method	Detection Limit	Units	Sample ID Method Blank SVOC2_980826B	Sample ID Method Blank SVOC2_980827A
Non-Detect for all perimeters	8270C	10	Ug/L	ND	ND

Soil Analysis Quality Control Results

Parameter (Volatiles)	EPA Test Method	Detection Limit	Units	Sample ID Method Blank VOC2_980811A	Sample ID Method Blank VOC2_980811B
Acetone	8270C	0.01	Mg/Kg	ND	.05475
Methylene Chloride	8270C	0.004	Mg/Kg	ND	.385
2-Hexanone	8270C	0.006	Mg/Kg	.01285	.01295
4-Methyl-2-Pentanone	8270C	0.01	Mg/Kg	.0106	ND
Parameter (Semi-Volatiles)	**EPA Test Method**	**Detection Limit**	**Units**	**Sample ID Method Blank SVOC2_980811A**	**Sample ID Method Blank SVOC2_980812A**
Non-Detect for all perimeters	8270C	10	Ug/L	ND	ND

5.0 DECONTAMINATION OF CONTAINER STORAGE AREA 31-W

The building was washed down with Alconox and water. The wash water was collected and drummed. The building was then rinsed with high pressure potable water. This water was collected into drums. Rinsewater from the decontamination procedure was collected and analyzed for all constituents of concern to verify decontamination of storage area 31-W. Potable water was sampled and analyzed for the same constituents as the decontamination water. Decontamination water analysis was then compared with the potable water analysis to more accurately assess if the building was completely decontaminated. This action was performed in accordance with Provision IV.B.4 of the Longhorn RCRA permit 50195 and the supplemental closure plan.

5.1 Disposition of Waste Streams

All hazardous waste was removed from 31-W in 1997 and sent offsite for final treatment and disposal. The containment areas in the building have not been used since for any storage of hazardous or non-hazardous waste.

All washwater and rinsewater collected from the decontamination of the container storage area 31-W was classified in accordance with 40 CFR part 261 and 30 TAC Subchapter R. Neither the washwater nor the rinsewater met the conditions to be classified at a hazardous or class 1 non-hazardous waste. The washwater and the rinsewater were both classified as a class II non-hazardous wastewater.

The drummed water was collected and disposed of by Anderson-Columbia Environmental.

5.2 Discussion of Decontamination Results

Table 4-1 lists the potable water, washwater and rinsewater sample analysis results. Only the metals and other detected constituents are listed in the table. Chemical constituents analyzed for but below the method detection limit are not listed in the table. The constituents detected in the rinsewater were compared to the Longhorn AAP Groundwater background, drinking water, and drinking water Maximum Contaminant Limits (MCL) in order to verify if the permitted storage area was decontaminated properly.

TABLE 5-1
DECONTAMINATION WATER ANALYSIS RESULTS

Parameter	EPA Test Method	Detection Limit	Units	Drinking Water MCL's	LHAAP Potable Water Sampled: 07/21/98	LHAAP Groundwater Background	Washwater Analysis Results Sampled: 07/30/98	RinseWater Analysis Results Sampled: 07/30/98
Metals								
Arsenic	3005/6010B	.05	MG/L	.05	<0.0020	0.01	.06	<.05
Barium	3005/6010B	.05	MG/L	2.0	0.021	0.9	1.8	1.5
Cadmium	3005/6010B	.005	MG/L	0.005	<0.0002	0.018	.007	.017
Chromium	3005/6010B	.01	MG/L	.1	<0.01	0.03	.09	**.23**
Lead	3005/6010B	.03	MG/L	0.015	<0.0010	0.29	.09	.18
Mercury	7470	.0002	MG/L	0.002	<0.00027	0.0005	.0016	<.0002
Selenium	3005/6010B	.05	MG/L	0.05	<0.0020	0.003	<.05	<.05
Silver	3005/6010B	.01	MG/L	0.1	<0.01	0.01	<.01	<.01
Volatiles								
Acetone	8260A	10	Ug/L	NR	194(2)	NA	ND	**107**
Semi-Volatiles								
Bis(2-ethylhexyl)phthalate	8270C	10	Ug/L	NR	NA	NA	12.8	**14.8**
Di-n-butyl phthalate	8270C	10	Ug/L	NR	<2.0	NA	ND	**10.6**
Phenol	8270C	10	Ug/L	NR	NR	NA	ND	**22**
Total Petroleum Hydrocarbons	E418.1	.5	Mg/L	NA	NR	NR	61.3	<0.5

NA: Non Applicable
ND: Not Detected
NR: Not Regulated
(1) – Total Trihalomethanes 40 CFR§141.30
(2) – Sampled on 7/30/98

Looking at the rinsewater analysis results we find that several constituents have been detected in the water. Strictly comparing the rinsewater to potable water and the MCL's, we find that background is exceeded for several constituents, indicating a need for further decontamination of the storage area.

6.0 INVESTIGATION OF SOILS

Soil sampling was performed in order to document if the soils at storage area 31-W were impacted from waste storage during past use. Investigation for impact of soils from waste storage included metals, volatiles, semi-volatiles and total petroleum hydrocarbons.

Each sample was collected in accordance with SW-846. Quality of the samples and analysis was ensured by the collection of a quality assurance/quality control (QA/QC) sample. Sample twelve was collected and split in duplicate as a QA/QC sample.

Soil samples were collected using a stainless steel auger. The auger was decontaminated between collection of each sample to prevent cross contamination. All sample locations were marked with a wooden stake and the ID number of the sample written on the wooden stake. Sample containers were sealed and placed into an ice chest on ice for shipment to the laboratory. Samples were shipped utilizing a chain-of-custody.

No compositing of the soil samples was performed. Laboratory reports are located in Appendix 1.

6.1 Soil Sample Locations

Twelve soil samples were collected from the perimeter of the permitted storage area. Each sample was collected from two to four feet from the edge of the concrete slab from depths to twelve inches deep from the ground surface. Sample twelve was split into a duplicate as a quality control sample.

Each soil sample location can be located by measuring from the structural steel columns of the building. Figure 6-1 describes the location where each soil sample was collected from 31-W.

6.2 Discussion of Metals Analysis Results

All total metals detected in any single soil sample from building 31-W were below Longhorn AAP soil background levels with the exception of barium, cadmium, chromium, and lead.

Because total metals in some soil samples are expected to exceed the calculated plant background levels, the following procedure was followed in order to determine if there is actually contamination from these metals at 31-W. Each metal has been reviewed in accordance with 30 TAC 335.553(d)(2) to determine if clean-up requirements are greater than plant background levels. Table 6-2 lists the results of the statistical comparison for analysis results of metals that exceeded background at area 31-W. Results of the statistical analysis were compared to the Longhorn AAP Soil Background Concentration Report, May 1995.

TABLE 6-2
Calculated Clean-up Levels

SAMPLE ID	Ba	Cd	Cr	Pb
31-W-1	58.10	1.05	9.66	7.96
31-W-2	55.70	**1.40**	9.67	10.70
31-W-3	79.70	**1.95**	11.40	10.50
31-W-4	62.70	**2.16**	15.00	12.70
31-W-5	26.00	0.50	5.14	5.52
31-W-6	51.80	0.50	8.47	6.24
31-W-7	70.80	**2.88**	**16.90**	12.30
31-W-8	88.40	1.14	14.80	11.70
31-W-9	44.00	0.50	7.25	**16.40**
31-W-10	**303.00**	**1.34**	8.61	**450.00**
31-W-11	**167.00**	0.50	4.31	4.97
31-W-12	**274.00**	0.50	6.84	7.82
31-W-13	77.30	0.50	7.40	7.56
Mean:	104.50	1.15	9.65	43.41
Standard Deviation:	88.35	0.78	3.88	122.21
Clean-up Level:	148.00	1.5	11.60	103.50

Concentrations exceeding LHAAP background are denoted in **bold** letters.

Barium

Total barium levels detected in three soil samples (Sample 31-W-10, 11, & 12) exceeded the plant background average of 161.8 mg/kg.

To determine if there is actually contamination from barium at 31-W, barium has been reviewed in accordance with 30 TAC 335.553(d)(2) to determine if clean-up requirements are necessary. Chapter 335.553 references the preferred method for a statistical comparison of the results of the soil analysis utilizing the 95% confidence limit of the mean concentration to determine the required clean-up level.

In brief the formula reads: Clean-up Level $\geq$ X + ts/sqrt (n),

Where X = the mean concentration
s = the standard deviation = $[\Sigma(y\text{-}y)^2/(n\text{-}1)]^{1/2}$
t = a value from Table 2(in 30 TAC 335.553) based on 13 samples = 1.771
sqrt (n) = the square root of the sample size = 3.6

The calculation reveals a clean-up level of 148.0 mg/kg. This is below the barium background level of 161.8 mg/kg established at the Longhorn Army Ammunition Plant. This calculated clean-up level for barium is less than the installation background level.

Furthermore, the three soil samples containing barium levels above the plant background average were subjected to EPA Method 1312 analysis. As indicated in the following level, leachate of the barium from the soil is less than average LHAAP groundwater background.

Sample ID	LHAAP Groundwater Background for Barium	Method 1312 –Synthetic Precipitation Leaching Procedure
Sample 31-W-10	0.9 mg/L	0.11 mg/L
Sample 31-W-11	0.9 mg/L	0.31 mg/L
Sample 31-W-12	0.9 mg/L	0.18 mg/L

Barium levels at 31-W are clearly in compliance with 30 TAC 335.554, attainment of Risk Reduction Standard Number 1/Closure to Background.

Chromium

The maximum chromium level detected in any soil sample (Sample 31-W-7) was 16.9 mg/kg as compared to the plant background average of 16.7 mg/kg. This was the only soil sample that exceeded the plant background level for chromium.

To determine if there is actually contamination from chromium at 31-W, chromium has been reviewed in accordance with 30 TAC 335.553(d)(2) to determine if clean-up requirements are necessary. Chapter 335.553 references the preferred method for a statistical comparison of the results of the soil analysis utilizing the 95% confidence limit of the mean concentration to determine the required clean-up level.

In brief the formula reads: Clean-up Level $\geq$ X + ts/sqrt (n),

Where X = the mean concentration
s = the standard deviation = $[\Sigma(y\text{-}y)^2/(n\text{-}1)]^{1/2}$
t = a value from Table 2(in 30 TAC 335.553) based on 13 samples = 1.771
sqrt (n) = the square root of the sample size = 3.6

The calculation reveals a clean-up level of 11.6 mg/kg. This is below the chromium background level of 16.7 mg/kg established at the Longhorn Army Ammunition Plant. This calculated clean-up level for chromium is less than the installation background level.

Chromium levels are in compliance with 30 TAC 335.554, attainment of Risk Reduction Standard Number 1/Closure to Background.

Cadmium

Total cadmium levels detected in five soil samples (Sample 31-W-2, 3, 4, 7, & 10) exceeded the plant background average of 1.25 mg/kg.

To determine if there is actually contamination from cadmium at 31-W, cadmium has been reviewed in accordance with 30 TAC 335.553(d)(2) to determine if clean-up requirements are necessary. Chapter 335.553 references the preferred method for a statistical comparison of the results of the soil analysis utilizing the 95% confidence limit of the mean concentration to determine the required clean-up level.

In brief the formula reads: Clean-up Level $\geq$ X + ts/sqrt (n),

Where X = the mean concentration
s = the standard deviation = $[\Sigma(y-y)^2/(n-1)]^{1/2}$
t = a value from Table 2(in 30 TAC 335.553) based on 13 samples = 1.771
sqrt (n) = the square root of the sample size = 3.6

The calculation reveals a clean-up level of 1.5 mg/kg. This is above the cadmium background level of 1.25 mg/kg established at the Longhorn Army Ammunition Plant. This calculated clean-up level for cadmium is more than the installation background level so cadmium should be considered a contaminant.

The five soil samples containing cadmium levels above the plant background average were subjected to EPA Method 1312 analysis. As indicated in the following level, leachate of the cadmium from the soil is less than average LHAAP groundwater background of.018 mg/L.

Sample ID	LHAAP Groundwater Background for Cadmium	Method 1312 –Synthetic Precipitation Leaching Procedure
Sample 31-W-2	0.018 mg/L	<0.005 mg/L
Sample 31-W-3	0.018 mg/L	<0.005 mg/L
Sample 31-W-4	0.018 mg/L	<0.005 mg/L
Sample 31-W-7	0.018 mg/L	<0.005 mg/L
Sample 31-W-10	0.018 mg/L	<0.005 mg/L

Cadmium was compared to the examples of medium-specific concentrations (MSC), standards and criteria for health-based closure/remediation based on Title 30 Chapter 335 Subchapter S Part 568 Appendix II. The health based standards are included with this report as Appendix IV. This information was downloaded from the TNRCC web site on December 8, 1998. The Summary of Updates to the Tables Accompanying the Interoffice Memorandum Entitled Implementation of the Existing Risk Reduction rule, Original tables current as of July 1, 1998 was also referenced to determine the most recent update to the RRS 2 Table. This update is also included in Appendix IV. In accordance with the above standards for RRS 2 to residential standards, it is believed that cadmium in the soils at 31-W will not present a risk to human health.

Lead

Total lead levels detected in two soil samples (Sample 31-W-9 & 10) exceeded the plant background average of 14.6 mg/kg.

To determine if there is actually contamination from cadmium at 31-W, lead has been reviewed in accordance with 30 TAC 335.553(d)(2) to determine if clean-up requirements are necessary. Chapter 335.553 references the preferred method for a statistical comparison of the results of the soil analysis utilizing the 95% confidence limit of the mean concentration to determine the required clean-up level.

In brief the formula reads: Clean-up Level $\geq$ X + ts/sqrt (n),

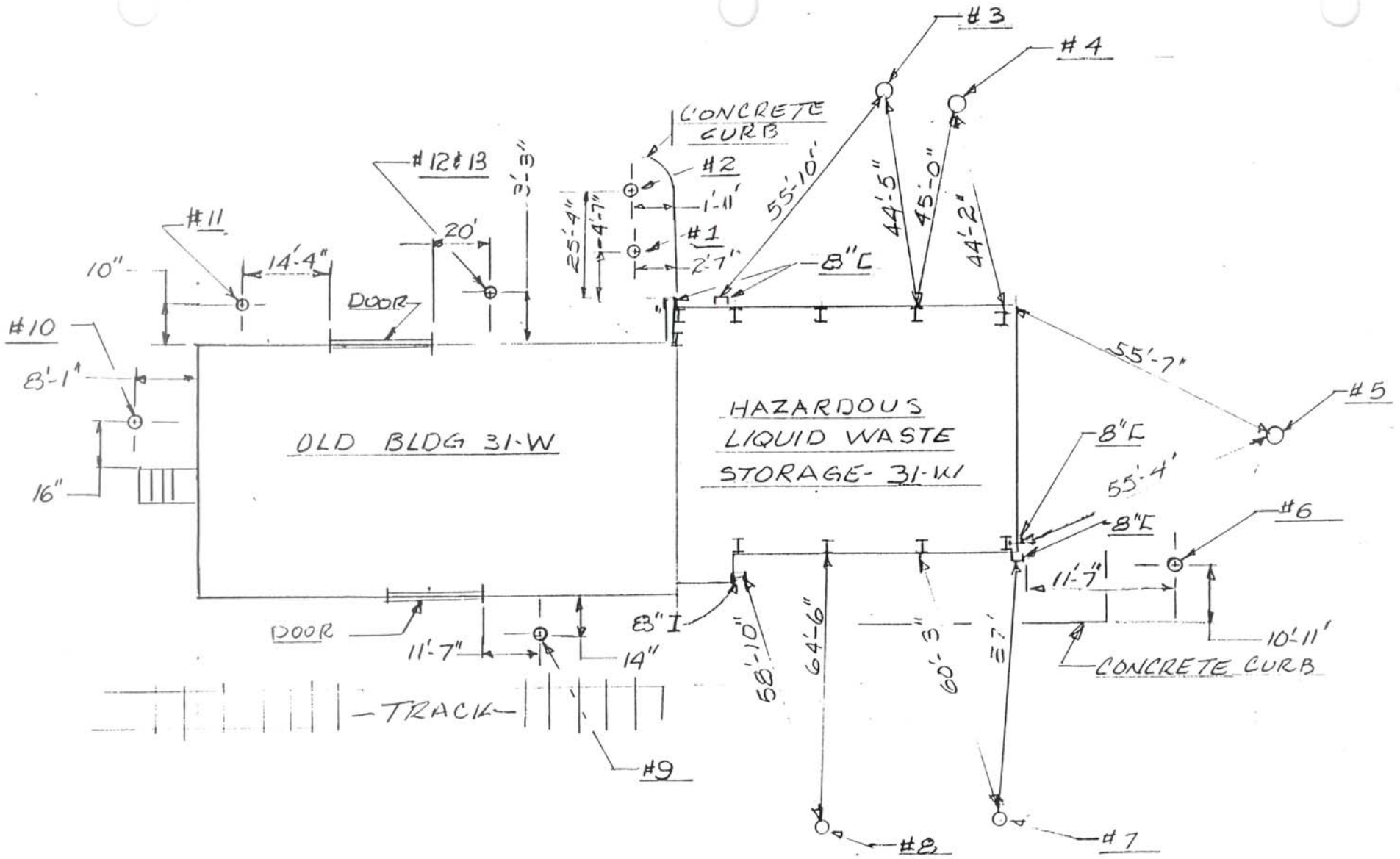
Where X = the mean concentration
s = the standard deviation = $[\Sigma(y-y)^2/(n-1)]^{1/2}$
t = a value from Table 2(in 30 TAC 335.553) based on 13 samples = 1.771
sqrt (n) = the square root of the sample size = 3.6

The calculation reveals a clean-up level of 1103. mg/kg. This is above the lead background level of 14.6 mg/kg established at the Longhorn Army Ammunition Plant. This calculated clean-up level for lead is more than the installation background level so lead should be considered a contaminant.

Soil sample 31-W-10 containing 450 mg/kg of total lead was subjected to the EPA Method 1312 analysis. As indicated in the following level, leachate of the lead from the soil is less than average LHAAP groundwater background .29 mg/L.

Sample ID	LHAAP Groundwater Background for Lead	Method 1312 –Synthetic Precipitation Leaching Procedure
Sample 31-W-9	0.29 mg/L	Not Analyzed
Sample 31-W-10	0.29 mg/L	0.09 mg/L

Lead was compared to the examples of medium-specific concentrations (MSC), standards and criteria for health-based closure/remediation based on Title 30 Chapter 335 Subchapter S Part 568 Appendix II. The health based standards are included with this report as Appendix IV. This information was downloaded from the TNRCC web site on December 8, 1998. The Summary of Updates to the Tables Accompanying the Interoffice Memorandum Entitled Implementation of the Existing Risk Reduction rule, Original tables current as of July 1, 1998 was also referenced to determine the most recent update to the RRS 2 Table. This update is also included in Appendix IV. Though lead leachate from the soil is 0.09 mg/L which exceeds the MCL of .015 mg/L, levels are substantially below LHAAP background levels. In accordance with the above standards for RRS 2 to residential standards, it is believed that lead in the soils at 31-W will not present a risk to human health.



BLDG-31-W SOIL SAMPLES
30 JULY 1998

FIGURE 6-1

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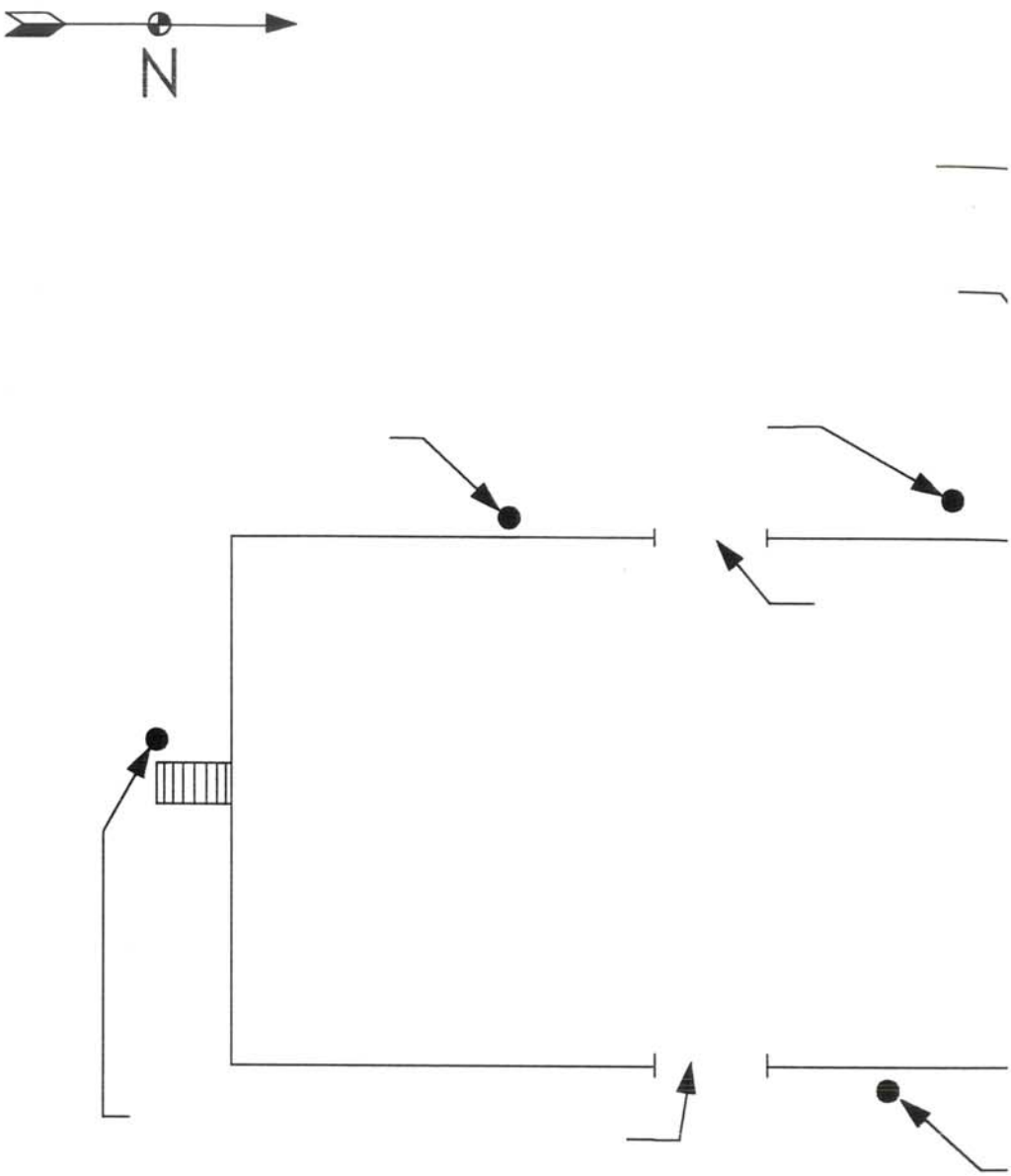

Legend

● Soil Sample

1E Sample ID

TABLE 6-3
SOIL ANALYSIS RESULTS

Parameter (Metals)	EPA Test Method	Detection Limit	Units	LHAAP Soil Back-ground	Sample ID 31-W-1 Sampled: 07/30/98	Sample ID 31-W-2 Sampled: 07/30/98	Sample ID 31-W-3 Sampled: 07/30/98	Sample ID 31-W-4 Sampled: 07/30/98	Sample ID 31-W-5 Sampled: 07/30/98
Arsenic	3050/6010B	2.5	MG/KG	7.0	<2.5	<2.5	3.15	<2.5	<2.5
Barium	3050/6010B	2.5	MG/KG	161.8	58.1	55.7	79.7	62.7	26
Cadmium	3050/6010B	.5	MG/KG	1.25	1.05	**1.4**	**1.95**	**2.16**	<.50
Chromium	3050/6010B	.5	MG/KG	16.7	9.66	9.67	11.4	15	5.14
Lead	3050/6010B	.1.5	MG/KG	14.6	7.96	10.7	10.5	12.7	5.52
Mercury	7471	.1	MG/KG	0.25	<.1	<.1	<.1	<.1	<.1
Selenium	3050/6010B	4.0	MG/KG	0.5	<4.0	<4.0	<4.0	<4.0	<4.0
Silver	3050/6010B	.5	MG/KG	1.3	<.50	<.50	<.50	<.50	<.50

Parameter (Metals)	EPA Test Method	Detection Limit	Units	LHAAP Soil Back-ground	Sample ID 31-W-6 Sampled: 07/30/98	Sample ID 31-W-7 Sampled: 07/30/98	Sample ID 31-W-8 Sampled: 07/30/98	Sample ID 31-W-9 Sampled: 07/30/98
Arsenic	3050/6010B	2.5	MG/KG	7.0	<2.5	5.28	3.8	<2.5
Barium	3050/6010B	2.5	MG/KG	161.8	51.8	70.8	88.4	44
Cadmium	3050/6010B	.5	MG/KG	1.25	<.50	**2.88**	1.14	<.50
Chromium	3050/6010B	.5	MG/KG	16.7	8.47	**16.9**	14.8	7.25
Lead	3050/6010B	.1.5	MG/KG	14.6	6.24	12.3	11.7	**16.4**
Mercury	7471	.1	MG/KG	0.25	<.1	<.1	<.1	<.1
Selenium	3050/6010B	4.0	MG/KG	0.5	<4.0	<4.0	<4.0	<4.0
Silver	3050/6010B	.5	MG/KG	1.3	<.50	<.50	<.50	<.50

Parameter (Metals)	EPA Test Method	Detection Limit	Units	LHAAP Soil Back-ground	Sample ID 31-W-10 Sampled: 07/30/98	Sample ID 31-W-11 Sampled: 07/30/98	Sample ID 31-W-12 Sampled: 07/30/98	Sample ID 49-W-13 Duplicate Sampled: 07/30/98
Arsenic	3050/6010B	2.5	MG/KG	7.0	<2.5	<2.5	<2.5	<2.5
Barium	3050/6010B	2.5	MG/KG	161.8	**303**	**167**	**274**	77.3
Cadmium	3050/6010B	.5	MG/KG	1.25	**1.34**	<.50	<.50	<.50
Chromium	3050/6010B	.5	MG/KG	16.7	8.61	4.31	6.84	7.4
Lead	3050/6010B	.1.5	MG/KG	14.6	**450**	4.97	7.82	7.56
Mercury	7471	.1	MG/KG	0.25	<.1	<.1	<.1	<.1
Selenium	3050/6010B	4.0	MG/KG	0.5	<4.0	<4.0	<4.0	<4.0
Silver	3050/6010B	.5	MG/KG	1.3	<.50	<.50	<.50	<.50

6.3 Discussion of Volatiles Analysis Results

The volatiles acetone, methylene chloride, 2-hexanone, and 4-methyl-2-pentanone were detected in the soil samples above the detection limit. However, these same contaminants were in all of the method blanks prepared at the laboratory.

It appears that contaminants found in the soil samples are likely due to laboratory contamination because the same analytes in the soil sample were present in the laboratory method blank.

Parameter (Volatiles) EPA Test Method 8260A	Detection Limit	Units	Sample ID 31-W-1 Sampled: 07/30/98	Sample ID 31-W-2 Sampled: 07/30/98	Sample ID 31-W-3 Sampled: 07/30/98	Sample ID 31-W-4 Sampled: 07/30/98	Sample ID 31-W-5 Sampled: 07/30/98	Sample ID 31-W-6 Sampled: 07/30/98	Sample ID 31-W-7 Sampled: 07/30/98
Acetone	0.01	MG/KG	0.047	0.302	0.475	0.138	0.119	0.145	0.147
2-Butanone	0.01	MG/KG	ND	ND	0.034	ND	ND	ND	ND
Methylene Chloride	0.004	MG/KG	0.027	0.606	0.668	0.466	0.348	0.454	0.435
2-Hexanone	0.006	MG/KG	0.008	0.014	0.02	ND	ND	ND	ND
4-Methyl-2-pentanone	0.01	MG/KG	ND	0.013	ND	ND	ND	ND	ND
All other volatiles were below method detection limits.	<.002-0.01								

Parameter (Volatiles) EPA Test Method 8260A	Detection Limit	Units	Sample ID 31-W-8 Sampled: 07/30/98	Sample ID 31-W-9 Sampled: 07/30/98	Sample ID 31-W-10 Sampled: 07/30/98	Sample ID 31-W-11 Sampled: 07/30/98	Sample ID 31-W-12 Sampled: 07/30/98	Sample ID 31-W-13 Duplicate Sampled: 07/30/98
Acetone	0.01	MG/KG	0.06	0.078	0.465	0.53	0.816	1.02
Methylene Chloride	0.004	MG/KG	0.313	0.382	0.445	0.43	0.39	0.394
All other volatiles were below method detection limits.	<.002-0.01							

6.4 Discussion of Semi-Volatiles Analysis Results

All soil samples from storage area 31-W were subject to EPA Test Method 8270C to determine if any semi-volatile organic constituents were released into the soil. There were no semi-volatile constituents detected in any of the soil samples. Detection limits for the various constituents range from <0.33 to 0.67 mg/kg.

6.5 Discussion of Total Petroleum Hydrocarbon Results

Each of the soil samples were analyzed for Total Petroleum Hydrocarbons. Five soil samples had detectable levels of TPH . The maximum TPH detected was 331 mg/kg, which is far under the action level for closure of underground storage tanks, TNRCC publication RG-17. It is clear that there is no soil contamination present in the soils at 31-W from the storage of petroleum wastes. Table 6-3 below summarizes the results from the analysis for TPH.

TABLE 6-4
TOTAL PETROLEUM HYDROCARBON ANALYSIS RESULTS

Sample Identification	EPA Test Method	Detection Limit	Units	Analysis Results Sampled: 07/30/98
LHAAP/31-W-1	9071/418.1	10	MG/KG	<10
LHAAP/31-W-2	9071/418.1	10	MG/KG	62
LHAAP/31-W-3	9071/418.1	10	MG/KG	18
LHAAP/31-W-4	9071/418.1	10	MG/KG	<10
LHAAP/31-W-5	9071/418.1	10	MG/KG	<10
LHAAP/31-W-6	9071/418.1	10	MG/KG	<10
LHAAP/31-W-7	9071/418.1	10	MG/KG	<10
LHAAP/31-W-8	9071/418.1	10	MG/KG	<10
LHAAP/31-W-9	9071/418.1	10	MG/KG	331
LHAAP/31-W-10	9071/418.1	10	MG/KG	26
LHAAP/31-W-11	9071/418.1	10	MG/KG	12
LHAAP/31-W-12	9071/418.1	10	MG/KG	<10
LHAAP/31-W-13	9071/418.1	10	MG/KG	<10

7.0 CONCLUSIONS

Decontamination and closure of the permitted waste storage area 31-W has been completed in accordance with the approved closure plan dated September 1988. In addition to the approved closure plan in the RCRA permit, a closure plan dated July 1997 was prepared and followed in order to meet more stringent closure standards. Requirements as stated in 30 TAC Chapter 335 and the requirements of Longhorn AAP Part B Hazardous Waste Permit 50195 have been met with the exception of the following.

1) ***Decontamination of Container Storage Area 31-W*** – Storage Area 31-W does not meet the decontamination goals of the LHAAP RCRA permit or the closure plan. Storage area 811-1 needs to be decontaminated again and the rinsewater analyzed for chromium, volatiles, and semi-volatiles.

2) ***Soil Contamination (Volatiles)*** – Acetone, methylene chloride and various other volatiles were detected in the soil and the same volatiles were detected in all of the method blanks in the laboratory. It appears that all of the contamination in the soils is from contamination at the laboratory, and not actual contamination in the soil. Verification sampling should be performed in order to establish whether there is actually contamination from volatiles in the soil at the container storage area 31-W.

3) ***Soil Contamination (Metals)*** – Levels of barium, cadmium and lead are above plant background levels for total metals. Leachate from all of the soil samples that exceeded soil background for metals was below plant groundwater background levels. Levels meet TNRCC RRS 2 standards. Deed recording of the area will be required.

U.S. Army Representative: _____ Date: 14 Jan 99

Licensed Professional Engineer: _____ Date: 17 Dec 98

1	LABORATORY REPORTS
2	SEPTEMBER 1988 CLOSURE PLAN
3	JULY 1997 CLOSURE PLAN
4	TNRCC HEALTH BASED STANDARDS
5	LHAAP BACKGROUND DATA FOR SOIL AND GROUNDWATER

APPENDIX I

Laboratory Reports

LABORATORY REPORTS

- **Washwater Analysis**
  Metals
  Volatiles
  Semi-Volatiles
  Total Petroleum Hydrocarbons

- **Rinsewater Analysis**
  Metals
  Volatiles
  Semi-Volatiles
  Total Petroleum Hydrocarbons

- **Soils Analysis**
  Metals
  Volatiles
  Semi-Volatiles
  Total Petroleum Hydrocarbons

- **Trip Blanks**

- **Potable Water Analysis Report**

- **Chain-of-Custody Reports**

WASHWATER ANALYSIS

Metals

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6203
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Water
Chemron ID #: 73060
Report Date: 08/17/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-Wash 7/30/98 11:45

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	.06	.05	MG/L	08/07/98	3005/6010B
Total Barium	1.8	.05	MG/L	08/07/98	3005/6010B
Total Cadmium	.007	.005	MG/L	08/07/98	3005/6010B
Total Chromium	.09	.01	MG/L	08/07/98	3005/6010B
Total Lead	.09	.03	MG/L	08/07/98	3005/6010B
Total Mercury	.0016	.0002	MG/L	08/12/98	7470
Total Selenium	<.05	.05	MG/L	08/07/98	3005/6010B
Total Silver	<.01	.01	MG/L	08/07/98	3005/6010B

Approved By: _____

MDL - Method Detection Limit

00188986

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
Chain of Custody #: 6203
Report Date: 08/26/98
Page #: 1

QUALITY ASSURANCE REPORT

Description / Parameter	Matrix	Analysis Date	Spike Concentration	Analyzed Value	Background Value	% Recovery	Control Limits Lower	Control Limits Upper	Relative % Difference	Control Limit
Blk - Arsenic	Water	08/07/98		<50.						
MS - Arsenic	Water	08/07/98	500.	453.	<50.	90.6	60	125	2.2	10
MSD - Arsenic	Water	08/07/98	500.	443.	<50.	88.6	60	125	2.2	10
LCS - Arsenic	Water	08/07/98	500.	492.	<50.	98.4	75	125		
Blk - Barium	Water	08/07/98		<10.						
MS - Barium	Water	08/07/98	1000.	1350.	525.	82.5	73	117	2.2	7
MSD - Barium	Water	08/07/98	1000.	1320.	525.	79.5	73	117	2.2	7
LCS - Barium	Water	08/07/98	1000.	963.	<10.	96.3	75	125		
Blk - Cadmium	Water	08/07/98		<5.						
MS - Cadmium	Water	08/07/98	200.	276.	103.	86.5	63	120	2.6	7
MSD - Cadmium	Water	08/07/98	200.	269.	103.	83.0	63	120	2.6	7
LCS - Cadmium	Water	08/07/98	200.	185.	<5.	92.5	75	125		
Blk - Chromium	Water	08/07/98		<10.						
MS - Chromium	Water	08/07/98	200.	242.	69.	86.5	58	131	3.8	8
MSD - Chromium	Water	08/07/98	200.	233.	69.	82.0	58	131	3.8	8
LCS - Chromium	Water	08/07/98	200.	189.	<10.	94.5	75	125		
Blk - Lead	Water	08/07/98		<30.						
MS - Lead	Water	08/07/98	500.	1145.	574.	114.	74	129	0.4	10
MSD - Lead	Water	08/07/98	500.	1140.	574.	113.	74	129	0.4	10
LCS - Lead	Water	08/07/98	500.	517.	<30.	103.	75	125		
Blk - Mercury	Water	08/26/98		<.2						
MS - Mercury	Water	08/26/98	5.	4.70	<.2	94.0	84	117	0.0	8
MSD - Mercury	Water	08/26/98	5.	4.70	<.2	94.0	84	117	0.0	8
LCS - Mercury	Water	08/26/98	5.	5.30	<.2	106.	75	125		
Blk - Selenium	Water	08/07/98		<50.						
MS - Selenium	Water	08/07/98	500.	419.	<50.	83.8	50	132	3.4	10
MSD - Selenium	Water	08/07/98	500.	405.	<50.	81.0	50	132	3.4	10

Concentration Units: Soil / Sed[illegible]: MG/KG - Water ug/L

00188987

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
Chain of Custody #: 6203
Report Date: 08/26/98

QUALITY ASSURANCE REPORT

Description / Parameter	Matrix	Analysis Date	Spike Concentration	Analyzed Value	Background Value	% Recovery	Control Limits Lower	Control Limits Upper	Relative % Difference	Control Limit
LCS - Selenium	Water	08/07/98	500.	510.	<50.	102.	75	125		
Blk - Silver	Water	08/07/98		<10.						
MS - Silver	Water	08/07/98	100.	63.	<10.	63.0	16	154	17.2	27
MSD - Silver	Water	08/07/98	100.	53.	<10.	53.0	16	154	17.2	27
LCS - Silver	Water	08/07/98	100.	87.	<10.	87.0	75	125		

Concentration Units: Soil / Sediment MG/KG - Water ug/L

WASHWATER ANALYSIS

Volatiles

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-WASH
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:45:00 AM
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-25A	**Batch ID:**	VOC2_980810A
Chemron ID:	73060	**Prep Date:**	8/10/98 5:57:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 100	100	ug/L	10	8/10/98 5:57:00 PM
Acrolein	< 50	50	ug/L	10	8/10/98 5:57:00 PM
Acrylonitrile	< 40	40	ug/L	10	8/10/98 5:57:00 PM
Allyl chloride	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Benzene	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Bromodichloromethane	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Bromoform	< 20	20	ug/L	10	8/10/98 5:57:00 PM
Bromomethane	< 60	60	ug/L	10	8/10/98 5:57:00 PM
2-Butanone	< 100	100	ug/L	10	8/10/98 5:57:00 PM
Carbon disulfide	< 50	50	ug/L	10	8/10/98 5:57:00 PM
Carbon tetrachloride	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Chlorobenzene	< 40	40	ug/L	10	8/10/98 5:57:00 PM
Chloroethane	< 20	20	ug/L	10	8/10/98 5:57:00 PM
2-Chloroethylvinylether	< 100	100	ug/L	10	8/10/98 5:57:00 PM
Chloroform	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Chloromethane	< 50	50	ug/L	10	8/10/98 5:57:00 PM
Dibromochloromethane	< 30	30	ug/L	10	8/10/98 5:57:00 PM
1,2-Dibromo-3-chloropropane	< 60	60	ug/L	10	8/10/98 5:57:00 PM
1,2-Dibromoethane	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Dibromomethane	< 20	20	ug/L	10	8/10/98 5:57:00 PM
1,2-Dichlorobenzene	< 50	50	ug/L	10	8/10/98 5:57:00 PM
1,3-Dichlorobenzene	< 50	50	ug/L	10	8/10/98 5:57:00 PM
1,4-Dichlorobenzene	< 60	60	ug/L	10	8/10/98 5:57:00 PM
trans-1,4-Dichloro-2-butene	< 40	40	ug/L	10	8/10/98 5:57:00 PM
Dichlorodifluoromethane	< 30	30	ug/L	10	8/10/98 5:57:00 PM
1,1-Dichloroethane	< 30	30	ug/L	10	8/10/98 5:57:00 PM
1,2-Dichloroethane	< 30	30	ug/L	10	8/10/98 5:57:00 PM
1,1-Dichloroethene	< 50	50	ug/L	10	8/10/98 5:57:00 PM
cis-1,2-Dichloroethene	< 40	40	ug/L	10	8/10/98 5:57:00 PM

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-WASH
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:45:00 AM
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-25A	**Batch ID:**	VOC2_980810A
Chemron ID:	73060	**Prep Date:**	8/10/98 5:57:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 40	40	ug/L	10	8/10/98 5:57:00 PM
Methylene chloride	< 40	40	ug/L	10	8/10/98 5:57:00 PM
1,2-Dichloropropane	< 20	20	ug/L	10	8/10/98 5:57:00 PM
cis-1,3-Dichloropropene	< 20	20	ug/L	10	8/10/98 5:57:00 PM
trans-1,3-Dichloropropene	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Diethyl ether	< 50	50	ug/L	10	8/10/98 5:57:00 PM
Ethylbenzene	< 50	50	ug/L	10	8/10/98 5:57:00 PM
Ethyl methacrylate	< 50	50	ug/L	10	8/10/98 5:57:00 PM
2-Hexanone	< 60	60	ug/L	10	8/10/98 5:57:00 PM
Methacrylonitrile	< 50	50	ug/L	10	8/10/98 5:57:00 PM
Iodomethane	< 50	50	ug/L	10	8/10/98 5:57:00 PM
Methyl methacrylate	< 40	40	ug/L	10	8/10/98 5:57:00 PM
4-Methyl-2-pentanone	< 100	100	ug/L	10	8/10/98 5:57:00 PM
Propionitrile	< 100	100	ug/L	10	8/10/98 5:57:00 PM
Styrene	< 40	40	ug/L	10	8/10/98 5:57:00 PM
1,1,1,2-Tetrachloroethane	< 50	50	ug/L	10	8/10/98 5:57:00 PM
1,1,2,2-Tetrachloroethane	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Tetrachloroethene	< 50	50	ug/L	10	8/10/98 5:57:00 PM
Toluene	< 30	30	ug/L	10	8/10/98 5:57:00 PM
1,1,1-Trichloroethane	< 50	50	ug/L	10	8/10/98 5:57:00 PM
1,1,2-Trichloroethane	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Trichloroethene	< 20	20	ug/L	10	8/10/98 5:57:00 PM
Trichlorofluoromethane	< 50	50	ug/L	10	8/10/98 5:57:00 PM
1,2,3-Trichloropropane	< 30	30	ug/L	10	8/10/98 5:57:00 PM
Vinyl acetate	< 100	100	ug/L	10	8/10/98 5:57:00 PM
Vinyl chloride	< 30	30	ug/L	10	8/10/98 5:57:00 PM
m,p-Xylene	< 50	50	ug/L	10	8/10/98 5:57:00 PM
o-Xylene	< 40	40	ug/L	10	8/10/98 5:57:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-WASH
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:45:00 AM
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-25A	**Batch ID:**	VOC2_980810A
Chemron ID:	73060	**Prep Date:**	8/10/98 5:57:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-WASH
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:45:00 AM
Project ID:		**Matrix:**	WATER
Lab ID:	9808004-25A	**Batch ID:**	VOC2_980810A
Chemron ID:	73060	**Prep Date:**	8/10/98 5:57:00 PM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	102.	62-125
4-Bromofluorobenzene	93.	75-125
Dibromofluoromethane	92.	75-125
Toluene-d8	90.	75-125

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
Acetone	61.94	10	ug/L
Acrolein	< 5	5	ug/L
Acrylonitrile	< 4	4	ug/L
Allyl chloride	< 3	3	ug/L
Benzene	< 3	3	ug/L
Bromodichloromethane	< 3	3	ug/L
Bromoform	< 2	2	ug/L
Bromomethane	< 6	6	ug/L
2-Butanone	27.18	10	ug/L
Carbon disulfide	< 5	5	ug/L
Carbon tetrachloride	< 3	3	ug/L
Chlorobenzene	< 4	4	ug/L
Chloroethane	< 2	2	ug/L
2-Chloroethylvinylether	< 10	10	ug/L
Chloroform	< 3	3	ug/L
Chloromethane	< 5	5	ug/L
Dibromochloromethane	< 3	3	ug/L
1,2-Dibromo-3-chloropropane	< 6	6	ug/L
1,2-Dibromoethane	< 3	3	ug/L
Dibromomethane	< 2	2	ug/L
1,2-Dichlorobenzene	< 5	5	ug/L
1,3-Dichlorobenzene	< 5	5	ug/L
1,4-Dichlorobenzene	< 6	6	ug/L
trans-1,4-Dichloro-2-butene	< 4	4	ug/L
Dichlorodifluoromethane	< 3	3	ug/L
1,1-Dichloroethane	< 3	3	ug/L
1,2-Dichloroethane	< 3	3	ug/L
1,1-Dichloroethene	< 5	5	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 4	4	ug/L
trans-1,2-Dichloroethene	< 4	4	ug/L
Methylene chloride	8.05	4	ug/L
1,2-Dichloropropane	< 2	2	ug/L
cis-1,3-Dichloropropene	< 2	2	ug/L
trans-1,3-Dichloropropene	< 3	3	ug/L
Diethyl ether	< 5	5	ug/L
Ethylbenzene	< 5	5	ug/L
Ethyl methacrylate	< 5	5	ug/L
2-Hexanone	< 6	6	ug/L
Methacrylonitrile	< 5	5	ug/L
Iodomethane	< 5	5	ug/L
Methyl methacrylate	< 4	4	ug/L
4-Methyl-2-pentanone	< 10	10	ug/L
Propionitrile	< 10	10	ug/L
Styrene	< 4	4	ug/L
1,1,1,2-Tetrachloroethane	< 5	5	ug/L
1,1,2,2-Tetrachloroethane	< 3	3	ug/L
Tetrachloroethene	< 5	5	ug/L
Toluene	< 3	3	ug/L
1,1,1-Trichloroethane	< 5	5	ug/L
1,1,2-Trichloroethane	< 3	3	ug/L
Trichloroethene	< 2	2	ug/L
Trichlorofluoromethane	< 5	5	ug/L
1,2,3-Trichloropropane	< 3	3	ug/L
Vinyl acetate	< 10	10	ug/L
Vinyl chloride	< 3	3	ug/L
m,p-Xylene	< 5	5	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
o-Xylene	< 4	4	ug/L

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	94	62-125
4-Bromofluorobenzene	98	75-125
Dibromofluoromethane	100	75-125
Toluene-d8	93	75-125

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	LCS	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	80	82.1	25	75-125	ug/L
Acrolein	80	71.8	90	75-125	ug/L
Acrylonitrile	80	66.4	83	75-125	ug/L
Allyl chloride	50	58.1	116	75-125	ug/L
Benzene	50	50.1	100	75-125	ug/L
Bromodichloromethane	50	53.6	107	75-125	ug/L
Bromoform	50	45.1	90	75-125	ug/L
Bromomethane	50	49.8	100	72-125	ug/L
2-Butanone	80	63.9	46	75-125	ug/L
Carbon disulfide	50	57.4	115	75-125	ug/L
Carbon tetrachloride	50	54	108	62-125	ug/L
Chlorobenzene	50	46.2	93	75-125	ug/L
Chloroethane	50	46.7	93	65-125	ug/L
2-Chloroethylvinylether	50	45.9	92	75-125	ug/L
Chloroform	50	56.8	114	74-125	ug/L
Chloromethane	50	43.2	86	75-125	ug/L
Dibromochloromethane	50	48.9	98	73-125	ug/L
1,2-Dibromo-3-chloropropane	50	47.4	95	59-125	ug/L
1,2-Dibromoethane	50	46.5	93	75-125	ug/L
Dibromomethane	50	52.3	105	69-127	ug/L
1,2-Dichlorobenzene	50	49	98	75-125	ug/L
1,3-Dichlorobenzene	50	46.1	92	75-125	ug/L
1,4-Dichlorobenzene	50	45.3	91	75-125	ug/L
trans-1,4-Dichloro-2-butene	50	44.7	89	75-125	ug/L
Dichlorodifluoromethane	50	38.5	77	75-125	ug/L
1,1-Dichloroethane	50	54.4	109	75-125	ug/L
1,2-Dichloroethane	50	54.9	110	75-125	ug/L
1,1-Dichloroethene	50	53.7	107	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	LCS	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	50	52.4	105	75-125	ug/L
trans-1,2-Dichloroethene	50	52.3	105	75-125	ug/L
Methylene chloride	50	57.8	100	75-125	ug/L
1,2-Dichloropropane	50	46.8	94	70-125	ug/L
cis-1,3-Dichloropropene	50	52.6	105	74-125	ug/L
trans-1,3-Dichloropropene	50	54	108	66-125	ug/L
Diethyl ether	80	73.2	91	75-125	ug/L
Ethylbenzene	50	50.7	101	75-125	ug/L
Ethyl methacrylate	50	48.7	97	75-125	ug/L
2-Hexanone	80	42.6	53	75-125	ug/L
Methacrylonitrile	80	66.7	83	75-125	ug/L
Iodomethane	50	46.3	93	75-125	ug/L
Methyl methacrylate	80	57.6	72	75-125	ug/L
4-Methyl-2-pentanone	80	47.4	48	75-125	ug/L
Propionitrile	80	58.5	73	75-125	ug/L
Styrene	50	45.1	90	75-125	ug/L
1,1,1,2-Tetrachloroethane	50	49.3	99	72-125	ug/L
1,1,2,2-Tetrachloroethane	50	42	84	74-125	ug/L
Tetrachloroethene	50	51.3	103	71-125	ug/L
Toluene	50	50.3	101	74-125	ug/L
1,1,1-Trichloroethane	50	59.6	119	75-125	ug/L
1,1,2-Trichloroethane	50	48.4	97	75-125	ug/L
Trichloroethene	50	52.6	105	71-125	ug/L
Trichlorofluoromethane	50	56.1	112	67-125	ug/L
1,2,3-Trichloropropane	50	44.1	88	75-125	ug/L
Vinyl acetate	50	52.2	104	75-125	ug/L
Vinyl chloride	50	45.1	90	46-134	ug/L
m,p-Xylene	100	92.9	93	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	LCS	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	50	46.1	92	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980810A
Lab ID:	LCS	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	104	62-139
4-Bromofluorobenzene	102	75-125
Dibromofluoromethane	101	75-125
Toluene-d8	99	75-125

WASHWATER ANALYSIS

Semi-Volatiles

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9808061
Project Name: 8502 LHAAP
Project No.:
Lab ID: 9808061-03A
Chemron ID: 73273

Date: *31-Aug-98*
Client Sample ID: LHAAP 31-W WASH
Collection Date: 8/18/98 12:05:00 PM
Matrix: WATER
Batch ID: SVOC2_980826B
Prep Date: 8/24/98 9:00:00 AM
Loc. ID:

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Acenaphthylene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Acetophenone	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Aniline	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Anthracene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
4-Aminobiphenyl	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Benzidine	< 20	20	ug/L	1	8/27/98 1:19:00 AM
Benzo[a]anthracene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Benzo[b]fluoranthene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Benzo[k]fluoranthene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Benzo[g,h,i]perylene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Benzo[a]pyrene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Benzoic acid	< 20	20	ug/L	1	8/27/98 1:19:00 AM
Benzyl alcohol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Bis(2-chloroethoxy)methane	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Bis(2-chloroethyl)ether	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Bis(2-chloroisopropyl)ether	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Bis(2-ethylhexyl)phthalate	12.8	10	ug/L	1	8/27/98 1:19:00 AM
4-Bromophenyl phenyl ether	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Butyl benzyl phthalate	< 10	10	ug/L	1	8/27/98 1:19:00 AM
4-Chloroaniline	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2-Chloronaphthalene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
4-Chloro-3-methylphenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2-Chlorophenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
4-Chlorophenyl phenyl ether	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Chrysene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Dibenz[a,h]anthracene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Dibenzofuran	< 10	10	ug/L	1	8/27/98 1:19:00 AM
1,3-Dichlorobenzene	< 10	10	ug/L	1	8/27/98 1:19:00 AM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9808061
Project Name: 8502 LHAAP
Project No.:
Lab ID: 9808061-03A
Chemron ID: 73273

Date: *31-Aug-98*
Client Sample ID: LHAAP 31-W WASH
Collection Date: 8/18/98 12:05:00 PM
Matrix: WATER
Batch ID: SVOC2_980826B
Prep Date: 8/24/98 9:00:00 AM
Loc. ID:

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
3,3´-Dichlorobenzidine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
1,2-Dichlorobenzene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2,4-Dichlorophenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2,6-Dichlorophenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Diethyl phthalate	< 10	10	ug/L	1	8/27/98 1:19:00 AM
a,a-Dimethylphenethylamine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2,4-Dimethylphenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Dimethyl phthalate	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Di-n-butyl phthalate	< 10	10	ug/L	1	8/27/98 1:19:00 AM
4,6-Dinitro-2-methylphenol	< 20	20	ug/L	1	8/27/98 1:19:00 AM
2,4-Dinitrophenol	< 20	20	ug/L	1	8/27/98 1:19:00 AM
2,4-Dinitrotoluene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2,6-Dinitrotoluene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Di-n-octyl phthalate	< 10	10	ug/L	1	8/27/98 1:19:00 AM
1,2-Diphenylhydrazine	< 20	20	ug/L	1	8/27/98 1:19:00 AM
Fluoranthene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Fluorene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Hexachlorobenzene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Hexachlorobutadiene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Hexachlorocyclopentadiene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Hexachloroethane	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Isophorone	< 10	10	ug/L	1	8/27/98 1:19:00 AM
3-Methylcholanthrene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2-Methylnaphthalene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2-Methylphenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
4-Methylphenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Naphthalene	< 10	10	ug/L	1	8/27/98 1:19:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*31-Aug-98*
Lab Order:	9808061	**Client Sample ID:**	LHAAP 31-W WASH
Project Name:	8502 LHAAP	**Collection Date:**	8/18/98 12:05:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9808061-03A	**Batch ID:**	SVOC2_980826B
Chemron ID:	73273	**Prep Date:**	8/24/98 9:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2-Naphthylamine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2-Nitroaniline	< 10	10	ug/L	1	8/27/98 1:19:00 AM
3-Nitroaniline	< 10	10	ug/L	1	8/27/98 1:19:00 AM
4-Nitroaniline	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Nitrobenzene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2-Nitrophenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
4-Nitrophenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
N-Nitroso-di-n-butylamine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
N-Nitrosodiethylamine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
N-Nitrosodimethylamine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
N-Nitrosodiphenylamine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
N-Nitrosodi-n-propylamine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
N-Nitrosomethylethylamine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Pentachlorobenzene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Pentachloronitrobenzene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Pentachlorophenol	< 20	20	ug/L	1	8/27/98 1:19:00 AM
Phenacetin	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Phenanthrene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Phenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Pyrene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
Pyridine	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2,4,5-Trichlorophenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM
1,2,4-Trichlorobenzene	< 10	10	ug/L	1	8/27/98 1:19:00 AM
2,4,6-Trichlorophenol	< 10	10	ug/L	1	8/27/98 1:19:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*31-Aug-98*
Lab Order:	9808061	**Client Sample ID:**	LHAAP 31-W WASH
Project Name:	8502 LHAAP	**Collection Date:**	8/18/98 12:05:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9808061-03A	**Batch ID:**	SVOC2_980826B
Chemron ID:	73273	**Prep Date:**	8/24/98 9:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*31-Aug-98*
Lab Order:	9808061	**Client Sample ID:**	LHAAP 31-W WASH
Project Name:	8502 LHAAP	**Collection Date:**	8/18/98 12:05:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9808061-03A	**Batch ID:**	SVOC2_980826B
Chemron ID:	73273	**Prep Date:**	8/24/98 9:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	0.	25-134
2-Fluorobiphenyl	43.	43-125
2-Fluorophenol	0.	25-125
Nitrobenzene-d5	23.	32-125
Phenol-d5	1.	25-125
Terphenyl-d14	22.	42-126

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: BLANK

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 4:55:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
Acenaphthene	< 10	10	ug/L
Acenaphthylene	< 10	10	ug/L
Acetophenone	< 10	10	ug/L
Aniline	< 10	10	ug/L
Anthracene	< 10	10	ug/L
4-Aminobiphenyl	< 10	10	ug/L
Benzidine	< 20	20	ug/L
Benzo[a]anthracene	< 10	10	ug/L
Benzo[b]fluoranthene	< 10	10	ug/L
Benzo[k]fluoranthene	< 10	10	ug/L
Benzo[g,h,i]perylene	< 10	10	ug/L
Benzo[a]pyrene	< 10	10	ug/L
Benzoic acid	< 20	20	ug/L
Benzyl alcohol	< 10	10	ug/L
Bis(2-chloroethoxy)methane	< 10	10	ug/L
Bis(2-chloroethyl)ether	< 10	10	ug/L
Bis(2-chloroisopropyl)ether	< 10	10	ug/L
Bis(2-ethylhexyl)phthalate	< 10	10	ug/L
4-Bromophenyl phenyl ether	< 10	10	ug/L
Butyl benzyl phthalate	< 10	10	ug/L
4-Chloroaniline	< 10	10	ug/L
2-Chloronaphthalene	< 10	10	ug/L
4-Chloro-3-methylphenol	< 10	10	ug/L
2-Chlorophenol	< 10	10	ug/L
4-Chlorophenyl phenyl ether	< 10	10	ug/L
Chrysene	< 10	10	ug/L
Dibenz[a,h]anthracene	< 10	10	ug/L
Dibenzofuran	< 10	10	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: BLANK

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 4:55:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
1,3-Dichlorobenzene	< 10	10	ug/L
1,4-Dichlorobenzene	< 10	10	ug/L
1,2-Dichlorobenzene	< 10	10	ug/L
3,3´-Dichlorobenzidine	< 10	10	ug/L
2,4-Dichlorophenol	< 10	10	ug/L
2,6-Dichlorophenol	< 10	10	ug/L
Diethyl phthalate	< 10	10	ug/L
a,a-Dimethylphenethylamine	< 10	10	ug/L
2,4-Dimethylphenol	< 10	10	ug/L
Dimethyl phthalate	< 10	10	ug/L
Di-n-butyl phthalate	< 10	10	ug/L
4,6-Dinitro-2-methylphenol	< 20	20	ug/L
2,4-Dinitrophenol	< 20	20	ug/L
2,4-Dinitrotoluene	< 10	10	ug/L
2,6-Dinitrotoluene	< 10	10	ug/L
Di-n-octyl phthalate	< 10	10	ug/L
1,2-Diphenylhydrazine	< 20	20	ug/L
Fluoranthene	< 10	10	ug/L
Fluorene	< 10	10	ug/L
Hexachlorobenzene	< 10	10	ug/L
Hexachlorobutadiene	< 10	10	ug/L
Hexachlorocyclopentadiene	< 10	10	ug/L
Hexachloroethane	< 10	10	ug/L
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L
Isophorone	< 10	10	ug/L
3-Methylcholanthrene	< 10	10	ug/L
2-Methylnaphthalene	< 10	10	ug/L
2-Methylphenol	< 10	10	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: BLANK

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 4:55:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
4-Methylphenol	< 10	10	ug/L
Naphthalene	< 10	10	ug/L
1-Naphthylamine	< 10	10	ug/L
2-Naphthylamine	< 10	10	ug/L
2-Nitroaniline	< 10	10	ug/L
3-Nitroaniline	< 10	10	ug/L
4-Nitroaniline	< 10	10	ug/L
Nitrobenzene	< 10	10	ug/L
2-Nitrophenol	< 10	10	ug/L
4-Nitrophenol	< 10	10	ug/L
N-Nitroso-di-n-butylamine	< 10	10	ug/L
N-Nitrosodiethylamine	< 10	10	ug/L
N-Nitrosodimethylamine	< 10	10	ug/L
N-Nitrosodiphenylamine	< 10	10	ug/L
N-Nitrosodi-n-propylamine	< 10	10	ug/L
N-Nitrosomethylethylamine	< 10	10	ug/L
Pentachlorobenzene	< 10	10	ug/L
Pentachloronitrobenzene	< 10	10	ug/L
Pentachlorophenol	< 20	20	ug/L
Phenacetin	< 10	10	ug/L
Phenanthrene	< 10	10	ug/L
Phenol	< 10	10	ug/L
Pyrene	< 10	10	ug/L
Pyridine	< 10	10	ug/L
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L
1,2,4-Trichlorobenzene	< 10	10	ug/L
2,4,5-Trichlorophenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*31-Aug-98*
Lab Order:	9808061	**Matrix:**	Water
Project:	8502 LHAAP	**Batch ID:**	SVOC2_980826B
Lab ID:	BLANK	**Prep Date:**	8/24/98
		Date Analyzed:	8/26/98 4:55:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS	**SW8270C**		**Analyst:** HM
Analyte	**Result**	**Report Limit**	**Units:**
2,4,6-Trichlorophenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*31-Aug-98*
Lab Order:	9808061	**Matrix:**	Water
Project:	8502 LHAAP	**Batch ID:**	SVOC2_980826B
Lab ID:	BLANK	**Prep Date:**	8/24/98
		Date Analyzed:	8/26/98 4:55:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	41	25-134
2-Fluorobiphenyl	84	43-125
2-Fluorophenol	66	25-125
Nitrobenzene-d5	62	32-125
Phenol-d5	124	25-125
Terphenyl-d14	49	42-126

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCS

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 5:53:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acenaphthene	50	45.4	91	49-125	ug/L
Acenaphthylene	50	42.9	86	47-125	ug/L
Acetophenone	50	33.9	68	25-175	ug/L
Aniline	50	26.9	54	25-175	ug/L
Anthracene	50	46.8	94	45-165	ug/L
4-Aminobiphenyl	50	57.4	115	25-175	ug/L
Benzidine	100	5.6	6	25-175	ug/L
Benzo[a]anthracene	50	40.9	82	51-133	ug/L
Benzo[b]fluoranthene	50	60.5	121	37-125	ug/L
Benzo[k]fluoranthene	50	49.6	99	25-175	ug/L
Benzo[g,h,i]perylene	50	54.4	109	34-149	ug/L
Benzo[a]pyrene	50	48.7	97	41-125	ug/L
Benzoic acid	100	30.8	31	25-162	ug/L
Benzyl alcohol	50	53.8	108	35-125	ug/L
Bis(2-chloroethoxy)methane	50	39.6	79	49-125	ug/L
Bis(2-chloroethyl)ether	50	34.7	69	44-125	ug/L
Bis(2-chloroisopropyl)ether	50	25.1	50	36-166	ug/L
Bis(2-ethylhexyl)phthalate	50	46.2	92	33-129	ug/L
4-Bromophenyl phenyl ether	50	48.2	96	53-127	ug/L
Butyl benzyl phthalate	50	46.1	92	26-125	ug/L
4-Chloroaniline	50	46	92	45-136	ug/L
2-Chloronaphthalene	50	43.7	87	60-125	ug/L
4-Chloro-3-methylphenol	50	52.4	105	44-125	ug/L
2-Chlorophenol	50	44.6	89	41-125	ug/L
4-Chlorophenyl phenyl ether	50	54	108	51-132	ug/L
Chrysene	50	38.3	77	55-133	ug/L
Dibenz[a,h]anthracene	50	56.3	113	50-125	ug/L
Dibenzofuran	50	53.1	106	52-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCS

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 5:53:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
1,3-Dichlorobenzene	50	28.8	58	36-125	ug/L
1,4-Dichlorobenzene	50	30.3	61	30-125	ug/L
1,2-Dichlorobenzene	50	28.6	57	42-155	ug/L
3,3´-Dichlorobenzidine	50	53.4	107	29-175	ug/L
2,4-Dichlorophenol	50	62.1	124	46-125	ug/L
2,6-Dichlorophenol	50	52.1	104	25-175	ug/L
Diethyl phthalate	50	49.7	99	37-125	ug/L
a,a-Dimethylphenethylamine	50	0.42	1	25-175	ug/L
2,4-Dimethylphenol	50	52.9	106	45-139	ug/L
Dimethyl phthalate	50	51.4	103	25-175	ug/L
Di-n-butyl phthalate	50	49.4	99	34-126	ug/L
4,6-Dinitro-2-methylphenol	50	57.4	115	26-134	ug/L
2,4-Dinitrophenol	50	47.3	95	30-151	ug/L
2,4-Dinitrotoluene	50	47	94	39-139	ug/L
2,6-Dinitrotoluene	50	49.6	99	51-125	ug/L
Di-n-octyl phthalate	50	50.3	101	38-127	ug/L
1,2-Diphenylhydrazine	100	53.6	54	25-175	ug/L
Fluoranthene	50	49.6	99	47-125	ug/L
Fluorene	50	48.9	98	48-139	ug/L
Hexachlorobenzene	50	37.6	75	46-133	ug/L
Hexachlorobutadiene	50	35	70	25-125	ug/L
Hexachlorocyclopentadiene	50	57.3	115	41-125	ug/L
Hexachloroethane	50	21.2	42	25-153	ug/L
Indeno[1,2,3-cd]pyrene	50	53.4	107	27-160	ug/L
Isophorone	50	38.2	76	26-175	ug/L
3-Methylcholanthrene	50	44	88	25-175	ug/L
2-Methylnaphthalene	50	52.2	104	41-125	ug/L
2-Methylphenol	50	32.8	66	25-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCS

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 5:53:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
4-Methylphenol	100	59.9	60	33-125	ug/L
Naphthalene	50	42.4	85	50-125	ug/L
1-Naphthylamine	50	56.6	113	25-175	ug/L
2-Naphthylamine	50	39.8	80	25-175	ug/L
2-Nitroaniline	50	41.4	83	50-125	ug/L
3-Nitroaniline	50	55.2	110	51-125	ug/L
4-Nitroaniline	50	52.6	105	40-143	ug/L
Nitrobenzene	50	37.4	75	46-133	ug/L
2-Nitrophenol	50	58.1	116	44-125	ug/L
4-Nitrophenol	50	26.7	53	25-131	ug/L
N-Nitroso-di-n-butylamine	50	42.1	84	25-175	ug/L
N-Nitrosodiethylamine	50	39.3	79	25-175	ug/L
N-Nitrosodimethylamine	50	47.8	95	25-175	ug/L
N-Nitrosodiphenylamine	100	49.7	50	27-125	ug/L
N-Nitrosodi-n-propylamine	50	32	64	37-125	ug/L
N-Nitrosomethylethylamine	50	33.4	66	25-175	ug/L
Pentachlorobenzene	50	47.3	95	25-175	ug/L
Pentachloronitrobenzene	50	41	82	25-175	ug/L
Pentachlorophenol	50	55.1	110	28-136	ug/L
Phenacetin	50	53.4	107	25-175	ug/L
Phenanthrene	50	48.3	97	54-125	ug/L
Phenol	50	19.8	40	25-125	ug/L
Pyrene	50	54.7	109	47-136	ug/L
Pyridine	50	23.2	46	25-175	ug/L
1,2,4,5-Tetrachlorobenzene	50	60.4	121	25-175	ug/L
2,3,4,6-Tetrachlorophenol	50	45.5	91	25-175	ug/L
1,2,4-Trichlorobenzene	50	40	80	44-142	ug/L
2,4,5-Trichlorophenol	50	54.8	110	25-175	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCS

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 5:53:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
2,4,6-Trichlorophenol	50	50.4	101	39-128	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCS

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 5:53:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	91	25-134
2-Fluorobiphenyl	94	43-125
2-Fluorophenol	52	25-125
Nitrobenzene-d5	78	32-125
Phenol-d5	34	25-125
Terphenyl-d14	118	42-126

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCSD

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 6:50:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acenaphthene	50	45.4	91	49-125	ug/L
Acenaphthylene	50	43.9	88	47-125	ug/L
Acetophenone	50	34.6	69	25-175	ug/L
Aniline	50	26.6	53	25-175	ug/L
Anthracene	50	44	88	45-165	ug/L
4-Aminobiphenyl	50	58.5	117	25-175	ug/L
Benzidine	100	2.7	3	25-175	ug/L
Benzo[a]anthracene	50	43.1	86	51-133	ug/L
Benzo[b]fluoranthene	50	80.2	160	37-125	ug/L
Benzo[k]fluoranthene	50	63.9	128	25-175	ug/L
Benzo[g,h,i]perylene	50	72.2	144	34-149	ug/L
Benzo[a]pyrene	50	66.5	133	41-125	ug/L
Benzoic acid	100	30.3	30	25-162	ug/L
Benzyl alcohol	50	54.8	110	35-125	ug/L
Bis(2-chloroethoxy)methane	50	36.7	73	49-125	ug/L
Bis(2-chloroethyl)ether	50	34.7	69	44-125	ug/L
Bis(2-chloroisopropyl)ether	50	24.6	49	36-166	ug/L
Bis(2-ethylhexyl)phthalate	50	39.9	80	33-129	ug/L
4-Bromophenyl phenyl ether	50	49.9	100	53-127	ug/L
Butyl benzyl phthalate	50	39.8	80	26-125	ug/L
4-Chloroaniline	50	44.3	89	45-136	ug/L
2-Chloronaphthalene	50	30.9	62	60-125	ug/L
4-Chloro-3-methylphenol	50	48.6	97	44-125	ug/L
2-Chlorophenol	50	42.4	85	41-125	ug/L
4-Chlorophenyl phenyl ether	50	54.7	109	51-132	ug/L
Chrysene	50	43.3	87	55-133	ug/L
Dibenz[a,h]anthracene	50	70.4	141	50-125	ug/L
Dibenzofuran	50	52	104	52-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCSD

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 6:50:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
1,3-Dichlorobenzene	50	28.4	57	36-125	ug/L
1,4-Dichlorobenzene	50	30.7	61	30-125	ug/L
1,2-Dichlorobenzene	50	29.5	59	42-155	ug/L
3,3´-Dichlorobenzidine	50	59.5	119	29-175	ug/L
2,4-Dichlorophenol	50	60.6	121	46-125	ug/L
2,6-Dichlorophenol	50	51	102	25-175	ug/L
Diethyl phthalate	50	47	94	37-125	ug/L
a,a-Dimethylphenethylamine	50	0.03	0	25-175	ug/L
2,4-Dimethylphenol	50	49.4	99	45-139	ug/L
Dimethyl phthalate	50	50.3	101	25-175	ug/L
Di-n-butyl phthalate	50	46.6	93	34-126	ug/L
4,6-Dinitro-2-methylphenol	50	58	116	26-134	ug/L
2,4-Dinitrophenol	50	44.3	89	30-151	ug/L
2,4-Dinitrotoluene	50	46.6	93	39-139	ug/L
2,6-Dinitrotoluene	50	47.8	96	51-125	ug/L
Di-n-octyl phthalate	50	49.2	98	38-127	ug/L
1,2-Diphenylhydrazine	100	50.3	50	25-175	ug/L
Fluoranthene	50	49.1	98	47-125	ug/L
Fluorene	50	47.5	95	48-139	ug/L
Hexachlorobenzene	50	38.1	76	46-133	ug/L
Hexachlorobutadiene	50	36.4	73	25-125	ug/L
Hexachlorocyclopentadiene	50	62.2	124	41-125	ug/L
Hexachloroethane	50	20.7	41	25-153	ug/L
Indeno[1,2,3-cd]pyrene	50	70.3	141	27-160	ug/L
Isophorone	50	35.6	71	26-175	ug/L
3-Methylcholanthrene	50	54.2	108	25-175	ug/L
2-Methylnaphthalene	50	47	94	41-125	ug/L
2-Methylphenol	50	33.5	67	25-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCSD

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 6:50:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
4-Methylphenol	100	58.5	58	33-125	ug/L
Naphthalene	50	41.5	83	50-125	ug/L
1-Naphthylamine	50	57.6	115	25-175	ug/L
2-Naphthylamine	50	39.1	78	25-175	ug/L
2-Nitroaniline	50	39	78	50-125	ug/L
3-Nitroaniline	50	55.3	111	51-125	ug/L
4-Nitroaniline	50	51.8	104	40-143	ug/L
Nitrobenzene	50	33.9	68	46-133	ug/L
2-Nitrophenol	50	55	110	44-125	ug/L
4-Nitrophenol	50	28.2	56	25-131	ug/L
N-Nitroso-di-n-butylamine	50	38.4	77	25-175	ug/L
N-Nitrosodiethylamine	50	37.6	75	25-175	ug/L
N-Nitrosodimethylamine	50	34.9	70	25-175	ug/L
N-Nitrosodiphenylamine	100	55.3	55	27-125	ug/L
N-Nitrosodi-n-propylamine	50	30.3	61	37-125	ug/L
N-Nitrosomethylethylamine	50	30.1	60	25-175	ug/L
Pentachlorobenzene	50	48.6	97	25-175	ug/L
Pentachloronitrobenzene	50	40.9	82	25-175	ug/L
Pentachlorophenol	50	53.8	108	28-136	ug/L
Phenacetin	50	51.8	104	25-175	ug/L
Phenanthrene	50	45.5	91	54-125	ug/L
Phenol	50	19.6	39	25-125	ug/L
Pyrene	50	44.4	89	47-136	ug/L
Pyridine	50	18	36	25-175	ug/L
1,2,4,5-Tetrachlorobenzene	50	50.7	101	25-175	ug/L
2,3,4,6-Tetrachlorophenol	50	46.9	94	25-175	ug/L
,2,4-Trichlorobenzene	50	40	80	44-142	ug/L
2,4,5-Trichlorophenol	50	56.6	113	25-175	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*31-Aug-98*
Lab Order:	9808061	**Matrix:**	Water
Project:	8502 LHAAP	**Batch ID:**	SVOC2_980826B
Lab ID:	LCSD	**Prep Date:**	8/24/98
		Date Analyzed:	8/26/98 6:50:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
2,4,6-Trichlorophenol	50	63.2	126	39-128	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCSD

Date: *31-Aug-98*
Matrix: Water
Batch ID: SVOC2_980826B
Prep Date: 8/24/98
Date Analyzed: 8/26/98 6:50:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	99	25-134
2-Fluorobiphenyl	91	43-125
2-Fluorophenol	50	25-125
Nitrobenzene-d5	75	32-125
Phenol-d5	33	25-125
Terphenyl-d14	101	42-126

WASHWATER ANALYSIS

Total Petroleum Hydrocarbons

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CLIENT: Anderson Columbia Environmental, Inc.
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT

Date: *17-Aug-98*
Matrix: WATER

PETROLEUM HYDROCARBONS, T/R — **E418.1** — **Analyst:** SLF

Lab ID	Chemron ID	Client ID	Collection Date	Analyses	Result	Report Limit	Units	Dilution	Date Analyzed
9808004-01A	73036	LHAAP/49-W-WASH	7/28/98 12:00:00	Petroleum Hydrocarbons	2.31	0.5	mg/L	1	8/14/98
9808004-02A	73037	LHAAP/49-2-RINSE	7/28/98 12:05:00	Petroleum Hydrocarbons	37.7	5	mg/L	10	8/14/98
9808004-23A	73058	LHAAP/811-1-WASH	7/29/98 2:15:00	Petroleum Hydrocarbons	24.6	0.5	mg/L	1	8/14/98
9808004-24A	73059	LHAAP/811-1-RINSE	7/29/98 5:30:00	Petroleum Hydrocarbons	3.34	0.5	mg/L	1	8/14/98
9808004-25A	73060	LHAAP/31-W-WASH	7/30/98 11:45:00	Petroleum Hydrocarbons	61.3	5	mg/L	10	8/14/98
9808004-26A	73061	LHAAP/31-W-RINSE	7/30/98 3:30:00	Petroleum Hydrocarbons	< 0.5	0.5	mg/L	1	8/14/98

Approved by: R. Aldrich

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980814A
Lab ID:	MBlank	**Prep Date:**	8/14/98
		Date Analyzed:	8/14/98

QUALITY CONTROL REPORT

Method Blank

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Result	Report Limit	Units:
Petroleum Hydrocarbons, TR	< 0.5	0.5	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980814A
Lab ID:	LCS	**Prep Date:**	8/14/98
		Date Analyzed:	8/14/98

QUALITY CONTROL REPORT

Laboratory Control Sample

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Petroleum Hydrocarbons, TR	2	2.18	109	73-119	mg/L

RINSEWATER ANALYSIS

Metals

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6203
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Water
Chemron ID #: 73061
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8205 Longhorn Army Ammo Plant
LHAAP/31-W-Rinse 7/30/98 15:30

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<.05	.05	MG/L	08/07/98	3005/6010B
Total Barium	1.5	.05	MG/L	08/07/98	3005/6010B
Total Cadmium	.017	.005	MG/L	08/07/98	3005/6010B
Total Chromium	.23	.01	MG/L	08/07/98	3005/6010B
Total Lead	.18	.03	MG/L	08/07/98	3005/6010B
Total Mercury	<.0002	.0002	MG/L	08/26/98	7470
Total Selenium	<.05	.05	MG/L	08/07/98	3005/6010B
Total Silver	<.01	.01	MG/L	08/07/98	3005/6010B

Approved By: _____

MDL - Method Detection Limit

00189028

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
Chain of Custody #: 6203
Report Date: 08/26/98
Page #: 1

QUALITY ASSURANCE REPORT

Description / Parameter	Matrix	Analysis Date	Spike Concentration	Analyzed Value	Background Value	% Recovery	Control Limits Lower	Control Limits Upper	Relative % Difference	Control Limit
Blk - Arsenic	Water	08/07/98		<50.						
MS - Arsenic	Water	08/07/98	500.	453.	<50.	90.6	60	125	2.2	10
MSD - Arsenic	Water	08/07/98	500.	443.	<50.	88.6	60	125	2.2	10
LCS - Arsenic	Water	08/07/98	500.	492.	<50.	98.4	75	125		
Blk - Barium	Water	08/07/98		<10.						
MS - Barium	Water	08/07/98	1000.	1350.	525.	82.5	73	117	2.2	7
MSD - Barium	Water	08/07/98	1000.	1320.	525.	79.5	73	117	2.2	7
LCS - Barium	Water	08/07/98	1000.	963.	<10.	96.3	75	125		
Blk - Cadmium	Water	08/07/98		<5.						
MS - Cadmium	Water	08/07/98	200.	276.	103.	86.5	63	120	2.6	7
MSD - Cadmium	Water	08/07/98	200.	269.	103.	83.0	63	120	2.6	7
LCS - Cadmium	Water	08/07/98	200.	185.	<5.	92.5	75	125		
Blk - Chromium	Water	08/07/98		<10.						
MS - Chromium	Water	08/07/98	200.	242.	69.	86.5	58	131	3.8	8
MSD - Chromium	Water	08/07/98	200.	233.	69.	82.0	58	131	3.8	8
LCS - Chromium	Water	08/07/98	200.	189.	<10.	94.5	75	125		
Blk - Lead	Water	08/07/98		<30.						
MS - Lead	Water	08/07/98	500.	1145.	574.	114.	74	129	0.4	10
MSD - Lead	Water	08/07/98	500.	1140.	574.	113.	74	129	0.4	10
LCS - Lead	Water	08/07/98	500.	517.	<30.	103.	75	125		
Blk - Mercury	Water	08/26/98		<.2						
MS - Mercury	Water	08/26/98	5.	4.70	<.2	94.0	84	117	0.0	8
MSD - Mercury	Water	08/26/98	5.	4.70	<.2	94.0	84	117	0.0	8
LCS - Mercury	Water	08/26/98	5.	5.30	<.2	106.	75	125		
Blk - Selenium	Water	08/07/98		<50.						
MS - Selenium	Water	08/07/98	500.	419.	<50.	83.8	50	132	3.4	10
MSD - Selenium	Water	08/07/98	500.	405.	<50.	81.0	50	132	3.4	10

Concentration Units: Soil / Sed MG/KG - Water ug/L

00189029

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
Chain of Custody #: 6203
Report Date: 08/26/98

QUALITY ASSURANCE REPORT

Description / Parameter	Matrix	Analysis Date	Spike Concentration	Analyzed Value	Background Value	% Recovery	Control Limits Lower	Control Limits Upper	Relative % Difference	Control Limit
LCS - Selenium	Water	08/07/98	500.	510.	<50.	102.	75	125		
Blk - Silver	Water	08/07/98		<10.						
MS - Silver	Water	08/07/98	100.	63.	<10.	63.0	16	154	17.2	27
MSD - Silver	Water	08/07/98	100.	53.	<10.	53.0	16	154	17.2	27
LCS - Silver	Water	08/07/98	100.	87.	<10.	87.0	75	125		

Concentration Units: Soil / Sediment MG/KG - Water ug/L

RINSEWATER ANALYSIS

Volatiles

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-RINSE
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:30:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-26A	**Batch ID:**	VOC2_980810A
Chemron ID:	73061	**Prep Date:**	8/10/98 6:41:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	107	100	ug/L	10	8/10/98 6:41:00 PM
Acrolein	< 50	50	ug/L	10	8/10/98 6:41:00 PM
Acrylonitrile	< 40	40	ug/L	10	8/10/98 6:41:00 PM
Allyl chloride	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Benzene	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Bromodichloromethane	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Bromoform	< 20	20	ug/L	10	8/10/98 6:41:00 PM
Bromomethane	< 60	60	ug/L	10	8/10/98 6:41:00 PM
2-Butanone	< 100	100	ug/L	10	8/10/98 6:41:00 PM
Carbon disulfide	< 50	50	ug/L	10	8/10/98 6:41:00 PM
Carbon tetrachloride	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Chlorobenzene	< 40	40	ug/L	10	8/10/98 6:41:00 PM
Chloroethane	< 20	20	ug/L	10	8/10/98 6:41:00 PM
2-Chloroethylvinylether	< 100	100	ug/L	10	8/10/98 6:41:00 PM
Chloroform	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Chloromethane	< 50	50	ug/L	10	8/10/98 6:41:00 PM
Dibromochloromethane	< 30	30	ug/L	10	8/10/98 6:41:00 PM
1,2-Dibromo-3-chloropropane	< 60	60	ug/L	10	8/10/98 6:41:00 PM
1,2-Dibromoethane	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Dibromomethane	< 20	20	ug/L	10	8/10/98 6:41:00 PM
1,2-Dichlorobenzene	< 50	50	ug/L	10	8/10/98 6:41:00 PM
1,3-Dichlorobenzene	< 50	50	ug/L	10	8/10/98 6:41:00 PM
1,4-Dichlorobenzene	< 60	60	ug/L	10	8/10/98 6:41:00 PM
trans-1,4-Dichloro-2-butene	< 40	40	ug/L	10	8/10/98 6:41:00 PM
Dichlorodifluoromethane	< 30	30	ug/L	10	8/10/98 6:41:00 PM
1,1-Dichloroethane	< 30	30	ug/L	10	8/10/98 6:41:00 PM
1,2-Dichloroethane	< 30	30	ug/L	10	8/10/98 6:41:00 PM
1,1-Dichloroethene	< 50	50	ug/L	10	8/10/98 6:41:00 PM
cis-1,2-Dichloroethene	< 40	40	ug/L	10	8/10/98 6:41:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-RINSE
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:30:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-26A	**Batch ID:**	VOC2_980810A
Chemron ID:	73061	**Prep Date:**	8/10/98 6:41:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 40	40	ug/L	10	8/10/98 6:41:00 PM
Methylene chloride	< 40	40	ug/L	10	8/10/98 6:41:00 PM
1,2-Dichloropropane	< 20	20	ug/L	10	8/10/98 6:41:00 PM
cis-1,3-Dichloropropene	< 20	20	ug/L	10	8/10/98 6:41:00 PM
trans-1,3-Dichloropropene	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Diethyl ether	< 50	50	ug/L	10	8/10/98 6:41:00 PM
Ethylbenzene	< 50	50	ug/L	10	8/10/98 6:41:00 PM
Ethyl methacrylate	< 50	50	ug/L	10	8/10/98 6:41:00 PM
2-Hexanone	< 60	60	ug/L	10	8/10/98 6:41:00 PM
Methacrylonitrile	< 50	50	ug/L	10	8/10/98 6:41:00 PM
Iodomethane	< 50	50	ug/L	10	8/10/98 6:41:00 PM
Methyl methacrylate	< 40	40	ug/L	10	8/10/98 6:41:00 PM
4-Methyl-2-pentanone	< 100	100	ug/L	10	8/10/98 6:41:00 PM
Propionitrile	< 100	100	ug/L	10	8/10/98 6:41:00 PM
Styrene	< 40	40	ug/L	10	8/10/98 6:41:00 PM
1,1,1,2-Tetrachloroethane	< 50	50	ug/L	10	8/10/98 6:41:00 PM
1,1,2,2-Tetrachloroethane	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Tetrachloroethene	< 50	50	ug/L	10	8/10/98 6:41:00 PM
Toluene	< 30	30	ug/L	10	8/10/98 6:41:00 PM
1,1,1-Trichloroethane	< 50	50	ug/L	10	8/10/98 6:41:00 PM
1,1,2-Trichloroethane	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Trichloroethene	< 20	20	ug/L	10	8/10/98 6:41:00 PM
Trichlorofluoromethane	< 50	50	ug/L	10	8/10/98 6:41:00 PM
1,2,3-Trichloropropane	< 30	30	ug/L	10	8/10/98 6:41:00 PM
Vinyl acetate	< 100	100	ug/L	10	8/10/98 6:41:00 PM
Vinyl chloride	< 30	30	ug/L	10	8/10/98 6:41:00 PM
m,p-Xylene	< 50	50	ug/L	10	8/10/98 6:41:00 PM
o-Xylene	< 40	40	ug/L	10	8/10/98 6:41:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-RINSE
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:30:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-26A	**Batch ID:**	VOC2_980810A
Chemron ID:	73061	**Prep Date:**	8/10/98 6:41:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-RINSE
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:30:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9808004-26A	**Batch ID:**	VOC2_980810A
Chemron ID:	73061	**Prep Date:**	8/10/98 6:41:00 PM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	97.	62-125
4-Bromofluorobenzene	95.	75-125
Dibromofluoromethane	87.	75-125
Toluene-d8	89.	75-125

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
Acetone	61.94	10	ug/L
Acrolein	< 5	5	ug/L
Acrylonitrile	< 4	4	ug/L
Allyl chloride	< 3	3	ug/L
Benzene	< 3	3	ug/L
Bromodichloromethane	< 3	3	ug/L
Bromoform	< 2	2	ug/L
Bromomethane	< 6	6	ug/L
2-Butanone	27.18	10	ug/L
Carbon disulfide	< 5	5	ug/L
Carbon tetrachloride	< 3	3	ug/L
Chlorobenzene	< 4	4	ug/L
Chloroethane	< 2	2	ug/L
2-Chloroethylvinylether	< 10	10	ug/L
Chloroform	< 3	3	ug/L
Chloromethane	< 5	5	ug/L
Dibromochloromethane	< 3	3	ug/L
1,2-Dibromo-3-chloropropane	< 6	6	ug/L
1,2-Dibromoethane	< 3	3	ug/L
Dibromomethane	< 2	2	ug/L
1,2-Dichlorobenzene	< 5	5	ug/L
1,3-Dichlorobenzene	< 5	5	ug/L
1,4-Dichlorobenzene	< 6	6	ug/L
trans-1,4-Dichloro-2-butene	< 4	4	ug/L
Dichlorodifluoromethane	< 3	3	ug/L
1,1-Dichloroethane	< 3	3	ug/L
1,2-Dichloroethane	< 3	3	ug/L
1,1-Dichloroethene	< 5	5	ug/L

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Client:	Anderson Columbia Environ	Date:	*17-Aug-98*
Lab Order:	9808004	Matrix:	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	Batch ID:	VOC2_980810A
Lab ID:	Blank	Prep Date:	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS — SW8260A — Analyst: DLS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 4	4	ug/L
trans-1,2-Dichloroethene	< 4	4	ug/L
Methylene chloride	8.05	4	ug/L
1,2-Dichloropropane	< 2	2	ug/L
cis-1,3-Dichloropropene	< 2	2	ug/L
trans-1,3-Dichloropropene	< 3	3	ug/L
Diethyl ether	< 5	5	ug/L
Ethylbenzene	< 5	5	ug/L
Ethyl methacrylate	< 5	5	ug/L
2-Hexanone	< 6	6	ug/L
Methacrylonitrile	< 5	5	ug/L
Iodomethane	< 5	5	ug/L
Methyl methacrylate	< 4	4	ug/L
4-Methyl-2-pentanone	< 10	10	ug/L
Propionitrile	< 10	10	ug/L
Styrene	< 4	4	ug/L
1,1,1,2-Tetrachloroethane	< 5	5	ug/L
1,1,2,2-Tetrachloroethane	< 3	3	ug/L
Tetrachloroethene	< 5	5	ug/L
Toluene	< 3	3	ug/L
1,1,1-Trichloroethane	< 5	5	ug/L
1,1,2-Trichloroethane	< 3	3	ug/L
Trichloroethene	< 2	2	ug/L
Trichlorofluoromethane	< 5	5	ug/L
1,2,3-Trichloropropane	< 3	3	ug/L
Vinyl acetate	< 10	10	ug/L
Vinyl chloride	< 3	3	ug/L
m,p-Xylene	< 5	5	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
o-Xylene	< 4	4	ug/L

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Client:	Anderson Columbia Environ	Date:	*17-Aug-98*
Lab Order:	9808004	Matrix:	Water
Project:	8502 LONGHORN ARMY AM	Batch ID:	VOC2_980810A
Lab ID:	Blank	Prep Date:	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS | SW8260A | Analyst: DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	94	62-125
4-Bromofluorobenzene	98	75-125
Dibromofluoromethane	100	75-125
Toluene-d8	93	75-125

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Client:	Anderson Columbia Environ	Date:	17-Aug-98
Lab Order:	9808004	Matrix:	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	Batch ID:	VOC2_980810A
Lab ID:	LCS	Prep Date:	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — SW8260A — Analyst: DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	80	82.1	25	75-125	ug/L
Acrolein	80	71.8	90	75-125	ug/L
Acrylonitrile	80	66.4	83	75-125	ug/L
Allyl chloride	50	58.1	116	75-125	ug/L
Benzene	50	50.1	100	75-125	ug/L
Bromodichloromethane	50	53.6	107	75-125	ug/L
Bromoform	50	45.1	90	75-125	ug/L
Bromomethane	50	49.8	100	72-125	ug/L
2-Butanone	80	63.9	46	75-125	ug/L
Carbon disulfide	50	57.4	115	75-125	ug/L
Carbon tetrachloride	50	54	108	62-125	ug/L
Chlorobenzene	50	46.2	93	75-125	ug/L
Chloroethane	50	46.7	93	65-125	ug/L
2-Chloroethylvinylether	50	45.9	92	75-125	ug/L
Chloroform	50	56.8	114	74-125	ug/L
Chloromethane	50	43.2	86	75-125	ug/L
Dibromochloromethane	50	48.9	98	73-125	ug/L
1,2-Dibromo-3-chloropropane	50	47.4	95	59-125	ug/L
1,2-Dibromoethane	50	46.5	93	75-125	ug/L
Dibromomethane	50	52.3	105	69-127	ug/L
1,2-Dichlorobenzene	50	49	98	75-125	ug/L
1,3-Dichlorobenzene	50	46.1	92	75-125	ug/L
1,4-Dichlorobenzene	50	45.3	91	75-125	ug/L
trans-1,4-Dichloro-2-butene	50	44.7	89	75-125	ug/L
Dichlorodifluoromethane	50	38.5	77	75-125	ug/L
1,1-Dichloroethane	50	54.4	109	75-125	ug/L
1,2-Dichloroethane	50	54.9	110	75-125	ug/L
1,1-Dichloroethene	50	53.7	107	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	LCS	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	50	52.4	105	75-125	ug/L
trans-1,2-Dichloroethene	50	52.3	105	75-125	ug/L
Methylene chloride	50	57.8	100	75-125	ug/L
1,2-Dichloropropane	50	46.8	94	70-125	ug/L
cis-1,3-Dichloropropene	50	52.6	105	74-125	ug/L
trans-1,3-Dichloropropene	50	54	108	66-125	ug/L
Diethyl ether	80	73.2	91	75-125	ug/L
Ethylbenzene	50	50.7	101	75-125	ug/L
Ethyl methacrylate	50	48.7	97	75-125	ug/L
2-Hexanone	80	42.6	53	75-125	ug/L
Methacrylonitrile	80	66.7	83	75-125	ug/L
Iodomethane	50	46.3	93	75-125	ug/L
Methyl methacrylate	80	57.6	72	75-125	ug/L
4-Methyl-2-pentanone	80	47.4	48	75-125	ug/L
Propionitrile	80	58.5	73	75-125	ug/L
Styrene	50	45.1	90	75-125	ug/L
1,1,1,2-Tetrachloroethane	50	49.3	99	72-125	ug/L
1,1,2,2-Tetrachloroethane	50	42	84	74-125	ug/L
Tetrachloroethene	50	51.3	103	71-125	ug/L
Toluene	50	50.3	101	74-125	ug/L
1,1,1-Trichloroethane	50	59.6	119	75-125	ug/L
1,1,2-Trichloroethane	50	48.4	97	75-125	ug/L
Trichloroethene	50	52.6	105	71-125	ug/L
Trichlorofluoromethane	50	56.1	112	67-125	ug/L
1,2,3-Trichloropropane	50	44.1	88	75-125	ug/L
Vinyl acetate	50	52.2	104	75-125	ug/L
Vinyl chloride	50	45.1	90	46-134	ug/L
m,p-Xylene	100	92.9	93	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	LCS	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — SW8260A — Analyst: DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	50	46.1	92	75-125	ug/L

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Client:	Anderson Columbia Environ	Date:	*17-Aug-98*
Lab Order:	9808004	Matrix:	Water
Project:	8502 LONGHORN ARMY AM	Batch ID:	VOC2_980810A
Lab ID:	LCS	Prep Date:	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS | SW8260A | Analyst: DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	104	62-139
4-Bromofluorobenzene	102	75-125
Dibromofluoromethane	101	75-125
Toluene-d8	99	75-125

RINSEWATER ANALYSIS

Semi-Volatiles

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client: Anderson Columbia Environmental, Inc.
Lab Order: 9808061
Project Name: 8502 LHAAP
Project No.:
Lab ID: 9808061-04A
Chemron ID: 73274

Date: *28-Aug-98*
Client Sample ID: 31-W RINSE
Collection Date: 8/18/98 12:08:00 PM
Matrix: WATER
Batch ID: SVOC2_980827A
Prep Date: 8/25/98 9:00:00 AM
Loc. ID:

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Acenaphthylene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Acetophenone	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Aniline	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Anthracene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
4-Aminobiphenyl	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Benzidine	< 20	20	ug/L	1	8/27/98 6:45:00 PM
Benzo[a]anthracene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Benzo[b]fluoranthene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Benzo[k]fluoranthene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Benzo[g,h,i]perylene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Benzo[a]pyrene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Benzoic acid	< 20	20	ug/L	1	8/27/98 6:45:00 PM
Benzyl alcohol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Bis(2-chloroethoxy)methane	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Bis(2-chloroethyl)ether	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Bis(2-chloroisopropyl)ether	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Bis(2-ethylhexyl)phthalate	14.8	10	ug/L	1	8/27/98 6:45:00 PM
4-Bromophenyl phenyl ether	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Butyl benzyl phthalate	< 10	10	ug/L	1	8/27/98 6:45:00 PM
4-Chloroaniline	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2-Chloronaphthalene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
4-Chloro-3-methylphenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2-Chlorophenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
4-Chlorophenyl phenyl ether	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Chrysene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Dibenz[a,h]anthracene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Dibenzofuran	< 10	10	ug/L	1	8/27/98 6:45:00 PM
1,3-Dichlorobenzene	< 10	10	ug/L	1	8/27/98 6:45:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*28-Aug-98*
Lab Order:	9808061	**Client Sample ID:**	31-W RINSE
Project Name:	8502 LHAAP	**Collection Date:**	8/18/98 12:08:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9808061-04A	**Batch ID:**	SVOC2_980827A
Chemron ID:	73274	**Prep Date:**	8/25/98 9:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
3,3´-Dichlorobenzidine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
1,2-Dichlorobenzene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2,4-Dichlorophenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2,6-Dichlorophenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Diethyl phthalate	< 10	10	ug/L	1	8/27/98 6:45:00 PM
a,a-Dimethylphenethylamine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2,4-Dimethylphenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Dimethyl phthalate	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Di-n-butyl phthalate	10.6	10	ug/L	1	8/27/98 6:45:00 PM
4,6-Dinitro-2-methylphenol	< 20	20	ug/L	1	8/27/98 6:45:00 PM
2,4-Dinitrophenol	< 20	20	ug/L	1	8/27/98 6:45:00 PM
2,4-Dinitrotoluene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2,6-Dinitrotoluene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Di-n-octyl phthalate	< 10	10	ug/L	1	8/27/98 6:45:00 PM
1,2-Diphenylhydrazine	< 20	20	ug/L	1	8/27/98 6:45:00 PM
Fluoranthene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Fluorene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Hexachlorobenzene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Hexachlorobutadiene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Hexachlorocyclopentadiene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Hexachloroethane	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Isophorone	< 10	10	ug/L	1	8/27/98 6:45:00 PM
3-Methylcholanthrene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2-Methylnaphthalene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2-Methylphenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
4-Methylphenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Naphthalene	< 10	10	ug/L	1	8/27/98 6:45:00 PM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9808061
Project Name: 8502 LHAAP
Project No.:
Lab ID: 9808061-04A
Chemron ID: 73274

Date: *28-Aug-98*
Client Sample ID: 31-W RINSE
Collection Date: 8/18/98 12:08:00 PM
Matrix: WATER
Batch ID: SVOC2_980827A
Prep Date: 8/25/98 9:00:00 AM
Loc. ID:

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2-Naphthylamine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2-Nitroaniline	< 10	10	ug/L	1	8/27/98 6:45:00 PM
3-Nitroaniline	< 10	10	ug/L	1	8/27/98 6:45:00 PM
4-Nitroaniline	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Nitrobenzene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2-Nitrophenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
4-Nitrophenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
N-Nitroso-di-n-butylamine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
N-Nitrosodiethylamine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
N-Nitrosodimethylamine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
N-Nitrosodiphenylamine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
N-Nitrosodi-n-propylamine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
N-Nitrosomethylethylamine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Pentachlorobenzene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Pentachloronitrobenzene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Pentachlorophenol	< 20	20	ug/L	1	8/27/98 6:45:00 PM
Phenacetin	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Phenanthrene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Phenol	22	10	ug/L	1	8/27/98 6:45:00 PM
Pyrene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
Pyridine	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2,4,5-Trichlorophenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM
1,2,4-Trichlorobenzene	< 10	10	ug/L	1	8/27/98 6:45:00 PM
2,4,6-Trichlorophenol	< 10	10	ug/L	1	8/27/98 6:45:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*28-Aug-98*
Lab Order:	9808061	**Client Sample ID:**	31-W RINSE
Project Name:	8502 LHAAP	**Collection Date:**	8/18/98 12:08:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9808061-04A	**Batch ID:**	SVOC2_980827A
Chemron ID:	73274	**Prep Date:**	8/25/98 9:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Oldham

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*28-Aug-98*
Lab Order:	9808061	**Client Sample ID:**	31-W RINSE
Project Name:	8502 LHAAP	**Collection Date:**	8/18/98 12:08:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9808061-04A	**Batch ID:**	SVOC2_980827A
Chemron ID:	73274	**Prep Date:**	8/25/98 9:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	70.	25-134
2-Fluorobiphenyl	79.	43-125
2-Fluorophenol	52.	25-125
Nitrobenzene-d5	67.	32-125
Phenol-d5	75.	25-125
Terphenyl-d14	57.	42-126

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: BLANK

Date: *28-Aug-98*
Matrix: Water
Batch ID: SVOC2_980827A
Prep Date: 8/25/98
Date Analyzed: 8/27/98 3:57:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
Acenaphthene	< 10	10	ug/L
Acenaphthylene	< 10	10	ug/L
Acetophenone	< 10	10	ug/L
Aniline	< 10	10	ug/L
Anthracene	< 10	10	ug/L
4-Aminobiphenyl	< 10	10	ug/L
Benzidine	< 20	20	ug/L
Benzo[a]anthracene	< 10	10	ug/L
Benzo[b]fluoranthene	< 10	10	ug/L
Benzo[k]fluoranthene	< 10	10	ug/L
Benzo[g,h,i]perylene	< 10	10	ug/L
Benzo[a]pyrene	< 10	10	ug/L
Benzoic acid	< 20	20	ug/L
Benzyl alcohol	< 10	10	ug/L
Bis(2-chloroethoxy)methane	< 10	10	ug/L
Bis(2-chloroethyl)ether	< 10	10	ug/L
Bis(2-chloroisopropyl)ether	< 10	10	ug/L
Bis(2-ethylhexyl)phthalate	< 10	10	ug/L
4-Bromophenyl phenyl ether	< 10	10	ug/L
Butyl benzyl phthalate	< 10	10	ug/L
4-Chloroaniline	< 10	10	ug/L
2-Chloronaphthalene	< 10	10	ug/L
4-Chloro-3-methylphenol	< 10	10	ug/L
2-Chlorophenol	< 10	10	ug/L
4-Chlorophenyl phenyl ether	< 10	10	ug/L
Chrysene	< 10	10	ug/L
Dibenz[a,h]anthracene	< 10	10	ug/L
Dibenzofuran	< 10	10	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: BLANK

Date: *28-Aug-98*
Matrix: Water
Batch ID: SVOC2_980827A
Prep Date: 8/25/98
Date Analyzed: 8/27/98 3:57:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
1,3-Dichlorobenzene	< 10	10	ug/L
1,4-Dichlorobenzene	< 10	10	ug/L
1,2-Dichlorobenzene	< 10	10	ug/L
3,3´-Dichlorobenzidine	< 10	10	ug/L
2,4-Dichlorophenol	< 10	10	ug/L
2,6-Dichlorophenol	< 10	10	ug/L
Diethyl phthalate	< 10	10	ug/L
ı,a-Dimethylphenethylamine	< 10	10	ug/L
2,4-Dimethylphenol	< 10	10	ug/L
Dimethyl phthalate	< 10	10	ug/L
Di-n-butyl phthalate	< 10	10	ug/L
4,6-Dinitro-2-methylphenol	< 20	20	ug/L
2,4-Dinitrophenol	< 20	20	ug/L
2,4-Dinitrotoluene	< 10	10	ug/L
2,6-Dinitrotoluene	< 10	10	ug/L
Di-n-octyl phthalate	< 10	10	ug/L
1,2-Diphenylhydrazine	< 20	20	ug/L
Fluoranthene	< 10	10	ug/L
Fluorene	< 10	10	ug/L
Hexachlorobenzene	< 10	10	ug/L
Hexachlorobutadiene	< 10	10	ug/L
Hexachlorocyclopentadiene	< 10	10	ug/L
Hexachloroethane	< 10	10	ug/L
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L
Isophorone	< 10	10	ug/L
3-Methylcholanthrene	< 10	10	ug/L
?-Methylnaphthalene	< 10	10	ug/L
∠-Methylphenol	< 10	10	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: BLANK

Date: *28-Aug-98*
Matrix: Water
Batch ID: SVOC2_980827A
Prep Date: 8/25/98
Date Analyzed: 8/27/98 3:57:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
4-Methylphenol	< 10	10	ug/L
Naphthalene	< 10	10	ug/L
1-Naphthylamine	< 10	10	ug/L
2-Naphthylamine	< 10	10	ug/L
2-Nitroaniline	< 10	10	ug/L
3-Nitroaniline	< 10	10	ug/L
4-Nitroaniline	< 10	10	ug/L
Nitrobenzene	< 10	10	ug/L
2-Nitrophenol	< 10	10	ug/L
4-Nitrophenol	< 10	10	ug/L
N-Nitroso-di-n-butylamine	< 10	10	ug/L
N-Nitrosodiethylamine	< 10	10	ug/L
N-Nitrosodimethylamine	< 10	10	ug/L
N-Nitrosodiphenylamine	< 10	10	ug/L
N-Nitrosodi-n-propylamine	< 10	10	ug/L
N-Nitrosomethylethylamine	< 10	10	ug/L
Pentachlorobenzene	< 10	10	ug/L
Pentachloronitrobenzene	< 10	10	ug/L
Pentachlorophenol	< 20	20	ug/L
Phenacetin	< 10	10	ug/L
Phenanthrene	< 10	10	ug/L
Phenol	< 10	10	ug/L
Pyrene	< 10	10	ug/L
Pyridine	< 10	10	ug/L
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L
1,2,4-Trichlorobenzene	< 10	10	ug/L
2,4,5-Trichlorophenol	< 10	10	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: BLANK

Date: *28-Aug-98*
Matrix: Water
Batch ID: SVOC2_980827A
Prep Date: 8/25/98
Date Analyzed: 8/27/98 3:57:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
2,4,6-Trichlorophenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*28-Aug-98*
Lab Order:	9808061	**Matrix:**	Water
Project:	8502 LHAAP	**Batch ID:**	SVOC2_980827A
Lab ID:	BLANK	**Prep Date:**	8/25/98
		Date Analyzed:	8/27/98 3:57:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	15	25-134
2-Fluorobiphenyl	70	43-125
2-Fluorophenol	54	25-125
Nitrobenzene-d5	72	32-125
Phenol-d5	74	25-125
Terphenyl-d14	65	42-126

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCS

Date: *28-Aug-98*
Matrix: Water
Batch ID: SVOC2_980827A
Prep Date: 8/25/98
Date Analyzed: 8/27/98 5:49:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acenaphthene	50	43	86	49-125	ug/L
Acenaphthylene	50	42.5	85	47-125	ug/L
Acetophenone	50	40.8	80	25-175	ug/L
Aniline	50	26.3	53	25-175	ug/L
Anthracene	50	42.9	86	45-165	ug/L
4-Aminobiphenyl	50	31.6	63	25-175	ug/L
Benzidine	100	4.1	4	25-175	ug/L
Benzo[a]anthracene	50	44.8	90	51-133	ug/L
Benzo[b]fluoranthene	50	58.4	117	37-125	ug/L
Benzo[k]fluoranthene	50	49.1	98	25-175	ug/L
Benzo[g,h,i]perylene	50	39.8	80	34-149	ug/L
Benzo[a]pyrene	50	47.3	95	41-125	ug/L
Benzoic acid	100	106	106	25-162	ug/L
Benzyl alcohol	50	53.2	106	35-125	ug/L
Bis(2-chloroethoxy)methane	50	34.4	69	49-125	ug/L
Bis(2-chloroethyl)ether	50	37.4	75	44-125	ug/L
Bis(2-chloroisopropyl)ether	50	23.6	47	36-166	ug/L
Bis(2-ethylhexyl)phthalate	50	47.6	95	33-129	ug/L
4-Bromophenyl phenyl ether	50	40.5	81	53-127	ug/L
Butyl benzyl phthalate	50	41.7	83	26-125	ug/L
4-Chloroaniline	50	27	54	45-136	ug/L
2-Chloronaphthalene	50	41.9	84	60-125	ug/L
4-Chloro-3-methylphenol	50	42	84	44-125	ug/L
2-Chlorophenol	50	39	78	41-125	ug/L
4-Chlorophenyl phenyl ether	50	47.8	96	51-132	ug/L
Chrysene	50	44.2	88	55-133	ug/L
Dibenz[a,h]anthracene	50	45.8	92	50-125	ug/L
Dibenzofuran	50	49.5	99	52-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCS

Date: *28-Aug-98*
Matrix: Water
Batch ID: SVOC2_980827A
Prep Date: 8/25/98
Date Analyzed: 8/27/98 5:49:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
1,3-Dichlorobenzene	50	25.7	51	36-125	ug/L
1,4-Dichlorobenzene	50	27.2	54	30-125	ug/L
1,2-Dichlorobenzene	50	28.3	57	42-155	ug/L
3,3´-Dichlorobenzidine	50	32.6	65	29-175	ug/L
2,4-Dichlorophenol	50	47.7	95	46-125	ug/L
2,6-Dichlorophenol	50	43.6	87	25-175	ug/L
Diethyl phthalate	50	13	26	37-125	ug/L
a,a-Dimethylphenethylamine	50	0.83	2	25-175	ug/L
2,4-Dimethylphenol	50	43.2	86	45-139	ug/L
Dimethyl phthalate	50	26.5	53	25-175	ug/L
Di-n-butyl phthalate	50	36.2	72	34-126	ug/L
4,6-Dinitro-2-methylphenol	50	32.5	65	26-134	ug/L
2,4-Dinitrophenol	50	71.2	142	30-151	ug/L
2,4-Dinitrotoluene	50	42.7	85	39-139	ug/L
2,6-Dinitrotoluene	50	49.4	99	51-125	ug/L
Di-n-octyl phthalate	50	51	102	38-127	ug/L
1,2-Diphenylhydrazine	100	50.7	51	25-175	ug/L
Fluoranthene	50	38.7	77	47-125	ug/L
Fluorene	50	44.4	89	48-139	ug/L
Hexachlorobenzene	50	40.1	80	46-133	ug/L
Hexachlorobutadiene	50	32.8	66	25-125	ug/L
Hexachlorocyclopentadiene	50	22.7	45	41-125	ug/L
Hexachloroethane	50	31.6	63	25-153	ug/L
Indeno[1,2,3-cd]pyrene	50	41.9	84	27-160	ug/L
Isophorone	50	40.7	81	26-175	ug/L
3-Methylcholanthrene	50	43.4	87	25-175	ug/L
2-Methylnaphthalene	50	44.8	90	41-125	ug/L
2-Methylphenol	50	32.4	65	25-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9808061
Project: 8502 LHAAP
Lab ID: LCS

Date: *28-Aug-98*
Matrix: Water
Batch ID: SVOC2_980827A
Prep Date: 8/25/98
Date Analyzed: 8/27/98 5:49:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
4-Methylphenol	100	58.5	58	33-125	ug/L
Naphthalene	50	36.4	73	50-125	ug/L
1-Naphthylamine	50	34.8	69	25-175	ug/L
2-Naphthylamine	50	28	56	25-175	ug/L
2-Nitroaniline	50	35.5	71	50-125	ug/L
3-Nitroaniline	50	44	88	51-125	ug/L
4-Nitroaniline	50	33.1	66	40-143	ug/L
Nitrobenzene	50	38.6	77	46-133	ug/L
2-Nitrophenol	50	36.7	73	44-125	ug/L
4-Nitrophenol	50	39.8	80	25-131	ug/L
N-Nitroso-di-n-butylamine	50	45.1	90	25-175	ug/L
N-Nitrosodiethylamine	50	44.4	89	25-175	ug/L
N-Nitrosodimethylamine	50	43.7	87	25-175	ug/L
N-Nitrosodiphenylamine	100	66	66	27-125	ug/L
N-Nitrosodi-n-propylamine	50	37.8	76	37-125	ug/L
N-Nitrosomethylethylamine	50	31.2	62	25-175	ug/L
Pentachlorobenzene	50	52.6	105	25-175	ug/L
Pentachloronitrobenzene	50	40.4	81	25-175	ug/L
Pentachlorophenol	50	20.4	41	28-136	ug/L
Phenacetin	50	32.1	64	25-175	ug/L
Phenanthrene	50	41.6	83	54-125	ug/L
Phenol	50	27.7	55	25-125	ug/L
Pyrene	50	58.7	117	47-136	ug/L
Pyridine	50	26.8	54	25-175	ug/L
1,2,4,5-Tetrachlorobenzene	50	49.1	98	25-175	ug/L
2,3,4,6-Tetrachlorophenol	50	20.1	40	25-175	ug/L
1,2,4-Trichlorobenzene	50	36.2	72	44-142	ug/L
2,4,5-Trichlorophenol	50	33.2	67	25-175	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*28-Aug-98*
Lab Order:	9808061	**Matrix:**	Water
Project:	8502 LHAAP	**Batch ID:**	SVOC2_980827A
Lab ID:	LCS	**Prep Date:**	8/25/98
		Date Analyzed:	8/27/98 5:49:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
2,4,6-Trichlorophenol	50	30.9	62	39-128	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*28-Aug-98*
Lab Order:	9808061	**Matrix:**	Water
Project:	8502 LHAAP	**Batch ID:**	SVOC2_980827A
Lab ID:	LCSD	**Prep Date:**	8/25/98
		Date Analyzed:	8/27/98 5:49:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	31	25-134
2-Fluorobiphenyl	72	43-125
2-Fluorophenol	48	25-125
Nitrobenzene-d5	66	32-125
Phenol-d5	30	25-125
Terphenyl-d14	133	42-126

RINSEWATER ANALYSIS

Total Petroleum Hydrocarbons

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CLIENT: Anderson Columbia Environmental, Inc.
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT

Date: *17-Aug-98*
Matrix: WATER

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Lab ID	Chemron ID	Client ID	Collection Date	Analyses	Result	Report Limit	Units	Dilution	Date Analyzed
9808004-01A	73036	LHAAP/49-W-WASH	7/28/98 12:00:00	Petroleum Hydrocarbons	2.31	0.5	mg/L	1	8/14/98
9808004-02A	73037	LHAAP/49-2-RINSE	7/28/98 12:05:00	Petroleum Hydrocarbons	37.7	5	mg/L	10	8/14/98
9808004-23A	73058	LHAAP/811-1-WASH	7/29/98 2:15:00	Petroleum Hydrocarbons	24.6	0.5	mg/L	1	8/14/98
9808004-24A	73059	LHAAP/811-1-RINSE	7/29/98 5:30:00	Petroleum Hydrocarbons	3.34	0.5	mg/L	1	8/14/98
9808004-25A	73060	LHAAP/31-W-WASH	7/30/98 11:45:00	Petroleum Hydrocarbons	61.3	5	mg/L	10	8/14/98
9808004-26A	73061	LHAAP/31-W-RINSE	7/30/98 3:30:00	Petroleum Hydrocarbons	< 0.5	0.5	mg/L	1	8/14/98

Approved by: R. Aldrich

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980814A
Lab ID:	MBlank	**Prep Date:**	8/14/98
		Date Analyzed:	8/14/98

QUALITY CONTROL REPORT

Method Blank

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Result	Report Limit	Units:
Petroleum Hydrocarbons, TR	< 0.5	0.5	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980814A
Lab ID:	LCS	**Prep Date:**	8/14/98
		Date Analyzed:	8/14/98

QUALITY CONTROL REPORT

Laboratory Control Sample

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Petroleum Hydrocarbons, TR	2	2.18	109	73-119	mg/L

SOILS ANALYSIS

Metals

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73062
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-1 7/30/98 11:50

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	58.1	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	1.05	.5	MG/KG	08/19/98	3050/6010B
Total Chromium	9.66	.5	MG/KG	08/18/98	3050/6010B
Total Lead	7.96	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73063
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-2 7/30/98 12:00

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	55.7	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	1.4	.5	MG/KG	08/19/98	3050/6010B
Total Chromium	9.67	.5	MG/KG	08/18/98	3050/6010B
Total Lead	10.7	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73064
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammy Plant
LHAAP/31-W-3 7/30/98 12:50

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	3.15	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	79.7	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	1.95	.5	MG/KG	08/19/98	3050/6010B
Total Chromium	11.4	.5	MG/KG	08/18/98	3050/6010B
Total Lead	10.5	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73065
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-4 7/30/98 13:20

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	62.7	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	2.16	.5	MG/KG	08/19/98	3050/6010B
Total Chromium	15.0	.5	MG/KG	08/18/98	3050/6010B
Total Lead	12.7	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73066
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-5 7/30/98 13:40

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	26.0	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	<.50	.5	MG/KG	08/18/98	3050/6010B
Total Chromium	5.14	.5	MG/KG	08/18/98	3050/6010B
Total Lead	5.52	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73067
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-6 7/30/98 14:00

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	51.8	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	<.50	.5	MG/KG	08/18/98	3050/6010B
Total Chromium	8.47	.5	MG/KG	08/18/98	3050/6010B
Total Lead	6.24	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73068
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8205 Longhorn Army Ammo Plant
LHAAP/31-W-7 7/30/98 14:55

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	5.28	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	70.8	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	2.88	.5	MG/KG	08/19/98	3050/6010B
Total Chromium	16.9	.5	MG/KG	08/18/98	3050/6010B
Total Lead	12.3	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73069
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-8 7/30/98 15:20

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	3.9	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	88.4	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	1.14	.5	MG/KG	08/19/98	3050/6010B
Total Chromium	14.8	.5	MG/KG	08/18/98	3050/6010B
Total Lead	11.7	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73070
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-9 7/30/98 15:50

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	44.0	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	<.50	.5	MG/KG	08/18/98	3050/6010B
Total Chromium	7.25	.5	MG/KG	08/18/98	3050/6010B
Total Lead	16.4	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6204
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73071
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-10 7/30/98 16:20

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	303.	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	1.34	.5	MG/KG	08/19/98	3050/6010B
Total Chromium	8.61	.5	MG/KG	08/18/98	3050/6010B
Total Lead	450.	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6205
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73072
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-11 7/30/98 16:50

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	167.	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	<.50	.5	MG/KG	08/18/98	3050/6010B
Total Chromium	4.31	.5	MG/KG	08/18/98	3050/6010B
Total Lead	4.97	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6205
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73073
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8502 Longhorn Army Ammo Plant
LHAAP/31-W-12 7/30/98 17:10

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	274.	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	<.50	.5	MG/KG	08/18/98	3050/6010B
Total Chromium	6.84	.5	MG/KG	08/18/98	3050/6010B
Total Lead	7.82	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
COC #: 6205
Date Sampled: 07/30/98
Date Received: 08/04/98
Sample Matrix: Soil
Chemron ID #: 73074
Report Date: 08/26/98
Chemron's Job#: 12167

Sample Description:
8205 Longhorn Army Ammo Plant
LHAAP/31-W-13 7/30/98 17:30

CHEMICAL ANALYSIS REPORT

Parameter	Value	MDL	Units	Date Analyzed	Analytical Method
Total Arsenic	<2.5	2.5	MG/KG	08/18/98	3050/6010B
Total Barium	77.3	2.5	MG/KG	08/19/98	3050/6010B
Total Cadmium	<.50	.5	MG/KG	08/18/98	3050/6010B
Total Chromium	7.4	.5	MG/KG	08/18/98	3050/6010B
Total Lead	7.56	1.5	MG/KG	08/18/98	3050/6010B
Total Mercury	<.1	.1	MG/KG	08/25/98	7471
Total Selenium	<4.0	4.0	MG/KG	08/18/98	3050/6010B
Total Silver	<.50	.5	MG/KG	08/18/98	3050/6010B

Approved By: _____

MDL - Method Detection Limit

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
Chain of Custody #: 6204
Report Date: 08/26/98
Page #: 1

QUALITY ASSURANCE REPORT

Description / Parameter	Matrix	Analysis Date	Spike Concentration	Analyzed Value	Background Value	% Recovery	Control Limits Lower	Control Limits Upper	Relative % Difference	Control Limit
Blk - Arsenic	Soil	08/18/98		<2.5						
MS - Arsenic	Soil	08/18/98	25.	21.8	3.15	74.6	32	137	13.2	14
MSD - Arsenic	Soil	08/18/98	25.	19.1	3.15	63.8	32	137	13.2	14
LCS - Arsenic	Soil	08/18/98	25.	20.1	<2.5	80.4	75	125		
Blk - Barium	Soil	08/19/98		<.5						
MS - Barium	Soil	08/19/98	50.	108.	79.7	56.6	9	156	27.9	21
MSD - Barium	Soil	08/19/98	50.	143.	79.7	126.	9	156	27.9	21
LCS - Barium	Soil	08/19/98	50.	47.8	<.5	95.6	75	125		
Blk - Cadmium	Soil	08/18/98		<.5						
MS - Cadmium	Soil	08/18/98	10.	5.78	<.5	57.8	15	143	25.2	13
MSD - Cadmium	Soil	08/18/98	10.	7.45	<.5	74.5	15	143	25.2	13
LCS - Cadmium	Soil	08/18/98	10.	8.64	<.5	86.4	75	125		
Blk - Chromium	Soil	08/18/98		<.5						
MS - Chromium	Soil	08/18/98	10.	21.7	11.5	102.	35	124	18.1	19
MSD - Chromium	Soil	08/18/98	10.	18.1	11.5	66.0	35	124	18.1	19
LCS - Chromium	Soil	08/18/98	10.	8.97	<.5	89.7	75	125		
Blk - Lead	Soil	08/18/98		<1.5						
MS - Lead	Soil	08/18/98	25.	34.2	10.5	94.8	10	159	11.1	21
MSD - Lead	Soil	08/18/98	25.	30.6	10.5	80.4	10	159	11.1	21
LCS - Lead	Soil	08/18/98	25.	24.1	<1.5	96.4	75	125		
Blk - Mercury	Soil	08/25/98		<.1						
MS - Mercury	Soil	08/25/98	1.	.93	<.1	93.0	83	112	2.1	13
MSD - Mercury	Soil	08/25/98	1.	.95	<.1	95.0	83	112	2.1	13
LCS - Mercury	Soil	08/25/98	1.	.94	<.1	94.0	75	125		
Blk - Selenium	Soil	08/18/98		<4.						
MS - Selenium	Soil	08/18/98	25.	17.2	<4.	68.8	18	128	19.4	17
MSD - Selenium	Soil	08/18/98	25.	20.9	<4.	83.6	18	128	19.4	17

Concentration Units: Soil / Sedim 'G/KG - Water ug/L

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Client: Anderson Columbia Environmental, Inc.
P. O. Box 1386
Lake City, FL 32056

Client's Job #: 8502
Chain of Custody #: 6204
Report Date: 08/26/98

QUALITY ASSURANCE REPORT

Description / Parameter	Matrix	Analysis Date	Spike Concentration	Analyzed Value	Background Value	% Recovery	Control Limits Lower	Control Limits Upper	Relative % Difference	Control Limit
LCS - Selenium	Soil	08/18/98	25.	25.3	<4.	101.	75	125		
Blk - Silver	Soil	08/18/98		<.5						
MS - Silver	Soil	08/18/98	5.	4.0	<.5	80.0	40	123	3.9	16
MSD - Silver	Soil	08/18/98	5.	4.16	<.5	83.2	40	123	3.9	16
LCS - Silver	Soil	08/18/98	5.	4.29	<.5	85.8	75	125		

Concentration Units: Soil / Sed: MG/KG - Water ug/L

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Client:	Anderson Columbia Environmental, Inc.	Date:	*13-Nov-98*
Lab Order:	9810101	Client Sample ID:	LHAAP-31-W-2
Project:	8502 Longhorn Army Ammo Plant	Collection Date:	7/30/98
Lab ID:	9810101-07A	Matrix:	SOIL
Chemron ID:	73063	Batch ID:	ICP_981110D
		Prep Date:	11/6/98

ICP METALS, SPLP SW1312/6010B Analyst: JOL

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Cadmium	< 0.005	0.005	mg/L	1	11/10/98

Approved by: R. Aldrich

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Client:	Anderson Columbia Environmental, Inc.	Date:	*13-Nov-98*
Lab Order:	9810101	Client Sample ID:	LHAAP-31-W-3
Project:	8502 Longhorn Army Ammo Plant	Collection Date:	7/30/98
Lab ID:	9810101-08A	Matrix:	SOIL
Chemron ID:	73064	Batch ID:	ICP_981110D
		Prep Date:	11/6/98

ICP METALS, SPLP SW1312/6010B Analyst: JOL

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Cadmium	< 0.005	0.005	mg/L	1	11/10/98

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*13-Nov-98*
Lab Order:	9810101	**Client Sample ID:**	LHAAP-31-W-4
Project:	8502 Longhorn Army Ammo Plant	**Collection Date:**	7/30/98
Lab ID:	9810101-09A	**Matrix:**	SOIL
Chemron ID:	73065	**Batch ID:**	ICP_981110D
		Prep Date:	11/6/98

ICP METALS, SPLP SW1312/6010B **Analyst:** JOL

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Cadmium	< 0.005	0.005	mg/L	1	11/10/98

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	Date:	*13-Nov-98*
Lab Order:	9810101	Client Sample ID:	LHAAP-31-W-7
Project:	8502 Longhorn Army Ammo Plant	Collection Date:	7/30/98
Lab ID:	9810101-10A	Matrix:	SOIL
Chemron ID:	73068	Batch ID:	ICP_981110D
		Prep Date:	11/6/98

ICP METALS, SPLP SW1312/6010B **Analyst:** JOL

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Cadmium	< 0.005	0.005	mg/L	1	11/10/98

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*24-Nov-98*
Lab Order:	9810101	**Client Sample ID:**	LHAAP-31-W-10
Project Name:	8502 Longhorn Army Ammo Plant	**Collection Date:**	7/30/98
Project ID:		**Matrix:**	SOIL
Lab ID:	9810101-11A	**Loc. ID:**	
Chemron ID:	73071		

Analyses	Result	Report Limit	Units	Dilution	Date Analyzed
ICP METALS, SPLP		SW1312/6010B		Analyst: JOL	
Barium	0.11	0.01	mg/L	1	11/10/98
Cadmium	< 0.005	0.005	mg/L	1	11/10/98
LEAD, SPLP		SW1312/7421		Analyst: JOL	
Lead	0.09	0.005	mg/L	1	11/10/98

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	Date:	*13-Nov-98*
Lab Order:	9810101	Client Sample ID:	LHAAP-31-W-11
Project:	8502 Longhorn Army Ammo Plant	Collection Date:	7/30/98
Lab ID:	9810101-12A	Matrix:	SOIL
Chemron ID:	73072	Batch ID:	ICP_981110B
		Prep Date:	11/6/98

ICP METALS, SPLP SW1312/6010B **Analyst:** JOL

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Barium	0.31	0.01	mg/L	1	11/10/98

Approved by: R. Oldham

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Client:	Anderson Columbia Environmental, Inc.	Date:	*13-Nov-98*
Lab Order:	9810101	Client Sample ID:	LHAAP-31-W-12
Project:	8502 Longhorn Army Ammo Plant	Collection Date:	7/30/98
Lab ID:	9810101-13A	Matrix:	SOIL
Chemron ID:	73073	Batch ID:	ICP_981110B
		Prep Date:	11/6/98

ICP METALS, SPLP SW1312/6010B Analyst: JOL

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Barium	0.18	0.01	mg/L	1	11/10/98

Approved by: R. Aldrich

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Client: Anderson Columbia Environ
Lab Order: 9810101
Project: 8502 Longhorn Army Ammo Plant
Lab ID: MBlank

Date: *24-Nov-98*
Matrix: Soil
Batch ID: ICP_981110B
Prep Date: 11/6/98
Date Analyzed: 11/10/98

QUALITY CONTROL REPORT

Method Blank

ICP METALS, SPLP **SW1312/6010B** **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Barium	< 0.01	0.01	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9810101
Project: 8502 Longhorn Army Ammo Plant
Lab ID: MBlank

Date: *13-Nov-98*
Matrix: Soil
Batch ID: ICP_981110D
Prep Date: 11/6/98
Date Analyzed: 11/10/98

QUALITY CONTROL REPORT

Method Blank

ICP METALS, SPLP SW1312/6010B **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Cadmium	< 0.005	0.005	mg/L
Chromium	< 0.01	0.01	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9810101
Project: 8502 Longhorn Army Ammo Plant
Lab ID: 9810101-03A

Date: *13-Nov-98*
Matrix: Soil
Batch ID: ICP_981110D
Prep Date: 11/6/98
Date Analyzed: 11/10/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

ICP METALS, SPLP SW1312/6010B **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Cadmium	1	1.06	106	75-125	1.03	103	3	20	mg/L
Chromium	1	1.05	105	75-125	1.02	102	3	20	mg/L

* MS/MSD results reflect the amount spiked + the parent sample concentration.

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Client: Anderson Columbia Environ
Lab Order: 9810101
Project: 8502 Longhorn Army Ammo Plant
Lab ID: LCS

Date: *13-Nov-98*
Matrix: Soil
Batch ID: ICP_981110D
Prep Date: 11/6/98
Date Analyzed: 11/10/98

QUALITY CONTROL REPORT

Laboratory Control Sample

ICP METALS, SPLP SW1312/6010B **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Cadmium	1	0.986	99	75-125	mg/L
Chromium	1	0.975	98	75-125	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9810101
Project: 8502 Longhorn Army Ammo Plant
Lab ID: 9810101-13A

Date: *25-Nov-98*
Matrix: Soil
Batch ID: ICP_981110B
Prep Date: 11/6/98
Date Analyzed: 11/10/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

ICP METALS, SPLP **SW1312/6010B** **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Barium	5	5.82	113	75-125	5.51	107	5	0	mg/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9810101
Project: 8502 Longhorn Army Ammo Plant
Lab ID: LCS

Date: *25-Nov-98*
Matrix: Soil
Batch ID: ICP_981110B
Prep Date: 11/6/98
Date Analyzed: 11/10/98

QUALITY CONTROL REPORT

Laboratory Control Sample

ICP METALS, SPLP — **SW1312/6010B** — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Barium	5	4.89	98	75-125	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9810101
Project: 8502 Longhorn Army Ammo Plant
Lab ID: MBlank

Date: *24-Nov-98*
Matrix: Soil
Batch ID: GFAA_981110C
Prep Date: 11/6/98
Date Analyzed: 11/10/98

QUALITY CONTROL REPORT

Method Blank

LEAD, SPLP SW1312/7421 **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Lead	< 0.005	0.005	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9810101
Project: 8502 Longhorn Army Ammo Plant
Lab ID: 9810101-06A

Date: *24-Nov-98*
Matrix: Soil
Batch ID: GFAA_981110C
Prep Date: 11/6/98
Date Analyzed: 11/10/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

LEAD, SPLP SW1312/7421 **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Lead	0.1	0.099	99	80-120	0.09	90	9	20	mg/L

* MS/MSD results reflect the amount spiked + the parent sample concentration.

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Client: Anderson Columbia Environ
Lab Order: 9810101
Project: 8502 Longhorn Army Ammo Plant
Lab ID: LCS

Date: *24-Nov-98*
Matrix: Soil
Batch ID: GFAA_981110C
Prep Date: 11/6/98
Date Analyzed: 11/10/98

QUALITY CONTROL REPORT

Laboratory Control Sample

LEAD, SPLP SW1312/7421 **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Lead	0.1	0.0986	99	80-120	mg/L

SOILS ANALYSIS

Volatiles

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client: Anderson Columbia Environmental, Inc.
Lab Order: 9808004
Project Name: 8502 LONGHORN ARMY AMMO PLA
Project No.:
Lab ID: 9808004-27A
Chemron ID: 73062

Date: *14-Aug-98*
Client Sample ID: LHAAP/31-W-1
Collection Date: 7/30/98 11:50:00 AM
Matrix: SOIL
Batch ID: VOC2_980811A
Prep Date: 8/11/98 10:48:00 PM
Loc. ID:

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.047	0.01	mg/Kg	1	8/11/98 10:48:00 PM
Acrolein	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/11/98 10:48:00 PM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Benzene	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Bromoform	< 0.002	0.002	mg/Kg	1	8/11/98 10:48:00 PM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/11/98 10:48:00 PM
.-Butanone	< 0.01	0.01	mg/Kg	1	8/11/98 10:48:00 PM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/11/98 10:48:00 PM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/11/98 10:48:00 PM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/11/98 10:48:00 PM
Chloroform	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/11/98 10:48:00 PM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/11/98 10:48:00 PM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/11/98 10:48:00 PM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/11/98 10:48:00 PM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/11/98 10:48:00 PM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9808004
Project Name: 8502 LONGHORN ARMY AMMO PLA
Project No.:
Lab ID: 9808004-27A
Chemron ID: 73062

Date: *14-Aug-98*
Client Sample ID: LHAAP/31-W-1
Collection Date: 7/30/98 11:50:00 AM
Matrix: SOIL
Batch ID: VOC2_980811A
Prep Date: 8/11/98 10:48:00 PM
Loc. ID:

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/11/98 10:48:00 PM
Methylene chloride	0.027	0.004	mg/Kg	1	8/11/98 10:48:00 PM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/11/98 10:48:00 PM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/11/98 10:48:00 PM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
2-Hexanone	0.008	0.006	mg/Kg	1	8/11/98 10:48:00 PM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/11/98 10:48:00 PM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/11/98 10:48:00 PM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/11/98 10:48:00 PM
Styrene	< 0.004	0.004	mg/Kg	1	8/11/98 10:48:00 PM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
Toluene	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/11/98 10:48:00 PM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/11/98 10:48:00 PM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/11/98 10:48:00 PM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/11/98 10:48:00 PM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/11/98 10:48:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-1
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:50:00 AM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-27A	**Batch ID:**	VOC2_980811A
Chemron ID:	73062	**Prep Date:**	8/11/98 10:48:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-1
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:50:00 AM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-27A	**Batch ID:**	VOC2_980811A
Chemron ID:	73062	**Prep Date:**	8/11/98 10:48:00 PM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	111.	52-149
4-Bromofluorobenzene	101.	65-135
Dibromofluoromethane	125.	65-135
Toluene-d8	94.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-28A	**Batch ID:**	VOC2_980811B
Chemron ID:	73063	**Prep Date:**	8/12/98 2:01:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.302	0.01	mg/Kg	1	8/12/98 2:01:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 2:01:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 2:01:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 2:01:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 2:01:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 2:01:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 2:01:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 2:01:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 2:01:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 2:01:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 2:01:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 2:01:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 2:01:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-28A	**Batch ID:**	VOC2_980811B
Chemron ID:	73063	**Prep Date:**	8/12/98 2:01:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 2:01:00 AM
Methylene chloride	0.606	0.004	mg/Kg	1	8/12/98 2:01:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 2:01:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 2:01:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
2-Hexanone	0.014	0.006	mg/Kg	1	8/12/98 2:01:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 2:01:00 AM
4-Methyl-2-pentanone	0.013	0.01	mg/Kg	1	8/12/98 2:01:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 2:01:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 2:01:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 2:01:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 2:01:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 2:01:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 2:01:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 2:01:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-28A	**Batch ID:**	VOC2_980811B
Chemron ID:	73063	**Prep Date:**	8/12/98 2:01:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:00:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-28A	**Batch ID:**	VOC2_980811B
Chemron ID:	73063	**Prep Date:**	8/12/98 2:01:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	112.	52-149
4-Bromofluorobenzene	96.	65-135
Dibromofluoromethane	110.	65-135
Toluene-d8	97.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-29A	**Batch ID:**	VOC2_980811B
Chemron ID:	73064	**Prep Date:**	8/12/98 2:45:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.475	0.01	mg/Kg	1	8/12/98 2:45:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 2:45:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 2:45:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 2:45:00 AM
-Butanone	0.034	0.01	mg/Kg	1	8/12/98 2:45:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 2:45:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 2:45:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 2:45:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 2:45:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 2:45:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 2:45:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 2:45:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
',1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 2:45:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-29A	**Batch ID:**	VOC2_980811B
Chemron ID:	73064	**Prep Date:**	8/12/98 2:45:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 2:45:00 AM
Methylene chloride	0.668	0.004	mg/Kg	1	8/12/98 2:45:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 2:45:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 2:45:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
2-Hexanone	0.02	0.006	mg/Kg	1	8/12/98 2:45:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 2:45:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 2:45:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 2:45:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 2:45:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 2:45:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 2:45:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 2:45:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 2:45:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 2:45:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-29A	**Batch ID:**	VOC2_980811B
Chemron ID:	73064	**Prep Date:**	8/12/98 2:45:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:50:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-29A	**Batch ID:**	VOC2_980811B
Chemron ID:	73064	**Prep Date:**	8/12/98 2:45:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	113.	52-149
4-Bromofluorobenzene	98.	65-135
Dibromofluoromethane	111.	65-135
Toluene-d8	99.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-4
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-30A	**Batch ID:**	VOC2_980811B
Chemron ID:	73065	**Prep Date:**	8/12/98 3:29:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.138	0.01	mg/Kg	1	8/12/98 3:29:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 3:29:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 3:29:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 3:29:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 3:29:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 3:29:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 3:29:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 3:29:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 3:29:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 3:29:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 3:29:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 3:29:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 3:29:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-13
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:30:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-39A	**Batch ID:**	VOC2_980811B
Chemron ID:	73074	**Prep Date:**	8/12/98 10:04:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-13
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:30:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-39A	**Batch ID:**	VOC2_980811B
Chemron ID:	73074	**Prep Date:**	8/12/98 10:04:00 AM
		Loc ID:	

VOLATILES BY GC/MS SW8260A **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	116.	52-149
4-Bromofluorobenzene	99.	65-135
Dibromofluoromethane	122.	65-135
Toluene-d8	97.	65-135

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Client:	Anderson Columbia Environ	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811A
Lab ID:	Blank	**Prep Date:**	8/11/98
		Date Analyzed:	8/11/98 12:25:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
Acetone	< 0.01	0.01	mg/Kg
Acrolein	< 0.005	0.005	mg/Kg
Acrylonitrile	< 0.004	0.004	mg/Kg
Allyl chloride	< 0.003	0.003	mg/Kg
Benzene	< 0.003	0.003	mg/Kg
Bromodichloromethane	< 0.003	0.003	mg/Kg
Bromoform	< 0.002	0.002	mg/Kg
Bromomethane	< 0.006	0.006	mg/Kg
2-Butanone	< 0.01	0.01	mg/Kg
Carbon disulfide	< 0.005	0.005	mg/Kg
Carbon tetrachloride	< 0.003	0.003	mg/Kg
Chlorobenzene	< 0.004	0.004	mg/Kg
Chloroethane	< 0.002	0.002	mg/Kg
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg
Chloroform	< 0.003	0.003	mg/Kg
Chloromethane	< 0.005	0.005	mg/Kg
Dibromochloromethane	< 0.003	0.003	mg/Kg
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg
1,2-Dibromoethane	< 0.003	0.003	mg/Kg
Dibromomethane	< 0.002	0.002	mg/Kg
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethane	< 0.003	0.003	mg/Kg
1,2-Dichloroethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethene	< 0.005	0.005	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT
Lab ID: Blank

Date: *14-Aug-98*
Matrix: Soil
Batch ID: VOC2_980811A
Prep Date: 8/11/98
Date Analyzed: 8/11/98 12:25:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
Methylene chloride	< 0.004	0.004	mg/Kg
1,2-Dichloropropane	< 0.002	0.002	mg/Kg
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg
Diethyl ether	< 0.005	0.005	mg/Kg
Ethylbenzene	< 0.005	0.005	mg/Kg
Ethyl methacrylate	< 0.005	0.005	mg/Kg
2-Hexanone	.01285	0.006	mg/Kg
Methacrylonitrile	< 0.005	0.005	mg/Kg
Iodomethane	< 0.005	0.005	mg/Kg
Methyl methacrylate	< 0.004	0.004	mg/Kg
4-Methyl-2-pentanone	.0106	0.01	mg/Kg
Propionitrile	< 0.01	0.01	mg/Kg
Styrene	< 0.004	0.004	mg/Kg
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg
Tetrachloroethene	< 0.005	0.005	mg/Kg
Toluene	< 0.003	0.003	mg/Kg
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg
Trichloroethene	< 0.002	0.002	mg/Kg
Trichlorofluoromethane	< 0.005	0.005	mg/Kg
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg
Vinyl acetate	< 0.01	0.01	mg/Kg
Vinyl chloride	< 0.003	0.003	mg/Kg
m,p-Xylene	< 0.005	0.005	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811A
Lab ID:	Blank	**Prep Date:**	8/11/98
		Date Analyzed:	8/11/98 12:25:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
o-Xylene	< 0.004	0.004	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980811A
Lab ID:	Blank	**Prep Date:**	8/11/98
		Date Analyzed:	8/11/98 12:25:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	98	52-149
4-Bromofluorobenzene	97	65-135
Dibromofluoromethane	115	65-135
Toluene-d8	97	65-135

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Client: Anderson Columbia Environ
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT
Lab ID: 9807093-01A

Date: *14-Aug-98*
Matrix: Soil
Batch ID: VOC2_980811A
Prep Date: 8/11/98
Date Analyzed: 8/11/98 2:37:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Acetone	0.08	0.316	544	33-175	0.44	495	33	30	mg/Kg
Acrolein	0.08	0.05	63	33-175	0.04	52	19	30	mg/Kg
Acrylonitrile	0.08	0.093	116	33-175	0.09	108	7	30	mg/Kg
Allyl chloride	0.05	0.061	122	65-135	0.06	120	2	30	mg/Kg
Benzene	0.05	0.051	102	65-135	0.06	119	15	30	mg/Kg
Bromodichloromethane	0.05	0.069	138	65-135	0.07	149	8	30	mg/Kg
Bromoform	0.05	0.063	126	65-135	0.06	123	2	30	mg/Kg
Bromomethane	0.05	0.046	92	62-135	0.04	82	11	30	mg/Kg
2-Butanone	0.08	0.178	183	40-173	0.22	232	20	30	mg/Kg
Carbon disulfide	0.05	0.057	115	65-135	0.06	112	3	30	mg/Kg
Carbon tetrachloride	0.05	0.053	106	52-135	0.06	117	11	30	mg/Kg
Chlorobenzene	0.05	0.049	99	65-135	0.05	102	3	30	mg/Kg
Chloroethane	0.05	0.059	118	55-135	0.06	123	4	30	mg/Kg
2-Chloroethylvinylether	0.05	0.024	48	25-175	0.03	53	9	30	mg/Kg
Chloroform	0.05	0.07	139	65-135	0.07	143	3	30	mg/Kg
Chloromethane	0.05	0.046	91	65-135	0.05	95	5	30	mg/Kg
Dibromochloromethane	0.05	0.061	123	63-135	0.06	126	2	30	mg/Kg
1,2-Dibromo-3-chloropropane	0.05	0.079	158	49-135	0.09	183	14	30	mg/Kg
1,2-Dibromoethane	0.05	0.064	128	65-135	0.07	132	3	30	mg/Kg
Dibromomethane	0.05	0.071	143	59-137	0.08	157	9	30	mg/Kg
1,2-Dichlorobenzene	0.05	0.053	106	65-135	0.05	108	2	30	mg/Kg
1,3-Dichlorobenzene	0.05	0.052	104	65-135	0.05	107	4	30	mg/Kg
1,4-Dichlorobenzene	0.05	0.052	104	65-135	0.05	109	5	30	mg/Kg
trans-1,4-Dichloro-2-butene	0.05	0.059	119	65-135	0.06	128	8	30	mg/Kg
Dichlorodifluoromethane	0.05	0.037	73	65-135	0.04	78	6	30	mg/Kg
1,1-Dichloroethane	0.05	0.063	125	65-135	0.07	133	6	30	mg/Kg

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT
Lab ID: 9807093-01A

Date: *14-Aug-98*
Matrix: Soil
Batch ID: VOC2_980811A
Prep Date: 8/11/98
Date Analyzed: 8/11/98 2:37:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
1,2-Dichloroethane	0.05	0.072	144	58-137	0.08	164	14	30	mg/Kg
1,1-Dichloroethene	0.05	0.062	124	65-135	0.07	131	6	30	mg/Kg
cis-1,2-Dichloroethene	0.05	0.064	128	65-135	0.06	129	1	30	mg/Kg
trans-1,2-Dichloroethene	0.05	0.062	124	65-135	0.06	126	2	30	mg/Kg
Methylene chloride	0.05	0.088	142	59-137	0.10	175	17	30	mg/Kg
1,2-Dichloropropane	0.05	0.055	110	60-135	0.06	124	12	30	mg/Kg
cis-1,3-Dichloropropene	0.05	0.059	119	64-135	0.06	121	2	30	mg/Kg
trans-1,3-Dichloropropene	0.05	0.064	128	56-135	0.07	134	4	30	mg/Kg
Diethyl ether	0.08	0.109	136	65-135	0.11	140	3	30	mg/Kg
Ethylbenzene	0.05	0.051	102	65-135	0.05	108	6	30	mg/Kg
Ethyl methacrylate	0.05	0.037	74	65-135	0.03	66	12	30	mg/Kg
2-Hexanone	0.08	0.118	109	65-135	0.14	141	20	30	mg/Kg
Methacrylonitrile	0.08	0.09	113	65-135	0.08	102	10	30	mg/Kg
Iodomethane	0.05	0.049	98	65-135	0.05	93	5	30	mg/Kg
Methyl methacrylate	0.08	0.109	136	65-135	0.12	154	12	30	mg/Kg
4-Methyl-2-pentanone	0.08	0.09	137	65-135	0.10	101	12	30	mg/Kg
Propionitrile	0.08	0.092	115	65-135	0.09	111	3	30	mg/Kg
Styrene	0.05	0.049	98	65-135	0.05	99	2	30	mg/Kg
1,1,1,2-Tetrachloroethane	0.05	0.054	108	62-108	0.06	115	6	30	mg/Kg
1,1,2,2-Tetrachloroethane	0.05	0.06	119	64-135	0.07	131	9	30	mg/Kg
Tetrachloroethene	0.05	0.05	100	61-135	0.05	107	6	30	mg/Kg
Toluene	0.05	0.055	109	64-135	0.06	118	8	30	mg/Kg
1,1,1-Trichloroethane	0.05	0.064	129	65-135	0.07	135	5	30	mg/Kg
1,1,2-Trichloroethane	0.05	0.066	131	65-135	0.07	142	8	30	mg/Kg
Trichloroethene	0.05	0.061	122	65-135	0.07	133	9	30	mg/Kg
Trichlorofluoromethane	0.05	0.063	127	57-135	0.07	134	6	30	mg/Kg

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811A
Lab ID:	9807093-01A	**Prep Date:**	8/11/98
		Date Analyzed:	8/11/98 2:37:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
1,2,3-Trichloropropane	0.05	0.078	155	65-135	0.09	172	10	30	mg/Kg
Vinyl acetate	0.05	0.007	14	65-135	0.004	8	0	30	mg/Kg
Vinyl chloride	0.05	0.051	101	36-144	0.05	106	5	30	mg/Kg
m,p-Xylene	0.1	0.096	96	65-135	0.1	99	4	30	mg/Kg
o-Xylene	0.05	0.048	96	65-135	0.05	99	3	30	mg/Kg

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980811A
Lab ID:	9807093-01A	**Prep Date:**	8/11/98
		Date Analyzed:	8/11/98 2:37:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	MS % Recovery	Control Limits	MSD % Recovery
1,2-Dichloroethane-d4	128	52-149	143
4-Bromofluorobenzene	110	65-135	114
Dibromofluoromethane	119	65-135	120
Toluene-d8	102	65-135	108

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Client:	Anderson Columbia Environ	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811A
Lab ID:	LCS	**Prep Date:**	8/11/98
		Date Analyzed:	8/11/98 1:09:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	0.08	0.0678	85	33-175	mg/Kg
Acrolein	0.08	0.0724	91	33-175	mg/Kg
Acrylonitrile	0.08	0.0788	99	33-175	mg/Kg
Allyl chloride	0.05	0.0622	124	65-135	mg/Kg
Benzene	0.05	0.0444	89	65-135	mg/Kg
Bromodichloromethane	0.05	0.0572	115	65-135	mg/Kg
Bromoform	0.05	0.0528	106	65-135	mg/Kg
Bromomethane	0.05	0.0454	91	62-135	mg/Kg
2-Butanone	0.08	0.0816	102	40-173	mg/Kg
Carbon disulfide	0.05	0.0596	119	65-135	mg/Kg
Carbon tetrachloride	0.05	0.0498	100	52-135	mg/Kg
Chlorobenzene	0.05	0.0478	96	65-135	mg/Kg
Chloroethane	0.05	0.0514	103	55-135	mg/Kg
2-Chloroethylvinylether	0.05	0.0395	79	25-175	mg/Kg
Chloroform	0.05	0.0608	122	65-135	mg/Kg
Chloromethane	0.05	0.0411	82	65-135	mg/Kg
Dibromochloromethane	0.05	0.051	102	63-135	mg/Kg
1,2-Dibromo-3-chloropropane	0.05	0.0558	112	49-135	mg/Kg
1,2-Dibromoethane	0.05	0.0502	100	65-135	mg/Kg
Dibromomethane	0.05	0.054	108	59-137	mg/Kg
1,2-Dichlorobenzene	0.05	0.0504	101	65-135	mg/Kg
1,3-Dichlorobenzene	0.05	0.0511	102	65-135	mg/Kg
1,4-Dichlorobenzene	0.05	0.0501	100	65-135	mg/Kg
trans-1,4-Dichloro-2-butene	0.05	0.0424	85	65-135	mg/Kg
Dichlorodifluoromethane	0.05	0.048	96	65-135	mg/Kg
1,1-Dichloroethane	0.05	0.0584	117	65-135	mg/Kg
1,2-Dichloroethane	0.05	0.0536	107	58-137	mg/Kg
1,1-Dichloroethene	0.05	0.0598	120	65-135	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT
Lab ID: LCS

Date: *14-Aug-98*
Matrix: Soil
Batch ID: VOC2_980811A
Prep Date: 8/11/98
Date Analyzed: 8/11/98 1:09:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	0.05	0.0604	121	65-135	mg/Kg
trans-1,2-Dichloroethene	0.05	0.0612	122	65-135	mg/Kg
Methylene chloride	0.05	0.0557	111	59-137	mg/Kg
1,2-Dichloropropane	0.05	0.0448	90	60-135	mg/Kg
cis-1,3-Dichloropropene	0.05	0.0514	103	64-135	mg/Kg
trans-1,3-Dichloropropene	0.05	0.0542	109	56-135	mg/Kg
Diethyl ether	0.08	0.0847	106	65-135	mg/Kg
Ethylbenzene	0.05	0.0522	104	65-135	mg/Kg
Ethyl methacrylate	0.05	0.0576	115	65-135	mg/Kg
2-Hexanone	0.08	0.0595	58	65-135	mg/Kg
Methacrylonitrile	0.08	0.0786	98	65-135	mg/Kg
Iodomethane	0.05	0.0551	110	65-135	mg/Kg
Methyl methacrylate	0.08	0.0626	78	65-135	mg/Kg
4-Methyl-2-pentanone	0.08	0.0662	69	65-135	mg/Kg
Propionitrile	0.08	0.0716	89	65-135	mg/Kg
Styrene	0.05	0.05	100	65-135	mg/Kg
1,1,1,2-Tetrachloroethane	0.05	0.0512	103	62-108	mg/Kg
1,1,2,2-Tetrachloroethane	0.05	0.0456	91	64-135	mg/Kg
Tetrachloroethene	0.05	0.0523	105	61-135	mg/Kg
Toluene	0.05	0.0509	102	64-135	mg/Kg
1,1,1-Trichloroethane	0.05	0.0588	118	65-135	mg/Kg
1,1,2-Trichloroethane	0.05	0.0518	104	65-135	mg/Kg
Trichloroethene	0.05	0.0526	105	65-135	mg/Kg
Trichlorofluoromethane	0.05	0.0603	121	57-135	mg/Kg
1,2,3-Trichloropropane	0.05	0.0502	101	65-135	mg/Kg
Vinyl acetate	0.05	0.0528	106	65-135	mg/Kg
Vinyl chloride	0.05	0.0452	90	36-144	mg/Kg
m,p-Xylene	0.1	0.0996	100	65-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811A
Lab ID:	LCS	**Prep Date:**	8/11/98
		Date Analyzed:	8/11/98 1:09:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	0.05	0.05	100	65-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*14-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980811A
Lab ID:	LCS	**Prep Date:**	8/11/98
		Date Analyzed:	8/11/98 1:09:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	99	52-149
4-Bromofluorobenzene	98	65-135
Dibromofluoromethane	117	65-135
Toluene-d8	97	65-135

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811B
Lab ID:	Blank	**Prep Date:**	8/12/98
		Date Analyzed:	8/12/98 12:33:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
Acetone	.05475	0.01	mg/Kg
Acrolein	< 0.005	0.005	mg/Kg
Acrylonitrile	< 0.004	0.004	mg/Kg
Allyl chloride	< 0.003	0.003	mg/Kg
Benzene	< 0.003	0.003	mg/Kg
Bromodichloromethane	< 0.003	0.003	mg/Kg
Bromoform	< 0.002	0.002	mg/Kg
Bromomethane	< 0.006	0.006	mg/Kg
2-Butanone	< 0.01	0.01	mg/Kg
Carbon disulfide	< 0.005	0.005	mg/Kg
Carbon tetrachloride	< 0.003	0.003	mg/Kg
Chlorobenzene	< 0.004	0.004	mg/Kg
Chloroethane	< 0.002	0.002	mg/Kg
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg
Chloroform	< 0.003	0.003	mg/Kg
Chloromethane	< 0.005	0.005	mg/Kg
Dibromochloromethane	< 0.003	0.003	mg/Kg
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg
1,2-Dibromoethane	< 0.003	0.003	mg/Kg
Dibromomethane	< 0.002	0.002	mg/Kg
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethane	< 0.003	0.003	mg/Kg
1,2-Dichloroethane	< 0.003	0.003	mg/Kg
1,1-Dichloroethene	< 0.005	0.005	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811B
Lab ID:	Blank	**Prep Date:**	8/12/98
		Date Analyzed:	8/12/98 12:33:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
Methylene chloride	.385	0.004	mg/Kg
1,2-Dichloropropane	< 0.002	0.002	mg/Kg
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg
Diethyl ether	< 0.005	0.005	mg/Kg
Ethylbenzene	< 0.005	0.005	mg/Kg
Ethyl methacrylate	< 0.005	0.005	mg/Kg
2-Hexanone	.01295	0.006	mg/Kg
Methacrylonitrile	< 0.005	0.005	mg/Kg
Iodomethane	< 0.005	0.005	mg/Kg
Methyl methacrylate	< 0.004	0.004	mg/Kg
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg
Propionitrile	< 0.01	0.01	mg/Kg
Styrene	< 0.004	0.004	mg/Kg
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg
Tetrachloroethene	< 0.005	0.005	mg/Kg
Toluene	< 0.003	0.003	mg/Kg
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg
Trichloroethene	< 0.002	0.002	mg/Kg
Trichlorofluoromethane	< 0.005	0.005	mg/Kg
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg
Vinyl acetate	< 0.01	0.01	mg/Kg
Vinyl chloride	< 0.003	0.003	mg/Kg
m,p-Xylene	< 0.005	0.005	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811B
Lab ID:	Blank	**Prep Date:**	8/12/98
		Date Analyzed:	8/12/98 12:33:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
o-Xylene	< 0.004	0.004	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980811B
Lab ID:	Blank	**Prep Date:**	8/12/98
		Date Analyzed:	8/12/98 12:33:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	98	52-149
4-Bromofluorobenzene	96	65-135
Dibromofluoromethane	115	65-135
Toluene-d8	96	65-135

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811B
Lab ID:	Blank	**Prep Date:**	8/12/98
		Date Analyzed:	8/12/98 12:33:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg
Methylene chloride	.385	0.004	mg/Kg
1,2-Dichloropropane	< 0.002	0.002	mg/Kg
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg
Diethyl ether	< 0.005	0.005	mg/Kg
Ethylbenzene	< 0.005	0.005	mg/Kg
Ethyl methacrylate	< 0.005	0.005	mg/Kg
2-Hexanone	.01295	0.006	mg/Kg
Methacrylonitrile	< 0.005	0.005	mg/Kg
Iodomethane	< 0.005	0.005	mg/Kg
Methyl methacrylate	< 0.004	0.004	mg/Kg
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg
Propionitrile	< 0.01	0.01	mg/Kg
Styrene	< 0.004	0.004	mg/Kg
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg
Tetrachloroethene	< 0.005	0.005	mg/Kg
Toluene	< 0.003	0.003	mg/Kg
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg
Trichloroethene	< 0.002	0.002	mg/Kg
Trichlorofluoromethane	< 0.005	0.005	mg/Kg
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg
Vinyl acetate	< 0.01	0.01	mg/Kg
Vinyl chloride	< 0.003	0.003	mg/Kg
m,p-Xylene	< 0.005	0.005	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980811B
Lab ID:	Blank	**Prep Date:**	8/12/98
		Date Analyzed:	8/12/98 12:33:00 A

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	98	52-149
4-Bromofluorobenzene	96	65-135
Dibromofluoromethane	115	65-135
Toluene-d8	96	65-135

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811B
Lab ID:	LCS	**Prep Date:**	8/12/98
		Date Analyzed:	8/12/98 1:17:00 AM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	0.08	0.139	105	33-175	mg/Kg
Acrolein	0.08	0.0693	87	33-175	mg/Kg
Acrylonitrile	0.08	0.0788	98	33-175	mg/Kg
Allyl chloride	0.05	0.0612	122	65-135	mg/Kg
Benzene	0.05	0.049	98	65-135	mg/Kg
Bromodichloromethane	0.05	0.06	120	65-135	mg/Kg
Bromoform	0.05	0.0576	115	65-135	mg/Kg
Bromomethane	0.05	0.0482	96	62-135	mg/Kg
2-Butanone	0.08	0.0764	96	40-173	mg/Kg
Carbon disulfide	0.05	0.0602	120	65-135	mg/Kg
Carbon tetrachloride	0.05	0.0556	111	52-135	mg/Kg
Chlorobenzene	0.05	0.0532	106	65-135	mg/Kg
Chloroethane	0.05	0.0518	104	55-135	mg/Kg
2-Chloroethylvinylether	0.05	0.0567	113	25-175	mg/Kg
Chloroform	0.05	0.0644	129	65-135	mg/Kg
Chloromethane	0.05	0.044	88	65-135	mg/Kg
Dibromochloromethane	0.05	0.0546	109	63-135	mg/Kg
1,2-Dibromo-3-chloropropane	0.05	0.0534	107	49-135	mg/Kg
1,2-Dibromoethane	0.05	0.0538	108	65-135	mg/Kg
Dibromomethane	0.05	0.0564	113	59-137	mg/Kg
1,2-Dichlorobenzene	0.05	0.0515	103	65-135	mg/Kg
1,3-Dichlorobenzene	0.05	0.0521	104	65-135	mg/Kg
1,4-Dichlorobenzene	0.05	0.0512	102	65-135	mg/Kg
trans-1,4-Dichloro-2-butene	0.05	0.0412	82	65-135	mg/Kg
Dichlorodifluoromethane	0.05	0.0498	99	65-135	mg/Kg
1,1-Dichloroethane	0.05	0.0584	117	65-135	mg/Kg
1,2-Dichloroethane	0.05	0.0565	113	58-137	mg/Kg
1,1-Dichloroethene	0.05	0.0598	120	65-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980811B
Lab ID:	LCS	**Prep Date:**	8/12/98
		Date Analyzed:	8/12/98 1:17:00 AM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	0.05	0.0596	119	65-135	mg/Kg
trans-1,2-Dichloroethene	0.05	0.0592	118	65-135	mg/Kg
Methylene chloride	0.05	0.468	167	59-137	mg/Kg
1,2-Dichloropropane	0.05	0.0469	94	60-135	mg/Kg
cis-1,3-Dichloropropene	0.05	0.0558	112	64-135	mg/Kg
trans-1,3-Dichloropropene	0.05	0.0574	115	56-135	mg/Kg
Diethyl ether	0.08	0.0816	102	65-135	mg/Kg
Ethylbenzene	0.05	0.0577	115	65-135	mg/Kg
Ethyl methacrylate	0.05	0.0726	145	65-135	mg/Kg
2-Hexanone	0.08	0.0492	45	65-135	mg/Kg
Methacrylonitrile	0.08	0.0732	92	65-135	mg/Kg
Iodomethane	0.05	0.0541	108	65-135	mg/Kg
Methyl methacrylate	0.08	0.0629	79	65-135	mg/Kg
4-Methyl-2-pentanone	0.08	0.0525	54	65-135	mg/Kg
Propionitrile	0.08	0.0684	85	65-135	mg/Kg
Styrene	0.05	0.0542	108	65-135	mg/Kg
1,1,1,2-Tetrachloroethane	0.05	0.056	112	62-108	mg/Kg
1,1,2,2-Tetrachloroethane	0.05	0.0432	87	64-135	mg/Kg
Tetrachloroethene	0.05	0.0599	120	61-135	mg/Kg
Toluene	0.05	0.0568	114	64-135	mg/Kg
1,1,1-Trichloroethane	0.05	0.0656	131	65-135	mg/Kg
1,1,2-Trichloroethane	0.05	0.0548	110	65-135	mg/Kg
Trichloroethene	0.05	0.0552	110	65-135	mg/Kg
Trichlorofluoromethane	0.05	0.0559	112	57-135	mg/Kg
1,2,3-Trichloropropane	0.05	0.048	96	65-135	mg/Kg
Vinyl acetate	0.05	0.0501	100	65-135	mg/Kg
Vinyl chloride	0.05	0.0426	85	36-144	mg/Kg
m,p-Xylene	0.1	0.11	110	65-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980811B
Lab ID:	LCS	**Prep Date:**	8/12/98
		Date Analyzed:	8/12/98 1:17:00 AM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	100	52-149
4-Bromofluorobenzene	95	65-135
Dibromofluoromethane	114	65-135
Toluene-d8	104	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-1
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:50:00 AM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-27A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73062	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Aniline	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Anthracene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Benzidine	< 0.67	0.67	mg/Kg	1	8/11/98 11:16:00 PM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/11/98 11:16:00 PM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Chrysene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-1
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:50:00 AM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-27A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73062	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/11/98 11:16:00 PM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/11/98 11:16:00 PM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/11/98 11:16:00 PM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Fluorene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Isophorone	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-1
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:50:00 AM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-27A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73062	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/11/98 11:16:00 PM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/11/98 11:16:00 PM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Phenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Pyrene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
Pyridine	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/11/98 11:16:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-1
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:50:00 AM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-27A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73062	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-1
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 11:50:00 AM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-27A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73062	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	51.	25-144
2-Fluorobiphenyl	77.	35-135
2-Fluorophenol	57.	25-135
Nitrobenzene-d5	53.	25-135
Phenol-d5	108.	25-135
Terphenyl-d14	41.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-28A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73063	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Aniline	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Benzidine	< 0.67	0.67	mg/Kg	1	8/12/98 12:11:00 AM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/12/98 12:11:00 AM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Chrysene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-28A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73063	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/12/98 12:11:00 AM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 12:11:00 AM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/12/98 12:11:00 AM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Fluorene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Isophorone	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-28A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73063	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 12:11:00 AM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/12/98 12:11:00 AM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Phenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
Pyridine	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 12:11:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-28A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73063	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:00:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-28A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73063	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	63.	25-144
2-Fluorobiphenyl	85.	35-135
2-Fluorophenol	59.	25-135
Nitrobenzene-d5	51.	25-135
Phenol-d5	112.	25-135
Terphenyl-d14	45.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-29A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73064	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Aniline	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Benzidine	< 0.67	0.67	mg/Kg	1	8/12/98 1:06:00 AM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/12/98 1:06:00 AM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Chrysene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-4
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-30A	**Batch ID:**	VOC2_980811B
Chemron ID:	73065	**Prep Date:**	8/12/98 3:29:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 3:29:00 AM
Methylene chloride	0.466	0.004	mg/Kg	1	8/12/98 3:29:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 3:29:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 3:29:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
2-Hexanone	0.007	0.006	mg/Kg	1	8/12/98 3:29:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 3:29:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 3:29:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 3:29:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 3:29:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 3:29:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 3:29:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 3:29:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 3:29:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 3:29:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-4
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-30A	**Batch ID:**	VOC2_980811B
Chemron ID:	73065	**Prep Date:**	8/12/98 3:29:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-4
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:20:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-30A	**Batch ID:**	VOC2_980811B
Chemron ID:	73065	**Prep Date:**	8/12/98 3:29:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	104.	52-149
4-Bromofluorobenzene	96.	65-135
Dibromofluoromethane	123.	65-135
Toluene-d8	96.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-5
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:40:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-31A	**Batch ID:**	VOC2_980811B
Chemron ID:	73066	**Prep Date:**	8/12/98 4:12:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.119	0.01	mg/Kg	1	8/12/98 4:12:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 4:12:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 4:12:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 4:12:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 4:12:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 4:12:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 4:12:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 4:12:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 4:12:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 4:12:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 4:12:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 4:12:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 4:12:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-5
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:40:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-31A	**Batch ID:**	VOC2_980811B
Chemron ID:	73066	**Prep Date:**	8/12/98 4:12:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 4:12:00 AM
Methylene chloride	0.348	0.004	mg/Kg	1	8/12/98 4:12:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 4:12:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 4:12:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
2-Hexanone	< 0.006	0.006	mg/Kg	1	8/12/98 4:12:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 4:12:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 4:12:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 4:12:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 4:12:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 4:12:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 4:12:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 4:12:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 4:12:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 4:12:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-5
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:40:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-31A	**Batch ID:**	VOC2_980811B
Chemron ID:	73066	**Prep Date:**	8/12/98 4:12:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-5
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:40:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-31A	**Batch ID:**	VOC2_980811B
Chemron ID:	73066	**Prep Date:**	8/12/98 4:12:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	115.	52-149
4-Bromofluorobenzene	95.	65-135
Dibromofluoromethane	105.	65-135
Toluene-d8	96.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-6
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-32A	**Batch ID:**	VOC2_980811B
Chemron ID:	73067	**Prep Date:**	8/12/98 4:56:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.145	0.01	mg/Kg	1	8/12/98 4:56:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 4:56:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 4:56:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 4:56:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 4:56:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 4:56:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 4:56:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 4:56:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 4:56:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 4:56:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 4:56:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 4:56:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 4:56:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-6
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-32A	**Batch ID:**	VOC2_980811B
Chemron ID:	73067	**Prep Date:**	8/12/98 4:56:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 4:56:00 AM
Methylene chloride	0.454	0.004	mg/Kg	1	8/12/98 4:56:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 4:56:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 4:56:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
2-Hexanone	< 0.006	0.006	mg/Kg	1	8/12/98 4:56:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 4:56:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 4:56:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 4:56:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 4:56:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 4:56:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 4:56:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 4:56:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 4:56:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 4:56:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-6
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-32A	**Batch ID:**	VOC2_980811B
Chemron ID:	73067	**Prep Date:**	8/12/98 4:56:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-6
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:00:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-32A	**Batch ID:**	VOC2_980811B
Chemron ID:	73067	**Prep Date:**	8/12/98 4:56:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	108.	52-149
4-Bromofluorobenzene	97.	65-135
Dibromofluoromethane	114.	65-135
Toluene-d8	96.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-7
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-33A	**Batch ID:**	VOC2_980811B
Chemron ID:	73068	**Prep Date:**	8/12/98 5:40:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.147	0.01	mg/Kg	1	8/12/98 5:40:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 5:40:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 5:40:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 5:40:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 5:40:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 5:40:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 5:40:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 5:40:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 5:40:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 5:40:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 5:40:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 5:40:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 5:40:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-7
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-33A	**Batch ID:**	VOC2_980811B
Chemron ID:	73068	**Prep Date:**	8/12/98 5:40:00 AM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 5:40:00 AM
Methylene chloride	0.435	0.004	mg/Kg	1	8/12/98 5:40:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 5:40:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 5:40:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
2-Hexanone	< 0.006	0.006	mg/Kg	1	8/12/98 5:40:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 5:40:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 5:40:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 5:40:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 5:40:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 5:40:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 5:40:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 5:40:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 5:40:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 5:40:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-7
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-33A	**Batch ID:**	VOC2_980811B
Chemron ID:	73068	**Prep Date:**	8/12/98 5:40:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-7
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:55:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-33A	**Batch ID:**	VOC2_980811B
Chemron ID:	73068	**Prep Date:**	8/12/98 5:40:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	109.	52-149
4-Bromofluorobenzene	98.	65-135
Dibromofluoromethane	103.	65-135
Toluene-d8	96.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-8
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-34A	**Batch ID:**	VOC2_980811B
Chemron ID:	73069	**Prep Date:**	8/12/98 6:24:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.06	0.01	mg/Kg	1	8/12/98 6:24:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 6:24:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 6:24:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 6:24:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 6:24:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 6:24:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 6:24:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 6:24:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 6:24:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 6:24:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 6:24:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 6:24:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 6:24:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-8
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-34A	**Batch ID:**	VOC2_980811B
Chemron ID:	73069	**Prep Date:**	8/12/98 6:24:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 6:24:00 AM
Methylene chloride	0.313	0.004	mg/Kg	1	8/12/98 6:24:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 6:24:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 6:24:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
2-Hexanone	< 0.006	0.006	mg/Kg	1	8/12/98 6:24:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 6:24:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 6:24:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 6:24:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 6:24:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 6:24:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 6:24:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 6:24:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 6:24:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 6:24:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-8
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-34A	**Batch ID:**	VOC2_980811B
Chemron ID:	73069	**Prep Date:**	8/12/98 6:24:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-8
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:20:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-34A	**Batch ID:**	VOC2_980811B
Chemron ID:	73069	**Prep Date:**	8/12/98 6:24:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	118.	52-149
4-Bromofluorobenzene	99.	65-135
Dibromofluoromethane	115.	65-135
Toluene-d8	97.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-9
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-35A	**Batch ID:**	VOC2_980811B
Chemron ID:	73070	**Prep Date:**	8/12/98 7:08:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.078	0.01	mg/Kg	1	8/12/98 7:08:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 7:08:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 7:08:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 7:08:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 7:08:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 7:08:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 7:08:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 7:08:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 7:08:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 7:08:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 7:08:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 7:08:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 7:08:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-9
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-35A	**Batch ID:**	VOC2_980811B
Chemron ID:	73070	**Prep Date:**	8/12/98 7:08:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 7:08:00 AM
Methylene chloride	0.382	0.004	mg/Kg	1	8/12/98 7:08:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 7:08:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 7:08:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
2-Hexanone	< 0.006	0.006	mg/Kg	1	8/12/98 7:08:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 7:08:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 7:08:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 7:08:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 7:08:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 7:08:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 7:08:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 7:08:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 7:08:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 7:08:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-9
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-35A	**Batch ID:**	VOC2_980811B
Chemron ID:	73070	**Prep Date:**	8/12/98 7:08:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-9
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:50:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-35A	**Batch ID:**	VOC2_980811B
Chemron ID:	73070	**Prep Date:**	8/12/98 7:08:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	107.	52-149
4-Bromofluorobenzene	98.	65-135
Dibromofluoromethane	111.	65-135
Toluene-d8	96.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-10
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-36A	**Batch ID:**	VOC2_980811B
Chemron ID:	73071	**Prep Date:**	8/12/98 7:52:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.465	0.01	mg/Kg	1	8/12/98 7:52:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 7:52:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 7:52:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 7:52:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 7:52:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 7:52:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 7:52:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 7:52:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 7:52:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 7:52:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 7:52:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 7:52:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 7:52:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-10
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-36A	**Batch ID:**	VOC2_980811B
Chemron ID:	73071	**Prep Date:**	8/12/98 7:52:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 7:52:00 AM
Methylene chloride	0.445	0.004	mg/Kg	1	8/12/98 7:52:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 7:52:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 7:52:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
2-Hexanone	< 0.006	0.006	mg/Kg	1	8/12/98 7:52:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 7:52:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 7:52:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 7:52:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 7:52:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 7:52:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 7:52:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 7:52:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 7:52:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 7:52:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-10
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-36A	**Batch ID:**	VOC2_980811B
Chemron ID:	73071	**Prep Date:**	8/12/98 7:52:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-10
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:20:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-36A	**Batch ID:**	VOC2_980811B
Chemron ID:	73071	**Prep Date:**	8/12/98 7:52:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	118.	52-149
4-Bromofluorobenzene	99.	65-135
Dibromofluoromethane	124.	65-135
Toluene-d8	93.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-11
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-37A	**Batch ID:**	VOC2_980811B
Chemron ID:	73072	**Prep Date:**	8/12/98 8:36:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.53	0.01	mg/Kg	1	8/12/98 8:36:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 8:36:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 8:36:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 8:36:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 8:36:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 8:36:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 8:36:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 8:36:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 8:36:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 8:36:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 8:36:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 8:36:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 8:36:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-11
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-37A	**Batch ID:**	VOC2_980811B
Chemron ID:	73072	**Prep Date:**	8/12/98 8:36:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 8:36:00 AM
Methylene chloride	0.43	0.004	mg/Kg	1	8/12/98 8:36:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 8:36:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 8:36:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
2-Hexanone	< 0.006	0.006	mg/Kg	1	8/12/98 8:36:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 8:36:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 8:36:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 8:36:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 8:36:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 8:36:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 8:36:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 8:36:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 8:36:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 8:36:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-11
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-37A	**Batch ID:**	VOC2_980811B
Chemron ID:	73072	**Prep Date:**	8/12/98 8:36:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-11
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:50:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-37A	**Batch ID:**	VOC2_980811B
Chemron ID:	73072	**Prep Date:**	8/12/98 8:36:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	116.	52-149
4-Bromofluorobenzene	98.	65-135
Dibromofluoromethane	123.	65-135
Toluene-d8	95.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-12
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:10:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-38A	**Batch ID:**	VOC2_980811B
Chemron ID:	73073	**Prep Date:**	8/12/98 9:20:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	0.816	0.01	mg/Kg	1	8/12/98 9:20:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 9:20:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 9:20:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 9:20:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 9:20:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 9:20:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 9:20:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 9:20:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 9:20:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 9:20:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 9:20:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 9:20:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 9:20:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-12
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:10:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-38A	**Batch ID:**	VOC2_980811B
Chemron ID:	73073	**Prep Date:**	8/12/98 9:20:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 9:20:00 AM
Methylene chloride	0.39	0.004	mg/Kg	1	8/12/98 9:20:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 9:20:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 9:20:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
2-Hexanone	< 0.006	0.006	mg/Kg	1	8/12/98 9:20:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 9:20:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 9:20:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 9:20:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 9:20:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 9:20:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 9:20:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 9:20:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 9:20:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 9:20:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-12
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:10:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-38A	**Batch ID:**	VOC2_980811B
Chemron ID:	73073	**Prep Date:**	8/12/98 9:20:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Oldham

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-12
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:10:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-38A	**Batch ID:**	VOC2_980811B
Chemron ID:	73073	**Prep Date:**	8/12/98 9:20:00 AM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	121.	52-149
4-Bromofluorobenzene	97.	65-135
Dibromofluoromethane	125.	65-135
Toluene-d8	95.	65-135

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-13
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:30:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-39A	**Batch ID:**	VOC2_980811B
Chemron ID:	73074	**Prep Date:**	8/12/98 10:04:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	1.02	0.01	mg/Kg	1	8/12/98 10:04:00 AM
Acrolein	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
Acrylonitrile	< 0.004	0.004	mg/Kg	1	8/12/98 10:04:00 AM
Allyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Benzene	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Bromodichloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Bromoform	< 0.002	0.002	mg/Kg	1	8/12/98 10:04:00 AM
Bromomethane	< 0.006	0.006	mg/Kg	1	8/12/98 10:04:00 AM
2-Butanone	< 0.01	0.01	mg/Kg	1	8/12/98 10:04:00 AM
Carbon disulfide	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
Carbon tetrachloride	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Chlorobenzene	< 0.004	0.004	mg/Kg	1	8/12/98 10:04:00 AM
Chloroethane	< 0.002	0.002	mg/Kg	1	8/12/98 10:04:00 AM
2-Chloroethylvinylether	< 0.01	0.01	mg/Kg	1	8/12/98 10:04:00 AM
Chloroform	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Chloromethane	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
Dibromochloromethane	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
1,2-Dibromo-3-chloropropane	< 0.006	0.006	mg/Kg	1	8/12/98 10:04:00 AM
1,2-Dibromoethane	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Dibromomethane	< 0.002	0.002	mg/Kg	1	8/12/98 10:04:00 AM
1,2-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
1,3-Dichlorobenzene	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
trans-1,4-Dichloro-2-butene	< 0.004	0.004	mg/Kg	1	8/12/98 10:04:00 AM
1,4-Dichlorobenzene	< 0.006	0.006	mg/Kg	1	8/12/98 10:04:00 AM
Dichlorodifluoromethane	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
1,1-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
1,2-Dichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
1,1-Dichloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
cis-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 10:04:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-13
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:30:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-39A	**Batch ID:**	VOC2_980811B
Chemron ID:	73074	**Prep Date:**	8/12/98 10:04:00 AM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 0.004	0.004	mg/Kg	1	8/12/98 10:04:00 AM
Methylene chloride	0.394	0.004	mg/Kg	1	8/12/98 10:04:00 AM
1,2-Dichloropropane	< 0.002	0.002	mg/Kg	1	8/12/98 10:04:00 AM
cis-1,3-Dichloropropene	< 0.002	0.002	mg/Kg	1	8/12/98 10:04:00 AM
trans-1,3-Dichloropropene	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Diethyl ether	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
Ethylbenzene	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
Ethyl methacrylate	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
2-Hexanone	< 0.006	0.006	mg/Kg	1	8/12/98 10:04:00 AM
Methacrylonitrile	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
Iodomethane	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
Methyl methacrylate	< 0.004	0.004	mg/Kg	1	8/12/98 10:04:00 AM
4-Methyl-2-pentanone	< 0.01	0.01	mg/Kg	1	8/12/98 10:04:00 AM
Propionitrile	< 0.01	0.01	mg/Kg	1	8/12/98 10:04:00 AM
Styrene	< 0.004	0.004	mg/Kg	1	8/12/98 10:04:00 AM
1,1,1,2-Tetrachloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
1,1,2,2-Tetrachloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Tetrachloroethene	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
Toluene	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
1,1,1-Trichloroethane	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
1,1,2-Trichloroethane	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Trichloroethene	< 0.002	0.002	mg/Kg	1	8/12/98 10:04:00 AM
Trichlorofluoromethane	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
1,2,3-Trichloropropane	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
Vinyl acetate	< 0.01	0.01	mg/Kg	1	8/12/98 10:04:00 AM
Vinyl chloride	< 0.003	0.003	mg/Kg	1	8/12/98 10:04:00 AM
m,p-Xylene	< 0.005	0.005	mg/Kg	1	8/12/98 10:04:00 AM
o-Xylene	< 0.004	0.004	mg/Kg	1	8/12/98 10:04:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-29A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73064	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/12/98 1:06:00 AM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 1:06:00 AM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/12/98 1:06:00 AM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Fluorene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Isophorone	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-29A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73064	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 1:06:00 AM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/12/98 1:06:00 AM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Phenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
Pyridine	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 1:06:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-29A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73064	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 12:50:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-29A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73064	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	63.	25-144
2-Fluorobiphenyl	89.	35-135
2-Fluorophenol	55.	25-135
Nitrobenzene-d5	51.	25-135
Phenol-d5	109.	25-135
Terphenyl-d14	43.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-4
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-30A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73065	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Aniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Benzidine	< 0.67	0.67	mg/Kg	1	8/12/98 2:01:00 AM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/12/98 2:01:00 AM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Chrysene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-4
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-30A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73065	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/12/98 2:01:00 AM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 2:01:00 AM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/12/98 2:01:00 AM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Fluorene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Isophorone	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-4
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-30A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73065	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 2:01:00 AM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/12/98 2:01:00 AM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Phenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
Pyridine	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:01:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-4
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-30A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73065	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-4
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:20:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-30A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73065	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	55.	25-144
2-Fluorobiphenyl	72.	35-135
2-Fluorophenol	50.	25-135
Nitrobenzene-d5	45.	25-135
Phenol-d5	98.	25-135
Terphenyl-d14	36.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-5
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:40:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-31A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73066	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Aniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Benzidine	< 0.67	0.67	mg/Kg	1	8/12/98 2:55:00 AM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/12/98 2:55:00 AM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Chrysene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-5
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:40:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-31A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73066	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/12/98 2:55:00 AM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 2:55:00 AM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/12/98 2:55:00 AM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Fluorene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Isophorone	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-5
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:40:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-31A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73066	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 2:55:00 AM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/12/98 2:55:00 AM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Phenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
Pyridine	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 2:55:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-5
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:40:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-31A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73066	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-5
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 1:40:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-31A	**Batch ID:**	SVOC2_980811A
Chemron ID:	73066	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	57.	25-144
2-Fluorobiphenyl	79.	35-135
2-Fluorophenol	56.	25-135
Nitrobenzene-d5	49.	25-135
Phenol-d5	109.	25-135
Terphenyl-d14	43.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-6
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-32A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73067	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Aniline	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Benzidine	< 0.67	0.67	mg/Kg	1	8/12/98 9:11:00 PM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/12/98 9:11:00 PM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Chrysene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-6
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-32A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73067	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
3,3'-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/12/98 9:11:00 PM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 9:11:00 PM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/12/98 9:11:00 PM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Fluorene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Isophorone	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-6
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-32A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73067	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 9:11:00 PM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/12/98 9:11:00 PM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Phenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
Pyridine	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 9:11:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-6
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:00:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-32A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73067	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-6
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:00:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-32A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73067	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	48.	25-144
2-Fluorobiphenyl	80.	35-135
2-Fluorophenol	63.	25-135
Nitrobenzene-d5	52.	25-135
Phenol-d5	124.	25-135
Terphenyl-d14	41.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-7
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-33A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73068	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Aniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Benzidine	< 0.67	0.67	mg/Kg	1	8/12/98 11:02:00 PM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/12/98 11:02:00 PM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Chrysene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-7
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-33A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73068	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/12/98 11:02:00 PM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 11:02:00 PM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/12/98 11:02:00 PM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Fluorene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Isophorone	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-7
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-33A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73068	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 11:02:00 PM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/12/98 11:02:00 PM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Phenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
Pyridine	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:02:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-7
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:55:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-33A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73068	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-7
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 2:55:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-33A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73068	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	30.	25-144
2-Fluorobiphenyl	40.	35-135
2-Fluorophenol	32.	25-135
Nitrobenzene-d5	25.	25-135
Phenol-d5	64.	25-135
Terphenyl-d14	24.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-8
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-34A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73069	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Aniline	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Benzidine	< 0.67	0.67	mg/Kg	1	8/12/98 8:15:00 PM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/12/98 8:15:00 PM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Chrysene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-8
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-34A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73069	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/12/98 8:15:00 PM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 8:15:00 PM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/12/98 8:15:00 PM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Fluorene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Isophorone	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-8
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-34A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73069	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 8:15:00 PM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/12/98 8:15:00 PM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Phenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
Pyridine	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 8:15:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-8
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-34A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73069	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-8
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:20:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-34A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73069	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	42.	25-144
2-Fluorobiphenyl	66.	35-135
2-Fluorophenol	46.	25-135
Nitrobenzene-d5	45.	25-135
Phenol-d5	96.	25-135
Terphenyl-d14	35.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-9
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-35A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73070	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Aniline	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Anthracene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Benzidine	< 0.67	0.67	mg/Kg	1	8/13/98 12:54:00 AM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/13/98 12:54:00 AM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Chrysene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-9
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-35A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73070	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
3,3'-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/13/98 12:54:00 AM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/13/98 12:54:00 AM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/13/98 12:54:00 AM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Fluorene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Isophorone	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-9
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-35A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73070	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/13/98 12:54:00 AM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/13/98 12:54:00 AM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Phenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Pyrene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
Pyridine	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 12:54:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-9
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-35A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73070	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-9
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 3:50:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-35A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73070	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	53.	25-144
2-Fluorobiphenyl	71.	35-135
2-Fluorophenol	52.	25-135
Nitrobenzene-d5	44.	25-135
Phenol-d5	103.	25-135
Terphenyl-d14	38.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-10
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-36A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73071	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Aniline	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Anthracene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Benzidine	< 0.67	0.67	mg/Kg	1	8/13/98 1:49:00 AM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/13/98 1:49:00 AM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Chrysene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
.,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-10
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-36A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73071	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
3,3'-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/13/98 1:49:00 AM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/13/98 1:49:00 AM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/13/98 1:49:00 AM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Fluorene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Isophorone	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-10
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-36A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73071	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/13/98 1:49:00 AM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/13/98 1:49:00 AM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Phenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Pyrene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
Pyridine	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 1:49:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-10
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:20:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-36A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73071	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-10
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:20:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-36A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73071	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	54.	25-144
2-Fluorobiphenyl	37.	35-135
2-Fluorophenol	56.	25-135
Nitrobenzene-d5	22.	25-135
Phenol-d5	105.	25-135
Terphenyl-d14	21.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-11
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-37A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73072	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Aniline	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Benzidine	< 0.67	0.67	mg/Kg	1	8/12/98 10:07:00 PM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/12/98 10:07:00 PM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Chrysene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
,,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-11
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-37A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73072	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
)imethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/12/98 10:07:00 PM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 10:07:00 PM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/12/98 10:07:00 PM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Fluorene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Isophorone	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
'-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-11
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-37A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73072	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 10:07:00 PM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/12/98 10:07:00 PM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Phenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
Pyridine	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 10:07:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-11
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:50:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-37A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73072	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-11
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 4:50:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-37A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73072	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	39.	25-144
2-Fluorobiphenyl	67.	35-135
2-Fluorophenol	57.	25-135
Nitrobenzene-d5	43.	25-135
Phenol-d5	107.	25-135
Terphenyl-d14	34.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-12
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:10:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-38A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73073	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Aniline	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Anthracene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Benzidine	< 0.67	0.67	mg/Kg	1	8/13/98 2:44:00 AM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/13/98 2:44:00 AM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Chrysene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-12
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:10:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-38A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73073	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/13/98 2:44:00 AM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/13/98 2:44:00 AM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/13/98 2:44:00 AM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Fluorene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Isophorone	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-12
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:10:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-38A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73073	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/13/98 2:44:00 AM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/13/98 2:44:00 AM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Phenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Pyrene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
Pyridine	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/13/98 2:44:00 AM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-12
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:10:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-38A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73073	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Aldrich

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-12
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:10:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-38A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73073	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	58.	25-144
2-Fluorobiphenyl	70.	35-135
2-Fluorophenol	51.	25-135
Nitrobenzene-d5	46.	25-135
Phenol-d5	103.	25-135
Terphenyl-d14	35.	32-136

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-13
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:30:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-39A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73074	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Acenaphthylene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Acetophenone	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Aniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
4-Aminobiphenyl	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Benzidine	< 0.67	0.67	mg/Kg	1	8/12/98 11:58:00 PM
Benzo[a]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Benzo[a]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Benzoic acid	< 0.67	0.67	mg/Kg	1	8/12/98 11:58:00 PM
Benzyl alcohol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
4-Chloroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2-Chloronaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2-Chlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Chrysene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Dibenzofuran	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-13
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:30:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-39A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73074	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Diethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Dimethyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg	1	8/12/98 11:58:00 PM
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 11:58:00 PM
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg	1	8/12/98 11:58:00 PM
Fluoranthene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Fluorene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Hexachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Hexachlorobutadiene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Hexachloroethane	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Isophorone	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
3-Methylcholanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2-Methylnaphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
4-Methylphenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Naphthalene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-13
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:30:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-39A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73074	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2-Naphthylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
3-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
4-Nitroaniline	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Nitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2-Nitrophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
4-Nitrophenol	< 0.67	0.67	mg/Kg	1	8/12/98 11:58:00 PM
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Pentachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Pentachlorophenol	< 0.67	0.67	mg/Kg	1	8/12/98 11:58:00 PM
Phenacetin	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Phenanthrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Phenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Pyrene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
Pyridine	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg	1	8/12/98 11:58:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-13
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:30:00 PM
Project No.:		**Matrix:**	SOIL
Lab ID:	9808004-39A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73074	**Prep Date:**	8/7/98 11:00:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/31-W-13
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 5:30:00 PM
Project ID:		**Matrix:**	SOIL
Lab ID:	9808004-39A	**Batch ID:**	SVOC2_980812A
Chemron ID:	73074	**Prep Date:**	8/7/98 11:00:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	60.	25-144
2-Fluorobiphenyl	80.	35-135
2-Fluorophenol	62.	25-135
Nitrobenzene-d5	52.	25-135
Phenol-d5	122.	25-135
Terphenyl-d14	40.	32-136

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980811A
Lab ID:	BLANK	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 4:44:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
Acenaphthene	< 0.33	0.33	mg/Kg
Acenaphthylene	< 0.33	0.33	mg/Kg
Acetophenone	< 0.33	0.33	mg/Kg
Aniline	< 0.33	0.33	mg/Kg
Anthracene	< 0.33	0.33	mg/Kg
4-Aminobiphenyl	< 0.33	0.33	mg/Kg
Benzidine	< 0.67	0.67	mg/Kg
Benzo[a]anthracene	< 0.33	0.33	mg/Kg
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg
Benzo[a]pyrene	< 0.33	0.33	mg/Kg
Benzoic acid	< 0.67	0.67	mg/Kg
Benzyl alcohol	< 0.33	0.33	mg/Kg
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg
4-Chloroaniline	< 0.33	0.33	mg/Kg
2-Chloronaphthalene	< 0.33	0.33	mg/Kg
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg
2-Chlorophenol	< 0.33	0.33	mg/Kg
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg
Chrysene	< 0.33	0.33	mg/Kg
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg
Dibenzofuran	< 0.33	0.33	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980811A
Lab ID:	BLANK	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 4:44:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS — SW8270C — Analyst: HM

Analyte	Result	Report Limit	Units:
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg
3,3'-Dichlorobenzidine	< 0.33	0.33	mg/Kg
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg
Diethyl phthalate	< 0.33	0.33	mg/Kg
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg
Dimethyl phthalate	< 0.33	0.33	mg/Kg
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg
Fluoranthene	< 0.33	0.33	mg/Kg
Fluorene	< 0.33	0.33	mg/Kg
Hexachlorobenzene	< 0.33	0.33	mg/Kg
Hexachlorobutadiene	< 0.33	0.33	mg/Kg
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg
Hexachloroethane	< 0.33	0.33	mg/Kg
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg
Isophorone	< 0.33	0.33	mg/Kg
3-Methylcholanthrene	< 0.33	0.33	mg/Kg
2-Methylnaphthalene	< 0.33	0.33	mg/Kg
2-Methylphenol	< 0.33	0.33	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT
Lab ID: BLANK

Date: *19-Aug-98*
Matrix: Soil
Batch ID: SVOC2_980811A
Prep Date: 8/7/98
Date Analyzed: 8/11/98 4:44:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS — SW8270C — Analyst: HM

Analyte	Result	Report Limit	Units:
4-Methylphenol	< 0.33	0.33	mg/Kg
Naphthalene	< 0.33	0.33	mg/Kg
1-Naphthylamine	< 0.33	0.33	mg/Kg
2-Naphthylamine	< 0.33	0.33	mg/Kg
2-Nitroaniline	< 0.33	0.33	mg/Kg
3-Nitroaniline	< 0.33	0.33	mg/Kg
4-Nitroaniline	< 0.33	0.33	mg/Kg
Nitrobenzene	< 0.33	0.33	mg/Kg
2-Nitrophenol	< 0.33	0.33	mg/Kg
4-Nitrophenol	< 0.67	0.67	mg/Kg
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg
Pentachlorobenzene	< 0.33	0.33	mg/Kg
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg
Pentachlorophenol	< 0.67	0.67	mg/Kg
Phenacetin	< 0.33	0.33	mg/Kg
Phenanthrene	< 0.33	0.33	mg/Kg
Phenol	< 0.33	0.33	mg/Kg
Pyrene	< 0.33	0.33	mg/Kg
Pyridine	< 0.33	0.33	mg/Kg
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg

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Client:	Anderson Columbia Environ	Date:	*19-Aug-98*
Lab Order:	9808004	Matrix:	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	Batch ID:	SVOC2_980811A
Lab ID:	BLANK	Prep Date:	8/7/98
		Date Analyzed:	8/11/98 4:44:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS — SW8270C — Analyst: HM

Analyte	Result	Report Limit	Units:
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg

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Client: Anderson Columbia Environ
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AM
Lab ID: BLANK

Date: *19-Aug-98*
Matrix: Soil
Batch ID: SVOC2_980811A
Prep Date: 8/7/98
Date Analyzed: 8/11/98 4:44:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS | SW8270C | Analyst: HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	30	25-144
2-Fluorobiphenyl	61	35-135
2-Fluorophenol	52	25-135
Nitrobenzene-d5	45	25-135
Phenol-d5	105	25-135
Terphenyl-d14	24	32-136

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980811A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acenaphthene	1.67	1.94	116	39-135	mg/Kg
Acenaphthylene	1.67	1.9	114	37-135	mg/Kg
Acetophenone	1.67	1.49	89	35-165	mg/Kg
Aniline	1.67	1.25	75	35-165	mg/Kg
Anthracene	1.67	1.94	116	35-175	mg/Kg
4-Aminobiphenyl	1.67	2.85	171	35-165	mg/Kg
Benzidine	3.33	4.34	130	35-165	mg/Kg
Benzo[a]anthracene	1.67	2.12	127	41-143	mg/Kg
Benzo[b]fluoranthene	1.67	1.68	101	27-135	mg/Kg
Benzo[k]fluoranthene	1.67	1.89	113	27-135	mg/Kg
Benzo[g,h,i]perylene	1.67	1.61	96	25-159	mg/Kg
Benzo[a]pyrene	1.67	1.64	98	31-135	mg/Kg
Benzoic acid	3.33	0.852	26	25-172	mg/Kg
Benzyl alcohol	1.67	1.45	87	25-135	mg/Kg
Bis(2-chloroethoxy)methane	1.67	1.52	91	39-135	mg/Kg
Bis(2-chloroethyl)ether	1.67	1.52	91	34-135	mg/Kg
Bis(2-chloroisopropyl)ether	1.67	1.12	67	26-175	mg/Kg
Bis(2-ethylhexyl)phthalate	1.67	2.08	125	25-139	mg/Kg
4-Bromophenyl phenyl ether	1.67	1.7	102	43-137	mg/Kg
Butyl benzyl phthalate	1.67	2	120	25-135	mg/Kg
4-Chloroaniline	1.67	1.83	110	35-146	mg/Kg
2-Chloronaphthalene	1.67	1.63	97	50-135	mg/Kg
4-Chloro-3-methylphenol	1.67	1.71	103	34-135	mg/Kg
2-Chlorophenol	1.67	1.63	97	31-135	mg/Kg
4-Chlorophenyl phenyl ether	1.67	2.14	128	41-142	mg/Kg
Chrysene	1.67	1.75	105	45-143	mg/Kg
Dibenz[a,h]anthracene	1.67	1.41	85	40-135	mg/Kg
Dibenzofuran	1.67	1.74	104	42-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980811A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS — SW8270C — Analyst: HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
1,3-Dichlorobenzene	1.67	1.4	84	26-135	mg/Kg
1,4-Dichlorobenzene	1.67	1.36	81	25-135	mg/Kg
1,2-Dichlorobenzene	1.67	1.28	77	32-135	mg/Kg
3,3'-Dichlorobenzidine	1.67	2.07	124	25-175	mg/Kg
2,4-Dichlorophenol	1.67	1.91	114	36-135	mg/Kg
2,6-Dichlorophenol	1.67	2.19	131	35-165	mg/Kg
Diethyl phthalate	1.67	1.89	113	27-135	mg/Kg
a,a-Dimethylphenethylamine	1.67	0.69	41	35-165	mg/Kg
2,4-Dimethylphenol	1.67	1.66	99	35-149	mg/Kg
Dimethyl phthalate	1.67	2.12	127	25-175	mg/Kg
Di-n-butyl phthalate	1.67	1.88	113	25-136	mg/Kg
4,6-Dinitro-2-methylphenol	1.67	1.52	91	25-144	mg/Kg
2,4-Dinitrophenol	1.67	1.83	109	25-161	mg/Kg
2,4-Dinitrotoluene	1.67	1.78	106	29-149	mg/Kg
2,6-Dinitrotoluene	1.67	1.84	110	41-135	mg/Kg
Di-n-octyl phthalate	1.67	1.86	112	28-137	mg/Kg
1,2-Diphenylhydrazine	3.33	1.88	56	35-165	mg/Kg
Fluoranthene	1.67	1.86	112	37-135	mg/Kg
Fluorene	1.67	2.07	124	38-149	mg/Kg
Hexachlorobenzene	1.67	1.09	65	36-143	mg/Kg
Hexachlorobutadiene	1.67	1.29	77	25-135	mg/Kg
Hexachlorocyclopentadiene	1.67	1.89	113	31-135	mg/Kg
Hexachloroethane	1.67	1.08	65	25-163	mg/Kg
Indeno[1,2,3-cd]pyrene	1.67	2.37	142	25-170	mg/Kg
Isophorone	1.67	1.4	84	25-175	mg/Kg
3-Methylcholanthrene	1.67	1.98	119	35-165	mg/Kg
2-Methylnaphthalene	1.67	1.77	106	31-135	mg/Kg
2-Methylphenol	1.67	1.54	92	25-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980811A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
4-Methylphenol	1.67	2.72	163	25-135	mg/Kg
Naphthalene	1.67	1.81	108	40-135	mg/Kg
1-Naphthylamine	1.67	2.82	169	35-165	mg/Kg
2-Naphthylamine	1.67	1.84	110	35-165	mg/Kg
2-Nitroaniline	1.67	1.19	71	40-135	mg/Kg
3-Nitroaniline	1.67	1.76	105	41-135	mg/Kg
4-Nitroaniline	1.67	1.69	101	30-153	mg/Kg
Nitrobenzene	1.67	1.24	74	36-143	mg/Kg
2-Nitrophenol	1.67	1.82	109	34-135	mg/Kg
4-Nitrophenol	1.67	0.55	33	25-141	mg/Kg
N-Nitroso-di-n-butylamine	1.67	1.57	93	35-165	mg/Kg
N-Nitrosodiethylamine	1.67	1.63	97	35-165	mg/Kg
N-Nitrosodimethylamine	1.67	0.9	54	35-165	mg/Kg
N-Nitrosodiphenylamine	1.67	3.68	220	25-135	mg/Kg
N-Nitrosodi-n-propylamine	1.67	1.28	77	27-135	mg/Kg
N-Nitrosomethylethylamine	1.67	1.17	70	35-165	mg/Kg
Pentachlorobenzene	1.67	1.54	92	35-165	mg/Kg
Pentachloronitrobenzene	1.67	1.1	66	35-165	mg/Kg
Pentachlorophenol	1.67	1.26	75	38-146	mg/Kg
Phenacetin	1.67	1.63	98	35-165	mg/Kg
Phenanthrene	1.67	1.98	119	44-135	mg/Kg
Phenol	1.67	0.696	42	25-135	mg/Kg
Pyrene	1.67	2.02	121	37-146	mg/Kg
Pyridine	1.67	0.828	50	35-165	mg/Kg
1,2,4,5-Tetrachlorobenzene	1.67	1.64	98	35-165	mg/Kg
2,3,4,6-Tetrachlorophenol	1.67	1.68	101	35-165	mg/Kg
1,2,4-Trichlorobenzene	1.67	1.52	91	34-152	mg/Kg
2,4,5-Trichlorophenol	1.67	2.06	123	29-175	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980811A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
2,4,6-Trichlorophenol	1.67	1.74	104	29-138	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	SVOC2_980811A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS | SW8270C | Analyst: HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	61	25-144
2-Fluorobiphenyl	91	34-135
2-Fluorophenol	53	25-135
Nitrobenzene-d5	72	25-135
Phenol-d5	35	25-135
Terphenyl-d14	59	32-136

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	BLANK	**Prep Date:**	8/7/98
		Date Analyzed:	8/12/98 4:28:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
Acenaphthene	< 0.33	0.33	mg/Kg
Acenaphthylene	< 0.33	0.33	mg/Kg
Acetophenone	< 0.33	0.33	mg/Kg
Aniline	< 0.33	0.33	mg/Kg
Anthracene	< 0.33	0.33	mg/Kg
4-Aminobiphenyl	< 0.33	0.33	mg/Kg
Benzidine	< 0.67	0.67	mg/Kg
Benzo[a]anthracene	< 0.33	0.33	mg/Kg
Benzo[b]fluoranthene	< 0.33	0.33	mg/Kg
Benzo[k]fluoranthene	< 0.33	0.33	mg/Kg
Benzo[g,h,i]perylene	< 0.33	0.33	mg/Kg
Benzo[a]pyrene	< 0.33	0.33	mg/Kg
Benzoic acid	< 0.67	0.67	mg/Kg
Benzyl alcohol	< 0.33	0.33	mg/Kg
Bis(2-chloroethoxy)methane	< 0.33	0.33	mg/Kg
Bis(2-chloroethyl)ether	< 0.33	0.33	mg/Kg
Bis(2-chloroisopropyl)ether	< 0.33	0.33	mg/Kg
Bis(2-ethylhexyl)phthalate	< 0.33	0.33	mg/Kg
4-Bromophenyl phenyl ether	< 0.33	0.33	mg/Kg
Butyl benzyl phthalate	< 0.33	0.33	mg/Kg
4-Chloroaniline	< 0.33	0.33	mg/Kg
2-Chloronaphthalene	< 0.33	0.33	mg/Kg
4-Chloro-3-methylphenol	< 0.33	0.33	mg/Kg
2-Chlorophenol	< 0.33	0.33	mg/Kg
4-Chlorophenyl phenyl ether	< 0.33	0.33	mg/Kg
Chrysene	< 0.33	0.33	mg/Kg
Dibenz[a,h]anthracene	< 0.33	0.33	mg/Kg
Dibenzofuran	< 0.33	0.33	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	BLANK	**Prep Date:**	8/7/98
		Date Analyzed:	8/12/98 4:28:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
1,3-Dichlorobenzene	< 0.33	0.33	mg/Kg
1,4-Dichlorobenzene	< 0.33	0.33	mg/Kg
1,2-Dichlorobenzene	< 0.33	0.33	mg/Kg
3,3´-Dichlorobenzidine	< 0.33	0.33	mg/Kg
2,4-Dichlorophenol	< 0.33	0.33	mg/Kg
2,6-Dichlorophenol	< 0.33	0.33	mg/Kg
Diethyl phthalate	< 0.33	0.33	mg/Kg
a,a-Dimethylphenethylamine	< 0.33	0.33	mg/Kg
2,4-Dimethylphenol	< 0.33	0.33	mg/Kg
Dimethyl phthalate	< 0.33	0.33	mg/Kg
Di-n-butyl phthalate	< 0.33	0.33	mg/Kg
4,6-Dinitro-2-methylphenol	< 0.67	0.67	mg/Kg
2,4-Dinitrophenol	< 0.67	0.67	mg/Kg
2,4-Dinitrotoluene	< 0.33	0.33	mg/Kg
2,6-Dinitrotoluene	< 0.33	0.33	mg/Kg
Di-n-octyl phthalate	< 0.33	0.33	mg/Kg
1,2-Diphenylhydrazine	< 0.67	0.67	mg/Kg
Fluoranthene	< 0.33	0.33	mg/Kg
Fluorene	< 0.33	0.33	mg/Kg
Hexachlorobenzene	< 0.33	0.33	mg/Kg
Hexachlorobutadiene	< 0.33	0.33	mg/Kg
Hexachlorocyclopentadiene	< 0.33	0.33	mg/Kg
Hexachloroethane	< 0.33	0.33	mg/Kg
Indeno[1,2,3-cd]pyrene	< 0.33	0.33	mg/Kg
Isophorone	< 0.33	0.33	mg/Kg
3-Methylcholanthrene	< 0.33	0.33	mg/Kg
2-Methylnaphthalene	< 0.33	0.33	mg/Kg
2-Methylphenol	< 0.33	0.33	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	BLANK	**Prep Date:**	8/7/98
		Date Analyzed:	8/12/98 4:28:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
4-Methylphenol	< 0.33	0.33	mg/Kg
Naphthalene	< 0.33	0.33	mg/Kg
1-Naphthylamine	< 0.33	0.33	mg/Kg
2-Naphthylamine	< 0.33	0.33	mg/Kg
2-Nitroaniline	< 0.33	0.33	mg/Kg
3-Nitroaniline	< 0.33	0.33	mg/Kg
4-Nitroaniline	< 0.33	0.33	mg/Kg
Nitrobenzene	< 0.33	0.33	mg/Kg
2-Nitrophenol	< 0.33	0.33	mg/Kg
4-Nitrophenol	< 0.67	0.67	mg/Kg
N-Nitroso-di-n-butylamine	< 0.33	0.33	mg/Kg
N-Nitrosodiethylamine	< 0.33	0.33	mg/Kg
N-Nitrosodimethylamine	< 0.33	0.33	mg/Kg
N-Nitrosodiphenylamine	< 0.33	0.33	mg/Kg
N-Nitrosodi-n-propylamine	< 0.33	0.33	mg/Kg
N-Nitrosomethylethylamine	< 0.33	0.33	mg/Kg
Pentachlorobenzene	< 0.33	0.33	mg/Kg
Pentachloronitrobenzene	< 0.33	0.33	mg/Kg
Pentachlorophenol	< 0.67	0.67	mg/Kg
Phenacetin	< 0.33	0.33	mg/Kg
Phenanthrene	< 0.33	0.33	mg/Kg
Phenol	< 0.33	0.33	mg/Kg
Pyrene	< 0.33	0.33	mg/Kg
Pyridine	< 0.33	0.33	mg/Kg
1,2,4,5-Tetrachlorobenzene	< 0.33	0.33	mg/Kg
2,3,4,6-Tetrachlorophenol	< 0.33	0.33	mg/Kg
1,2,4-Trichlorobenzene	< 0.33	0.33	mg/Kg
2,4,5-Trichlorophenol	< 0.33	0.33	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	BLANK	**Prep Date:**	8/7/98
		Date Analyzed:	8/12/98 4:28:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Result	Report Limit	Units:
2,4,6-Trichlorophenol	< 0.33	0.33	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	SVOC2_980812A
Lab ID:	BLANK	**Prep Date:**	8/7/98
		Date Analyzed:	8/12/98 4:28:00 PM

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	31	25-144
2-Fluorobiphenyl	60	35-135
2-Fluorophenol	51	25-135
Nitrobenzene-d5	48	25-135
Phenol-d5	107	25-135
Terphenyl-d14	37	32-136

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Client: Anderson Columbia Environ
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT
Lab ID: 9808004-34A

Date: *19-Aug-98*
Matrix: Soil
Batch ID: SVOC2_980812A
Prep Date: 8/7/98
Date Analyzed: 8/12/98 7:19:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Acenaphthene	1.67	1.291	77	39-135	1.27	76	2	30	mg/Kg
Acenaphthylene	1.67	1.22	73	37-135	1.25	75	2	30	mg/Kg
Acetophenone	1.67	0.932	56	35-165	0.89	53	5	30	mg/Kg
Aniline	1.67	0.776	46	35-165	0.76	46	2	30	mg/Kg
Anthracene	1.67	1.326	79	35-175	1.31	79	1	30	mg/Kg
4-Aminobiphenyl	1.67	1.2	72	35-165	1.09	65	9	30	mg/Kg
Benzidine	3.33	0	0	35-165	0.06	2	0	30	mg/Kg
Benzo[a]anthracene	1.67	1.129	67	41-143	1.32	78	15	30	mg/Kg
Benzo[b]fluoranthene	1.67	1.703	101	27-135	1.67	99	2	30	mg/Kg
Benzo[k]fluoranthene	1.67	1.433	85	27-135	1.47	87	3	30	mg/Kg
Benzo[g,h,i]perylene	1.67	1.601	96	25-159	1.23	74	26	30	mg/Kg
Benzo[a]pyrene	1.67	1.478	89	31-135	1.47	88	1	30	mg/Kg
Benzoic acid	3.33	0.858	26	25-172	1.14	34	28	30	mg/Kg
Benzyl alcohol	1.67	1.614	97	25-135	1.58	95	2	30	mg/Kg
Bis(2-chloroethoxy)methane	1.67	0.907	54	39-135	0.89	53	2	30	mg/Kg
Bis(2-chloroethyl)ether	1.67	1.039	62	34-135	0.83	49	23	30	mg/Kg
Bis(2-chloroisopropyl)ether	1.67	0.689	41	26-175	0.68	41	1	30	mg/Kg
Bis(2-ethylhexyl)phthalate	1.67	2.109	126	25-139	1.99	119	6	30	mg/Kg
4-Bromophenyl phenyl ether	1.67	1.383	83	43-137	1.28	77	8	30	mg/Kg
Butyl benzyl phthalate	1.67	1.883	113	25-135	1.9	114	1	30	mg/Kg
4-Chloroaniline	1.67	1.056	63	35-146	1.04	62	2	30	mg/Kg
2-Chloronaphthalene	1.67	1.033	62	50-135	1.05	63	1	30	mg/Kg
4-Chloro-3-methylphenol	1.67	1.09	65	34-135	1.07	64	2	30	mg/Kg
2-Chlorophenol	1.67	1.012	61	31-135	0.97	58	4	30	mg/Kg
4-Chlorophenyl phenyl ether	1.67	1.413	85	41-142	1.47	88	4	30	mg/Kg
Chrysene	1.67	1.383	83	45-143	1.3	78	6	30	mg/Kg

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	9808004-34A	**Prep Date:**	8/7/98
		Date Analyzed:	8/12/98 7:19:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Dibenz[a,h]anthracene	1.67	1.434	86	40-135	1.21	72	17	30	mg/Kg
Dibenzofuran	1.67	1.092	65	42-135	1.1	66	1	30	mg/Kg
1,3-Dichlorobenzene	1.67	0.982	59	26-135	1.03	62	5	30	mg/Kg
1,4-Dichlorobenzene	1.67	1.005	60	25-135	1	60	1	30	mg/Kg
1,2-Dichlorobenzene	1.67	0.928	56	32-135	0.96	57	3	30	mg/Kg
3,3´-Dichlorobenzidine	1.67	0.637	38	25-175	0.56	34	13	30	mg/Kg
2,4-Dichlorophenol	1.67	1.197	72	36-135	1.16	69	3	30	mg/Kg
2,6-Dichlorophenol	1.67	1.395	84	35-165	1.34	81	4	30	mg/Kg
Diethyl phthalate	1.67	1.445	87	27-135	1.41	84	2	30	mg/Kg
a,a-Dimethylphenethylamine	1.67	0.072	4	35-165	0.04	2	0	30	mg/Kg
2,4-Dimethylphenol	1.67	0.78	47	35-149	0.78	46	1	30	mg/Kg
Dimethyl phthalate	1.67	1.436	86	25-175	1.44	86	0	30	mg/Kg
Di-n-butyl phthalate	1.67	1.611	96	25-136	1.4	84	14	30	mg/Kg
4,6-Dinitro-2-methylphenol	1.67	0.561	34	25-144	0.4	24	0	30	mg/Kg
2,4-Dinitrophenol	1.67	0.49	29	25-161	0.33	20	0	30	mg/Kg
2,4-Dinitrotoluene	1.67	1.127	68	29-149	1.08	65	4	30	mg/Kg
2,6-Dinitrotoluene	1.67	1.229	74	41-135	1.19	71	3	30	mg/Kg
Di-n-octyl phthalate	1.67	1.949	117	28-137	2.35	141	19	30	mg/Kg
1,2-Diphenylhydrazine	3.33	1.358	41	35-165	1.29	39	5	30	mg/Kg
Fluoranthene	1.67	1.245	74	37-135	1.21	72	3	30	mg/Kg
Fluorene	1.67	1.387	83	38-149	1.36	82	2	30	mg/Kg
Hexachlorobenzene	1.67	0.838	50	36-143	0.87	52	3	30	mg/Kg
Hexachlorobutadiene	1.67	0.977	58	25-135	1.02	61	4	30	mg/Kg
Hexachlorocyclopentadiene	1.67	0.833	50	31-135	0.67	40	22	30	mg/Kg
Hexachloroethane	1.67	0.759	43	25-163	0.73	41	4	30	mg/Kg
Indeno[1,2,3-cd]pyrene	1.67	1.501	90	25-170	1.21	73	21	30	mg/Kg

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	9808004-34A	**Prep Date:**	8/7/98
		Date Analyzed:	8/12/98 7:19:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Isophorone	1.67	0.833	50	25-175	0.82	49	1	30	mg/Kg
3-Methylcholanthrene	1.67	1.457	87	35-165	1.34	80	9	30	mg/Kg
2-Methylnaphthalene	1.67	1.092	65	31-135	1.07	64	2	30	mg/Kg
2-Methylphenol	1.67	0.977	58	25-135	0.96	58	1	30	mg/Kg
4-Methylphenol	1.67	2.016	121	25-135	1.95	117	3	30	mg/Kg
Naphthalene	1.67	1.154	69	40-135	1.17	70	1	30	mg/Kg
1-Naphthylamine	1.67	0.771	46	35-165	0.7	42	10	30	mg/Kg
2-Naphthylamine	1.67	0.158	9	35-165	0.15	9	0	30	mg/Kg
2-Nitroaniline	1.67	0.746	45	40-135	0.74	44	1	30	mg/Kg
3-Nitroaniline	1.67	1.108	66	41-135	1.11	67	0	30	mg/Kg
4-Nitroaniline	1.67	0.981	59	30-153	0.92	55	6	30	mg/Kg
Nitrobenzene	1.67	0.747	45	36-143	0.76	45	1	30	mg/Kg
2-Nitrophenol	1.67	1.064	64	34-135	1.04	62	2	30	mg/Kg
4-Nitrophenol	1.67	0.741	44	25-141	0.70	42	5	30	mg/Kg
N-Nitroso-di-n-butylamine	1.67	0.931	56	35-165	0.93	55	1	30	mg/Kg
N-Nitrosodiethylamine	1.67	0.978	58	35-165	1	60	2	30	mg/Kg
N-Nitrosodimethylamine	1.67	0.368	22	35-165	0.38	23	4	30	mg/Kg
N-Nitrosodiphenylamine	1.67	2.781	167	25-135	2.64	158	5	30	mg/Kg
N-Nitrosodi-n-propylamine	1.67	0.893	53	27-135	0.82	48	9	30	mg/Kg
N-Nitrosomethylethylamine	1.67	0.76	45	35-165	0.65	38	16	30	mg/Kg
Pentachlorobenzene	1.67	1.03	62	35-165	1	60	3	30	mg/Kg
Pentachloronitrobenzene	1.67	0.949	57	35-165	0.85	51	11	30	mg/Kg
Pentachlorophenol	1.67	0.949	57	38-146	0.83	50	13	30	mg/Kg
Phenacetin	1.67	1.193	71	35-165	1.06	64	12	30	mg/Kg
Phenanthrene	1.67	1.443	86	44-135	1.38	83	4	30	mg/Kg
Phenol	1.67	0.848	51	25-135	0.83	50	2	30	mg/Kg

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	9808004-34A	**Prep Date:**	8/7/98
		Date Analyzed:	8/12/98 7:19:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Pyrene	1.67	1.83	109	37-146	1.87	111	2	30	mg/Kg
Pyridine	1.67	0.78	47	35-165	0.74	44	5	30	mg/Kg
1,2,4,5-Tetrachlorobenzene	1.67	1.181	71	35-165	1.31	78	10	30	mg/Kg
2,3,4,6-Tetrachlorophenol	1.67	1.148	69	35-165	1.18	70	2	30	mg/Kg
1,2,4-Trichlorobenzene	1.67	1.071	64	34-152	1.09	65	1	30	mg/Kg
2,4,5-Trichlorophenol	1.67	1.459	87	29-175	1.44	86	1	30	mg/Kg
2,4,6-Trichlorophenol	1.67	1.164	70	29-138	1.18	71	1	30	mg/Kg

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	SVOC2_980812A
Lab ID:	9808004-34A	**Prep Date:**	8/7/98
		Date Analyzed:	8/12/98 7:19:00 PM

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	MS % Recovery	Control Limits	MSD % Recovery
2,4,6-Tribromophenol	40	25-144	44
2-Fluorobiphenyl	59	34-135	60
2-Fluorophenol	46	25-135	47
Nitrobenzene-d5	40	25-135	41
Phenol-d5	46	25-135	46
Terphenyl-d14	71	32-136	74

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acenaphthene	1.67	1.94	116	39-135	mg/Kg
Acenaphthylene	1.67	1.9	114	37-135	mg/Kg
Acetophenone	1.67	1.49	89	35-165	mg/Kg
Aniline	1.67	1.25	75	35-165	mg/Kg
Anthracene	1.67	1.94	116	35-175	mg/Kg
4-Aminobiphenyl	1.67	2.85	171	35-165	mg/Kg
Benzidine	3.33	4.34	130	35-165	mg/Kg
Benzo[a]anthracene	1.67	2.12	127	41-143	mg/Kg
Benzo[b]fluoranthene	1.67	1.68	101	27-135	mg/Kg
Benzo[k]fluoranthene	1.67	1.89	113	27-135	mg/Kg
Benzo[g,h,i]perylene	1.67	1.61	96	25-159	mg/Kg
Benzo[a]pyrene	1.67	1.64	98	31-135	mg/Kg
Benzoic acid	3.33	0.852	26	25-172	mg/Kg
Benzyl alcohol	1.67	1.45	87	25-135	mg/Kg
Bis(2-chloroethoxy)methane	1.67	1.52	91	39-135	mg/Kg
Bis(2-chloroethyl)ether	1.67	1.52	91	34-135	mg/Kg
Bis(2-chloroisopropyl)ether	1.67	1.12	67	26-175	mg/Kg
Bis(2-ethylhexyl)phthalate	1.67	2.08	125	25-139	mg/Kg
4-Bromophenyl phenyl ether	1.67	1.7	102	43-137	mg/Kg
Butyl benzyl phthalate	1.67	2	120	25-135	mg/Kg
4-Chloroaniline	1.67	1.83	110	35-146	mg/Kg
2-Chloronaphthalene	1.67	1.63	97	50-135	mg/Kg
4-Chloro-3-methylphenol	1.67	1.71	103	34-135	mg/Kg
2-Chlorophenol	1.67	1.63	97	31-135	mg/Kg
4-Chlorophenyl phenyl ether	1.67	2.14	128	41-142	mg/Kg
Chrysene	1.67	1.75	105	45-143	mg/Kg
Dibenz[a,h]anthracene	1.67	1.41	85	40-135	mg/Kg
Dibenzofuran	1.67	1.74	104	42-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
1,3-Dichlorobenzene	1.67	1.4	84	26-135	mg/Kg
1,4-Dichlorobenzene	1.67	1.36	81	25-135	mg/Kg
1,2-Dichlorobenzene	1.67	1.28	77	32-135	mg/Kg
3,3´-Dichlorobenzidine	1.67	2.07	124	25-175	mg/Kg
2,4-Dichlorophenol	1.67	1.91	114	36-135	mg/Kg
2,6-Dichlorophenol	1.67	2.19	131	35-165	mg/Kg
Diethyl phthalate	1.67	1.89	113	27-135	mg/Kg
a,a-Dimethylphenethylamine	1.67	0.69	41	35-165	mg/Kg
2,4-Dimethylphenol	1.67	1.66	99	35-149	mg/Kg
Dimethyl phthalate	1.67	2.12	127	25-175	mg/Kg
Di-n-butyl phthalate	1.67	1.88	113	25-136	mg/Kg
4,6-Dinitro-2-methylphenol	1.67	1.52	91	25-144	mg/Kg
2,4-Dinitrophenol	1.67	1.83	109	25-161	mg/Kg
2,4-Dinitrotoluene	1.67	1.78	106	29-149	mg/Kg
2,6-Dinitrotoluene	1.67	1.84	110	41-135	mg/Kg
Di-n-octyl phthalate	1.67	1.86	112	28-137	mg/Kg
1,2-Diphenylhydrazine	3.33	1.88	56	35-165	mg/Kg
Fluoranthene	1.67	1.86	112	37-135	mg/Kg
Fluorene	1.67	2.07	124	38-149	mg/Kg
Hexachlorobenzene	1.67	1.09	65	36-143	mg/Kg
Hexachlorobutadiene	1.67	1.29	77	25-135	mg/Kg
Hexachlorocyclopentadiene	1.67	1.89	113	31-135	mg/Kg
Hexachloroethane	1.67	1.08	65	25-163	mg/Kg
Indeno[1,2,3-cd]pyrene	1.67	2.37	142	25-170	mg/Kg
Isophorone	1.67	1.4	84	25-175	mg/Kg
3-Methylcholanthrene	1.67	1.98	119	35-165	mg/Kg
2-Methylnaphthalene	1.67	1.77	106	31-135	mg/Kg
2-Methylphenol	1.67	1.54	92	25-135	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
4-Methylphenol	1.67	2.72	163	25-135	mg/Kg
Naphthalene	1.67	1.81	108	40-135	mg/Kg
1-Naphthylamine	1.67	2.82	169	35-165	mg/Kg
2-Naphthylamine	1.67	1.84	110	35-165	mg/Kg
2-Nitroaniline	1.67	1.19	71	40-135	mg/Kg
3-Nitroaniline	1.67	1.76	105	41-135	mg/Kg
4-Nitroaniline	1.67	1.69	101	30-153	mg/Kg
Nitrobenzene	1.67	1.24	74	36-143	mg/Kg
2-Nitrophenol	1.67	1.82	109	34-135	mg/Kg
4-Nitrophenol	1.67	0.55	33	25-141	mg/Kg
N-Nitroso-di-n-butylamine	1.67	1.57	94	35-165	mg/Kg
N-Nitrosodiethylamine	1.67	1.63	97	35-165	mg/Kg
N-Nitrosodimethylamine	1.67	0.9	54	35-165	mg/Kg
N-Nitrosodiphenylamine	1.67	3.68	220	25-135	mg/Kg
N-Nitrosodi-n-propylamine	1.67	1.28	77	27-135	mg/Kg
N-Nitrosomethylethylamine	1.67	1.17	70	35-165	mg/Kg
Pentachlorobenzene	1.67	1.54	92	35-165	mg/Kg
Pentachloronitrobenzene	1.67	1.1	66	35-165	mg/Kg
Pentachlorophenol	1.67	1.26	75	38-146	mg/Kg
Phenacetin	1.67	1.63	98	35-165	mg/Kg
Phenanthrene	1.67	1.98	119	44-135	mg/Kg
Phenol	1.67	0.696	42	25-135	mg/Kg
Pyrene	1.67	2.02	121	37-146	mg/Kg
Pyridine	1.67	0.828	50	35-165	mg/Kg
1,2,4,5-Tetrachlorobenzene	1.67	1.64	98	35-165	mg/Kg
2,3,4,6-Tetrachlorophenol	1.67	1.68	101	35-165	mg/Kg
1,2,4-Trichlorobenzene	1.67	1.52	91	34-152	mg/Kg
2,4,5-Trichlorophenol	1.67	2.06	123	29-175	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	SVOC2_980812A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
2,4,6-Trichlorophenol	1.67	1.74	104	29-138	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*19-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	SVOC2_980812A
Lab ID:	LCS	**Prep Date:**	8/7/98
		Date Analyzed:	8/11/98 5:41:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** HM

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	61	25-144
2-Fluorobiphenyl	91	34-135
2-Fluorophenol	53	25-135
Nitrobenzene-d5	72	25-135
Phenol-d5	35	25-135
Terphenyl-d14	59	32-136

SOILS ANALYSIS

Total Petroleum Hydrocarbons

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CLIENT: Anderson Columbia Environmental, Inc.
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT

Date: *18-Aug-98*
Matrix: SOIL

TPH EXTRACTION BY SOXHLET — **SW9071/418.1** — **Analyst:** SLF

Lab ID	Chemron ID	Client ID	Collection Date	Analyses	Result	Report Limit	Units	Dilution	Date Analyzed
9808004-03A	73038	LHAAP/49-W-1	7/28/98 1:00:00	Petroleum Hydrocarbons	27	10	mg/Kg	1	8/17/98
9808004-04A	73039	LHAAP/49-W-2	7/28/98 1:10:00	Petroleum Hydrocarbons	13	10	mg/Kg	1	8/17/98
9808004-05A	73040	LHAAP/49-W-3	7/28/98 1:20:00	Petroleum Hydrocarbons	26	10	mg/Kg	1	8/17/98
9808004-06A	73041	LHAAP/49-W-4	7/28/98 1:45:00	Petroleum Hydrocarbons	171	10	mg/Kg	1	8/17/98
9808004-07A	73042	LHAAP/49-W-5	7/28/98 1:55:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-08A	73043	LHAAP/49-W-6	7/28/98 2:20:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-09A	73044	LHAAP/49-W-7	7/28/98 2:40:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-10A	73045	LHAAP/49-W-8	7/28/98 3:00:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-11A	73046	LHAAP/49-W-9	7/28/98 3:10:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-12A	73047	LHAAP/49-W-10	7/28/98 3:25:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-13A	73048	LHAAP/49-W-11	7/28/98 3:40:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-14A	73049	LHAAP/49-W-12	7/28/98 3:50:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-15A	73050	LHAAP/49-W-13	7/28/98 4:05:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-18A	73053	LHAAP/811-1-1	7/30/98 9:25:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-19A	73054	LHAAP/811-1-2	7/30/98 9:35:00	Petroleum Hydrocarbons	298	10	mg/Kg	1	8/17/98
9808004-20A	73055	LHAAP/81-1-3	7/30/98 9:40:00	Petroleum Hydrocarbons	185	10	mg/Kg	1	8/17/98

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CLIENT: Anderson Columbia Environmental, Inc.
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT

Date: *18-Aug-98*
Matrix: SOIL

TPH EXTRACTION BY SOXHLET — **SW9071/418.1** — **Analyst:** SLF

Lab ID	Chemron ID	Client ID	Collection Date	Analyses	Result	Report Limit	Units	Dilution	Date Analyzed
9808004-21A	73056	LHAAP/811-1-5	7/30/98 10:00:00	Petroleum Hydrocarbons	21	10	mg/Kg	1	8/17/98
9808004-22A	73057	LHAAP/811-1-6	7/30/98 10:10:00	Petroleum Hydrocarbons	28	10	mg/Kg	1	8/17/98
9808004-27A	73062	LHAAP/31-W-1	7/30/98 11:50:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-28A	73063	LHAAP/31-W-2	7/30/98 12:00:00	Petroleum Hydrocarbons	62	10	mg/Kg	1	8/17/98
9808004-29A	73064	LHAAP/31-W-3	7/30/98 12:50:00	Petroleum Hydrocarbons	18	10	mg/Kg	1	8/17/98
9808004-30A	73065	LHAAP/31-W-4	7/30/98 1:20:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-31A	73066	LHAAP/31-W-5	7/30/98 1:40:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-32A	73067	LHAAP/31-W-6	7/30/98 2:00:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-33A	73068	LHAAP/31-W-7	7/30/98 2:55:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-34A	73069	LHAAP/31-W-8	7/30/98 3:20:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-35A	73070	LHAAP/31-W-9	7/30/98 3:50:00	Petroleum Hydrocarbons	331	10	mg/Kg	1	8/17/98
9808004-36A	73071	LHAAP/31-W-10	7/30/98 4:20:00	Petroleum Hydrocarbons	26	10	mg/Kg	1	8/17/98
9808004-37A	73072	LHAAP/31-W-11	7/30/98 4:50:00	Petroleum Hydrocarbons	12	10	mg/Kg	1	8/17/98
9808004-38A	73073	LHAAP/31-W-12	7/30/98 5:10:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98
9808004-39A	73074	LHAAP/31-W-13	7/30/98 5:30:00	Petroleum Hydrocarbons	< 10	10	mg/Kg	1	8/17/98

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CLIENT: Anderson Columbia Environmental, Inc.
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT

Date: *18-Aug-98*
Matrix: SOIL

TPH EXTRACTION BY SOXHLET — **SW9071/418.1** — **Analyst:** SLF

Lab ID	Chemron ID	Client ID	Collection Date	Analyses	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Oldham

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980817A
Lab ID:	MBlank	**Prep Date:**	8/13/98
		Date Analyzed:	8/17/98

QUALITY CONTROL REPORT

Method Blank

TPH EXTRACTION BY SOXHLET **SW9071/418.1** **Analyst:** SLF

Analyte	Result	Report Limit	Units:
Petroleum Hydrocarbons, TR	< 10	10	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980817A
Lab ID:	9808004-03A	**Prep Date:**	8/13/98
		Date Analyzed:	8/17/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

TPH EXTRACTION BY SOXHLET SW9071/418.1 **Analyst:** SLF

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Petroleum Hydrocarbons, TR	200	235	104	75-125	245	109	4	30	mg/Kg

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980817A
Lab ID:	LCS	**Prep Date:**	8/13/98
		Date Analyzed:	8/17/98

QUALITY CONTROL REPORT

Laboratory Control Sample

TPH EXTRACTION BY SOXHLET SW9071/418.1 **Analyst:** SLF

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Petroleum Hydrocarbons, TR	200	214	107	75-125	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980817B
Lab ID:	MBlank	**Prep Date:**	8/14/98
		Date Analyzed:	8/17/98

QUALITY CONTROL REPORT

Method Blank

TPH EXTRACTION BY SOXHLET — **SW9071/418.1** — **Analyst:** SLF

Analyte	Result	Report Limit	Units:
Petroleum Hydrocarbons, TR	< 10	10	mg/Kg

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980817B
Lab ID:	9808004-30A	**Prep Date:**	8/14/98
		Date Analyzed:	8/17/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

TPH EXTRACTION BY SOXHLET **SW9071/418.1** **Analyst:** SLF

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Petroleum Hydrocarbons, TR	200	237	119	75-125	213	107	11	30	mg/Kg

* MS/MSD results reflect the amount spiked + the parent sample concentration.

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Client:	Anderson Columbia Environ	**Date:**	*18-Aug-98*
Lab Order:	9808004	**Matrix:**	Soil
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980817B
Lab ID:	LCS	**Prep Date:**	8/14/98
		Date Analyzed:	8/17/98

QUALITY CONTROL REPORT

Laboratory Control Sample

TPH EXTRACTION BY SOXHLET — **SW9071/418.1** — **Analyst:** SLF

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Petroleum Hydrocarbons, TR	200	203	102	75-125	mg/Kg

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CLIENT: Anderson Columbia Environmental, Inc.
Lab Order: 9808004
Project: 8502 LONGHORN ARMY AMMO PLANT

Date: *17-Aug-98*
Matrix: WATER

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Lab ID	Chemron ID	Client ID	Collection Date	Analyses	Result	Report Limit	Units	Dilution	Date Analyzed
9808004-01A	73036	LHAAP/49-W-WASH	7/28/98 12:00:00	Petroleum Hydrocarbons	2.31	0.5	mg/L	1	8/14/98
9808004-02A	73037	LHAAP/49-2-RINSE	7/28/98 12:05:00	Petroleum Hydrocarbons	37.7	5	mg/L	10	8/14/98
9808004-23A	73058	LHAAP/811-1-WASH	7/29/98 2:15:00	Petroleum Hydrocarbons	24.6	0.5	mg/L	1	8/14/98
9808004-24A	73059	LHAAP/811-1-RINSE	7/29/98 5:30:00	Petroleum Hydrocarbons	3.34	0.5	mg/L	1	8/14/98
9808004-25A	73060	LHAAP/31-W-WASH	7/30/98 11:45:00	Petroleum Hydrocarbons	61.3	5	mg/L	10	8/14/98
9808004-26A	73061	LHAAP/31-W-RINSE	7/30/98 3:30:00	Petroleum Hydrocarbons	< 0.5	0.5	mg/L	1	8/14/98

Approved by: R. Aldrich

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980814A
Lab ID:	MBlank	**Prep Date:**	8/14/98
		Date Analyzed:	8/14/98

QUALITY CONTROL REPORT

Method Blank

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Result	Report Limit	Units:
Petroleum Hydrocarbons, TR	< 0.5	0.5	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	IR_980814A
Lab ID:	LCS	**Prep Date:**	8/14/98
		Date Analyzed:	8/14/98

QUALITY CONTROL REPORT

Laboratory Control Sample

PETROLEUM HYDROCARBONS, T/R E418.1 **Analyst:** SLF

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Petroleum Hydrocarbons, TR	2	2.18	109	73-119	mg/L

TRIP BLANKS

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/TRIP BLANK
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-41A	**Batch ID:**	VOC2_980810A
Chemron ID:	73076	**Prep Date:**	8/10/98 8:10:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	16.9	10	ug/L	1	8/10/98 8:10:00 PM
Acrolein	< 5	5	ug/L	1	8/10/98 8:10:00 PM
Acrylonitrile	< 4	4	ug/L	1	8/10/98 8:10:00 PM
Allyl chloride	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Benzene	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Bromodichloromethane	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Bromoform	< 2	2	ug/L	1	8/10/98 8:10:00 PM
Bromomethane	< 6	6	ug/L	1	8/10/98 8:10:00 PM
2-Butanone	< 10	10	ug/L	1	8/10/98 8:10:00 PM
Carbon disulfide	< 5	5	ug/L	1	8/10/98 8:10:00 PM
Carbon tetrachloride	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Chlorobenzene	< 4	4	ug/L	1	8/10/98 8:10:00 PM
Chloroethane	< 2	2	ug/L	1	8/10/98 8:10:00 PM
2-Chloroethylvinylether	< 10	10	ug/L	1	8/10/98 8:10:00 PM
Chloroform	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Chloromethane	< 5	5	ug/L	1	8/10/98 8:10:00 PM
Dibromochloromethane	< 3	3	ug/L	1	8/10/98 8:10:00 PM
1,2-Dibromo-3-chloropropane	< 6	6	ug/L	1	8/10/98 8:10:00 PM
1,2-Dibromoethane	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Dibromomethane	< 2	2	ug/L	1	8/10/98 8:10:00 PM
1,2-Dichlorobenzene	< 5	5	ug/L	1	8/10/98 8:10:00 PM
1,3-Dichlorobenzene	< 5	5	ug/L	1	8/10/98 8:10:00 PM
1,4-Dichlorobenzene	< 6	6	ug/L	1	8/10/98 8:10:00 PM
trans-1,4-Dichloro-2-butene	< 4	4	ug/L	1	8/10/98 8:10:00 PM
Dichlorodifluoromethane	< 3	3	ug/L	1	8/10/98 8:10:00 PM
1,1-Dichloroethane	< 3	3	ug/L	1	8/10/98 8:10:00 PM
1,2-Dichloroethane	< 3	3	ug/L	1	8/10/98 8:10:00 PM
1,1-Dichloroethene	< 5	5	ug/L	1	8/10/98 8:10:00 PM
cis-1,2-Dichloroethene	< 4	4	ug/L	1	8/10/98 8:10:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/TRIP BLANK
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-41A	**Batch ID:**	VOC2_980810A
Chemron ID:	73076	**Prep Date:**	8/10/98 8:10:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 4	4	ug/L	1	8/10/98 8:10:00 PM
Methylene chloride	< 4	4	ug/L	1	8/10/98 8:10:00 PM
1,2-Dichloropropane	< 2	2	ug/L	1	8/10/98 8:10:00 PM
cis-1,3-Dichloropropene	< 2	2	ug/L	1	8/10/98 8:10:00 PM
trans-1,3-Dichloropropene	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Diethyl ether	< 5	5	ug/L	1	8/10/98 8:10:00 PM
Ethylbenzene	< 5	5	ug/L	1	8/10/98 8:10:00 PM
Ethyl methacrylate	< 5	5	ug/L	1	8/10/98 8:10:00 PM
2-Hexanone	< 6	6	ug/L	1	8/10/98 8:10:00 PM
Methacrylonitrile	< 5	5	ug/L	1	8/10/98 8:10:00 PM
Iodomethane	< 5	5	ug/L	1	8/10/98 8:10:00 PM
Methyl methacrylate	< 4	4	ug/L	1	8/10/98 8:10:00 PM
4-Methyl-2-pentanone	< 10	10	ug/L	1	8/10/98 8:10:00 PM
Propionitrile	< 10	10	ug/L	1	8/10/98 8:10:00 PM
Styrene	< 4	4	ug/L	1	8/10/98 8:10:00 PM
1,1,1,2-Tetrachloroethane	< 5	5	ug/L	1	8/10/98 8:10:00 PM
1,1,2,2-Tetrachloroethane	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Tetrachloroethene	< 5	5	ug/L	1	8/10/98 8:10:00 PM
Toluene	< 3	3	ug/L	1	8/10/98 8:10:00 PM
1,1,1-Trichloroethane	< 5	5	ug/L	1	8/10/98 8:10:00 PM
1,1,2-Trichloroethane	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Trichloroethene	< 2	2	ug/L	1	8/10/98 8:10:00 PM
Trichlorofluoromethane	< 5	5	ug/L	1	8/10/98 8:10:00 PM
1,2,3-Trichloropropane	< 3	3	ug/L	1	8/10/98 8:10:00 PM
Vinyl acetate	< 10	10	ug/L	1	8/10/98 8:10:00 PM
Vinyl chloride	< 3	3	ug/L	1	8/10/98 8:10:00 PM
m,p-Xylene	< 5	5	ug/L	1	8/10/98 8:10:00 PM
o-Xylene	< 4	4	ug/L	1	8/10/98 8:10:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/TRIP BLANK
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-41A	**Batch ID:**	VOC2_980810A
Chemron ID:	73076	**Prep Date:**	8/10/98 8:10:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/TRIP BLANK
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project ID:		**Matrix:**	WATER
Lab ID:	9808004-41A	**Batch ID:**	VOC2_980810A
Chemron ID:	73076	**Prep Date:**	8/10/98 8:10:00 PM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	96.	62-125
4-Bromofluorobenzene	98.	75-125
Dibromofluoromethane	104.	75-125
Toluene-d8	90.	75-125

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	TRIP BLANK2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-42A	**Batch ID:**	VOC2_980810A
Chemron ID:	73077	**Prep Date:**	8/10/98 9:37:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	301	10	ug/L	1	8/10/98 9:37:00 PM
Acrolein	< 5	5	ug/L	1	8/10/98 9:37:00 PM
Acrylonitrile	< 4	4	ug/L	1	8/10/98 9:37:00 PM
Allyl chloride	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Benzene	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Bromodichloromethane	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Bromoform	< 2	2	ug/L	1	8/10/98 9:37:00 PM
Bromomethane	< 6	6	ug/L	1	8/10/98 9:37:00 PM
2-Butanone	< 10	10	ug/L	1	8/10/98 9:37:00 PM
Carbon disulfide	< 5	5	ug/L	1	8/10/98 9:37:00 PM
Carbon tetrachloride	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Chlorobenzene	< 4	4	ug/L	1	8/10/98 9:37:00 PM
Chloroethane	< 2	2	ug/L	1	8/10/98 9:37:00 PM
2-Chloroethylvinylether	< 10	10	ug/L	1	8/10/98 9:37:00 PM
Chloroform	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Chloromethane	< 5	5	ug/L	1	8/10/98 9:37:00 PM
Dibromochloromethane	< 3	3	ug/L	1	8/10/98 9:37:00 PM
1,2-Dibromo-3-chloropropane	< 6	6	ug/L	1	8/10/98 9:37:00 PM
1,2-Dibromoethane	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Dibromomethane	< 2	2	ug/L	1	8/10/98 9:37:00 PM
1,2-Dichlorobenzene	< 5	5	ug/L	1	8/10/98 9:37:00 PM
1,3-Dichlorobenzene	< 5	5	ug/L	1	8/10/98 9:37:00 PM
1,4-Dichlorobenzene	< 6	6	ug/L	1	8/10/98 9:37:00 PM
trans-1,4-Dichloro-2-butene	< 4	4	ug/L	1	8/10/98 9:37:00 PM
Dichlorodifluoromethane	< 3	3	ug/L	1	8/10/98 9:37:00 PM
1,1-Dichloroethane	< 3	3	ug/L	1	8/10/98 9:37:00 PM
1,2-Dichloroethane	< 3	3	ug/L	1	8/10/98 9:37:00 PM
1,1-Dichloroethene	< 5	5	ug/L	1	8/10/98 9:37:00 PM
cis-1,2-Dichloroethene	< 4	4	ug/L	1	8/10/98 9:37:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	TRIP BLANK2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-42A	**Batch ID:**	VOC2_980810A
Chemron ID:	73077	**Prep Date:**	8/10/98 9:37:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 4	4	ug/L	1	8/10/98 9:37:00 PM
Methylene chloride	< 4	4	ug/L	1	8/10/98 9:37:00 PM
1,2-Dichloropropane	< 2	2	ug/L	1	8/10/98 9:37:00 PM
cis-1,3-Dichloropropene	< 2	2	ug/L	1	8/10/98 9:37:00 PM
trans-1,3-Dichloropropene	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Diethyl ether	< 5	5	ug/L	1	8/10/98 9:37:00 PM
Ethylbenzene	< 5	5	ug/L	1	8/10/98 9:37:00 PM
Ethyl methacrylate	< 5	5	ug/L	1	8/10/98 9:37:00 PM
2-Hexanone	< 6	6	ug/L	1	8/10/98 9:37:00 PM
Methacrylonitrile	< 5	5	ug/L	1	8/10/98 9:37:00 PM
Iodomethane	< 5	5	ug/L	1	8/10/98 9:37:00 PM
Methyl methacrylate	< 4	4	ug/L	1	8/10/98 9:37:00 PM
4-Methyl-2-pentanone	< 10	10	ug/L	1	8/10/98 9:37:00 PM
Propionitrile	< 10	10	ug/L	1	8/10/98 9:37:00 PM
Styrene	< 4	4	ug/L	1	8/10/98 9:37:00 PM
1,1,1,2-Tetrachloroethane	< 5	5	ug/L	1	8/10/98 9:37:00 PM
1,1,2,2-Tetrachloroethane	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Tetrachloroethene	< 5	5	ug/L	1	8/10/98 9:37:00 PM
Toluene	< 3	3	ug/L	1	8/10/98 9:37:00 PM
1,1,1-Trichloroethane	< 5	5	ug/L	1	8/10/98 9:37:00 PM
1,1,2-Trichloroethane	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Trichloroethene	< 2	2	ug/L	1	8/10/98 9:37:00 PM
Trichlorofluoromethane	< 5	5	ug/L	1	8/10/98 9:37:00 PM
1,2,3-Trichloropropane	< 3	3	ug/L	1	8/10/98 9:37:00 PM
Vinyl acetate	< 10	10	ug/L	1	8/10/98 9:37:00 PM
Vinyl chloride	< 3	3	ug/L	1	8/10/98 9:37:00 PM
m,p-Xylene	< 5	5	ug/L	1	8/10/98 9:37:00 PM
o-Xylene	< 4	4	ug/L	1	8/10/98 9:37:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	TRIP BLANK2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-42A	**Batch ID:**	VOC2_980810A
Chemron ID:	73077	**Prep Date:**	8/10/98 9:37:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	TRIP BLANK2
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project ID:		**Matrix:**	WATER
Lab ID:	9808004-42A	**Batch ID:**	VOC2_980810A
Chemron ID:	73077	**Prep Date:**	8/10/98 9:37:00 PM
		Loc ID:	

VOLATILES BY GC/MS SW8260A **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	103.	62-125
4-Bromofluorobenzene	100.	75-125
Dibromofluoromethane	90.	75-125
Toluene-d8	96.	75-125

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	TRIP BLANK3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-43A	**Batch ID:**	VOC2_980810A
Chemron ID:	73078	**Prep Date:**	8/10/98 10:21:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	52.8	10	ug/L	1	8/10/98 10:21:00 PM
Acrolein	< 5	5	ug/L	1	8/10/98 10:21:00 PM
Acrylonitrile	< 4	4	ug/L	1	8/10/98 10:21:00 PM
Allyl chloride	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Benzene	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Bromodichloromethane	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Bromoform	< 2	2	ug/L	1	8/10/98 10:21:00 PM
Bromomethane	< 6	6	ug/L	1	8/10/98 10:21:00 PM
2-Butanone	< 10	10	ug/L	1	8/10/98 10:21:00 PM
Carbon disulfide	< 5	5	ug/L	1	8/10/98 10:21:00 PM
Carbon tetrachloride	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Chlorobenzene	< 4	4	ug/L	1	8/10/98 10:21:00 PM
Chloroethane	< 2	2	ug/L	1	8/10/98 10:21:00 PM
2-Chloroethylvinylether	< 10	10	ug/L	1	8/10/98 10:21:00 PM
Chloroform	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Chloromethane	< 5	5	ug/L	1	8/10/98 10:21:00 PM
Dibromochloromethane	< 3	3	ug/L	1	8/10/98 10:21:00 PM
1,2-Dibromo-3-chloropropane	< 6	6	ug/L	1	8/10/98 10:21:00 PM
1,2-Dibromoethane	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Dibromomethane	< 2	2	ug/L	1	8/10/98 10:21:00 PM
1,2-Dichlorobenzene	< 5	5	ug/L	1	8/10/98 10:21:00 PM
1,3-Dichlorobenzene	< 5	5	ug/L	1	8/10/98 10:21:00 PM
1,4-Dichlorobenzene	< 6	6	ug/L	1	8/10/98 10:21:00 PM
trans-1,4-Dichloro-2-butene	< 4	4	ug/L	1	8/10/98 10:21:00 PM
Dichlorodifluoromethane	< 3	3	ug/L	1	8/10/98 10:21:00 PM
1,1-Dichloroethane	< 3	3	ug/L	1	8/10/98 10:21:00 PM
1,2-Dichloroethane	< 3	3	ug/L	1	8/10/98 10:21:00 PM
1,1-Dichloroethene	< 5	5	ug/L	1	8/10/98 10:21:00 PM
cis-1,2-Dichloroethene	< 4	4	ug/L	1	8/10/98 10:21:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	TRIP BLANK3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-43A	**Batch ID:**	VOC2_980810A
Chemron ID:	73078	**Prep Date:**	8/10/98 10:21:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 4	4	ug/L	1	8/10/98 10:21:00 PM
Methylene chloride	86.1	4	ug/L	1	8/10/98 10:21:00 PM
1,2-Dichloropropane	< 2	2	ug/L	1	8/10/98 10:21:00 PM
cis-1,3-Dichloropropene	< 2	2	ug/L	1	8/10/98 10:21:00 PM
trans-1,3-Dichloropropene	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Diethyl ether	< 5	5	ug/L	1	8/10/98 10:21:00 PM
Ethylbenzene	< 5	5	ug/L	1	8/10/98 10:21:00 PM
Ethyl methacrylate	< 5	5	ug/L	1	8/10/98 10:21:00 PM
2-Hexanone	< 6	6	ug/L	1	8/10/98 10:21:00 PM
Methacrylonitrile	< 5	5	ug/L	1	8/10/98 10:21:00 PM
Iodomethane	< 5	5	ug/L	1	8/10/98 10:21:00 PM
Methyl methacrylate	< 4	4	ug/L	1	8/10/98 10:21:00 PM
4-Methyl-2-pentanone	< 10	10	ug/L	1	8/10/98 10:21:00 PM
Propionitrile	< 10	10	ug/L	1	8/10/98 10:21:00 PM
Styrene	< 4	4	ug/L	1	8/10/98 10:21:00 PM
1,1,1,2-Tetrachloroethane	< 5	5	ug/L	1	8/10/98 10:21:00 PM
1,1,2,2-Tetrachloroethane	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Tetrachloroethene	< 5	5	ug/L	1	8/10/98 10:21:00 PM
Toluene	< 3	3	ug/L	1	8/10/98 10:21:00 PM
1,1,1-Trichloroethane	< 5	5	ug/L	1	8/10/98 10:21:00 PM
1,1,2-Trichloroethane	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Trichloroethene	< 2	2	ug/L	1	8/10/98 10:21:00 PM
Trichlorofluoromethane	< 5	5	ug/L	1	8/10/98 10:21:00 PM
1,2,3-Trichloropropane	< 3	3	ug/L	1	8/10/98 10:21:00 PM
Vinyl acetate	< 10	10	ug/L	1	8/10/98 10:21:00 PM
Vinyl chloride	< 3	3	ug/L	1	8/10/98 10:21:00 PM
m,p-Xylene	< 5	5	ug/L	1	8/10/98 10:21:00 PM
o-Xylene	< 4	4	ug/L	1	8/10/98 10:21:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	TRIP BLANK3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-43A	**Batch ID:**	VOC2_980810A
Chemron ID:	73078	**Prep Date:**	8/10/98 10:21:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	TRIP BLANK3
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98
Project ID:		**Matrix:**	WATER
Lab ID:	9808004-43A	**Batch ID:**	VOC2_980810A
Chemron ID:	73078	**Prep Date:**	8/10/98 10:21:00 PM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	93.	62-125
4-Bromofluorobenzene	100.	75-125
Dibromofluoromethane	99.	75-125
Toluene-d8	96.	75-125

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
Acetone	61.94	10	ug/L
Acrolein	< 5	5	ug/L
Acrylonitrile	< 4	4	ug/L
Allyl chloride	< 3	3	ug/L
Benzene	< 3	3	ug/L
Bromodichloromethane	< 3	3	ug/L
Bromoform	< 2	2	ug/L
Bromomethane	< 6	6	ug/L
2-Butanone	27.18	10	ug/L
Carbon disulfide	< 5	5	ug/L
Carbon tetrachloride	< 3	3	ug/L
Chlorobenzene	< 4	4	ug/L
Chloroethane	< 2	2	ug/L
2-Chloroethylvinylether	< 10	10	ug/L
Chloroform	< 3	3	ug/L
Chloromethane	< 5	5	ug/L
Dibromochloromethane	< 3	3	ug/L
1,2-Dibromo-3-chloropropane	< 6	6	ug/L
1,2-Dibromoethane	< 3	3	ug/L
Dibromomethane	< 2	2	ug/L
1,2-Dichlorobenzene	< 5	5	ug/L
1,3-Dichlorobenzene	< 5	5	ug/L
1,4-Dichlorobenzene	< 6	6	ug/L
trans-1,4-Dichloro-2-butene	< 4	4	ug/L
Dichlorodifluoromethane	< 3	3	ug/L
1,1-Dichloroethane	< 3	3	ug/L
1,2-Dichloroethane	< 3	3	ug/L
1,1-Dichloroethene	< 5	5	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS — SW8260A — Analyst: DLS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 4	4	ug/L
trans-1,2-Dichloroethene	< 4	4	ug/L
Methylene chloride	8.05	4	ug/L
1,2-Dichloropropane	< 2	2	ug/L
cis-1,3-Dichloropropene	< 2	2	ug/L
trans-1,3-Dichloropropene	< 3	3	ug/L
Diethyl ether	< 5	5	ug/L
Ethylbenzene	< 5	5	ug/L
Ethyl methacrylate	< 5	5	ug/L
2-Hexanone	< 6	6	ug/L
Methacrylonitrile	< 5	5	ug/L
Iodomethane	< 5	5	ug/L
Methyl methacrylate	< 4	4	ug/L
4-Methyl-2-pentanone	< 10	10	ug/L
Propionitrile	< 10	10	ug/L
Styrene	< 4	4	ug/L
1,1,1,2-Tetrachloroethane	< 5	5	ug/L
1,1,2,2-Tetrachloroethane	< 3	3	ug/L
Tetrachloroethene	< 5	5	ug/L
Toluene	< 3	3	ug/L
1,1,1-Trichloroethane	< 5	5	ug/L
1,1,2-Trichloroethane	< 3	3	ug/L
Trichloroethene	< 2	2	ug/L
Trichlorofluoromethane	< 5	5	ug/L
1,2,3-Trichloropropane	< 3	3	ug/L
Vinyl acetate	< 10	10	ug/L
Vinyl chloride	< 3	3	ug/L
m,p-Xylene	< 5	5	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS — SW8260A — Analyst: DLS

Analyte	Result	Report Limit	Units:
o-Xylene	< 4	4	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980810A
Lab ID:	Blank	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 12:49:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	94	62-125
4-Bromofluorobenzene	98	75-125
Dibromofluoromethane	100	75-125
Toluene-d8	93	75-125

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Client:	Anderson Columbia Environ	Date:	17-Aug-98
Lab Order:	9808004	Matrix:	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	Batch ID:	VOC2_980810A
Lab ID:	LCS	Prep Date:	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — SW8260A — Analyst: DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	80	82.1	25	75-125	ug/L
Acrolein	80	71.8	90	75-125	ug/L
Acrylonitrile	80	66.4	83	75-125	ug/L
Allyl chloride	50	58.1	116	75-125	ug/L
Benzene	50	50.1	100	75-125	ug/L
Bromodichloromethane	50	53.6	107	75-125	ug/L
Bromoform	50	45.1	90	75-125	ug/L
Bromomethane	50	49.8	100	72-125	ug/L
2-Butanone	80	63.9	46	75-125	ug/L
Carbon disulfide	50	57.4	115	75-125	ug/L
Carbon tetrachloride	50	54	108	62-125	ug/L
Chlorobenzene	50	46.2	93	75-125	ug/L
Chloroethane	50	46.7	93	65-125	ug/L
2-Chloroethylvinylether	50	45.9	92	75-125	ug/L
Chloroform	50	56.8	114	74-125	ug/L
Chloromethane	50	43.2	86	75-125	ug/L
Dibromochloromethane	50	48.9	98	73-125	ug/L
1,2-Dibromo-3-chloropropane	50	47.4	95	59-125	ug/L
1,2-Dibromoethane	50	46.5	93	75-125	ug/L
Dibromomethane	50	52.3	105	69-127	ug/L
1,2-Dichlorobenzene	50	49	98	75-125	ug/L
1,3-Dichlorobenzene	50	46.1	92	75-125	ug/L
1,4-Dichlorobenzene	50	45.3	91	75-125	ug/L
trans-1,4-Dichloro-2-butene	50	44.7	89	75-125	ug/L
Dichlorodifluoromethane	50	38.5	77	75-125	ug/L
1,1-Dichloroethane	50	54.4	109	75-125	ug/L
1,2-Dichloroethane	50	54.9	110	75-125	ug/L
1,1-Dichloroethene	50	53.7	107	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	LCS	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	50	52.4	105	75-125	ug/L
trans-1,2-Dichloroethene	50	52.3	105	75-125	ug/L
Methylene chloride	50	57.8	100	75-125	ug/L
1,2-Dichloropropane	50	46.8	94	70-125	ug/L
cis-1,3-Dichloropropene	50	52.6	105	74-125	ug/L
trans-1,3-Dichloropropene	50	54	108	66-125	ug/L
Diethyl ether	80	73.2	91	75-125	ug/L
Ethylbenzene	50	50.7	101	75-125	ug/L
Ethyl methacrylate	50	48.7	97	75-125	ug/L
2-Hexanone	80	42.6	53	75-125	ug/L
Methacrylonitrile	80	66.7	83	75-125	ug/L
Iodomethane	50	46.3	93	75-125	ug/L
Methyl methacrylate	80	57.6	72	75-125	ug/L
4-Methyl-2-pentanone	80	47.4	48	75-125	ug/L
Propionitrile	80	58.5	73	75-125	ug/L
Styrene	50	45.1	90	75-125	ug/L
1,1,1,2-Tetrachloroethane	50	49.3	99	72-125	ug/L
1,1,2,2-Tetrachloroethane	50	42	84	74-125	ug/L
Tetrachloroethene	50	51.3	103	71-125	ug/L
Toluene	50	50.3	101	74-125	ug/L
1,1,1-Trichloroethane	50	59.6	119	75-125	ug/L
1,1,2-Trichloroethane	50	48.4	97	75-125	ug/L
Trichloroethene	50	52.6	105	71-125	ug/L
Trichlorofluoromethane	50	56.1	112	67-125	ug/L
1,2,3-Trichloropropane	50	44.1	88	75-125	ug/L
Vinyl acetate	50	52.2	104	75-125	ug/L
Vinyl chloride	50	45.1	90	46-134	ug/L
m,p-Xylene	100	92.9	93	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AMMO PLANT	**Batch ID:**	VOC2_980810A
Lab ID:	LCS	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260A** **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	50	46.1	92	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Matrix:**	Water
Project:	8502 LONGHORN ARMY AM	**Batch ID:**	VOC2_980810A
Lab ID:	LCS	**Prep Date:**	8/10/98
		Date Analyzed:	8/10/98 1:33:00 PM

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS | SW8260A | Analyst: DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	104	62-139
4-Bromofluorobenzene	102	75-125
Dibromofluoromethane	101	75-125
Toluene-d8	99	75-125

POTABLE WATER ANALYSIS REPORT

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/POTTABLE H2O
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 8:00:00 AM
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-40A	**Batch ID:**	VOC2_980810A
Chemron ID:	73075	**Prep Date:**	8/10/98 7:25:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	194	10	ug/L	1	8/10/98 7:25:00 PM
Acrolein	< 5	5	ug/L	1	8/10/98 7:25:00 PM
Acrylonitrile	< 4	4	ug/L	1	8/10/98 7:25:00 PM
Allyl chloride	< 3	3	ug/L	1	8/10/98 7:25:00 PM
Benzene	< 3	3	ug/L	1	8/10/98 7:25:00 PM
Bromodichloromethane	< 3	3	ug/L	1	8/10/98 7:25:00 PM
Bromoform	< 2	2	ug/L	1	8/10/98 7:25:00 PM
Bromomethane	< 6	6	ug/L	1	8/10/98 7:25:00 PM
2-Butanone	< 10	10	ug/L	1	8/10/98 7:25:00 PM
Carbon disulfide	< 5	5	ug/L	1	8/10/98 7:25:00 PM
Carbon tetrachloride	< 3	3	ug/L	1	8/10/98 7:25:00 PM
Chlorobenzene	< 4	4	ug/L	1	8/10/98 7:25:00 PM
Chloroethane	< 2	2	ug/L	1	8/10/98 7:25:00 PM
2-Chloroethylvinylether	< 10	10	ug/L	1	8/10/98 7:25:00 PM
Chloroform	7.96	3	ug/L	1	8/10/98 7:25:00 PM
Chloromethane	< 5	5	ug/L	1	8/10/98 7:25:00 PM
Dibromochloromethane	< 3	3	ug/L	1	8/10/98 7:25:00 PM
1,2-Dibromo-3-chloropropane	< 6	6	ug/L	1	8/10/98 7:25:00 PM
1,2-Dibromoethane	< 3	3	ug/L	1	8/10/98 7:25:00 PM
Dibromomethane	< 2	2	ug/L	1	8/10/98 7:25:00 PM
1,2-Dichlorobenzene	< 5	5	ug/L	1	8/10/98 7:25:00 PM
1,3-Dichlorobenzene	< 5	5	ug/L	1	8/10/98 7:25:00 PM
1,4-Dichlorobenzene	< 6	6	ug/L	1	8/10/98 7:25:00 PM
trans-1,4-Dichloro-2-butene	< 4	4	ug/L	1	8/10/98 7:25:00 PM
Dichlorodifluoromethane	< 3	3	ug/L	1	8/10/98 7:25:00 PM
1,1-Dichloroethane	< 3	3	ug/L	1	8/10/98 7:25:00 PM
1,2-Dichloroethane	< 3	3	ug/L	1	8/10/98 7:25:00 PM
1,1-Dichloroethene	< 5	5	ug/L	1	8/10/98 7:25:00 PM
cis-1,2-Dichloroethene	< 4	4	ug/L	1	8/10/98 7:25:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/POTTABLE H2O
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 8:00:00 AM
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-40A	**Batch ID:**	VOC2_980810A
Chemron ID:	73075	**Prep Date:**	8/10/98 7:25:00 PM
		Loc. ID:	

VOLATILES BY GC/MS — **SW8260A** — **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 4	4	ug/L	1	8/10/98 7:25:00 PM
Methylene chloride	66.4	4	ug/L	1	8/10/98 7:25:00 PM
1,2-Dichloropropane	< 2	2	ug/L	1	8/10/98 7:25:00 PM
cis-1,3-Dichloropropene	< 2	2	ug/L	1	8/10/98 7:25:00 PM
trans-1,3-Dichloropropene	< 3	3	ug/L	1	8/10/98 7:25:00 PM
Diethyl ether	< 5	5	ug/L	1	8/10/98 7:25:00 PM
Ethylbenzene	< 5	5	ug/L	1	8/10/98 7:25:00 PM
Ethyl methacrylate	< 5	5	ug/L	1	8/10/98 7:25:00 PM
2-Hexanone	< 6	6	ug/L	1	8/10/98 7:25:00 PM
Methacrylonitrile	< 5	5	ug/L	1	8/10/98 7:25:00 PM
Iodomethane	< 5	5	ug/L	1	8/10/98 7:25:00 PM
Methyl methacrylate	< 4	4	ug/L	1	8/10/98 7:25:00 PM
4-Methyl-2-pentanone	< 10	10	ug/L	1	8/10/98 7:25:00 PM
Propionitrile	< 10	10	ug/L	1	8/10/98 7:25:00 PM
Styrene	< 4	4	ug/L	1	8/10/98 7:25:00 PM
1,1,1,2-Tetrachloroethane	< 5	5	ug/L	1	8/10/98 7:25:00 PM
1,1,2,2-Tetrachloroethane	< 3	3	ug/L	1	8/10/98 7:25:00 PM
Tetrachloroethene	< 5	5	ug/L	1	8/10/98 7:25:00 PM
Toluene	< 3	3	ug/L	1	8/10/98 7:25:00 PM
1,1,1-Trichloroethane	< 5	5	ug/L	1	8/10/98 7:25:00 PM
1,1,2-Trichloroethane	< 3	3	ug/L	1	8/10/98 7:25:00 PM
Trichloroethene	< 2	2	ug/L	1	8/10/98 7:25:00 PM
Trichlorofluoromethane	< 5	5	ug/L	1	8/10/98 7:25:00 PM
1,2,3-Trichloropropane	< 3	3	ug/L	1	8/10/98 7:25:00 PM
Vinyl acetate	< 10	10	ug/L	1	8/10/98 7:25:00 PM
Vinyl chloride	< 3	3	ug/L	1	8/10/98 7:25:00 PM
m,p-Xylene	< 5	5	ug/L	1	8/10/98 7:25:00 PM
o-Xylene	< 4	4	ug/L	1	8/10/98 7:25:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/POTTABLE H2O
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 8:00:00 AM
Project No.:		**Matrix:**	WATER
Lab ID:	9808004-40A	**Batch ID:**	VOC2_980810A
Chemron ID:	73075	**Prep Date:**	8/10/98 7:25:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*17-Aug-98*
Lab Order:	9808004	**Client Sample ID:**	LHAAP/POTTABLE H2O
Project Name:	8502 LONGHORN ARMY AMMO PLA	**Collection Date:**	7/30/98 8:00:00 AM
Project ID:		**Matrix:**	WATER
Lab ID:	9808004-40A	**Batch ID:**	VOC2_980810A
Chemron ID:	73075	**Prep Date:**	8/10/98 7:25:00 PM
		Loc ID:	

VOLATILES BY GC/MS **SW8260A** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	127.	62-125
4-Bromofluorobenzene	96.	75-125
Dibromofluoromethane	121.	75-125
Toluene-d8	76.	75-125

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9811045
Project Name: Longhorn Army Ammo Plant, Storage Ar
Project No.:
Lab ID: 9811045-01A
Chemron ID: 74702

Date: *01-Dec-98*
Client Sample ID: Potable Water
Collection Date: 11/10/98 2:20:00 PM
Matrix: WATER
Batch ID: VOC1_981117B
Prep Date: 11/17/98 5:45:00 PM
Loc. ID:

VOLATILES BY GC/MS SW8260B **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 20	20	ug/L	2	11/17/98 5:45:00 PM
Acrolein	< 10	10	ug/L	2	11/17/98 5:45:00 PM
Acrylonitrile	< 8	8	ug/L	2	11/17/98 5:45:00 PM
Allyl chloride	< 6	6	ug/L	2	11/17/98 5:45:00 PM
Benzene	< 6	6	ug/L	2	11/17/98 5:45:00 PM
Bromodichloromethane	36.4	6	ug/L	2	11/17/98 5:45:00 PM
Bromoform	< 4	4	ug/L	2	11/17/98 5:45:00 PM
Bromomethane	< 12	12	ug/L	2	11/17/98 5:45:00 PM
2-Butanone	< 20	20	ug/L	2	11/17/98 5:45:00 PM
Carbon disulfide	< 10	10	ug/L	2	11/17/98 5:45:00 PM
Carbon tetrachloride	< 6	6	ug/L	2	11/17/98 5:45:00 PM
Chlorobenzene	< 8	8	ug/L	2	11/17/98 5:45:00 PM
Chloroethane	< 4	4	ug/L	2	11/17/98 5:45:00 PM
2-Chloroethylvinylether	< 20	20	ug/L	2	11/17/98 5:45:00 PM
Chloroform	220	6	ug/L	2	11/17/98 5:45:00 PM
Chloromethane	< 10	10	ug/L	2	11/17/98 5:45:00 PM
Dibromochloromethane	< 6	6	ug/L	2	11/17/98 5:45:00 PM
1,2-Dibromo-3-chloropropane	< 12	12	ug/L	2	11/17/98 5:45:00 PM
1,2-Dibromoethane	< 6	6	ug/L	2	11/17/98 5:45:00 PM
Dibromomethane	< 4	4	ug/L	2	11/17/98 5:45:00 PM
1,2-Dichlorobenzene	< 10	10	ug/L	2	11/17/98 5:45:00 PM
1,3-Dichlorobenzene	< 10	10	ug/L	2	11/17/98 5:45:00 PM
1,4-Dichlorobenzene	< 12	12	ug/L	2	11/17/98 5:45:00 PM
trans-1,4-Dichloro-2-butene	< 8	8	ug/L	2	11/17/98 5:45:00 PM
Dichlorodifluoromethane	< 6	6	ug/L	2	11/17/98 5:45:00 PM
1,1-Dichloroethane	< 6	6	ug/L	2	11/17/98 5:45:00 PM
1,2-Dichloroethane	< 6	6	ug/L	2	11/17/98 5:45:00 PM
1,1-Dichloroethene	< 10	10	ug/L	2	11/17/98 5:45:00 PM
cis-1,2-Dichloroethene	< 8	8	ug/L	2	11/17/98 5:45:00 PM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9811045
Project Name: Longhorn Army Ammo Plant, Storage Ar
Project No.:
Lab ID: 9811045-01A
Chemron ID: 74702

Date: *01-Dec-98*
Client Sample ID: Potable Water
Collection Date: 11/10/98 2:20:00 PM
Matrix: WATER
Batch ID: VOC1_981117B
Prep Date: 11/17/98 5:45:00 PM
Loc. ID:

VOLATILES BY GC/MS SW8260B **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 8	8	ug/L	2	11/17/98 5:45:00 PM
Methylene chloride	< 8	8	ug/L	2	11/17/98 5:45:00 PM
1,2-Dichloropropane	< 4	4	ug/L	2	11/17/98 5:45:00 PM
cis-1,3-Dichloropropene	< 4	4	ug/L	2	11/17/98 5:45:00 PM
trans-1,3-Dichloropropene	< 6	6	ug/L	2	11/17/98 5:45:00 PM
Diethyl ether	< 10	10	ug/L	2	11/17/98 5:45:00 PM
Ethylbenzene	< 10	10	ug/L	2	11/17/98 5:45:00 PM
Ethyl methacrylate	< 10	10	ug/L	2	11/17/98 5:45:00 PM
2-Hexanone	< 12	12	ug/L	2	11/17/98 5:45:00 PM
Methacrylonitrile	< 10	10	ug/L	2	11/17/98 5:45:00 PM
Iodomethane	< 10	10	ug/L	2	11/17/98 5:45:00 PM
Methyl methacrylate	< 8	8	ug/L	2	11/17/98 5:45:00 PM
4-Methyl-2-pentanone	< 20	20	ug/L	2	11/17/98 5:45:00 PM
Propionitrile	< 20	20	ug/L	2	11/17/98 5:45:00 PM
Styrene	< 8	8	ug/L	2	11/17/98 5:45:00 PM
1,1,1,2-Tetrachloroethane	< 10	10	ug/L	2	11/17/98 5:45:00 PM
1,1,2,2-Tetrachloroethane	< 6	6	ug/L	2	11/17/98 5:45:00 PM
Tetrachloroethene	< 10	10	ug/L	2	11/17/98 5:45:00 PM
Toluene	< 6	6	ug/L	2	11/17/98 5:45:00 PM
1,1,1-Trichloroethane	< 10	10	ug/L	2	11/17/98 5:45:00 PM
1,1,2-Trichloroethane	< 6	6	ug/L	2	11/17/98 5:45:00 PM
Trichloroethene	< 4	4	ug/L	2	11/17/98 5:45:00 PM
Trichlorofluoromethane	< 10	10	ug/L	2	11/17/98 5:45:00 PM
1,2,3-Trichloropropane	< 6	6	ug/L	2	11/17/98 5:45:00 PM
Vinyl acetate	< 20	20	ug/L	2	11/17/98 5:45:00 PM
Vinyl chloride	< 6	6	ug/L	2	11/17/98 5:45:00 PM
m,p-Xylene	< 10	10	ug/L	2	11/17/98 5:45:00 PM
o-Xylene	< 8	8	ug/L	2	11/17/98 5:45:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Client Sample ID:**	Potable Water
Project Name:	Longhorn Army Ammo Plant, Storage Ar	**Collection Date:**	11/10/98 2:20:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9811045-01A	**Batch ID:**	VOC1_981117B
Chemron ID:	74702	**Prep Date:**	11/17/98 5:45:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Client Sample ID:**	Potable Water
Project Name:	Longhorn Army Ammo Plant, Storage Ar	**Collection Date:**	11/10/98 2:20:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9811045-01A	**Batch ID:**	VOC1_981117B
Chemron ID:	74702	**Prep Date:**	11/17/98 5:45:00 PM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	114.	62-125
4-Bromofluorobenzene	101.	75-125
Dibromofluoromethane	99.	75-125
Toluene-d8	105.	75-125

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9811045
Project Name: Longhorn Army Ammo Plant, Storage Ar
Project No.:
Lab ID: 9811045-02A
Chemron ID: 74703

Date: *01-Dec-98*
Client Sample ID: Trip Blank
Collection Date: 10/27/98
Matrix: WATER
Batch ID: VOC1_981117B
Prep Date: 11/17/98 6:27:00 PM
Loc. ID:

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acetone	< 10	10	ug/L	1	11/17/98 6:27:00 PM
Acrolein	< 5	5	ug/L	1	11/17/98 6:27:00 PM
Acrylonitrile	< 4	4	ug/L	1	11/17/98 6:27:00 PM
Allyl chloride	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Benzene	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Bromodichloromethane	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Bromoform	< 2	2	ug/L	1	11/17/98 6:27:00 PM
Bromomethane	< 6	6	ug/L	1	11/17/98 6:27:00 PM
2-Butanone	< 10	10	ug/L	1	11/17/98 6:27:00 PM
Carbon disulfide	< 5	5	ug/L	1	11/17/98 6:27:00 PM
Carbon tetrachloride	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Chlorobenzene	< 4	4	ug/L	1	11/17/98 6:27:00 PM
Chloroethane	< 2	2	ug/L	1	11/17/98 6:27:00 PM
2-Chloroethylvinylether	< 10	10	ug/L	1	11/17/98 6:27:00 PM
Chloroform	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Chloromethane	< 5	5	ug/L	1	11/17/98 6:27:00 PM
Dibromochloromethane	< 3	3	ug/L	1	11/17/98 6:27:00 PM
1,2-Dibromo-3-chloropropane	< 6	6	ug/L	1	11/17/98 6:27:00 PM
1,2-Dibromoethane	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Dibromomethane	< 2	2	ug/L	1	11/17/98 6:27:00 PM
1,2-Dichlorobenzene	< 5	5	ug/L	1	11/17/98 6:27:00 PM
1,3-Dichlorobenzene	< 5	5	ug/L	1	11/17/98 6:27:00 PM
1,4-Dichlorobenzene	< 6	6	ug/L	1	11/17/98 6:27:00 PM
trans-1,4-Dichloro-2-butene	< 4	4	ug/L	1	11/17/98 6:27:00 PM
Dichlorodifluoromethane	< 3	3	ug/L	1	11/17/98 6:27:00 PM
1,1-Dichloroethane	< 3	3	ug/L	1	11/17/98 6:27:00 PM
1,2-Dichloroethane	< 3	3	ug/L	1	11/17/98 6:27:00 PM
1,1-Dichloroethene	< 5	5	ug/L	1	11/17/98 6:27:00 PM
cis-1,2-Dichloroethene	< 4	4	ug/L	1	11/17/98 6:27:00 PM

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9811045
Project Name: Longhorn Army Ammo Plant, Storage Ar
Project No.:
Lab ID: 9811045-02A
Chemron ID: 74703

Date: *01-Dec-98*
Client Sample ID: Trip Blank
Collection Date: 10/27/98
Matrix: WATER
Batch ID: VOC1_981117B
Prep Date: 11/17/98 6:27:00 PM
Loc. ID:

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
trans-1,2-Dichloroethene	< 4	4	ug/L	1	11/17/98 6:27:00 PM
Methylene chloride	< 4	4	ug/L	1	11/17/98 6:27:00 PM
1,2-Dichloropropane	< 2	2	ug/L	1	11/17/98 6:27:00 PM
cis-1,3-Dichloropropene	< 2	2	ug/L	1	11/17/98 6:27:00 PM
trans-1,3-Dichloropropene	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Diethyl ether	< 5	5	ug/L	1	11/17/98 6:27:00 PM
Ethylbenzene	< 5	5	ug/L	1	11/17/98 6:27:00 PM
Ethyl methacrylate	< 5	5	ug/L	1	11/17/98 6:27:00 PM
2-Hexanone	< 6	6	ug/L	1	11/17/98 6:27:00 PM
Methacrylonitrile	< 5	5	ug/L	1	11/17/98 6:27:00 PM
Iodomethane	< 5	5	ug/L	1	11/17/98 6:27:00 PM
Methyl methacrylate	< 4	4	ug/L	1	11/17/98 6:27:00 PM
4-Methyl-2-pentanone	< 10	10	ug/L	1	11/17/98 6:27:00 PM
Propionitrile	< 10	10	ug/L	1	11/17/98 6:27:00 PM
Styrene	< 4	4	ug/L	1	11/17/98 6:27:00 PM
1,1,1,2-Tetrachloroethane	< 5	5	ug/L	1	11/17/98 6:27:00 PM
1,1,2,2-Tetrachloroethane	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Tetrachloroethene	< 5	5	ug/L	1	11/17/98 6:27:00 PM
Toluene	< 3	3	ug/L	1	11/17/98 6:27:00 PM
1,1,1-Trichloroethane	< 5	5	ug/L	1	11/17/98 6:27:00 PM
1,1,2-Trichloroethane	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Trichloroethene	< 2	2	ug/L	1	11/17/98 6:27:00 PM
Trichlorofluoromethane	< 5	5	ug/L	1	11/17/98 6:27:00 PM
1,2,3-Trichloropropane	< 3	3	ug/L	1	11/17/98 6:27:00 PM
Vinyl acetate	< 10	10	ug/L	1	11/17/98 6:27:00 PM
Vinyl chloride	< 3	3	ug/L	1	11/17/98 6:27:00 PM
m,p-Xylene	< 5	5	ug/L	1	11/17/98 6:27:00 PM
o-Xylene	< 4	4	ug/L	1	11/17/98 6:27:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Client Sample ID:**	Trip Blank
Project Name:	Longhorn Army Ammo Plant, Storage Ar	**Collection Date:**	10/27/98
Project No.:		**Matrix:**	WATER
Lab ID:	9811045-02A	**Batch ID:**	VOC1_981117B
Chemron ID:	74703	**Prep Date:**	11/17/98 6:27:00 PM
		Loc. ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst: JSS**

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Adman

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Client Sample ID:**	Trip Blank
Project Name:	Longhorn Army Ammo Plant, Storage Ar	**Collection Date:**	10/27/98
Project ID:		**Matrix:**	WATER
Lab ID:	9811045-02A	**Batch ID:**	VOC1_981117B
Chemron ID:	74703	**Prep Date:**	11/17/98 6:27:00 PM
		Loc ID:	

VOLATILES BY GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	107.	62-125
4-Bromofluorobenzene	100.	75-125
Dibromofluoromethane	99.	75-125
Toluene-d8	105.	75-125

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: BLANK

Date: *01-Dec-98*
Matrix: Water
Batch ID: VOC1_981117B
Prep Date: 11/17/98
Date Analyzed: 11/17/98 2:17:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
Acetone	< 10	10	ug/L
Acrolein	< 5	5	ug/L
Acrylonitrile	< 4	4	ug/L
Allyl chloride	< 3	3	ug/L
Benzene	< 3	3	ug/L
Bromodichloromethane	< 3	3	ug/L
Bromoform	< 2	2	ug/L
Bromomethane	< 6	6	ug/L
2-Butanone	< 10	10	ug/L
Carbon disulfide	< 5	5	ug/L
Carbon tetrachloride	< 3	3	ug/L
Chlorobenzene	< 4	4	ug/L
Chloroethane	< 2	2	ug/L
2-Chloroethylvinylether	< 10	10	ug/L
Chloroform	< 3	3	ug/L
Chloromethane	< 5	5	ug/L
Dibromochloromethane	< 3	3	ug/L
1,2-Dibromo-3-chloropropane	< 6	6	ug/L
1,2-Dibromoethane	< 3	3	ug/L
Dibromomethane	< 2	2	ug/L
1,2-Dichlorobenzene	< 5	5	ug/L
1,3-Dichlorobenzene	< 5	5	ug/L
1,4-Dichlorobenzene	< 6	6	ug/L
trans-1,4-Dichloro-2-butene	< 4	4	ug/L
Dichlorodifluoromethane	< 3	3	ug/L
1,1-Dichloroethane	< 3	3	ug/L
1,2-Dichloroethane	< 3	3	ug/L
1,1-Dichloroethene	< 5	5	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: BLANK

Date: *01-Dec-98*
Matrix: Water
Batch ID: VOC1_981117B
Prep Date: 11/17/98
Date Analyzed: 11/17/98 2:17:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
cis-1,2-Dichloroethene	< 4	4	ug/L
trans-1,2-Dichloroethene	< 4	4	ug/L
Methylene chloride	< 4	4	ug/L
1,2-Dichloropropane	< 2	2	ug/L
cis-1,3-Dichloropropene	< 2	2	ug/L
trans-1,3-Dichloropropene	< 3	3	ug/L
Diethyl ether	< 5	5	ug/L
Ethylbenzene	< 5	5	ug/L
Ethyl methacrylate	< 5	5	ug/L
2-Hexanone	< 6	6	ug/L
Methacrylonitrile	< 5	5	ug/L
Iodomethane	< 5	5	ug/L
Methyl methacrylate	< 4	4	ug/L
4-Methyl-2-pentanone	< 10	10	ug/L
Propionitrile	< 10	10	ug/L
Styrene	< 4	4	ug/L
1,1,1,2-Tetrachloroethane	< 5	5	ug/L
1,1,2,2-Tetrachloroethane	< 3	3	ug/L
Tetrachloroethene	< 5	5	ug/L
Toluene	< 3	3	ug/L
1,1,1-Trichloroethane	< 5	5	ug/L
1,1,2-Trichloroethane	< 3	3	ug/L
Trichloroethene	< 2	2	ug/L
Trichlorofluoromethane	< 5	5	ug/L
1,2,3-Trichloropropane	< 3	3	ug/L
Vinyl acetate	< 10	10	ug/L
Vinyl chloride	< 3	3	ug/L
m,p-Xylene	< 5	5	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Closur	**Batch ID:**	VOC1_981117B
Lab ID:	BLANK	**Prep Date:**	11/17/98
		Date Analyzed:	11/17/98 2:17:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Result	Report Limit	Units:
o-Xylene	< 4	4	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, St	**Batch ID:**	VOC1_981117B
Lab ID:	BLANK	**Prep Date:**	11/17/98
		Date Analyzed:	11/17/98 2:17:00 P

QUALITY CONTROL REPORT

Method Blank

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	112	62-125
4-Bromofluorobenzene	98	75-125
Dibromofluoromethane	100	75-125
Toluene-d8	102	75-125

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, St	**Batch ID:**	VOC1_981117B
Lab ID:	9811045-01A	**Prep Date:**	11/17/98
		Date Analyzed:	11/17/98 7:52:00 P

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	MS % Recovery	Control Limits	MSD % Recovery
1,2-Dichloroethane-d4	92	62-139	104
4-Bromofluorobenzene	108	75-125	107
Dibromofluoromethane	87	75-125	104
Toluene-d8	100	75-125	100

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: 9811045-01A

Date: *01-Dec-98*
Matrix: Water
Batch ID: VOC1_981117B
Prep Date: 11/17/98
Date Analyzed: 11/17/98 7:52:00 P

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Acetone	100	81.16	81	40-140	100	100	21	20	ug/L
Benzene	100	121.8	122	75-125	122	122	0	20	ug/L
Bromodichloromethane	100	141.3	105	75-125	159	123	12	20	ug/L
Bromoform	100	103.3	103	75-125	97	97	6	20	ug/L
Bromomethane	100	100.2	100	72-125	76.2	76	27	20	ug/L
2-Butanone	100	103	103	40-140	101	101	2	20	ug/L
Carbon disulfide	100	193.4	193	75-125	227	227	16	20	ug/L
Carbon tetrachloride	100	106.3	106	62-125	121	121	13	20	ug/L
Chlorobenzene	100	116.4	116	75-125	119	119	2	20	ug/L
Chloroethane	100	132.7	133	65-125	128	128	3	20	ug/L
Chloroform	100	245.9	26	74-125	343	122	33	20	ug/L
Chloromethane	100	142.5	142	75-125	119	119	18	20	ug/L
Dibromochloromethane	100	109.2	109	73-125	108	108	2	20	ug/L
1,2-Dibromo-3-chloropropane	100	123.7	124	59-125	118	118	5	20	ug/L
1,2-Dibromoethane	100	105.6	106	75-125	99.4	99	6	20	ug/L
Dibromomethane	100	95.56	96	69-127	102	102	7	20	ug/L
1,2-Dichlorobenzene	100	123.1	123	75-125	124	124	1	20	ug/L
1,3-Dichlorobenzene	100	129.2	129	75-125	129	129	0	20	ug/L
1,4-Dichlorobenzene	100	127.9	128	75-125	129	129	1	20	ug/L
Dichlorodifluoromethane	100	116.1	116	75-125	111	111	5	20	ug/L
1,1-Dichloroethane	100	96.62	97	75-125	116	116	19	20	ug/L
1,2-Dichloroethane	100	96.66	97	75-125	113	113	16	20	ug/L
1,1-Dichloroethene	100	87.94	88	75-125	124	124	34	20	ug/L
cis-1,2-Dichloroethene	100	84.72	85	75-125	112	112	28	20	ug/L
trans-1,2-Dichloroethene	100	87.82	88	75-125	124	124	34	20	ug/L
Methylene chloride	100	84.86	85	75-125	96.9	97	13	20	ug/L

* MS/MSD results reflect the amount spiked + the parent sample concentration.

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: 9811045-01A

Date: *01-Dec-98*
Matrix: Water
Batch ID: VOC1_981117B
Prep Date: 11/17/98
Date Analyzed: 11/17/98 7:52:00 P

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
1,2-Dichloropropane	100	110	110	70-125	105	105	5	20	ug/L
cis-1,3-Dichloropropene	100	109.7	110	74-125	118	118	7	20	ug/L
trans-1,3-Dichloropropene	100	112.4	112	66-125	116	116	3	20	ug/L
Ethylbenzene	100	136.7	137	75-125	130	130	5	20	ug/L
2-Hexanone	100	116.7	117	75-125	105	105	10	20	ug/L
Iodomethane	200	140.6	70	75-125	141	70	0	20	ug/L
4-Methyl-2-pentanone	100	109.4	109	75-125	106	106	3	20	ug/L
Styrene	100	91.9	92	75-125	91.8	92	0	20	ug/L
1,1,1,2-Tetrachloroethane	100	105.6	106	72-125	105	105	0	20	ug/L
1,1,2,2-Tetrachloroethane	100	120.7	121	74-125	116	116	4	20	ug/L
Tetrachloroethene	100	117	117	71-125	110	110	6	20	ug/L
Toluene	100	117.2	117	74-125	114	114	3	20	ug/L
1,1,1-Trichloroethane	100	98.48	98	75-125	120	120	20	20	ug/L
1,1,2-Trichloroethane	100	108.1	108	75-125	110	110	2	20	ug/L
Trichloroethene	100	111	111	71-125	115	115	4	20	ug/L
Trichlorofluoromethane	100	112	112	67-125	129	129	14	20	ug/L
1,2,3-Trichloropropane	100	110.3	110	75-125	100	100	9	20	ug/L
Vinyl acetate	100	129.2	129	75-125	161	161	22	20	ug/L
Vinyl chloride	100	136.1	136	46-134	133	133	2	20	ug/L
m,p-Xylene	200	246.9	123	75-125	233	116	6	20	ug/L
o-Xylene	100	118.1	118	75-125	111	111	6	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *01-Dec-98*
Matrix: Water
Batch ID: VOC1_981117B
Prep Date: 11/17/98
Date Analyzed: 11/17/98 12:53:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260B** — **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acetone	50	58.8	118	40-140	ug/L
Acrolein	50	58.8	118	75-125	ug/L
Acrylonitrile	50	55.2	110	75-125	ug/L
Allyl chloride	50	54.6	109	75-125	ug/L
Benzene	50	57.9	116	75-125	ug/L
Bromodichloromethane	50	46.8	94	75-125	ug/L
Bromoform	50	54.6	109	75-125	ug/L
Bromomethane	50	55.4	111	72-125	ug/L
2-Butanone	50	56.3	113	40-140	ug/L
Carbon disulfide	50	58.6	117	75-125	ug/L
Carbon tetrachloride	50	56.3	113	62-125	ug/L
Chlorobenzene	50	53.9	108	75-125	ug/L
Chloroethane	50	57.3	115	65-125	ug/L
2-Chloroethylvinylether	50	43.8	88	75-125	ug/L
Chloroform	50	49.9	100	74-125	ug/L
Chloromethane	50	51.8	104	75-125	ug/L
Dibromochloromethane	50	53.4	107	73-125	ug/L
1,2-Dibromo-3-chloropropane	50	53.4	107	59-125	ug/L
1,2-Dibromoethane	50	55.4	111	75-125	ug/L
Dibromomethane	50	49.9	100	69-127	ug/L
1,2-Dichlorobenzene	50	55.7	111	75-125	ug/L
1,3-Dichlorobenzene	50	52.9	106	75-125	ug/L
1,4-Dichlorobenzene	50	51.4	103	75-125	ug/L
trans-1,4-Dichloro-2-butene	50	55.2	110	75-125	ug/L
Dichlorodifluoromethane	50	55.2	110	75-125	ug/L
1,1-Dichloroethane	50	51.4	103	75-125	ug/L
1,2-Dichloroethane	50	56.5	113	75-125	ug/L
1,1-Dichloroethene	50	53.4	107	75-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *01-Dec-98*
Matrix: Water
Batch ID: VOC1_981117B
Prep Date: 11/17/98
Date Analyzed: 11/17/98 12:53:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260B** — **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
cis-1,2-Dichloroethene	50	49.9	100	75-125	ug/L
trans-1,2-Dichloroethene	50	53.4	107	75-125	ug/L
Methylene chloride	50	46.8	94	75-125	ug/L
1,2-Dichloropropane	50	47.1	94	70-125	ug/L
cis-1,3-Dichloropropene	50	57.4	115	74-125	ug/L
trans-1,3-Dichloropropene	50	57.6	115	66-125	ug/L
Diethyl ether	50	53.8	108	75-125	ug/L
Ethylbenzene	50	59.7	119	75-125	ug/L
Ethyl methacrylate	50	57.5	115	75-125	ug/L
2-Hexanone	50	53.6	107	75-125	ug/L
Methacrylonitrile	50	55.8	112	75-125	ug/L
Iodomethane	100	86.2	86	75-125	ug/L
Methyl methacrylate	50	63.8	128	75-125	ug/L
4-Methyl-2-pentanone	50	54.4	109	75-125	ug/L
Propionitrile	50	52.9	106	75-125	ug/L
Styrene	50	53.7	107	75-125	ug/L
1,1,1,2-Tetrachloroethane	50	51.2	102	72-125	ug/L
1,1,2,2-Tetrachloroethane	50	49.3	99	74-125	ug/L
Tetrachloroethene	50	53.1	106	71-125	ug/L
Toluene	50	54.7	109	74-125	ug/L
1,1,1-Trichloroethane	50	50	100	75-125	ug/L
1,1,2-Trichloroethane	50	56	112	75-125	ug/L
Trichloroethene	50	48.1	96	71-125	ug/L
Trichlorofluoromethane	50	54.4	109	67-125	ug/L
1,2,3-Trichloropropane	50	57.7	115	75-125	ug/L
Vinyl acetate	50	57.1	114	75-125	ug/L
Vinyl chloride	50	57.9	116	46-134	ug/L
m,p-Xylene	100	107	107	75-125	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Clo	**Batch ID:**	VOC1_981117B
Lab ID:	LCS	**Prep Date:**	11/17/98
		Date Analyzed:	11/17/98 12:53:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS — **SW8260B** — **Analyst:** JSS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
o-Xylene	50	51.4	103	75-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, St
Lab ID: LCS

Date: *01-Dec-98*
Matrix: Water
Batch ID: VOC1_981117B
Prep Date: 11/17/98
Date Analyzed: 11/17/98 12:53:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

VOLATILES by GC/MS **SW8260B** **Analyst:** JSS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
1,2-Dichloroethane-d4	98	62-139
4-Bromofluorobenzene	107	75-125
Dibromofluoromethane	88	75-125
Toluene-d8	97	75-125

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Client: Anderson Columbia Environmental, Inc.
Lab Order: 9811045
Project Name: Longhorn Army Ammo Plant, Storage Ar
Project No.:
Lab ID: 9811045-01A
Chemron ID: 74702

Date: *18-Nov-98*
Client Sample ID: Potable Water
Collection Date: 11/10/98 2:20:00 PM
Matrix: WATER
Batch ID: SVOC1_981116A
Prep Date: 11/16/98 9:30:00 AM
Loc. ID:

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
Acenaphthene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Acenaphthylene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Acetophenone	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Aniline	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Anthracene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
4-Aminobiphenyl	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Benzidine	< 50	50	ug/L	1	11/16/98 9:12:00 PM
Benzo[a]anthracene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Benzo[b]fluoranthene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Benzo[k]fluoranthene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Benzo[g,h,i]perylene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Benzo[a]pyrene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Benzoic acid	< 20	20	ug/L	1	11/16/98 9:12:00 PM
Benzyl alcohol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Bis(2-chloroethoxy)methane	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Bis(2-chloroethyl)ether	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Bis(2-chloroisopropyl)ether	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Bis(2-ethylhexyl)phthalate	< 10	10	ug/L	1	11/16/98 9:12:00 PM
4-Bromophenyl phenyl ether	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Butyl benzyl phthalate	< 10	10	ug/L	1	11/16/98 9:12:00 PM
4-Chloroaniline	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2-Chloronaphthalene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
4-Chloro-3-methylphenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2-Chlorophenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
4-Chlorophenyl phenyl ether	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Chrysene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Dibenz[a,h]anthracene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Dibenzofuran	< 10	10	ug/L	1	11/16/98 9:12:00 PM
1,3-Dichlorobenzene	< 10	10	ug/L	1	11/16/98 9:12:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Nov-98*
Lab Order:	9811045	**Client Sample ID:**	Potable Water
Project Name:	Longhorn Army Ammo Plant, Storage Ar	**Collection Date:**	11/10/98 2:20:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9811045-01A	**Batch ID:**	SVOC1_981116A
Chemron ID:	74702	**Prep Date:**	11/16/98 9:30:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1,4-Dichlorobenzene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
3,3´-Dichlorobenzidine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
1,2-Dichlorobenzene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2,4-Dichlorophenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2,6-Dichlorophenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Diethyl phthalate	< 10	10	ug/L	1	11/16/98 9:12:00 PM
a,a-Dimethylphenethylamine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2,4-Dimethylphenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Dimethyl phthalate	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Di-n-butyl phthalate	< 10	10	ug/L	1	11/16/98 9:12:00 PM
4,6-Dinitro-2-methylphenol	< 20	20	ug/L	1	11/16/98 9:12:00 PM
2,4-Dinitrophenol	< 20	20	ug/L	1	11/16/98 9:12:00 PM
2,4-Dinitrotoluene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2,6-Dinitrotoluene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Di-n-octyl phthalate	< 10	10	ug/L	1	11/16/98 9:12:00 PM
1,2-Diphenylhydrazine	< 20	20	ug/L	1	11/16/98 9:12:00 PM
Fluoranthene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Fluorene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Hexachlorobenzene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Hexachlorobutadiene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Hexachlorocyclopentadiene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Hexachloroethane	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Isophorone	< 10	10	ug/L	1	11/16/98 9:12:00 PM
3-Methylcholanthrene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2-Methylnaphthalene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2-Methylphenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
4-Methylphenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Naphthalene	< 10	10	ug/L	1	11/16/98 9:12:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Nov-98*
Lab Order:	9811045	**Client Sample ID:**	Potable Water
Project Name:	Longhorn Army Ammo Plant, Storage Ar	**Collection Date:**	11/10/98 2:20:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9811045-01A	**Batch ID:**	SVOC1_981116A
Chemron ID:	74702	**Prep Date:**	11/16/98 9:30:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed
1-Naphthylamine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2-Naphthylamine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2-Nitroaniline	< 10	10	ug/L	1	11/16/98 9:12:00 PM
3-Nitroaniline	< 10	10	ug/L	1	11/16/98 9:12:00 PM
4-Nitroaniline	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Nitrobenzene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2-Nitrophenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
4-Nitrophenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
N-Nitroso-di-n-butylamine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
N-Nitrosodiethylamine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
N-Nitrosodimethylamine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
N-Nitrosodiphenylamine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
N-Nitrosodi-n-propylamine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
N-Nitrosomethylethylamine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Pentachlorobenzene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Pentachloronitrobenzene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Pentachlorophenol	< 20	20	ug/L	1	11/16/98 9:12:00 PM
Phenacetin	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Phenanthrene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Phenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Pyrene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
Pyridine	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2,4,5-Trichlorophenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM
1,2,4-Trichlorobenzene	< 10	10	ug/L	1	11/16/98 9:12:00 PM
2,4,6-Trichlorophenol	< 10	10	ug/L	1	11/16/98 9:12:00 PM

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Nov-98*
Lab Order:	9811045	**Client Sample ID:**	Potable Water
Project Name:	Longhorn Army Ammo Plant, Storage Ar	**Collection Date:**	11/10/98 2:20:00 PM
Project No.:		**Matrix:**	WATER
Lab ID:	9811045-01A	**Batch ID:**	SVOC1_981116A
Chemron ID:	74702	**Prep Date:**	11/16/98 9:30:00 AM
		Loc. ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units	Dilution	Date Analyzed

Approved by: R. Eldridge

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*18-Nov-98*
Lab Order:	9811045	**Client Sample ID:**	Potable Water
Project Name:	Longhorn Army Ammo Plant, Storage Ar	**Collection Date:**	11/10/98 2:20:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9811045-01A	**Batch ID:**	SVOC1_981116A
Chemron ID:	74702	**Prep Date:**	11/16/98 9:30:00 AM
		Loc ID:	

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	49.	25-134
2-Fluorobiphenyl	64.	43-125
2-Fluorophenol	45.	25-125
Nitrobenzene-d5	66.	32-125
Phenol-d5	10.	25-125
Terphenyl-d14	77.	42-126

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: BLANK

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 5:28:00 P

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
Acenaphthene	< 10	10	ug/L
Acenaphthylene	< 10	10	ug/L
Acetophenone	< 10	10	ug/L
Aniline	< 10	10	ug/L
Anthracene	< 10	10	ug/L
4-Aminobiphenyl	< 10	10	ug/L
Benzidine	< 50	50	ug/L
Benzo[a]anthracene	< 10	10	ug/L
Benzo[b]fluoranthene	< 10	10	ug/L
Benzo[k]fluoranthene	< 10	10	ug/L
Benzo[g,h,i]perylene	< 10	10	ug/L
Benzo[a]pyrene	< 10	10	ug/L
Benzoic acid	< 20	20	ug/L
Benzyl alcohol	< 10	10	ug/L
Bis(2-chloroethoxy)methane	< 10	10	ug/L
Bis(2-chloroethyl)ether	< 10	10	ug/L
Bis(2-chloroisopropyl)ether	< 10	10	ug/L
Bis(2-ethylhexyl)phthalate	< 10	10	ug/L
4-Bromophenyl phenyl ether	< 10	10	ug/L
Butyl benzyl phthalate	< 10	10	ug/L
4-Chloroaniline	< 10	10	ug/L
2-Chloronaphthalene	< 10	10	ug/L
4-Chloro-3-methylphenol	< 10	10	ug/L
2-Chlorophenol	< 10	10	ug/L
4-Chlorophenyl phenyl ether	< 10	10	ug/L
Chrysene	< 10	10	ug/L
Dibenz[a,h]anthracene	< 10	10	ug/L
Dibenzofuran	< 10	10	ug/L

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: BLANK

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 5:28:00 P

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
1,3-Dichlorobenzene	< 10	10	ug/L
1,4-Dichlorobenzene	< 10	10	ug/L
1,2-Dichlorobenzene	< 10	10	ug/L
3,3´-Dichlorobenzidine	< 10	10	ug/L
2,4-Dichlorophenol	< 10	10	ug/L
2,6-Dichlorophenol	< 10	10	ug/L
Diethyl phthalate	< 10	10	ug/L
a,a-Dimethylphenethylamine	< 10	10	ug/L
2,4-Dimethylphenol	< 10	10	ug/L
Dimethyl phthalate	< 10	10	ug/L
Di-n-butyl phthalate	< 10	10	ug/L
4,6-Dinitro-2-methylphenol	< 20	20	ug/L
2,4-Dinitrophenol	< 20	20	ug/L
2,4-Dinitrotoluene	< 10	10	ug/L
2,6-Dinitrotoluene	< 10	10	ug/L
Di-n-octyl phthalate	< 10	10	ug/L
1,2-Diphenylhydrazine	< 20	20	ug/L
Fluoranthene	< 10	10	ug/L
Fluorene	< 10	10	ug/L
Hexachlorobenzene	< 10	10	ug/L
Hexachlorobutadiene	< 10	10	ug/L
Hexachlorocyclopentadiene	< 10	10	ug/L
Hexachloroethane	< 10	10	ug/L
Indeno[1,2,3-cd]pyrene	< 10	10	ug/L
Isophorone	< 10	10	ug/L
3-Methylcholanthrene	< 10	10	ug/L
2-Methylnaphthalene	< 10	10	ug/L
2-Methylphenol	< 10	10	ug/L

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10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: BLANK

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 5:28:00 P

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
4-Methylphenol	< 10	10	ug/L
Naphthalene	< 10	10	ug/L
1-Naphthylamine	< 10	10	ug/L
2-Naphthylamine	< 10	10	ug/L
2-Nitroaniline	< 10	10	ug/L
3-Nitroaniline	< 10	10	ug/L
4-Nitroaniline	< 10	10	ug/L
Nitrobenzene	< 10	10	ug/L
2-Nitrophenol	< 10	10	ug/L
4-Nitrophenol	< 10	10	ug/L
N-Nitroso-di-n-butylamine	< 10	10	ug/L
N-Nitrosodiethylamine	< 10	10	ug/L
N-Nitrosodimethylamine	< 10	10	ug/L
N-Nitrosodiphenylamine	< 10	10	ug/L
N-Nitrosodi-n-propylamine	< 10	10	ug/L
N-Nitrosomethylethylamine	< 10	10	ug/L
Pentachlorobenzene	< 10	10	ug/L
Pentachloronitrobenzene	< 10	10	ug/L
Pentachlorophenol	< 20	20	ug/L
Phenacetin	< 10	10	ug/L
Phenanthrene	< 10	10	ug/L
Phenol	< 10	10	ug/L
Pyrene	< 10	10	ug/L
Pyridine	< 10	10	ug/L
1,2,4,5-Tetrachlorobenzene	< 10	10	ug/L
2,3,4,6-Tetrachlorophenol	< 10	10	ug/L
1,2,4-Trichlorobenzene	< 10	10	ug/L
2,4,5-Trichlorophenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*18-Nov-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Closur	**Batch ID:**	SVOC1_981116A
Lab ID:	BLANK	**Prep Date:**	11/16/98
		Date Analyzed:	11/16/98 5:28:00 P

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Result	Report Limit	Units:
2,4,6-Trichlorophenol	< 10	10	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*18-Nov-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, St	**Batch ID:**	SVOC1_981116A
Lab ID:	BLANK	**Prep Date:**	11/16/98
		Date Analyzed:	11/16/98 5:28:00 P

QUALITY CONTROL REPORT

Method Blank

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	58	25-134
2-Fluorobiphenyl	72	43-125
2-Fluorophenol	57	25-125
Nitrobenzene-d5	73	32-125
Phenol-d5	35	25-125
Terphenyl-d14	75	42-126

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: 9811045-01A

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 8:16:00 P

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Acenaphthene	50	34.73	69	49-125	33.5	67	4	20	ug/L
Acenaphthylene	50	32.15	64	47-125	31.4	63	2	20	ug/L
Acetophenone	50	36.51	73	25-175	35.2	70	4	20	ug/L
Aniline	50	33.91	68	25-175	34.5	69	2	20	ug/L
Anthracene	50	34.09	68	45-165	33	66	3	20	ug/L
4-Aminobiphenyl	50	52.38	105	25-175	48	96	9	20	ug/L
Benzidine	100	52.68	53	25-175	42	42	0	20	ug/L
Benzo[a]anthracene	50	35.68	71	51-133	33.6	67	6	20	ug/L
Benzo[b]fluoranthene	50	27.22	54	37-125	24.6	49	10	20	ug/L
Benzo[k]fluoranthene	50	33.03	66	25-175	30.9	62	7	20	ug/L
Benzo[g,h,i]perylene	50	46.95	94	34-149	45	90	4	20	ug/L
Benzo[a]pyrene	50	34.82	70	41-125	32.4	65	7	20	ug/L
Benzoic acid	100	35.37	35	25-162	42.1	42	17	20	ug/L
Benzyl alcohol	50	37.09	74	35-125	37.9	76	2	20	ug/L
Bis(2-chloroethoxy)methane	50	39.75	80	49-125	38.2	76	4	20	ug/L
Bis(2-chloroethyl)ether	50	35.77	72	44-125	35.8	72	0	20	ug/L
Bis(2-chloroisopropyl)ether	50	33.54	67	36-166	32.8	66	2	20	ug/L
Bis(2-ethylhexyl)phthalate	50	38.57	77	33-129	36.3	73	6	20	ug/L
4-Bromophenyl phenyl ether	50	38.3	77	53-127	36.2	72	6	20	ug/L
Butyl benzyl phthalate	50	33.39	67	26-125	29.6	59	12	20	ug/L
4-Chloroaniline	50	39.31	79	45-136	38.2	77	3	20	ug/L
2-Chloronaphthalene	50	33.88	68	60-125	33.7	67	0	20	ug/L
4-Chloro-3-methylphenol	50	46.73	93	44-125	44.7	89	4	20	ug/L
2-Chlorophenol	50	35.79	72	41-125	36.1	72	1	20	ug/L
4-Chlorophenyl phenyl ether	50	35.49	71	51-132	33.7	67	5	20	ug/L
Chrysene	50	39.89	80	55-133	38.8	78	3	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: 9811045-01A

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 8:16:00 P

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Dibenz[a,h]anthracene	50	52.5	105	50-125	50.4	101	4	20	ug/L
Dibenzofuran	50	34.86	70	52-125	34.1	68	2	20	ug/L
1,3-Dichlorobenzene	50	28.48	57	36-125	27.4	55	4	20	ug/L
1,4-Dichlorobenzene	50	27.54	55	30-125	27.1	54	2	20	ug/L
1,2-Dichlorobenzene	50	28.7	57	42-155	28.1	56	2	20	ug/L
3,3´-Dichlorobenzidine	50	45.36	91	29-175	44.2	88	3	20	ug/L
2,4-Dichlorophenol	50	37.5	75	46-125	35.8	72	4	20	ug/L
2,6-Dichlorophenol	50	37.54	75	25-175	36.3	73	3	20	ug/L
Diethyl phthalate	50	11.52	23	37-125	11	22	4	20	ug/L
a,a-Dimethylphenethylamine	50	44.97	90	25-175	38.1	76	17	20	ug/L
2,4-Dimethylphenol	50	30.21	60	45-139	28	56	8	20	ug/L
Dimethyl phthalate	50	3.03	6	25-175	3.6	7	0	20	ug/L
Di-n-butyl phthalate	50	28.3	57	34-126	26.5	53	7	20	ug/L
4,6-Dinitro-2-methylphenol	50	34.21	68	26-134	34	68	0	20	ug/L
2,4-Dinitrophenol	50	30.42	61	30-151	29.8	60	2	20	ug/L
2,4-Dinitrotoluene	50	37.23	74	39-139	35.8	72	4	20	ug/L
2,6-Dinitrotoluene	50	38.58	77	51-125	36.1	72	7	20	ug/L
Di-n-octyl phthalate	50	26.19	52	38-127	23	46	13	20	ug/L
1,2-Diphenylhydrazine	100	67.01	67	25-175	63.6	64	5	20	ug/L
Fluoranthene	50	30.25	61	47-125	29.4	59	3	20	ug/L
Fluorene	50	34.98	70	48-139	33.5	67	4	20	ug/L
Hexachlorobenzene	50	34.83	70	46-133	33	66	5	20	ug/L
Hexachlorobutadiene	50	32.06	64	25-125	31	62	3	20	ug/L
Hexachlorocyclopentadiene	50	29.32	59	41-125	29	58	1	20	ug/L
Hexachloroethane	50	29.43	59	25-153	28.9	58	2	20	ug/L
Indeno[1,2,3-cd]pyrene	50	45.8	92	27-160	44	88	4	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: 9811045-01A

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 8:16:00 P

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Isophorone	50	39.75	80	26-175	37	74	7	20	ug/L
3-Methylcholanthrene	50	29.09	58	25-175	27	54	7	20	ug/L
2-Methylnaphthalene	50	34.8	70	41-125	33.7	67	3	20	ug/L
2-Methylphenol	50	28.53	57	25-125	27	54	5	20	ug/L
4-Methylphenol	100	44.8	45	33-125	42.4	42	6	20	ug/L
Naphthalene	50	30.84	62	50-125	30.5	61	1	20	ug/L
1-Naphthylamine	50	32.1	64	25-175	30.6	61	5	20	ug/L
2-Naphthylamine	50	36.61	73	25-175	34.1	68	7	20	ug/L
2-Nitroaniline	50	38.64	77	50-125	37.2	74	4	20	ug/L
3-Nitroaniline	50	38.13	76	51-125	35.8	72	6	20	ug/L
4-Nitroaniline	50	34.75	70	40-143	32.4	65	7	20	ug/L
Nitrobenzene	50	37.16	74	46-133	35.9	72	3	20	ug/L
2-Nitrophenol	50	38.52	77	44-125	37.7	75	2	20	ug/L
4-Nitrophenol	50	1.48	3	25-131	1.5	3	0	20	ug/L
N-Nitroso-di-n-butylamine	50	36.99	74	25-175	33.9	68	9	20	ug/L
N-Nitrosodiethylamine	50	35.74	71	25-175	35.6	71	0	20	ug/L
N-Nitrosodimethylamine	50	37.88	76	25-175	39	78	3	20	ug/L
N-Nitrosodiphenylamine	100	76.08	76	27-125	72.8	73	4	20	ug/L
N-Nitrosodi-n-propylamine	50	32.62	65	37-125	32.1	64	2	20	ug/L
N-Nitrosomethylethylamine	50	40.12	80	25-175	40.2	80	0	20	ug/L
Pentachlorobenzene	50	34.6	69	25-175	33.2	66	4	20	ug/L
Pentachloronitrobenzene	50	36.63	73	25-175	33.8	68	8	20	ug/L
Pentachlorophenol	50	32.17	64	28-136	30.9	62	4	20	ug/L
Phenacetin	50	38.95	78	25-175	36	72	8	20	ug/L
Phenanthrene	50	34.36	69	54-125	33.1	66	4	20	ug/L
Phenol	50	23.03	46	25-125	23.6	47	2	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: 9811045-01A

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 8:16:00 P

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Pyrene	50	31.12	62	47-136	28.9	58	8	20	ug/L
Pyridine	50	35.33	71	25-175	34.6	69	2	20	ug/L
1,2,4,5-Tetrachlorobenzene	50	33.08	66	25-175	33.3	67	1	20	ug/L
2,3,4,6-Tetrachlorophenol	50	33.77	68	25-175	31.9	64	6	20	ug/L
1,2,4-Trichlorobenzene	50	35.43	71	44-142	34.2	68	4	20	ug/L
2,4,5-Trichlorophenol	50	34.92	70	25-175	33.9	68	3	20	ug/L
2,4,6-Trichlorophenol	50	35.27	71	39-128	34	68	4	20	ug/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, St
Lab ID: 9811045-01A

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 8:16:00 P

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	MS % Recovery	Control Limits	MSD % Recovery
2,4,6-Tribromophenol	66	25-134	62
2-Fluorobiphenyl	50	43-125	50
2-Fluorophenol	50	25-125	52
Nitrobenzene-d5	68	32-125	65
Phenol-d5	41	25-125	42
Terphenyl-d14	52	42-126	50

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 6:24:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Acenaphthene	50	40.7	81	49-125	ug/L
Acenaphthylene	50	40	80	47-125	ug/L
Acetophenone	50	41.1	82	25-175	ug/L
Aniline	50	35	70	25-175	ug/L
Anthracene	50	40.4	81	45-165	ug/L
4-Aminobiphenyl	50	56.7	113	25-175	ug/L
Benzidine	100	27	27	25-175	ug/L
Benzo[a]anthracene	50	41.4	83	51-133	ug/L
Benzo[b]fluoranthene	50	28.6	57	37-125	ug/L
Benzo[k]fluoranthene	50	51.6	103	25-175	ug/L
Benzo[g,h,i]perylene	50	52.5	105	34-149	ug/L
Benzo[a]pyrene	50	42.6	85	41-125	ug/L
Benzoic acid	100	20.3	20	25-162	ug/L
Benzyl alcohol	50	35.6	71	35-125	ug/L
Bis(2-chloroethoxy)methane	50	42	84	49-125	ug/L
Bis(2-chloroethyl)ether	50	41.3	83	44-125	ug/L
Bis(2-chloroisopropyl)ether	50	41.6	83	36-166	ug/L
Bis(2-ethylhexyl)phthalate	50	55	110	33-129	ug/L
4-Bromophenyl phenyl ether	50	39.1	78	53-127	ug/L
Butyl benzyl phthalate	50	42.3	85	26-125	ug/L
4-Chloroaniline	50	42.2	84	45-136	ug/L
2-Chloronaphthalene	50	39.5	79	60-125	ug/L
4-Chloro-3-methylphenol	50	35.4	71	44-125	ug/L
2-Chlorophenol	50	39.4	79	41-125	ug/L
4-Chlorophenyl phenyl ether	50	40.4	81	51-132	ug/L
Chrysene	50	49	98	55-133	ug/L
Dibenz[a,h]anthracene	50	56.7	113	50-125	ug/L
Dibenzofuran	50	41.8	84	52-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 6:24:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
1,3-Dichlorobenzene	50	33.1	66	36-125	ug/L
1,4-Dichlorobenzene	50	32.7	65	30-125	ug/L
1,2-Dichlorobenzene	50	34.8	70	42-155	ug/L
3,3´-Dichlorobenzidine	50	48	96	29-175	ug/L
2,4-Dichlorophenol	50	36.7	73	46-125	ug/L
2,6-Dichlorophenol	50	39.5	79	25-175	ug/L
Diethyl phthalate	50	13.7	27	37-125	ug/L
a,a-Dimethylphenethylamine	50	9.1	18	25-175	ug/L
2,4-Dimethylphenol	50	36.2	72	45-139	ug/L
Dimethyl phthalate	50	3.5	7	25-175	ug/L
Di-n-butyl phthalate	50	35.9	72	34-126	ug/L
4,6-Dinitro-2-methylphenol	50	35.9	72	26-134	ug/L
2,4-Dinitrophenol	50	27.2	54	30-151	ug/L
2,4-Dinitrotoluene	50	40.3	81	39-139	ug/L
2,6-Dinitrotoluene	50	40.8	82	51-125	ug/L
Di-n-octyl phthalate	50	51.4	103	38-127	ug/L
1,2-Diphenylhydrazine	100	70	70	25-175	ug/L
Fluoranthene	50	36	72	47-125	ug/L
Fluorene	50	41.3	83	48-139	ug/L
Hexachlorobenzene	50	36.3	73	46-133	ug/L
Hexachlorobutadiene	50	30.6	61	25-125	ug/L
Hexachlorocyclopentadiene	50	26.9	54	41-125	ug/L
Hexachloroethane	50	32.5	65	25-153	ug/L
Indeno[1,2,3-cd]pyrene	50	51.2	102	27-160	ug/L
Isophorone	50	39.9	80	26-175	ug/L
3-Methylcholanthrene	50	26.3	53	25-175	ug/L
2-Methylnaphthalene	50	36.9	74	41-125	ug/L
2-Methylphenol	50	29.8	60	25-125	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 6:24:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS — **SW8270C** — **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
4-Methylphenol	100	62.9	63	33-125	ug/L
Naphthalene	50	35.2	70	50-125	ug/L
1-Naphthylamine	50	40	80	25-175	ug/L
2-Naphthylamine	50	41.1	82	25-175	ug/L
2-Nitroaniline	50	40.5	81	50-125	ug/L
3-Nitroaniline	50	40	80	51-125	ug/L
4-Nitroaniline	50	36.5	73	40-143	ug/L
Nitrobenzene	50	40.1	80	46-133	ug/L
2-Nitrophenol	50	36.1	72	44-125	ug/L
4-Nitrophenol	50	1.8	4	25-131	ug/L
N-Nitroso-di-n-butylamine	50	35.8	72	25-175	ug/L
N-Nitrosodiethylamine	50	38	76	25-175	ug/L
N-Nitrosodimethylamine	50	41.2	83	25-175	ug/L
N-Nitrosodiphenylamine	100	85.5	86	27-125	ug/L
N-Nitrosodi-n-propylamine	50	37.2	74	37-125	ug/L
N-Nitrosomethylethylamine	50	44.3	89	25-175	ug/L
Pentachlorobenzene	50	36.9	74	25-175	ug/L
Pentachloronitrobenzene	50	37.3	75	25-175	ug/L
Pentachlorophenol	50	32.8	66	28-136	ug/L
Phenacetin	50	39.5	79	25-175	ug/L
Phenanthrene	50	40.1	80	54-125	ug/L
Phenol	50	17.8	36	25-125	ug/L
Pyrene	50	42.4	85	47-136	ug/L
Pyridine	50	35.4	71	25-175	ug/L
1,2,4,5-Tetrachlorobenzene	50	37.1	74	25-175	ug/L
2,3,4,6-Tetrachlorophenol	50	34.6	69	25-175	ug/L
1,2,4-Trichlorobenzene	50	34.7	69	44-142	ug/L
2,4,5-Trichlorophenol	50	36.1	72	25-175	ug/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *18-Nov-98*
Matrix: Water
Batch ID: SVOC1_981116A
Prep Date: 11/16/98
Date Analyzed: 11/16/98 6:24:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
2,4,6-Trichlorophenol	50	36.2	72	39-128	ug/L

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Client:	Anderson Columbia Environ	**Date:**	*18-Nov-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, St	**Batch ID:**	SVOC1_981116A
Lab ID:	LCS	**Prep Date:**	11/16/98
		Date Analyzed:	11/16/98 6:24:00 P

QUALITY CONTROL REPORT

Laboratory Control Sample

SEMIVOLATILE ORGANICS **SW8270C** **Analyst:** DLS

Surrogate Summary Report

Surrogate	% Recovery	Control Limits
2,4,6-Tribromophenol	75	25-134
2-Fluorobiphenyl	67	43-125
2-Fluorophenol	54	25-125
Nitrobenzene-d5	73	32-125
Phenol-d5	35	25-125
Terphenyl-d14	97	42-126

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Client:	Anderson Columbia Environmental, Inc.	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Client Sample ID:**	Potable Water
Project Name:	Longhorn Army Ammo Plant, Storage Are	**Collection Date:**	11/10/98 2:20:00 PM
Project ID:		**Matrix:**	WATER
Lab ID:	9811045-01A	**Loc. ID:**	
Chemron ID:	74702		

Analyses	Result	Report Limit	Units	Dilution	Date Analyzed
PETROLEUM HYDROCARBONS, T/R		E418.1		Analyst:	SLF
Petroleum Hydrocarbons, TR	< 0.5	0.5	mg/L	1	11/19/98
ARSENIC, TOTAL		SW6010B		Analyst:	JOL
Arsenic	< 0.05	0.05	mg/L	1	11/17/98
CADMIUM, TOTAL		SW6010B		Analyst:	JOL
Cadmium	< 0.005	0.005	mg/L	1	11/17/98
METALS- RCRA, TOTAL		SW6010B		Analyst:	JOL
Barium	0.04	0.01	mg/L	1	11/17/98
Chromium	0.04	0.01	mg/L	1	11/17/98
Lead	0.15	0.03	mg/L	1	11/17/98
Selenium	< 0.05	0.05	mg/L	1	11/17/98
Silver	< 0.01	0.01	mg/L	1	11/18/98
MERCURY, TOTAL		SW7470A		Analyst:	DAM
Mercury	< 0.0002	0.0002	mg/L	1	11/19/98

Approved by: R. Aldrich

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Client:	Anderson Columbia Environ	**Date:**	*20-Nov-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Closur	**Batch ID:**	IR_981119B
Lab ID:	MBlank	**Prep Date:**	11/18/19
		Date Analyzed:	11/19/98

QUALITY CONTROL REPORT

Method Blank

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Result	Report Limit	Units:
Petroleum Hydrocarbons, TR	< 0.5	0.5	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *20-Nov-98*
Matrix: Water
Batch ID: IR_981119B
Prep Date: 11/18/19
Date Analyzed: 11/19/98

QUALITY CONTROL REPORT

Laboratory Control Sample

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Petroleum Hydrocarbons, TR	2	1.89	95	73-119	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCSD

Date: *20-Nov-98*
Matrix: Water
Batch ID: IR_981119B
Prep Date: 11/18/19
Date Analyzed: 11/19/98

QUALITY CONTROL REPORT

Laboratory Control Sample Duplicate

PETROLEUM HYDROCARBONS, T/R **E418.1** **Analyst:** SLF

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Petroleum Hydrocarbons, TR	2	1.79	90	73-119	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Closur	**Batch ID:**	ICP_981117A
Lab ID:	MBlank	**Prep Date:**	11/16/98
		Date Analyzed:	11/17/98

QUALITY CONTROL REPORT

Method Blank

ARSENIC, Total | **SW6010B** | **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Arsenic	< 0.05	0.05	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Closur	**Batch ID:**	ICP_981117A
Lab ID:	9811045-01A	**Prep Date:**	11/16/98
		Date Analyzed:	11/17/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

ARSENIC, Total — **SW6010B** — **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Arsenic	1	0.919	92	75-125	0.953	95	4	15	mg/L

* MS/MSD results reflect the amount spiked + the parent sample concentration.

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *01-Dec-98*
Matrix: Water
Batch ID: ICP_981117A
Prep Date: 11/16/98
Date Analyzed: 11/17/98

QUALITY CONTROL REPORT

Laboratory Control Sample

ARSENIC, Total — SW6010B — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Arsenic	1	0.95	95	80-120	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Closur	**Batch ID:**	ICP_981117B
Lab ID:	MBlank	**Prep Date:**	11/16/98
		Date Analyzed:	11/17/98

QUALITY CONTROL REPORT

Method Blank

CADMIUM, Total **SW6010B** **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Cadmium	< 0.005	0.005	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: 9811045-01A

Date: *01-Dec-98*
Matrix: Water
Batch ID: ICP_981117B
Prep Date: 11/16/98
Date Analyzed: 11/17/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

CADMIUM, Total — **SW6010B** — **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Cadmium	0.4	0.363	91	75-125	0.451	113	22	15	mg/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Clo	**Batch ID:**	ICP_981117B
Lab ID:	LCS	**Prep Date:**	11/16/98
		Date Analyzed:	11/17/98

QUALITY CONTROL REPORT

Laboratory Control Sample

CADMIUM, Total — **SW6010B** — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Cadmium	0.4	0.373	93	80-120	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: MBlank

Date: *01-Dec-98*
Matrix: Water
Batch ID: ICP_981117C
Prep Date: 11/16/98
Date Analyzed: 11/17/98

QUALITY CONTROL REPORT

Method Blank

METALS- RCRA, Total **SW6010B** **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Barium	< 0.01	0.01	mg/L
Chromium	< 0.01	0.01	mg/L
Lead	< 0.03	0.03	mg/L
Selenium	< 0.05	0.05	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: 9811045-01A

Date: *01-Dec-98*
Matrix: Water
Batch ID: ICP_981117C
Prep Date: 11/16/98
Date Analyzed: 11/17/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

METALS- RCRA, Total SW6010B **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Barium	2	1.94	95	80-120	2.01	99	4	20	mg/L
Chromium	0.4	0.382	86	80-120	0.42	95	9	20	mg/L
Lead	1	0.922	77	80-120	1.04	89	12	20	mg/L
Selenium	1	0.924	92	80-120	0.987	99	7	20	mg/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *01-Dec-98*
Matrix: Water
Batch ID: ICP_981117C
Prep Date: 11/16/98
Date Analyzed: 11/17/98

QUALITY CONTROL REPORT

Laboratory Control Sample

METALS- RCRA, Total — **SW6010B** — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Barium	2	1.88	94	80-120	mg/L
Chromium	0.4	0.388	97	80-120	mg/L
Lead	1	0.932	93	80-120	mg/L
Selenium	1	0.961	96	80-120	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Closur	**Batch ID:**	ICP_981118A
Lab ID:	MBlank	**Prep Date:**	11/16/98
		Date Analyzed:	11/18/98

QUALITY CONTROL REPORT

Method Blank

METALS- RCRA, Total | **SW6010B** | **Analyst:** JOL

Analyte	Result	Report Limit	Units:
Silver	< 0.01	0.01	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Closur	**Batch ID:**	ICP_981118A
Lab ID:	9811045-01A	**Prep Date:**	11/16/98
		Date Analyzed:	11/18/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

METALS- RCRA, Total **SW6010B** **Analyst:** JOL

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Silver	0.1	0.055	55	80-120	0.042	42	27	20	mg/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Clo	**Batch ID:**	ICP_981118A
Lab ID:	LCS	**Prep Date:**	11/16/98
		Date Analyzed:	11/18/98

QUALITY CONTROL REPORT

Laboratory Control Sample

METALS- RCRA, Total — **SW6010B** — **Analyst:** JOL

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Silver	0.1	0.08	80	80-120	mg/L

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Client:	Anderson Columbia Environ	**Date:**	*01-Dec-98*
Lab Order:	9811045	**Matrix:**	Water
Project:	Longhorn Army Ammo Plant, Storage Area Closur	**Batch ID:**	HG_981119B
Lab ID:	MBlank	**Prep Date:**	11/19/98
		Date Analyzed:	11/19/98

QUALITY CONTROL REPORT

Method Blank

MERCURY, TOTAL **SW7470a** **Analyst:** DAM

Analyte	Result	Report Limit	Units:
Mercury	< 0.0002	0.0002	mg/L

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Closur
Lab ID: 9811045-01A

Date: *01-Dec-98*
Matrix: Water
Batch ID: HG_981119B
Prep Date: 11/19/98
Date Analyzed: 11/19/98

QUALITY CONTROL REPORT

Matrix Spike/Matrix Spike Duplicate

MERCURY, TOTAL — SW7470a — **Analyst:** DAM

Analyte	Amount Spiked	MS* Results	% Recovery	Control Limits	MSD* Results	% Recovery	% RPD	RPD Limits	Units
Mercury	0.005	0.005	96	77-120	0.005	100	4	15	mg/L

*** MS/MSD results reflect the amount spiked + the parent sample concentration.**

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Client: Anderson Columbia Environ
Lab Order: 9811045
Project: Longhorn Army Ammo Plant, Storage Area Clo
Lab ID: LCS

Date: *01-Dec-98*
Matrix: Water
Batch ID: HG_981119B
Prep Date: 11/19/98
Date Analyzed: 11/19/98

QUALITY CONTROL REPORT

Laboratory Control Sample

MERCURY, TOTAL SW7470a **Analyst:** DAM

Analyte	Amt. Spiked	Result	% Recovery	Control Limits	Units:
Mercury	0.005	0.0049	98	77-120	mg/L

00189356

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COC #: 6663
Job# 12540

CHAIN OF CUSTODY RECORD

Chemron's Client: ANDERSON COLUMBIA ENVIRONMENTAL INC	Client's P.O. #:
Project Manager: WAYNE THOMAS	Phone #: 903-687-3689
Address: BENAURA FARM 13589 FM 2625 E	FAX #: WASKOM, TEX 75692
Project Number:	Project Name: STORAGE AREA CLOSURE
Project Location: LONGHORN ARMY AMMO. PLT, KARNACK, TEX	Sampler Signature: Wayne Thomas

ID # LAB USE ONLY	Sampling Date	Sampling Time	Matrix (s,w,f)	Composite	Grab	Boring	FIELD ID #	FIELD DESCRIPTION	No. of Containers	ANALYSIS: BTEX	TRPH	VOA's	8-RCRA-METALS	SEMI-VOA's	REMARKS (Preservation, Size/Amount, Etc.)
74702	11/10/98	1420	W		✓		Potable H2O	Potable H2O from COE Trailer	4			✓			
74703	"		W		✓			Trip Blank				✓			
74702	10/10/98	1430	W		✓		POTABLE H2O	POTABLE H2O FROM COE TRAILER	2				✓		
	10/10/98	1445	W		✓		POTABLE WATER	POTABLE H2O FROM COE TRAILER	2					✓	
	10/10/98	1450	W		✓		POTABLE WATER	POTABLE H2O FROM COE TRAILER	2						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Wayne Thomas	10/10/98	1600	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)
	11/12/98	09:30	E.K. Halbert

Remarks:

	Yes	No	
Headspace			If Yes, Amt.
Properly Sealed			If No, Explain
Chilled to 40°F			If No, Temp.

Type of Container

Additional comments:

CHAIN-OF-CUSTODY REPORTS

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COC #: 6203

12147 (4 of 10)

Chemron's Client: Anderson Columbia Env.	Client's P.O. #:
Project Manager: Curtis Bowden	Phone #: 903-277-9025
Address: PO Box 1385 Lake City, Tx.	FAX #:
Project Number: 8502	Project Name: Longhorn Army Ammo Plant
Project Location: Karnack, Tx	Sampler Signature: Curtis Bowden

CHAIN OF CUSTODY RECORD

ID # LAB USE ONLY	Sampling Date	Sampling Time	Matrix (s,w,f)	Composite	Grab	Boring	FIELD ID #	FIELD DESCRIPTION	No. of Containers	ANALYSIS: BTEX	TRPH	RCRA-8	VOC	Semi VOC			REMARKS (Preservation, Size/Amount, Etc.)
73060	7/30	11:45	W	X			LHAAP	31-W-Wash	7		X	X	X	X			
73061	7/30	15:30	W	X			"	31-W-Rinse	7		X	X	X	X			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Curtis Bowden	8-3	12:00	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Remarks:

	Yes	No	
Headspace			If Yes, Amt.
Properly Sealed			If No, Explain
Chilled to 40°F			If No, Temp.

Type of Container

Additional comments: Void SVOC analy. 31-W-two

00189358

00189359

#19

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SAMPLE LOG-IN CHECKLIST

DATE: 8/4/98 TIME: 09:00 ~~a.m.~~ / p.m. INITIALS: H

CLIENT: ACE PROJECT: 8502 - LONGHORN ARMY AMMO PLANT

1. Is a Chain of Custody present? ~~Yes~~ No
2. Is the Chain of Custody properly completed? ~~Yes~~ No
3. Are custody seals present? Yes ~~No~~
   If yes, are they intact? Yes No
   Are they on: Sample ____ *or on* Shipping Container ____
4. Are all samples tagged or labeled? ~~Yes~~ No
   If yes, do the labels match the Chain of Custody? ~~Yes~~ No
5. Do all shipping documents agree (i.e, number of coolers arrived vs. on tickets?) *If not*, describe below. Yes No N/A
6. Are samples preserved properly? *If not*, describe below. ~~Yes~~ No
7. Are all samples within holding times on arrival? *If not*, describe below. ~~Yes~~ No

			Other
8.	Condition of shipping container:	Intact ✓ *or*	
9.	Condition of samples:	Intact ✓ *or*	
10.	Temperature of samples:	3.0°C	
11.	Delivery agent:	Client ___ UPS ___ Fed-Ex ✓ *or*	
12.	Sample disposal:	Return to client ___ Chemron disposal ✓	

COMMENTS (Reference checklist item number from above, or for comments on resolution below):

ALL VOA's HAVE AIR BUBBLES (ONE 4 LTR. BOTTLE OF 31-W-RINSE & HAAP BROKEN)
TEMP VIAL BROKEN
#19 ICE CHEST

C.B.

Record of contacting client for resolution of sample discrepancies (first and retry contact)

		Contacted How?			
Name:		Phone ___	Fax ___	Date: ___/___	Time: ___
Name:		Phone ___	Fax ___	Date: ___/___	Time: ___

5

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COC #: 6204

12167
(5 of 6)

CHAIN OF CUSTODY RECORD

Chemron's Client: Anderson Columbia ENV.	Client's P.O. #:
Project Manager: Curtis Bowden	Phone #: 903-277-9025
Address: P.O. Box 1386 Lake City, Fla.	FAX #:
Project Number: 8502	Project Name: Longhorn Army Ammo Plant
Project Location: Karnack, Tx.	Sampler Signature: [signature]

ID # LAB USE ONLY	Sampling Date	Sampling Time	Matrix (s,w,f)	Composite	Grab	Boring	FIELD ID #	FIELD DESCRIPTION	No. of Containers	BTEX	TRPH	Voc	RCRA-8	Semi Voc		REMARKS (Preservation, Size/Amount, Etc.)
73062	7/30	11:50	S			X	LHAAP	31-W-1	3	X	X	X	X			
73063	7/30	12:00	S			X	LHAAP	31-W-2	3	X	X	X	X			
73064	"	12:50	S			X	LHAAP	31-W-3	3	X	X	X	X			
73065	"	13:20	S			X	LHAAP	31-W-4	3	X	X	X	X			
73066	"	13:40	S			X	LHAAP	31-W-5	3	X	X	X	X			
73067	"	14:00	S			X	LHAAP	31-W-6	3	X	X	X	X			
73068	"	14:55	S			X	LHAAP	31-W-7	3	X	X	X	X			
73069	"	15:20	S			X	LHAAP	31-W-8	3	X	X	X	X			
73070	"	15:50	S			X	LHAAP	31-W-9	3	X	X	X	X			
73071	"	16:20	S			X	LHAAP	31-W-10	3	X	X	X	X			

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
[signature]	8-3	12:00	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	8.4	07:00	Received for Laboratory by: (Signature) E K Hallbert

Remarks:

	Yes	No	
Headspace			If Yes, Amt.
Properly Sealed			If No, Explain
Chilled to 40°F			If No, Temp.

Type of Container

Additional comments:

00189360

00189361

CHEMRON
INCORPORATED

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SAMPLE LOG-IN CHECKLIST

DATE: 8 / 4 / 98 TIME: 09:00 a.m. / p.m. INITIALS: [illegible]

CLIENT: ACE PROJECT: LONG HORN ARMY AMMO PLANT

1. Is a Chain of Custody present? Yes No
2. Is the Chain of Custody properly completed? Yes No
3. Are custody seals present? Yes No
   If yes, are they intact? Yes No
   Are they on: Sample _____ *or on* Shipping Container _____
4. Are all samples tagged or labeled? Yes No
   If yes, do the labels match the Chain of Custody? Yes No
5. Do all shipping documents agree (i.e, number of coolers arrived vs. on tickets?) *If not*, describe below. Yes No N/A
6. Are samples preserved properly? *If not*, describe below. Yes No
7. Are all samples within holding times on arrival? *If not*, describe below. Yes No

			Other
8.	Condition of shipping container:	Intact ✓ *or*	_____
9.	Condition of samples:	Intact ✓ *or*	_____
10.	Temperature of samples:	1.0°C	
11.	Delivery agent:	Client ___ UPS ___ Fed-Ex ✓ *or*	_____

12. Sample disposal: Return to client _____ Chemron disposal ✓

COMMENTS (Reference checklist item number from above, or for comments on resolution below):

_____

_____

_____

_____

Record of contacting client for resolution of sample discrepancies (first and retry contact)

		Contacted How?			
[illegible]ne:	_____	Phone ___ Fax ___	Date: ___/___	Time: _____	
Name:	_____	Phone ___ Fax ___	Date: ___/___	Time: _____	

CHEMRON
INCORPORATED
10526 Gulfdale • San Antonio, Texas 78216
(210) 340-8121 (800) 572-6955

COC #: 6205

12167
(loaflo)

CHAIN OF CUSTODY RECORD

Chemron's Client	Client's P.O. #
Anderson Columbia Env.	
Project Manager: Curtis Bowden	Phone #: 903-277-9025
Address: P.O. Box [redacted] 1386 Lake City,	FAX #: FLA
Project Number: 8502	Project Name: Longhorn Army Ammo Plant
Project Location: Karnack, Tx	Sampler Signature: Curtis Bowden

ID # LAB USE ONLY	Sampling Date	Sampling Time	Matrix (s,w,f)	Composite	Grab	Boring	FIELD ID #	FIELD DESCRIPTION	No. of Containers	BTEX	TRPH	VOC	RCRA-8	Semi VOC		REMARKS (Preservation, Size/Amount, Etc.)
73072	7/30	16:50	S			X	LHAAP	31-W-11	3		X	X	X	X		
73073	"	17:10	S			X	LHAAP	31-W-12	3		X	X	X	X		
73074	"	17:30	S			X	LHAAP	31-W-13	3		X	X	X	X		
73075	7/30	08:00			X		LHAAP	Potable H2O	2*		X	X	X	X	X	Background
73076			W					TRIP BLANKS *	1			X				
73077			W					" *	1			X				
73078			W					" *	1			X				
73079			W					" *	1			X				

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Curtis Bowden	8-3	12:00	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date 8-4	Time 09:00	Received for Laboratory by: (Signature) E.K. Hallert

Remarks:

	Yes	No	
Headspace			If Yes, Amt.
Properly Sealed			If No, Explain
Chilled to 40°F			If No, Temp.

Type of Container

Additional comments: * Lab to analyze for VOC's only - order 2 VOA vials 8/4/98

00189362

00189363

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SAMPLE LOG-IN CHECKLIST

DATE: 8 / 4 / 98 TIME: 09:00 a.m. / p.m. INITIALS: [illegible]

CLIENT: ACE PROJECT: LONGHORN ARMY AMMO PLANT

1. Is a Chain of Custody present? Yes No
2. Is the Chain of Custody properly completed? Yes No
3. Are custody seals present? Yes No
   If yes, are they intact? Yes No
   Are they on: Sample _____ *or on* Shipping Container _____
4. Are all samples tagged or labeled? Yes No
   If yes, do the labels match the Chain of Custody? Yes No
5. Do all shipping documents agree (i.e, number of coolers arrived vs. on tickets?) *If not*, describe below. Yes No N/A
6. Are samples preserved properly? *If not*, describe below. Yes No
7. Are all samples within holding times on arrival? *If not*, describe below. Yes No

				Other
8.	Condition of shipping container:	Intact ✓	*or*	_____
9.	Condition of samples:	Intact ✓	*or*	_____
10.	Temperature of samples:	2.0°C		
11.	Delivery agent:	Client ___ UPS ___ Fed-Ex ✓	*or*	_____

12. Sample disposal: Return to client _____ Chemron disposal ✓

COMMENTS (Reference checklist item number from above, or for comments on resolution below):

#19 – 3.0°C #1105-L – 1.0°C
#1107-L – 5.5°C
#1112-L – 2.5°C
#1116-L – 3.0°C
#1007-L – 2.5°C
#1125-L – 2.0°C

Record of contacting client for resolution of sample discrepancies (first and retry contact)

		Contacted How?			
Name:	_____	Phone ___	Fax ___	Date: ___/___	Time: _____
Name:	_____	Phone ___	Fax ___	Date: ___/___	Time: _____

8

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(210) 340-8121 (800) 572-6955

COC #: 6469
Job # 12228

Chemron's Client: Anderson Columbia Env.	Client's P.O. #
Project Manager: Curtis Black	Phone #: 903-297-9025
Address: PO Box 1386 Lake City, FL	FAX #:
Project Number: 8502	Project Name: LHAAP
Project Location: Marshall, TX	Sampler Signature: Curtis Black

CHAIN OF CUSTODY RECORD

ID # LAB USE ONLY	Sampling Date	Sampling Time	Matrix (s,w,f)	Composite	Grab	Boring	FIELD ID #	FIELD DESCRIPTION	No. of Containers	ANALYSIS BTEX	TRPH	Semi Vol	RDX	HMX	REMARKS (Preservation, Size/Amount, Etc.)
73271	8/18	12:00	W	X			LHAAP	811-1 [illegible] Rinse	2			X	X	X	
73272	8/18	11:55	W	X			LHAAP	811-1 Wash	2			X	X	X	
73273	8/18	12:05	W	X			LHAAP	31-W- Wash	1			X			
73274	8/18	12:08	W	X			LHAAP	31-W- Rinse	1			X			
73275	8/18	12:10	W	X			LHAAP	49-W- Rinse	1			X			
73276	8/18	12:15	W	X			LHAAP	49-W Wash	1			X			
—								Temp Vial	1						
73277								Trip Blank	1						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Curtis Black	8-19	12:00	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date 8-20	Time 09:15	Received for Laboratory by: (Signature) E.K. Hallet

Remarks:

	Yes	No	
Headspace			If Yes, Amt.
Properly Sealed			If No, Explain
Chilled to 40°F			If No, Temp.

Type of Container

Additional comments:

00189364

00189365

CHEMRON
INCORPORATED

10526 Gulfdale • San Antonio, Texas 78216-3601 • (210) 340-8121

SAMPLE LOG-IN CHECKLIST

DATE: 8 / 20 / 98 TIME: 09:15 ~~a.m.~~ / p.m. INITIALS: ~~A~~

CLIENT: ACE PROJECT: LHAAP

1. Is a Chain of Custody present? ~~Yes~~ No
2. Is the Chain of Custody properly completed? ~~Yes~~ No
3. Are custody seals present? Yes ~~No~~
   If yes, are they intact? Yes No
   Are they on: Sample _____ *or on* Shipping Container _____
4. Are all samples tagged or labeled? ~~Yes~~ No
   If yes, do the labels match the Chain of Custody? ~~Yes~~ No
5. Do all shipping documents agree (i.e, number of coolers arrived vs. on tickets?) *If not*, describe below. ~~Yes~~ No N/A
6. Are samples preserved properly? *If not*, describe below. ~~Yes~~ No
7. Are all samples within holding times on arrival? *If not*, describe below. ~~Yes~~ No

			Other
8.	Condition of shipping container:	Intact ✓ *or*	_____
9.	Condition of samples:	Intact ✓ *or*	_____
10.	Temperature of samples:	3°C	#1125L
11.	Delivery agent:	Client ___ UPS ___ Fed-Ex ✓ *or*	_____

12. Sample disposal: Return to client _____ Chemron disposal ✓

COMMENTS (Reference checklist item number from above, or for comments on resolution below):

_____

_____

_____

_____

C.B.

Record of contacting client for resolution of sample discrepancies (first and retry contact)

Contacted How?

Name: _____ Phone ___ Fax ___ Date: ___/___ Time: _____

Name: _____ Phone ___ Fax ___ Date: ___/___ Time: _____

APPENDIX II

September 1988 Closure Plan

LONGHORN ARMY AMMUNITION PLANT

CLOSURE/POST-CLOSURE PLAN

SEPTEMBER, 1988

Allen B. Childress, Jr.
Environmental Coordinator
Morton Thiokol, Inc.

Don E. Maley
Environmental Coordinator
Army

PURPOSE

The purpose of this plan is to provide guidance should the need arise to close an existing waste disposal site on Longhorn Army Ammunition Plant. The procedures provided are of a general nature and will be revised and expanded before actual closure of a particular site begins.

GENERAL PROCEDURES

A. The contact point for any information or problems encountered with any waste disposal facility currently in use or closed, is the Commander, Longhorn Army Ammunition Plant, Marshall, Texas 75670, phone number (214) 679-2100. Should the plant itself ever be deactivated, the contact point will become the Environmental Operations Center, U.S. Army Armament, Munitions and Chemical Command, Rock Island, Illinois 61299 which can be reached at Autovon number 8-793-6244, commercial number (309) 782-6244/4793.

B. Any site which is closed or partially closed will be certified closed by an independent (subcontractor) registered professional engineer, who will have access to the disposal site before, during, and after closure to insure that the site is closed as per the state approved Closure Plan. The registered professional engineer will provide a letter of certification to the installation certifying proper closure. A copy of this letter plus a notarized letter signed by the General Manager and Contracting Officer's Representative will be provided to the state within 30 days of final closure.

C. Following closure or partial closure of any disposal site, a metes and bounds description of the site will be recorded with the Harrison County Court Clerk. This metes and bounds description will include information necessary to describe the site, all waste cells within the site, the type and quantity of materials left in the closed site and a statement that the site will not be used for other activities. A copy of this information with the seal of the County Clerk will be provided to the Executive Director of the Texas Water Commission. As there is no deed to the property owned by the federal government, the notice recorded with the metes and bounds description will be furnished with a map of the installation.

D. Periodic revision of this plan will be made to insure that new facilities are added, and that closed sites are removed from the plan. Revision of the Closure Plan Cost Estimate will be done annually on/or before November 30th.

E. This plan is not for release outside of Longhorn Army Ammunition Plant without the approval of the Commander. It's purpose is as an internal planning document meeting the requirements of the Resource Conservation and Recovery Act and the Texas Water Commission for development of closure/post-closure plans.

F. All equipment used to totally or partially close a hazardous waste site will be cleaned and decontaminated. The item will be cleaned and decontaminated with material appropriate for the type of waste and equipment involved, such as: water, solvents, absorbent, etc. All waste and waste residues produced will be collected and managed as a hazardous

waste. It will then be shipped off-site for disposal at an approved hazardous waste site. Equipment that is impractical to clean and decontaminate, such as brooms, mops and rags, will be packaged and shipped off-site for disposal at an approved hazardous waste site.

SPECIFIC SITE PROCEDURES

A. Burning Ground (B.G. #3) Open Burning Area

1. Closure Procedures

Depending on priorities and operational requirements, higher echelons of the U. S. Army will determine if a facility is to be laid away (deactivated) or maintained when production ceases. Partial closure of this facility and/or relocation of operations could be made at any time throughout the life of the facility. Partial closure could be done as per the procedures contained here but, in all probability, would be accomplished by removal of the contaminated soil for disposal in an off-plant hazardous waste disposal site and then refilling the area to grade. Explosive waste ash residue from burns in this area is periodically removed and tested and if found to be non-hazardous, buried in a sanitary landfill on-plant or, if hazardous, shipped to an off-plant hazardous waste disposal site. There is, therefore, no permanent accumulations of hazardous waste at this facility and there is no known life expectancy for the site. The expected year of closure for the site is the year 2030. At this time, closure, either partial or complete closure, is not being contemplated. Should the decision be made to deactivate the open burning area, the following is proposed as a method:

a. Equipment such as burning pans and cages would be removed and salvaged. Clay linings from pans will be drummed and tested for EP toxicity (metals) to determine proper disposal methods.

b. A thorough search will be made of the area to be deactivated for unexploded ordnance or explosives and any items found will be destroyed.

c. Representative soil samples will be taken in the area and analyzed for explosive residue. If explosive residue is found, a layer of straw will be laid over the area, soaked with diesel and burned off.

d. Soil tests will be conducted for metals and organics and any area found to exceed EPA listed standards will be excavated, the soil drummed and shipped to an off-plant hazardous waste disposal site.

e. Low areas will be filled with soil and contoured to control surface water runoff and to prevent standing water. Appropriate vegetation will then be planted and maintained to prevent erosion. Fertilizer will be applied to promote growth.

f. The area will be posted and secured as required by the use of a chain link fence and gates.

g. The area will be inspected monthly for the first year and quarterly thereafter to check for possible leaching, surface runoff or erosion and to maintain proper cover.

h. Records of inspections performed will be maintained by the installation Environmental Control Office. An annual report will be made to the U.S. Army higher echelons for permanent record.

i. Monitoring of wells around the Burning Ground will be conducted annually for the first five (5) years. If no groundwater contamination from open burning operations is found after five (5) years, then a request for an exemption to the monitoring requirements will be made.

2. Care of Site After Closure

a. No other use of this site is planned at this time.

b. If required, inspections, maintenance actions and reports will be continued for a minimum of 30 years or until conditions change.

c. As required, preventive maintenance inspections will be continued on a quarterly basis indefinitely to insure integrity of the site.

d. The Department of Defense Explosive Safety Board requires that all areas containing buried explosives remain under federal control until the explosives are rendered innocuous. Closed site ownership and responsibility is expected to remain with the U.S. Army.

B. Demolition Range

1. Closure Procedures

Depending on priorities and operational requirements, higher echelons of the U.S. Army will determine if a facility is to be laid away, closed or maintained when production operations cease. Partial closure of the demolition range or relocation of the existing demolition sites is possible throughout the life of the facility. Partial closure or relocation would be accomplished in the same manner as closure. Following demolition of explosives there is very little residue left and accumulation, for all intents and purposes, of waste will not occur. The estimated life of the facility is 50 years from 1980 (2030) assuming that the actual demolition pits will be relocated several times during this period. Time required to close this facility would be six months after notice to proceed from the regulator. Closure of the demolition range is not anticipated until and unless, the entire plant closes. Should the decision be made to close the demolition range, the following is proposed as a method:

a. Stake the area out, within 500 feet of the demolition pits, into 100 foot square grids and perform a detailed surface search for unexploded ordnance. Any unexploded ordnance found will be destroyed in place.

b. Take core samples to a depth of ten feet in each demolition pit and sample for metals.

c. If testing indicates contamination, remove the contaminated soil and dispose of it in an off-plant hazardous waste disposal site.

d. If no contamination is found, fill the demolition pits with dirt, contour to prevent run-on of surface water and seed to prevent erosion.

e. Place warning signs immediately around/above the demolition pit areas stating, "Warning, Former Demolition Area".

2. Care of Site After Closure

a. Semiannual maintenance checks for soil erosion will be made for the first several years after which additional checks will be made as required.

b. No monitoring will be required because the site will be closed by removing all hazardous waste, and the potential for groundwater contamination is very small.

c. No other use of this site is planned at this time.

d. Records of inspections and maintenance actions will be maintained by installation Environmental Control Office and an annual report will be made to U.S. Army higher echelons for permanent record.

e. If required, post-closure actions will continue for up to 30 years, unless conditions change.

C. Drum Storage Buildings (49-W, 31-W, and 811-1)

1. Closure Procedures

Depending on priorities and operational requirements, higher echelons of the U.S. Army will determine if a facility is to be laid away (deactivated) or maintained when production ceases. Partial closure of this facility, and/or relocation of operations, could be made at any time throughout the life of the facility. Partial closure would be accomplished by returning part of the facility now used for hazardous waste storage to normal operations. Waste at these facilities is stored in drums pending off-site disposal and there is no known life expectancy for the buildings. At this time, closure, either partial or complete, is not being contemplated. The expected year of closure for these sites is 2030. Should the decision be made to deactivate or close all or part of these facilities, the following is proposed as a method:

a. Remove all remaining drums and ship to an approved off-site hazardous waste disposal facility, utilizing manifest procedures.

b. Sweep/mop the floor areas utilized for drum storage and drum any recovered residue for off-site disposal as in (a) above.

c. Inspect the facility for any evidence of contamination and provide a letter of certification to the Texas Water Commission stating

that the facility is partially or completely closed for hazardous waste storage operations.

d. If the facility is to be laid away and not utilized for other operations, the building will be posted and lay away forms completed. An annual inspection of the facility will be made by Property and Maintenance personnel and recorded on the lay away form.

e. Monitoring procedures during post-closure will not be necessary as sources of pollution will not exist.

2. Care of Site After Closure

a. Should the facility ever be released for public sale, a certificate of decontamination would be prepared.

b. If the facility is laid away, an annual inspection would be conducted indefinitely.

D. Lagoon (Unlined Evaporation Pond) Closure Procedures

1. Closure was completed and certified in July 1986.

2. Care of Site After Closure

a. No other use of this site is planned at this time.

b. The closed facility is inspected as part of the Preventive Maintenance program for the plant to insure that the clay cap remains intact. The grass cover will be maintained indefinitely to protect the cap. Mowing of the grass will insure that erosion can be easily spotted and controlled.

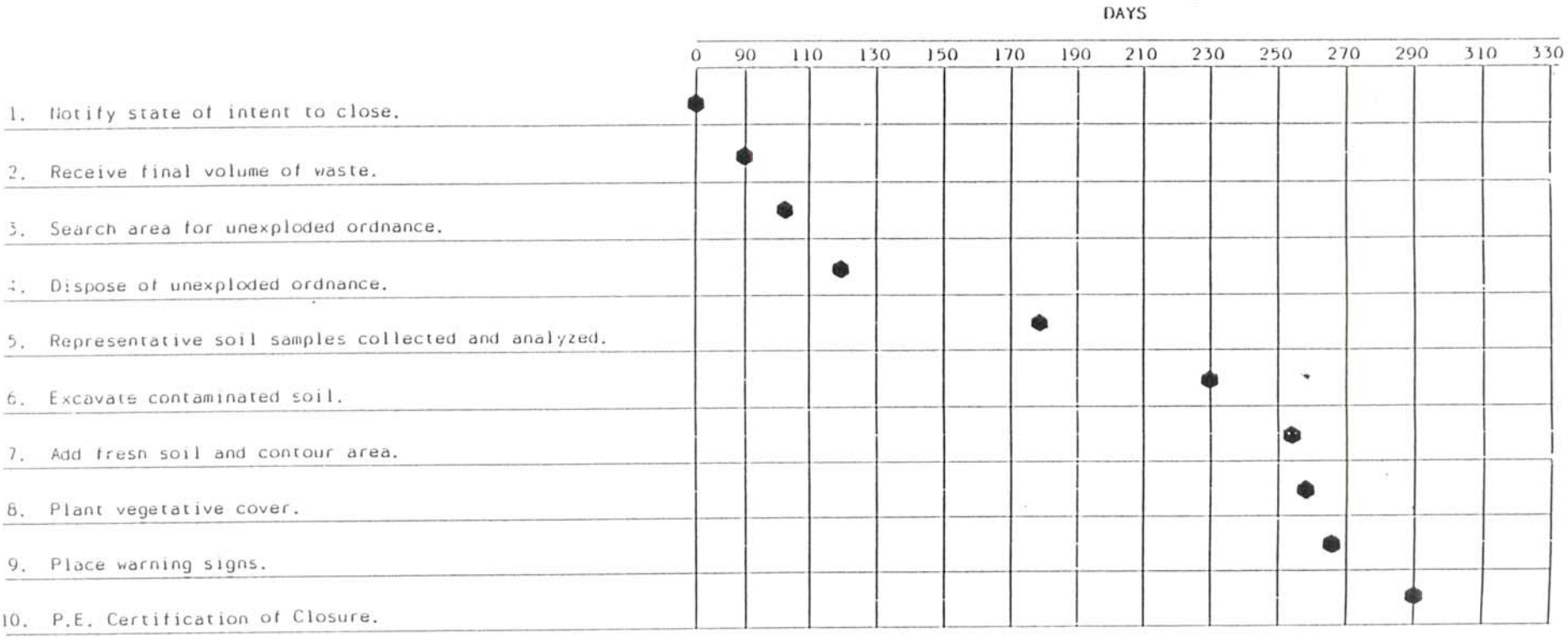
c. The fence around Burning Ground No. 3 will be maintained along with gate security and signs to preclude inadvertent access to the closed lagoon site.

d. Post closure activities are expected to continue for at least 30 years.

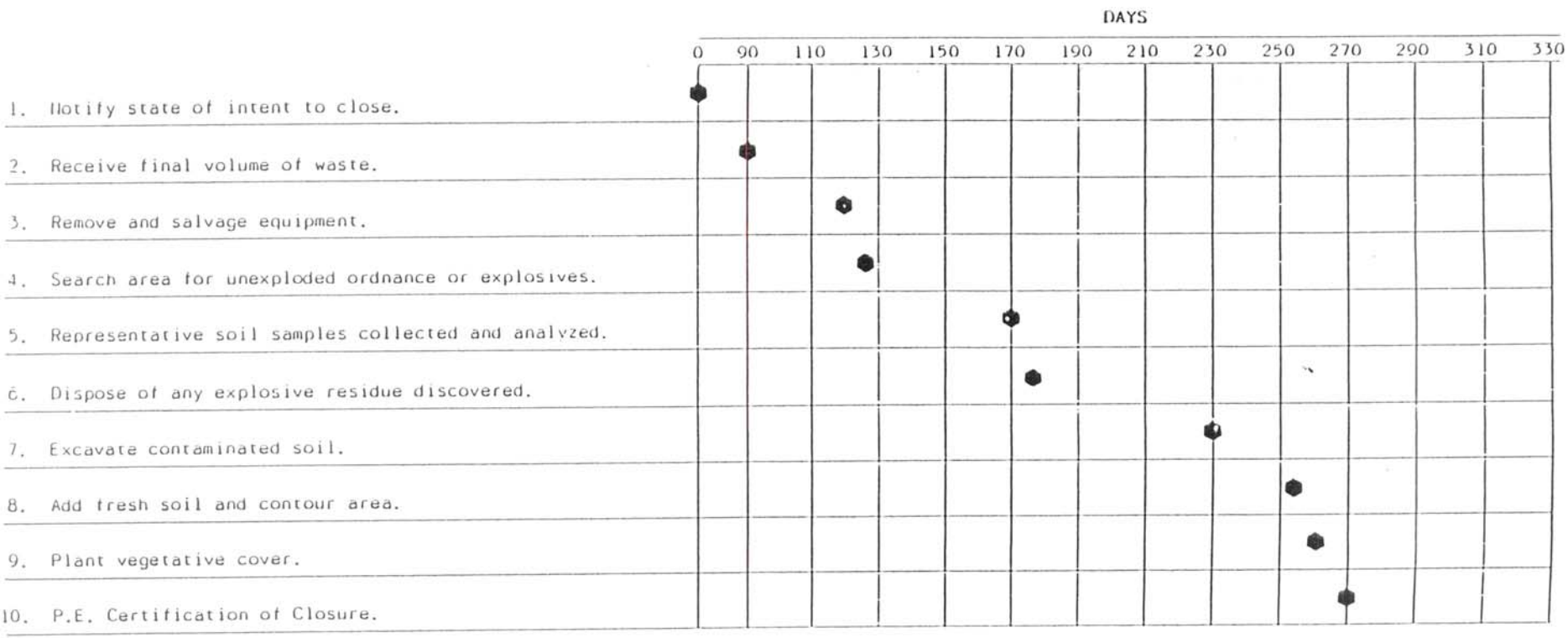
E. Schedule to totally and partially close hazardous waste management facilities (see Attachment A).

ATTACHMENT A

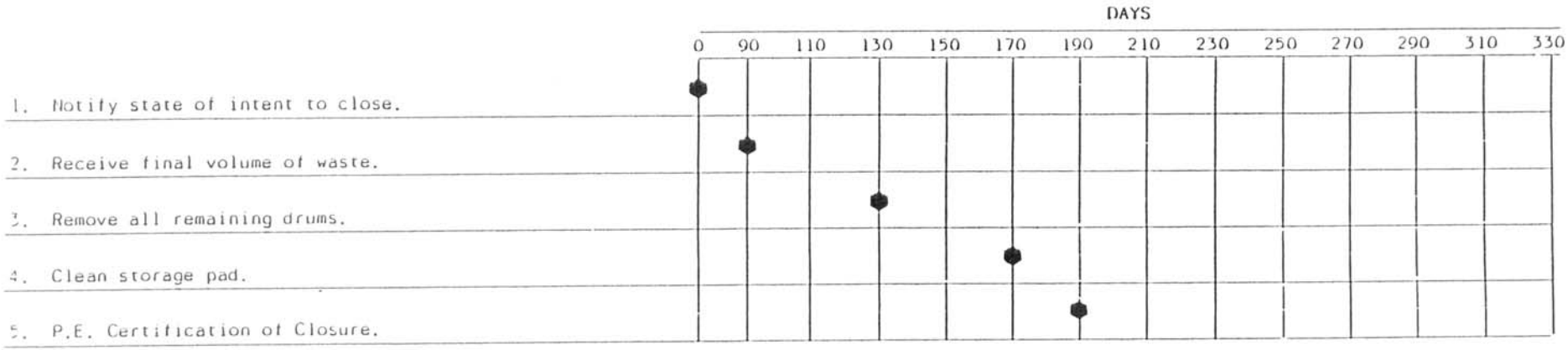
PARTIAL AND FINAL CLOSURE OF DEMOLITION RANGE



PARTIAL AND FINAL CLOSURE OF BURNING GROUND NO. 3



PARTIAL AND FINAL CLOSURE OF DRUM STORAGE BUILDINGS



ATTACHMENT B

CLOSURE COST ESTIMATE AS OF SEPTEMBER 1988

1. Open Burning*

a.	Search and destroy	$ 50,000
b.	Soil samples/burn	110,000
c.	Disc, sample and reburn	275,000
d.	Fill and seed	12,000
e.	Dispose of residue	220,000
f.	Post and secure	25,000
	TOTAL:	$692,000
g.	Post Closure	
(1)	Inspections	60,000
(2)	Maintenance (Erosion Control & Security)	100,000
(3)	Reports	20,000
	TOTAL:	$180,000
	GRAND TOTAL:	$872,000

2. Sanitary Landfill

a.	Fill and cap	$600,000
b.	Grade and seed	182,000
c.	Post and mark	35,000
	TOTAL:	$817,000
d.	Post Closure	
(1)	Inspections	36,000
(2)	Monitoring wells	75,000
(3)	Maintenance	121,000
(4)	Reports	25,000
	TOTAL:	$257,000
	GRAND TOTAL:	$1,074,000

*Escalated cost due in part to new Land Ban Restrictions.

3. Air Curtain Destructor

a.	Lay away cleanup	$125,000
b.	Preservation	25,000
c.	Posting	2,000
	TOTAL:	$152,000
d.	Post closure	
	(1) Inspections	6,500
	GRAND TOTAL:	$158,500

4. PCB Pads

a.	Ship transformers	$165,000
b.	Payment for disposal (DRMO)	250,000
c.	Clean pads	25,000
d.	Sample soil	3,000
e.	Remove and ship contaminated soil	18,000
f.	Payment for disposal	30,000
g.	Fill, grade and seed	6,000
h.	Post	2,000
	TOTAL:	$499,000
i.	Post closure	
	(1) Inspections	65,000
	(2) Reports	4,000
	TOTAL:	$69,000
	GRAND TOTAL:	$568,000

5. Demolition Range

a.	Stake and search range	$ 50,000
b.	Core samples/metal analysis	20,000
c.	Removal of contaminated soil/disposal	200,000
d.	Fill and cap with soil	30,000
e.	Grade and seed	15,000
f.	Post and secure	10,000
	TOTAL:	$325,000
g.	Post closure	
	(1) Semiannual inspections	30,000
	(2) Maintenance	40,000
	(3) Reports	15,000
	TOTAL:	$85,000
	GRAND TOTAL:	$410,000

6. Drum Storage Building 31-W*

a.	Remove drums to off-site disposal (DRMO) (1600 drums)	$ 930.000
b.	Sweep/mop floor areas	55,000
c.	Drum and dispose of residue	50,000
d.	Post area	2,200
	TOTAL:	$1,037,000
e.	Post closure	
	(1) Inspections	10,000
	GRAND TOTAL:	$1,047,200

7. Drum Storage Building 49-W*

a.	Remove drums to off-site disposal (DRMO) (2000 drums)	$300,000
b.	Sweep/mop floor areas	75,000
c.	Drum and dispose of residue	15,000
d.	Post area	2,000
	TOTAL:	$392,000
e.	Post closure	
	(1) Inspections	10,000
	GRAND TOTAL:	$402,000

*Escalated cost due in part to new Land Ban Restrictions.

8. Pilot Wastewater Treatment Plant*

a.	Dispose of remaining sludge and liquid	$250,000
b.	Steam/solvent clean tanks	250,000
c.	Clean/replace piping	75,000
d.	Clean heat exchangers and towers	150,000
e.	Dispose of cleanup residue	75,000
f.	Sample oil	10,000
g.	Remove and dispose of contaminated soil	300,000
h.	Post with signs	1,500
	TOTAL:	$1,111,500
i.	Post closure	
	(1) Inspections	10,000
	GRAND TOTAL:	$1,121,500

9. Construction Materials Landfill

a.	Fill and cap	$350,000
b.	Grade and seed	120,000
c.	Post and mark	50,000
	TOTAL:	$520,000
d.	Post closure	
	(1) Inspections	$ 36,000
	(2) Monitoring wells	72,000
	(3) Maintenance	175,000
	(4) Reports	12,000
	TOTAL:	$295,000
	GRAND TOTAL:	$815,000

10. Explosive Waste Storage 811-1*

a.	Remove drums for on-site treatment (200 drums)	$20,000
b.	Sweep/mop floor area	12,000
c.	Drum and dispose of residue	20,000
d.	Post area	2,200
	TOTAL:	$54,200
e.	Post Closure	
	(1) Inspections	10,000
	GRAND TOTAL:	$64,200

*Escalated cost due in part to new Land Ban Restrictions.

11. Lagoon (Unlined Evaporation Pond)

Closed July 1986

a. Post Closure (30 years)

(1)	Inspections	$ 10,000
(2)	Maintenance	100,000
(3)	Reports	10,000
	TOTAL:	$120,000

SUMMARY

1.	Open Burning	$ 872,000
2.	Sanitary Landfill	1,074,000
3.	Air Curtain Destructor	158,500
4.	PCB Pads	568,000
5.	Demolition Range	410,000
6.	Drum Storage (31-W)	1,047,200
7.	Drum Storage (49-W)	402,000
8.	Pilot Wastewater Treatment Plant	1,121,500
9.	Construction Materials Landfill	815,000
10.	Explosive Waste Storage (811-1)	64,200
11.	Lagoon	120,000
	GRAND TOTAL:	$6,652,400

		Closure	Post Closure
1.	Open Burning	$ 692,000	$ 180,000
2.	Sanitary Landfill	817,000	257,000
3.	Air Curtain Destructor	152,000	6,500
4.	PCB Pads	499,000	69,000
5.	Demo Range	325,000	85,000
6.	Drum Storage (31-W)	1,037,200	10,000
7.	Drum Storage (49-W)	392,000	10,000
8.	Pilot Wastewater Treatment Plant	1,111,500	10,000
9.	Construction Materials Landfill	520,000	295,000
10.	Explosive Waste Storage (811-1)	54,200	10,000
11.	Lagoon	-------	120,000
	SUB-TOTAL:	$5,599,900	$1,052,500
	Contingency (20%):	1,119,980	210,500
	GRAND TOTAL:	$6,719,880	$1,263,000

APPENDIX III

July 1997 Closure Plan

CLOSURE PLAN
for
PERMIT UNIT NO. 001

HAZARDOUS WASTE
CONTAINER STORAGE AREA 31-W
at
LONGHORN ARMY AMMUNITION PLANT

JULY 1997

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

EPA IDENTIFICATION NO. TX6213820529
HAZARDOUS WASTE PERMIT NO. 50195
SOLID WASTE REGISTRATION NO. 30990

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CLOSURE PLAN FOR HAZARDOUS WASTE STORAGE BUILDING 31-W

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CLOSURE PLAN FOR CONTAINER STORAGE AREA 31-W

(continued)

FIGURES

DRAWINGS

Hazardous Liquid Waste Storage, Drawing No. F-12291, Floor Plan, Sheet 3 of 19

Hazardous Liquid Waste Storage, Drawing No. F-12291, Exterior Elevations, Sheet 5 of 19

1.0 BACKGROUND INFORMATION

1.1 Location of Longhorn Army Ammunition Plant

Longhorn Army Ammunition Plant (LHAAP) is located in the northeast corner of Harrison County, Texas, approximately 3.6 miles from the Louisiana border. LHAAP is bordered by Caddo Lake, Caddo Lake State Park and the small town of Karnack. The plant is located approximately 30 miles west of Shreveport, Louisiana, with the nearest major city being Marshall, Texas, 15 miles to the southwest. Figure 1-1 illustrates the location of LHAAP relative to the state of Texas. The installation has a total area of approximately 8,493 acres. State Highways 43 and 134 access the installation.

1.2 Location of Container Storage Area 31-W

The Container Storage Area 31-W is located on South Crockett Avenue Longhorn Army Ammunition Plant, Harrison County, Texas. South Crockett Avenue is located towards the central area of LHAAP. Figure 1-2 details the location of Storage Area 31-W within Longhorn Army Ammunition Plant

2.0 PURPOSE OF CLOSURE PLAN

References:

1. Permit for Industrial Solid Waste Management Site, Permit Number HW-50195.
2. 30 TAC Subchapter A
3. 40 CFR 264 Subpart G

Longhorn Army Ammunition Plant (LHAAP) received notification in the fall of 1996 that it no longer has a mission requirement and will be excessed in its entirety. In accordance with hazardous waste permit provision IV.A.1.c. (abandonment of the site), LHAAP is proceeding with plans to close container storage area 31-W.

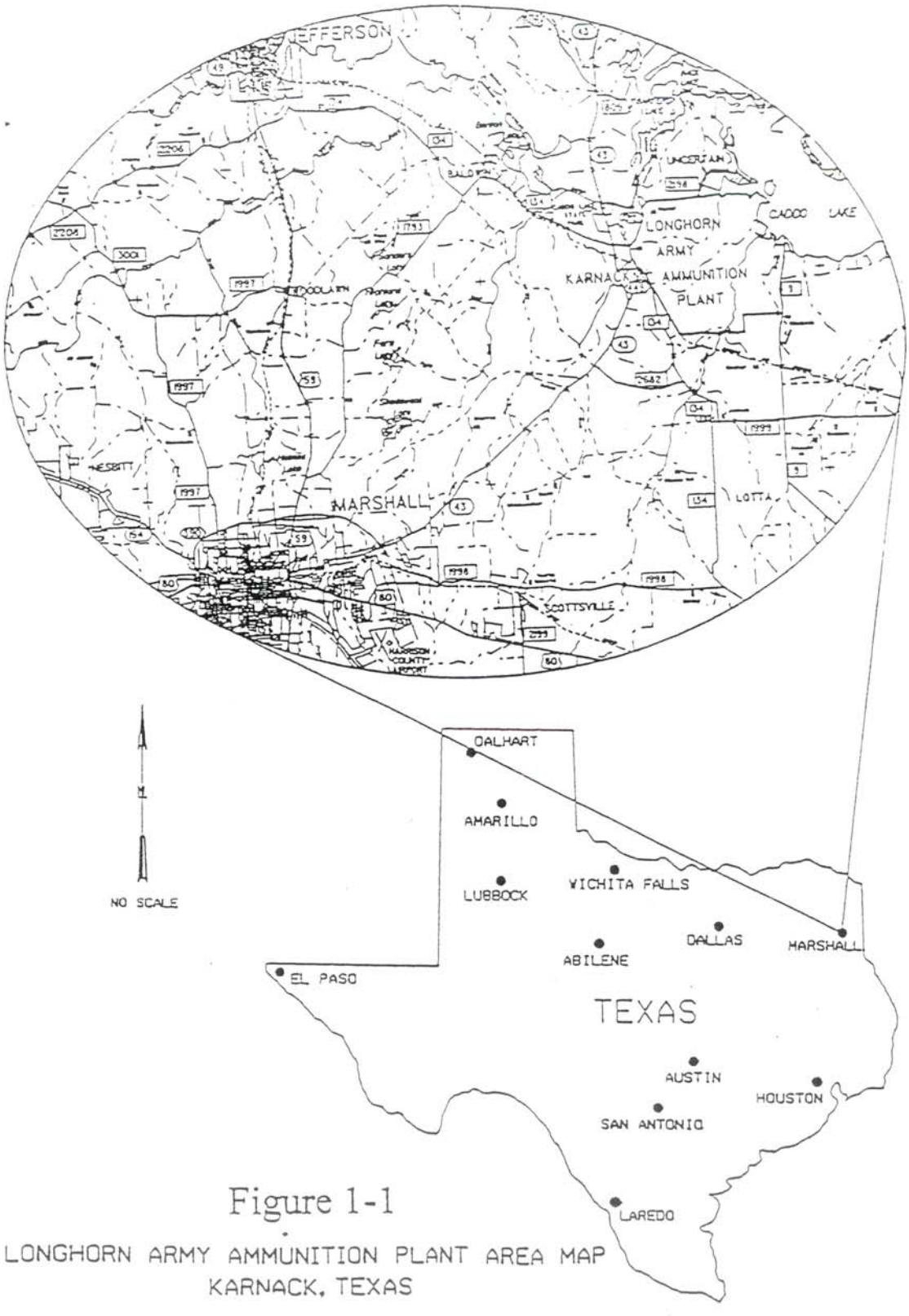
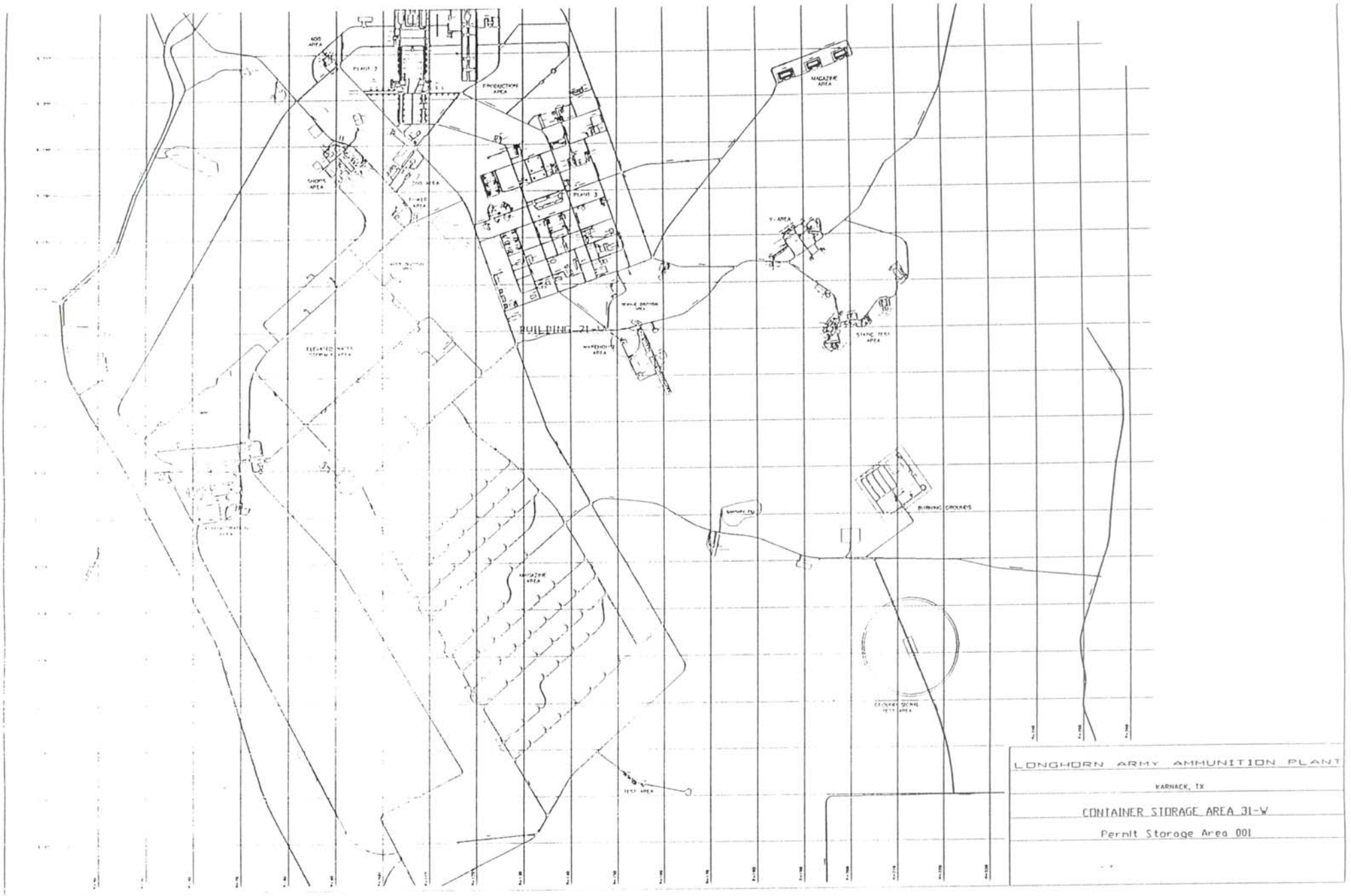


Figure 1-1

LONGHORN ARMY AMMUNITION PLANT AREA MAP
KARNACK, TEXAS

00189388


BUILDING 21-W
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TX
CONTAINER STORAGE AREA 31-W
Permit Storage Area 001

3.0 DESCRIPTION OF WASTE MANAGEMENT UNIT

Hazardous Waste Permit Unit Number - 001
Texas Waste Management Unit Registration Number - 008

Building 31-W is located in a warehouse area within the confines of Longhorn AAP. Building 31-W is one of the warehouses that was built in the late 1950's. In 1986, this building was added on to. The addition meets the standards required under RCRA. The addition has sloped concrete floors and diked bays. All hazardous wastes are stored in the part of the building that meets the technical requirements of RCRA.

Building 31-W is described in permit 50195 as follows:

> Container Storage Area, enclosed, capacity 88,000 gallons,(N.O.R. 08) identified as Building 31-W in the application, for storage of the wastes described in Provision II.A.2.b.4.-45., and 47.-109.

Building Description: Building 31-W is an enclosed warehouse structure with a concrete slab and a structural steel roof. The structure has horizontal rolling doors for access for each bay. There are eight bays in the building, each labeled with a letter of the alphabet, "a" through "h". The structure is 10093 square feet large.

4.0 DESCRIPTION AND CLASSIFICATION OF WASTES MANAGED AT STORAGE AREA 31-W

Types and quantities of wastes historically stored at Area 31-W are listed in Appendix III.

The storage area served was utilized to store hazardous waste from manufacturing from the late 1980's until the present time.

Hazardous waste permit No. 50195 Section II.B.3. authorizes the materials listed in Figure 4-1 to be stored in container storage area 31-W.

FIGURE 4-1
WASTES APPROVED FOR STORAGE AT AREA 31-W

(4) & (5) Spent Halogenated Solvents (Ignitable, Toxic)
(6) & (7) Lab Packs (ignitable, corrosive)
(8) & (9) Spent Non-Halogenated Solvents (Ignitable, Toxic)
(10) Paint Wastes, Solids
(11) Oils, waste
(12) Sulfuric Acid
(13) Dye Waste, Organic
(14) Methyl Ethyl Ketone Peroxide
(15) Creosote
(16) Cresols
(17) Dimethylamine
(18) Acetates
(19) Hexachlorobenzene
(20) Maleic Anhydride
(21) Urethane
(22) Chlorine
(23) Dimethyl Formamide
(24) Glycol
(25) Hydrogen
(26) Oxygen
(27) Potassium Iodine
(28) Silver Nitrate
(29) Amines
(30) Benzenamine
(31) Cellulose Sludge
(32) Chromium-Bearing Waste
(33) Isocyanate Waste
(34) Toluene Diisocyanate
(35) Chromium Contaminated Waste
(36) Mercury-contaminated Waste
(37) Silver Wastes
(38) Barium Compounds
(39) Calcium Chromate
(40) Barium nitrate
(41) Chromium Compounds
(42) Diethyl Phthalate
(43) 1,2 Benzene dicarboxylic Acid
(44) Formaldehyde
(45) Brine Sludge
(47) Chemicals, Agricultural
(48) Laminac (polyester resin)
(49) Vinyl Acetate
(50) IMSOL 40% Methylene Chloride & 15% Cresylic Acid
(51) Varnish
(52) Paint Thinner
(53) Resin (liquid) & epoxy resin (wet)
(54) Enamel Thinner
(55) Adhesive (Solvent Based)
(56) Shellac
(57) Amyl Acetate
(58) Aniline
(59) Ethylene Dichloride
(60) Nitromethane
(61) Cyclohexane
(62) Sodium Peroxide
(63) Mercaptan Compounds
(64) Imine Compounds
(65) Cobalt Napthanate
(66) Lacquer
(67) Toluene
(68) Isopropanol
(69) Epoxy Resin
(70) Pine Tar
(71) Turpentine
(72) Butyl Acetate
(73) Titanium Trichloride
(74) Glycidyl Ether (Butyl Glycidyl Ether)
(75) Chromium Oxide
(76) Barium Manganate
(77) Triethylenetetramine
(78) Mercury EDTA
(79) Potassium Chromate
(80) Decane (petroleum distillate)
(81) Methyl Ethyl Ketone
(82) Diesel
(83) Antimony Trichloride
(84) Battery (lead acid)
(85) Nitric Acid
(86) Acetic Acid
(87) Phosphoric Acid

(88) Hydrochloric Acid
(89) Nitrocellulose
(90) Printing Ink (liquid)
(91) Hexane
(92) Vinyl chloride
(93) Molybdenum Trioxide
(94) Lead Waste
(95) Lead Oxide
(96) Hexamine
(97) Methyl Acetate
(98) Polyester Resin
(99) Acetic Anhydride
(100) Ethanol
(101) Kodak Developer Replenisher (Part B)
(102) Sulfuric Acid & Silver
(103) Sodium Nitrate
(104) Strontium Nitrate
(105) Corrosive Waste
(106) Methylene Chloride
(107) Kerosene
(108) Organic Peroxide
(109) Mixed Acids

5.0 CLOSURE PROCEDURE

The closure procedure to be implemented for container storage area building 31-W at LHAAP will generally consist of the following steps:

1. Empty all wastes, pallets, drums, carts, spill kits, etc. out of building.
2. Wash floor with Alconox detergent and water.
3. Squeegee-up/vacuum-up decontamination water from floor.
4. Rinse floor with fresh water.
5. Squeegee-up/vacuum-up rinse water from floor.
6. Sample washwater & perform hazardous waste determination.
7. Repeat steps two through six if necessary.
8. Dispose of all hazardous or non-hazardous waste at authorized offsite solid waste management facility.
9. Sample soil and verify condition.
10. Certification of closure actions.

6.0 WASTES GENERATED DURING 31-W CLOSURE ACTIVITIES

In order to correctly handle and dispose of the waste generated during closure of container storage area 31-W at LHAAP, samples will be collected to classify and categorize waste generated.

6.1 Waste Classification

All waste will be determined to be listed hazardous or characteristically hazardous per 40 CFR 261. If the waste is determined to be nonhazardous per 40 CFR 261, contaminants will be compared to 30 TAC 335 Appendix 1 Table 1 limits of Subchapter R, to determine the correct nonhazardous waste classification.

The following waste samples will be collected:

1. One composite liquid sample from each washing and rinsing of the concrete slab.

All samples will be collected, handled and analyzed in accordance with EPA SW-846 Test Methods for Evaluating Solid Waste Physical/Chemical Methods which satisfies the requirements of 40 CFR Part 261.

Liquid Sample - The liquid sample will be analyzed for totals of constituents listed in Appendix II. The liquid will serve as the TCLP extract. The levels of detectable constituents will be treated as the TCLP level.

6.2 Waste Disposal

Longhorn will obtain TNRCC waste codes for each of the waste streams listed below. If waste streams are generated that are not typical of previously generated waste, Longhorn AAP will either electronically register the waste stream or set up a one time shipment waste code.

CLOSURE GENERATED WASTE	DISPOSAL METHOD
Hazardous Wastewater	Treatment and Discharge to POTW(offsite) or Deep Well Injection (offsite)
Class 1 Non Hazardous Water	
Hazardous Soil	Treatment to LDR & Landfill (offsite)

Shipments of waste offsite will use the Uniform Hazardous Waste Manifest. A Land Disposal Restriction Notification form will accompany each shipment of hazardous waste. Transporters of waste will be registered with the EPA and have a Texas registration number.

Longhorn AAP will only use waste disposal companies that are permitted solid waste treatment and disposal companies. Contracts are awarded according to Federal Acquisition Regulation (FAR). The following companies are presently approved vendors for the treatment and disposal of hazardous waste.

Section 6.2 Continued

APPROVED VENDORS FOR DISPOSAL OF HAZARDOUS WASTE	
Chemical Waste Mgt.	EPA No. LAD000777201
Rollins	EPA No. TXD055141378
Treatment One	EPA No. TXD055135388

7.0 DECONTAMINATION OF CONTAINER STORAGE AREA 31-W

Concrete surfaces will be washed with water mixed with a suitable detergent such as Alconox. Liquid generated from building decontamination will be containerized and handled in the same manner as previously mentioned in section 6.0.

Wastewater will be collected and analyzed for "total" hazardous constituents. If the rinsate analyses indicate a concentration equal to or less than 30 TAC 290.103, Maximum Contaminant Levels, the concrete will be considered clean. In the event that potable wash water exceeds the allowable concentrations for any of the parameters, the concentration limit for considering the concrete clean will be determined by the potable water results. If LHAAP determines that it is not feasible to meet this criteria, container storage area will be closed in accordance with the Texas Risk Reduction Rules.

8.0 EQUIPMENT DECONTAMINATION

Any equipment which has come in contact with hazardous waste will be decontaminated prior to exiting the unit. At a minimum, all contaminated equipment shall be washed sufficiently to remove waste residues. Equipment used in the closure of container storage area 31-W will be decontaminated using a Alconox wash, or by another appropriate method. All water used in the decontamination of the equipment will be collected, containerized, sampled, and transferred to a permitted container storage area until it is classified and shipped offsite for treatment and disposal.

Any equipment that can not be decontaminated will be disposed of at an authorized treatment, storage, or disposal (TSD) facility.

9.0 DISPOSITION OF CONTAINER STORAGE AREA 31-W

Upon decontamination of container storage area 31-W, the building may be utilized for the storage of scrap metals or other recyclable or inert materials.

If the concrete structure cannot be decontaminated, it will be removed and shipped to an authorized treatment, storage, or disposal (TSD) facility.

Provided the concrete floor is decontaminated, and the soil surrounding the area does not meet background, but does meet the criteria of Risk Reduction Standard 2, it will be surveyed and closed in accordance with 30 TAC 335.560. If the area does not meet the Risk Reduction Standard, a work plan will be submitted to further define the extent of contamination and remediate contaminated media as necessary.

10.0 SAMPLING & ANALYSIS PLAN

The objective of soil sampling is to define the extent of contamination, if any, around the container storage area that occurred during past use. Soil sampling will ensure that the area meets the numeric levels of TAC Risk Reduction Standard Number 2 groundwater protection standard for industrial use.

10.1 Specific Data Objectives

1. Determine if the concentration of the contaminants in soil exceed Background levels.
2. If background is exceeded in soil samples, Determine if the concentration exceeds Risk Reduction Standard Number 2 cleanup levels at 31-W.
3. Define the extent of contamination resulting from a release of waste at the container storage area.
4. If contamination is present and within Risk Reduction levels, determine metes and bounds coordinates of the contaminated location. Delineate the contaminated area for a Deed Certification in the county deed records in accordance with Risk reduction Standard Number 2.

10.2 Chemical Data Acquisition

Twelve samples of soil will also be collected from container storage area 31-W. The soil samples will be analyzed for totals of constituents listed in Appendix II. Samples containing any constituents above background and having levels 20 times or greater than the EPA Maximum Contaminant Limit will by analyzed utilizing Method 1312 of SW-846, the Synthetic Precipitation Leaching Procedure (SPLP).

Soil samples will be collected using a stainless steel auger. Sample locations will be marked with a wooden stake. The sample number will be marked on the stake with a permanent marker. These soil samples will be collected from the surface at depth of no more than 12 inches. Soil may be place into a stainless steel bowl and mixed for homogeneity with a stainless steel spoon. Decontamination procedures will be employed to prevent cross contamination during sampling. Samples containers will be sealed, placed in an ice chest on ice, and the ice chest will be sealed. Samples will be shipped under utilizing a chain-of-custody to a COE certified analytical laboratory.

A summary of findings and recommendations will be prepared. Will this summary, soil sampling locations and all analytical results will be submitted with laboratory Quality Assurance and Quality Control to TNRCC for review.

10.3 Determination of Waste Impact on Surrounding Soils

Soil samples will be compared to the Longhorn AAP Soil Concentration Background Report, May 1995 to determine impact of hazardous constituents. If the soils surrounding the unit prove to be impacted by hazardous constituents at levels greater than background or 30 TAC 335.556, an additional work plan will be submitted to the TNRCC. This plan will address further actions to be taken to determine the extent of contamination and remediation necessary.

Soil will be remediated as necessary to achieve the clean-up levels to the industrial levels of Risk Reduction Standard No. 2 of the Texas Administrative Code.

10.3 continued

If soil samples contain detectable amounts of volatiles, additional samples will be taken for further delineation of the area of contamination. If any volatiles levels exceed 100 times the Medium Specific Concentrations (MSC) for groundwater protection standards for residential exposure conditions, the samples will be subjected to Method 1312 of SW-846 (Synthetic Precipitation Leaching Procedure-SPLP) to determine if the concentration produces a leachate in excess of the MSC.

10.4 Data Quality Objectives

The following quality assurance/quality control procedures will be utilized to ensure that all data and decisions based on this data is technically sound.

10.4.1 Field Sampling

1. Field Duplicates: Field duplicate(split) samples will be collected verify the reproducibility of the lab data. Field duplicates will be collected for 10% (1-each) of the samples collected.
2. Equipment Blanks: Equipment blanks will be used to determine the effectiveness of field cleaning procedures as well as to determine whether sampling equipment is causing cross contamination of samples. Equipment blanks will be collected for 5% (1-each) of the samples collected.

10.4.2 Offsite Laboratory

The offsite laboratory will employ the following measures to ensure that data quality objectives are met.

1. Matrix Spikes: A matrix spike and matrix spike duplicate will be used to document the precision of a given sample matrix. A minimum of one matrix spike and matrix spike duplicate shall be analyzed for every 5% (1-each) of samples received.
2. The laboratories quality assurance report will be provided with each set of data.

11.0 HEALTH AND SAFETY PRECAUTIONS

All LHAAP and contractor personnel will abide by Corps of Engineer and Army Safety Regulations. Contractors are briefed on these regulations prior to any work being accomplished.

Level D protection will be worn by decontamination personnel at a minimum with additional protection added as required.

12.0 CERTIFICATION OF CLOSURE ACTIONS

All closure actions associated with this plan will be certified for compliance with this plan and all applicable state and federal regulations by an independent Professional Engineer registered in the State of Texas. The certification will be in the form of a Closure Completion Report. In accordance with 40 CFR Part 265.115, this certification will be submitted to the TNRCC by registered mail. Included with this certification will be all analytical reports, chain-of-custody reports, work done, and the final configuration of the subject unit.

13.0 CLOSURE COST ESTIMATE

Pursuant to 40 CFR Part 265.140(c), federal facilities are exempt from the closure financial requirements. Therefore, LHAAP is not required to provide closure cost estimates.

14.0 NOTIFICATION OF CLOSURE ACTIVITIES

LHAAP is utilizing the submittal of this closure plan as notification to the TNRCC of closure activities associated with Longhorn AAP Container Storage Area 31-W. LHAAP will notify the TNRCC Region 5 office in writing 14 days prior to any sampling or before commencing closure.

15.0 CLOSURE SCHEDULE

The explosive waste storage magazine will be closed within 12 months following the approval of the closure plan.

Milestones

Activity		Time Required
1.	Obtain Funding	6 months
2.	Obtain Contract	3 months
3.	Decontaminate Storage Building	2 weeks
4.	Safety inspection and approval of decontamination	1 day
5.	Collect samples to investigate for soil impact	3 weeks
6.	Dispose of waste as required	1 months
7.	Prepare and send in Completion Certification	1 month
8.	Receive approval of closure from TNRCC	5 months

This schedule does not account for delays which may be caused by force majeure, including without limitations, fires, floods, riots, strikes, or lack of funding. If any of the aforementioned circumstances occur, LHAAP will submit a written request to the TNRCC to extend the time allowed for closure, with the rationale substantiating that request.

16.0 POST CLOSURE REQUIREMENTS

Post closure requirements will be adhered to according to the rules for Risk Reduction Standard No. 2 as specified by 30 TAC 335.8(b)(2)(B), 335.555, 335.556, & 335.557.

16.1 Deed Certification

If required, a deed certification will be filed at the Harrison County Courthouse. Upon approval by the executive director that attainment of Risk Reduction Standard No. 2 for the soils surrounding the Container Storage Area is demonstrated, a document containing the information required in 30 TAC 335.560 (b) (1)-(4) shall be prepared and filed at the Harrison County courthouse. The document will follow the guidelines as provided in 30 TAC 335.569 (Appendix III). A copy of this document will be forwarded to the Executive Director.

APPENDIX I
SAMPLE CONTAINER, PRESERVATION & ANALYSIS REQUIREMENTS

PARAMETER	CONTAINER	PRESERVATIVE	MAXIMUM HOLDING TIME	EXTRACT
pH	1/2 pint glass	N/A	Immediate	
Metals	Plastic 1 liter	Cool 4° C Filter in field HNO_3 to pH<2	6 months (mercury = 28 days)	
(soil)	Plastic	Cool 4° C	6 months	1/2 liter
Semi-volatiles				
(water)	Amber Glass 1 liter	Cool 4° C	7 days	
(soil) Glass	Cool 4° C		14 days	1/2 liter
Volatiles				
(water)	Glass	Cool 4° C 40 ml glass No head space, air bubbles or agitation	7 days	
(soil)	Glass 1/2 liter	Cool 4° C	14 days	
Cyanide				
(water)	Plastic 1 liter	Cool 4° C NaOH to pH>12	14 days	
(soil)	Plastic 250 ml	Cool 4° C	14 days	
TPH				
(water)	Amber glass 1 liter	Cool 4° C HCL to pH<2	28 days	
(soil)	250 ml Plastic	Cool 4° C	28 days	

NOTE: Sample containers for Volatiles have Fluorocarbon resin-lined caps.

APPENDIX I (continued)

ANALYTICAL METHODS

PARAMETER	REQUIRED METHOD
Volatiles	EPA-8260A Gas Chromatographic/ Mass Spectroscopic Methods
Semi-volatiles	EPA-8270A Gas Chromatographic/ Mass Spectroscopic Methods
Metals Barium Chromium Silver Selenium	EPA-6010A Inductive Coupled Plasma Atomic Emission Spectroscopy
Cadmium	EPA-7131 (AA Furnace Technique)
Lead	EPA-7421 (AA Furnace Technique)
Mercury	(liquid) EPA-7470 Manual Cold Vapor Technique (solid) EPA-7471 Manual Cold Vapor Technique
Arsenic	EPA-6010 or 7060 Atomic Absorption Furnace
TPH	EPA-418-1 (Modified for solid material)
Explosives RDX HMX	COE Method

APPENDIX II

HAZARDOUS WASTE STORAGE AREA CONSTITUENTS ANALYSIS

NOR NUMBER	AREA	REQUIRED ANALYSIS
008	31-W	Volatile Organic Compounds Semi-volatile Organic Compounds Metals (8 RCRA), Total Petroleum Hydrocarbons

Title 30. ENVIRONMENTAL QUALITY

Part I. TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Chapter 335. INDUSTRIAL SOLID WASTE AND MUNICIPAL HAZARDOUS WASTE

Subchapter S. RISK REDUCTION STANDARDS

§ 335.568 Appendix II

Examples of medium-specific concentrations (MSC), standards, and criteria for health-based closure/remediation (see § 335.558 of this title (relating to Medium Specific Concentration of Risk Reduction Standards Number 2.))

T30S335.568

(1) Concentrations for constituents are expressed in scientific notation. Examples 2.20E-00 = 2.2; 2.20E+02 = 220; **and** 2.20E-01 = 0.22.

(2) The development of final cleanup levels may involve other factors as described in this subchapter, such as cumulative health effects, that are not considered in this chapter.

(3) Groundwater concentrations are based on maximum contaminant levels (MCLs) or the formula and parameters for residential use of groundwater which are contained in § 335.567 of this title (relating to Appendix I). For nonresidential exposure conditions, the groundwater concentrations are calculated using the procedures of § 335.559(d)(2) or (3) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standard Number 2).

(4) For some constituents, the practical quantitation limit (PQL) may be the appropriate groundwater MSC as described in § 335.555(d)(1) of this title (relating to Attainment of Risk Reduction Standard Number 2: Closure/Remediation to Health-Based Standards and Criteria). See 40 Code of Federal Regulations Part 264 (Appendix IX) for a list of groundwater PQLs.

(5) Residential soil groundwater protection concentrations are based on a multiplication factor of 100 times the groundwater MSC.

(6) Industrial soil groundwater protection concentrations are based on a multiplication factor of 100 times the MCL or, when an MCL is not available, a factor of 100 times the groundwater concentration calculated using the formula and parameters which are contained in § 335.559(d)(2) or (3) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standard Number 2).

(7) Residential soil concentrations (maximum) are calculated using the formula and parameters for residential land use which are contained in § 335.567 of this title (relating to Appendix I). The person must also demonstrate that groundwater is protected and that no nuisance conditions exist (§ 335.559 (a)-(h) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction

Standard Number 2)).

(8) Industrial soil concentrations (maximum) are calculated using the formula and parameters for industrial land use which are contained in § 335.567 of this title (relating to Appendix I). The person must also demonstrate that groundwater is protected and that no nuisance conditions exist (§ 335.559 (a)-(h) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standard Number 2)).

(9) The final, proposed or listed MCL, from the Federal Safe Drinking Water Act, § 146. For lead, the action level for lead in drinking water is used as the MSC.

(10) All concentrations were calculated using data from the Integrated Risk Information System (IRIS) Chemical Files, or data from the Health Effects Assessment Summary Tables (HEAST), developed by the United States Environmental Protection Agency, Office of Research and Development and Office of Health and Environmental Assessment, Washington, D.C. 20460. The toxicity information, and the MSCs, will be updated as new information becomes available.

(11) In some cases, an oral reference dose (RFD) or an oral slope factor (SF) was substituted for the inhalation RFD or inhalation SF in calculating MSC. This MSC will be updated when this information becomes available.

(12) The MSCs calculated for this compound are based on noncarcinogenic effects. The following formula was used for calculating the soil MSCs: MSC = [(oral RFD)(Body Weight)(ED)(365 days/yr)]/[(EF)(ED)(IR)(CF)]. For residential soils, the following exposure factors were used: BW = 15 Kg; ED = 5 years; EF = 350 days/year; IR = 200 mg/day. For industrial soils, the following exposure factors were used: BW = 70 Kg; ED = 25 years; EF = 250 days/year; IR = 100 mg/day. In both cases, the CF is 0.000001 kg/mg. When oral slope factors become available, these MSCs will be revised.

(13) As described in § 335.559(e) of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standard Number 2), the sum of concentrations of the volatile organic compounds in vapor phase in soil shall not exceed 1,000 ppm by weight or volume.

(14) The MSC for lead in soil is based on values calculated by the United States EPA using the Lead Uptake/Biokinetic Model, Version 0.4, which has been developed by the United States EPA Office of Health and Environmental Assessment.

(15) Soil MSCs for polychlorinated biphenyls are based upon the 4/2/87 TSCA regulations, 40 Code of Federal Regulations § 761.125 (see 52 FedReg 10688).

(16) NHHB = Not Human Health Based. The SAI-Ind MSC for this compound exceeds 10e+6 ppm, which means it is not toxic to humans when exposed to soils under these assumptions. Persons must consider other criteria of § 335.559 of this title (relating to Medium Specific Requirements and Adjustments for Risk Reduction Standards Number 2) to develop numeric cleanup values.

Source: The provisions of this § 335.568 adopted to be effective June 28, 1993, 18 TexReg 3814.

Cross Reference: This Section cited in 30 TAC § 335.553, (relating to Required Information); 30 TAC § 335.558, (relating to Medium Specific Concentrations for Risk Reduction Standard Number

CAS #	=	Chemical Abstracts Service Number for the Specific Compound.
GW	=	Ground Water. Maximum Concentration in Ground Water (mg/L) for residential exposure conditions.
GWP-Res	=	Ground-Water Protection Standard for Residential Use. Concentration in Residential Soil Assumed Protective of Ground Water Considering Cross-media Contamination of Ground Water from Contaminated Soil (mg/kg).
GWP-Ind	=	Ground-Water Protection Standard for Industrial Use. Concentration in Industrial Soil Assumed Protective of Ground Water Considering Cross-media Contamination of Ground Water from Contaminated Soil (mg/kg).
SAI-Res	=	Soil/Air and Ingestion Standard for Residential Use. Maximum Concentration in Residential Soil Considering Cross-media Contamination of Air and the Human Ingestion and Inhalation Pathways (mg/kg).
SAI-Ind	=	Soil/Air and Ingestion Standard for Industrial Use. Maximum Concentration in Industrial Soil Considering Cross-media Contamination of Air and the Human Ingestion and Inhalation Pathways (mg/kg).

CONSTITUENT	CAS #	GW (1-4)	GWP-Res (1,5)	GWP-Ind (1,6)	SAI-Res (1,7, 10,11)	SAI-Ind (1,8, 10,11)
Acenaphthene	83-32-9	2.19e+00	2.19e+02	6.13e+02	1.34e+04 (13)	4.43e+04 (13)
Acetone	67-64-1	3.65e+00	3.65e+02	1.02e+03	3.82e+03 (13)	4.16e+03 (13)
Acetonitrile	75-05-8	2.19e-01	2.19e+01	6.13e+01	1.65e+03	1.23e+04
Acetophenone	98-86-2	3.65e+00	3.65e+02	1.02e+03	2.26e+04	8.15e+04
Acrolein	107-02-8	7.30e-01 (12)	7.30e+01	2.04e+02	1.56e+03 (12)	2.04e+04 (12)
Acrylamide	79-06-1	1.89e-05	1.89e-03	6.36e-03	1.42e-01	1.27e+00
Acrylonitrile	107-13-1	1.58e-04	1.58e-02	5.30e-02	1.15e-01 (13)	1.44e-01 (13)
Alachlor	15972-60-8	2.00e-03 (9)	2.00e-01	2.00e-01	7.95e+00	7.10e+01
Aldicarb	116-06-3	3.00e-03 (9)	3.00e-01	3.00e-01	5.49e+01	4.09e+02
Aldicarb Sulfone	1646-88-4	2.00e-03 (9)	2.00e-01	2.00e-01	8.23e+01	6.13e+02
Aldicarb Sulfoxide	1646-88-3	4.00e-03 (9)	4.00e-01	4.00e-01	5.49e+01	4.09e+02
Aldrin	309-00-2	5.01e-06	5.01e-04	1.68e-03	3.77e-02	3.36e-01
Aluminum Phosphide	20859-73-8	1.46e-02	1.46e+00	4.09e+00	1.10e+02	8.18e+02
Aniline	62-53-3	1.49e-02	1.49e+00	5.02e+00	4.18e-02 (13)	4.80e-02 (13)
Anthracene	120-12-7	1.10e+01	1.10e+03	3.07e+03	5.91e+04 (13)	1.51e+05 (13)
Antimony	7440-36-0	6.00e-03 (9)	6.00e-01	6.00e-01	1.10e+02	8.18e+02
Arsenic	7440-38-2	5.00e-02 (9)	5.00e+00	5.00e+00	3.66e-01	3.27e+00
Atrazine	1912-24-9	3.00e-03 (9)	3.00e-01	3.00e-01	2.88e+01	2.58e+02
Barium (ionic)	7440-39-3	2.00e+00 (9)	2.00e+02	2.00e+02	1.91e+04	1.37e+05
Benzene	71-43-2	5.00e-03 (9)	5.00e-01	5.00e-01	1.33e+00 (13)	1.62e+00 (13)
Benzidine	92-87-5	3.70e-07	3.70e-05	1.24e-04	2.78e-03	2.49e-02
Beryllium	7440-41-7	4.00e-03 (9)	4.00e-01	4.00e-01	1.49e-01	1.33e+00
Biphenyl	92-52-4	1.83e+00	1.83e+02	5.11e+02	6.68e+03 (13)	1.11e+04 (13)

Bis (2-chloro-ethyl) ether	111-44-4	7.74e-05	7.74e-03	2.60e-02	2.20e-01 (13)	3.77e-01 (13)
Bis (2-chloroisopropyl) ether	39638-32-9	1.22e-02	1.22e+00	4.09e+00	4.50e+01 (13)	9.05e+01 (13)
Bis (2-ethyl-hexyl) phthalate	117-81-7	6.08e-03	6.08e-01	2.04e+00	4.57e+01	4.09e+02
Bromodichloromethane	75-27-4	1.00e-01 (9)	1.00e+01	1.00e+01	7.19e-01 (13)	9.46e-01 (13)
Bromoform	75-25-2	1.00e-01 (9)	1.00e+01	1.00e+01	8.11e+01	7.24e+02
Bromomethane	74-83-9	5.11e-02	5.11e+00	1.43e+01	2.44e+01 (13)	2.47e+01 (13)
Butyl-4,6-dinitrophenol, 2-sec-	88-85-7	3.65e-02	3.65e+00	1.02e+01	2.74e+02	2.04e+03
Cadmium	7440-43-9	5.00e-03 (9)	5.00e-01	5.00e-01	1.37e+02	1.02e+03
Carbofuran	1563-66-2	4.00e-02 (9)	4.00e+00	4.00e+00	1.37e+03	1.02e+04
Carbon Disulfide	75-15-0	3.65e+00	3.65e+02	1.02e+03	2.45e+01 (13)	2.34e+01 (13)
Carbontetrachloride	56-23-5	5.00e-03 (9)	5.00e-01	5.00e-01	4.14e-01 (13)	5.13e-01 (13)
Chlordane	57-74-9	2.00e-03 (9)	2.00e-01	2.00e-01	4.93e-01	4.40e+00
Chloroaniline, p-	106-47-8	1.46e-01	1.46e+01	4.09e+01	1.10e+03	8.18e+03
Chlorobenzene	108-90-7	1.00e-01 (9)	1.00e+01	1.00e+01	2.56e+02 (13)	2.56e+02 (13)
Chlorobenzilate	510-15-6	7.30e-01	7.30e+01	2.04e+02	5.49e+03	4.09e+04
Chloroethane (Ethylchloride)	75-00-3	7.30e-01	7.30e+01	2.04e+02	4.99e+03 (13)	2.30e+04 (13)
Chloroform	67-66-3	1.00e-01 (9)	1.00e+01	1.00e+01	4.37e-01 (13)	5.04e-01 (13)
Chloronaphthalene, 2-	91-58-7	2.92e+00	2.92e+02	8.18e+02	2.20e+04	1.64e+05
2-chlorophenol	95-57-8	1.83e-01	1.83e+01	5.11e+01	1.37e+03	1.02e+04
Chromium (total)	7440-47-3	1.00e-01 (9)	1.00e+01	1.00e+01	3.91e+02 (12)	5.11e+03 (12)
Chromium (VI)	7440-47-3	1.00e-01 (9)	1.00e+01	1.00e+01	3.91e+02 (12)	5.11e+03 (12)
Cresol, m-	108-39-4	1.83e+00 (12)	1.83e+02	5.11e+02	3.91e+03 (12)	5.11e+04 (12)
Cresol, o-	95-48-7	1.83e+00 (12)	1.83e+02	5.11e+02	3.91e+03 (12)	5.11e+04 (12)

Cresol, p-	106-44-5	1.83e+00 (12)	1.83e+02	5.11e+02	3.91e+03 (12)	5.11e+04 (12)
Cyanide	57-12-5	2.00e-01 (9)	2.00e+01	2.00e+01	5.49e+03	4.09e+04
DDD	72-54-8	3.55e-04	3.55e-02	1.19e-01	2.67e+00	2.38e+01
DDE	72-55-9	2.50e-04	2.50e-02	8.41e-02	1.88e+00	1.68e+01
DDT	50-29-3	2.50e-04	2.50e-02	8.41e-02	1.88e+00	1.68e+01
Di-n-butyl phthalate	84-74-2	3.65e+00	3.65e+02	1.02e+03	2.74e+04	2.04e+05
Di-n-octyl phthalate	117-81-7	7.30e-01	7.30e+01	2.04e+02	5.49e+03	4.09e+04
Dibromo-3-chloropropane, 1,2-	96-12-8	2.00e-04 (9)	2.00e-02	2.00e-02	4.57e-01	4.09e+00
Dibromochloromethane	124-48-1	1.00e-01 (9)	1.00e+01	1.00e+01	7.62e+01	6.81e+02
Dichlorobenzene (1,2)	95-50-1	6.00e-01 (9)	6.00e+01	6.00e+01	6.69e+03 (13)	8.39e+03 (13)
Dichlorobenzene (1,3)	541-73-1	6.00e-01 (9)	6.00e+01	6.00e+01	7.61e+03 (13)	9.99e+03 (13)
Dichlorobenzene (1,4)	106-46-7	7.50e-02 (9)	7.50e+00	7.50e+00	8.64e+01 (13)	1.38e+02 (13)
Dichlorodifluoromethane	75-71-8	7.30e+00	7.30e+02	2.04e+03	5.00e+01 (13)	4.79e+01 (13)
Dichloroethane (1,1)	75-34-3	3.65e+00	3.65e+02	1.02e+03	7.30e+03 (13)	2.04e+04 (13)
Dichloroethane (1,2)	107-06-2	5.00e-03 (9)	5.00e-01	5.00e-01	4.17e-01 (13)	5.05e-01 (13)
Dichloroethylene (1,1)	75-35-4	7.00e-03 (9)	7.00e-01	7.00e-01	7.15e-01 (13)	8.72e-01 (13)
Dichloroethylene, cis-(1,2)	156-59-2	7.00e-02 (9)	7.00e+00	7.00e+00	1.08e+02 (13)	1.08e+02 (13)
Dichloroethylene, trans-(1,2)	156-60-5	1.00e-01 (9)	1.00e+01	1.00e+01	2.56e+02 (13)	2.56e+02 (13)
Dichlorophenol, 2,4-	120-83-2	1.10e-01	1.10e+01	3.07e+01	8.23e+02	6.13e+03
Dichlorophenoxyacetic acid, 2,4-	94-75-7	7.00e-02 (9)	7.00e+00	7.00e+00	2.74e+03	2.04e+04
Dichloropropane (1,2)	78-87-5	5.00e-03 (9)	5.00e-01	5.00e-01	6.88e-01 (13)	8.43e-01 (13)
Dieldrin	60-57-1	5.32e-06	5.32e-04	1.79e-03	4.00e-02	3.57e-01

Diethyl phthalate	84-66-2	2.92e+01	2.92e+03	8.18e+03	2.20e+05	NHHB (16)
Diethylhexyl adipate	103-23-1	5.00e-01 (9)	5.00e+01	5.00e+01	5.34e+03	4.77e+04
Dimethoate	60-51-5	7.30e-03	7.30e-01	2.04e+00	5.49e+01	4.09e+02
Dimethyl phenol, 2,4-	105-67-9	7.30e-01	7.30e+01	2.04e+02	5.49e+03	4.09e+04
Dinitrobenzene, 1,3-	99-65-0	3.65e-03	3.65e-01	1.02e+00	2.74e+01	2.04e+02
Dinitrophenol, 2,4-	51-28-5	7.30e-02	7.30e+00	2.04e+01	5.49e+02	4.09e+03
Dioxane (1,4)	123-91-1	7.74e-03	7.74e-01	2.60e+00	1.55e+01 (13)	2.31e+01 (13)
Diphenylamine	122-39-4	9.13e-01	9.13e+01	2.56e+02	6.86e+03	5.11e+04
Diphenylhydrazine, 1,2-	122-66-7	1.06e-04	1.06e-02	3.58e-02	8.00e-01	7.15e+00
Disulfoton	298-04-4	1.46e-03	1.46e-01	4.09e-01	1.10e+01	8.18e+01
Endosulfan	115-29-7	1.83e-03	1.83e-01	5.11e-01	1.37e+01	1.02e+02
Endothall	145-73-3	1.00e-01 (9)	1.00e+01	1.00e+01	5.49e+03	4.09e+04
Endrin	72-20-8	2.00e-03 (9)	2.00e-01	2.00e-01	8.23e+01	6.13e+02
Ethoxy ethanol, 2-	110-80-5	1.46e+01	1.46e+03	4.09e+03	1.10e+05	8.17e+05
Ethoxyethanol acetate, 2-	111-15-9	1.10e+01	1.10e+03	3.07e+03	8.23e+04	6.13e+05
Ethyl benzene	100-41-4	7.00e-01 (9)	7.00e+01	7.00e+01	1.14e+04 (13)	1.70e+04 (13)
Ethylene dibromide	106-93-4	5.00e-05 (9)	5.00e-03	5.00e-03	7.09e-03 (13)	4.53e-02 (13)
Ethylene glycol	107-21-1	7.30e+01	7.30e+03	2.04e+04	5.49e+05	NHHB (16)
Ethylene oxide	75-21-8	8.35e-05	8.35e-03	2.30e-02	1.11e-01 (13)	1.51e-01 (13)
Fluoranthene	206-44-0	1.46e+00	1.46e+02	4.09e+02	1.10e+04	8.18e+04
Fluorene	86-73-7	1.46e+00	1.46e+02	4.09e+02	9.60e+03 (13)	3.87e+04 (13)
Fluorides	7782-41-4	4.00e+00 (9)	4.00e+02	4.00e+02	1.65e+04	1.23e+05
Formaldehyde	50-00-0	7.30e+00 (12)	7.30e+02	2.04e+03	1.56e+04 (12)	2.04e+05 (12)

Heptachlor	76-44-8	4.00e-04 (S)	4.00e-02	4.00e-02	1.42e-01	1.27e+00
Heptachlor epoxide	1024-57-3	2.00e-04 (S)	2.00e-02	2.00e-02	7.04e-02	6.29e-01
Hexachlorobenzene	118-74-1	1.00e-03 (S)	1.00e-01	1.00e-01	4.00e-01	3.57e+00
Hexachlorobutadiene	87-68-3	1.09e-02	1.09e+00	3.67e+00	8.21e+01	7.33e+02
Hexachlorocyclohexane, alpha	319-84-6	1.35e-05	1.35e-03	4.54e-03	1.02e-01	9.08e-01
Hexachlorocyclohexane, beta	319-85-7	4.73e-04	4.73e-02	1.59e-01	3.56e+00	3.18e+01
Hexachlorocyclohexane, gamma	58-89-9	2.00e-04 (S)	2.00e-02	2.00e-02	8.23e+01	6.13e+02
Hexachloroethane	67-72-1	6.08e-02	6.08e+00	2.04e+01	4.57e+02	4.09e+03
Isobutyl alcohol	78-83-13	1.10e+01	1.10e+03	3.07e+03	8.23e+04	6.13e+05
Lead (inorganic)	7439-92-1	1.50e-02 (S)	1.50e+00	1.50e+00	5.00e+02 (14)	1.00e+03 (14)
Mercury	7439-97-6	2.00e-03 (S)	2.00e-01	2.00e-01	8.23e+01	6.13e+02
Methomyl	16752-77-5	9.13e-01	9.13e+01	2.56e+02	6.86e+03	5.11e+04
Methoxy ethanol	109-86-4	1.46e-01	1.46e+01	4.09e+01	1.10e+03	8.18e+03
Methoxychlor	72-43-5	4.00e-02 (S)	4.00e+00	4.00e+00	1.37e+03	1.02e+04
Methoxyethanol acetate	110-49-6	7.30e-02	7.30e+00	2.04e+01	5.49e+02	4.09e+03
Methyl Ethyl Ketone	78-93-3	1.83e+00	1.83e+02	5.11e+02	7.58e+03 (13)	1.40e+04 (13)
Methyl isobutyl ketone	108-10-1	1.83e+00	1.83e+02	5.11e+02	1.37e+04	1.02e+05
Methyl methacrylate	80-62-6	2.92e+00	2.92e+02	8.18e+02	6.74e+02 (13)	6.63e+02 (13)
Methylene Chloride	75-09-2	5.00e-03 (S)	5.00e-01	5.00e-01	1.07e+01 (13)	1.38e+01 (13)
Naphthalene	91-20-3	1.46e+00	1.46e+02	4.09e+02	4.91e+03 (13)	7.72e+03 (13)
Nickel	7440-02-0	1.00e-01 (S)	1.00e+01	1.00e+01	1.56e+03 (12)	2.04e+04 (12)
Nitrate	14797-55-8	1.00e+01 (S)	1.00e+03	1.00e+03	4.39e+05	NHHB (16)
Nitrite	14797-65-0	1.00e+00 (S)	1.00e+02	1.00e+02	2.74e+04	2.04e+05

Nitrobenzene	98-95-3	1.83e-02	1.83e+00	5.11e+00	6.48e+01 (13)	1.06e+02 (13)
Nitroso-methyl-ethyl-amine, n-	10595-95-6	3.87e-06	3.87e-04	1.30e-03	2.91e-02	2.60e-01
Nitrosodi-n-propylamine, n-	621-64-7	1.22e-05	1.22e-03	4.09e-03	9.15e-02	8.17e-01
Nitrosodiethylamine, n-	55-18-5	5.68e-07	5.68e-05	1.91e-04	4.27e-03	3.81e-02
Nitrosodimethylamine, n-	62-75-9	1.67e-06	1.67e-04	5.61e-04	1.26e-02	1.12e-01
Nitrosopyrrolidine, n-	930-55-2	4.06e-05	4.06e-03	1.36e-02	3.05e-01	2.72e+00
Pentachloronitrobenzene	82-68-8	3.28e-03	3.28e-01	1.10e+00	2.46e+01	2.20e+02
Pentachlorophenol	87-86-5	1.00e-03 (9)	1.00e-01	1.00e-01	5.34e+00	4.77e+01
Phenol	108-95-2	2.19e+01	2.19e+03	6.13e+03	1.65e+05	NHHB (16)
Phthalic anhydride	85-44-9	7.30e+01	7.30e+03	2.04e+04	5.49e+05	NHHB (16)
Polychlorinated biphenyls	1336-36-3	5.00e-04 (9)	5.00e-02	5.00e-02	1.00e+01 (15)	2.50e+01 (15)
Pronamide	23950-58-5	2.74e+00	2.74e+02	7.67e+02	2.06e+04	1.53e+05
Pyrene	129-00-0	1.10e+00	1.10e+02	3.10e+02	8.20e+03	6.10e+04
Pyridine	110-86-1	3.65e-02	3.65e+00	1.02e+01	2.74e+02	2.04e+03
Selenium	7782-49-2	5.00e-02 (9)	5.00e+00	5.00e+00	1.37e+03	1.02e+04
Silver	7440-22-4	1.83e-01	1.83e+01	5.11e+01	1.37e+03	1.02e+04
Strychnine	57-24-9	1.10e-02	1.10e+00	3.07e+00	8.23e+01	6.13e+02
Styrene	100-42-5	1.00e-01 (9)	1.00e+01	1.00e+01	2.13e+01	1.91e+02
Tetrachlorobenzene, 1,2,4,5-	95-94-3	1.10e-02	1.10e+00	3.07e+00	8.23e+01	6.13e+02
Tetrachloroethane (1,1,1,2)	630-20-6	3.28e-02	3.28e+00	1.10e+01	4.59e+01 (13)	6.29e+01 (13)
Tetrachloroethane (1,1,2,2)	79-34-5	4.26e-03	4.26e-01	1.43e+00	8.00e+00 (13)	1.17e+01 (13)
Tetrachloroethylene	127-18-4	5.00e-03 (9)	5.00e-01	5.00e-01	7.93e+01 (13)	2.07e+02 (13)
Tetrachlorophenol, 2,3,4,6-	58-90-2	1.10e+00	1.10e+02	3.07e+02	8.23e+03	6.13e+04

Tetraethyl dithio pyro phosphate	3689-24-5	1.83e-02	1.83e+00	5.11e+00	1.37e+02	1.02e+03
Toluene	108-88-3	1.00e+00 (9)	1.00e+02	1.00e+02	3.58e+03 (13)	3.63e+03 (13)
Toxaphene	8001-35-2	3.00e-03 (9)	3.00e-01	3.00e-01	5.82e-01	5.20e+00
TP Silvex, 2,4,5-	93-72-1	5.00e-02 (9)	5.00e+00	5.00e+00	2.20e+03	1.64e+04
Trichloro benzene (1,2,4)	120-82-1	7.00e-02 (9)	7.00e+00	7.00e+00	6.78e+02 (13)	8.28e+02 (13)
Trichloro ethane (1,1,1)	71-55-6	2.00e-01 (9)	2.00e+01	2.00e+01	9.63e+03 (13)	1.40e+04 (13)
Trichloro ethane (1,1,2)	79-00-5	5.00e-03 (9)	5.00e-01	5.00e-01	1.27e+01 (13)	1.62e+01 (13)
Trichloro ethylene	79-01-6	5.00e-03 (9)	5.00e-01	5.00e-01	2.40e+00 (13)	2.85e+00 (13)
Trichloro fluoromethane	75-69-4	1.10e+01	1.10e+03	3.07e+03	8.73e+00 (13)	8.36e+00 (13)
Trichloro phenol (2,4,5)	95-95-4	3.65e+00	3.65e+02	1.02e+03	8.08e+03 (13)	1.04e+04 (13)
Trichloro phenol, 2,4,6-	88-06-2	7.74e-03	7.74e-01	2.60e+00	5.82e+01	5.20e+02
Trichloro phenoxyacatic acid, 2,4,5-	93-76-5	3.65e-01	3.65e+01	1.02e+02	2.74e+03	2.04e+04
Trichloro pro pane, 1,1,2-	598-77-6	1.83e-01	1.83e+01	5.11e+01	1.37e+03	1.02e+04
Trichloro pro pane, 1,2,3-	96-18-4	2.19e-01	2.19e+01	6.13e+01	1.65e+03	1.23e+04
Trinitro benzene, 1,3,5-	99-35-4	1.83e-03	1.83e-01	5.11e-01	1.37e+01	1.02e+02
Vinyl acetate	108-05-4	3.65e+01	3.65e+03	1.02e+04	2.74e+05	2.04e+06
Vinyl Chloride	75-01-4	2.00e-03 (9)	2.00e-01	2.00e-01	1.99e-02 (13)	2.41e-02 (13)
Xylene	1330-20-7	1.00e+01 (9)	1.00e+03	1.00e+03	5.47e+03 (13)	5.80e+03 (13)

Summary of Updates to the Tables Accompanying the Interoffice Memorandum Entitled Implementation of the Existing Risk Reduction Rule

Original tables current as of July 1, 1998

Date of Change	Change Made
August 1, 1998	SAI-Res, SAI-Ind, and soil risk-based screening values for mercury were revised (based on a change in the Kd value).
September 18, 1998	Remediation-Specific Effects Screening Levels (RS-ESLs) were added as inhalation toxicity factors; this affected the soil SAI and soil risk-based screening values for some of these contaminants.
September 18, 1998	SAI-Ind for arsenic was revised.
September 18, 1998	MCL for nickel was removed.
September 18, 1998	SFo for N-nitrosodimethylamine was corrected.
September 18, 1998	URF for nickel was added.
September 18, 1998	ABS.gi for trichloroethylene was changed from 15% to 100%; this affected the soil SAI and soil risk-based screening value.
September 18, 1998	Kd values presented in Attachment E, Chemical/Physical Properties were corrected. This change did not affect the MSC or Risk-Based Screening Values tables, as the Kd values used to derive the MSCs and risk-based screening values were accurate.
September 18, 1998	RfDo for chromium (III) was revised.
September 18, 1998	RfDo and RfC for chromium (VI) were revised.
September 18, 1998	RfDo and RfC for naphthalene were revised.
September 18, 1998	The text above the Risk-Based Screening Values table was correct to reflect that a HQ of 0.1 (not 1) was used.
September 18, 1998	****Note: In the future, updates to the tables will be made approximately once every six months (not every month). Exceptions to the six month schedule include a change that has been of such a magnitude that the MSCs previously developed for a contaminant would not be adequately protective of human health and the environment.**
September 29, 1998	Toxicity Factors table (SFi and RfDi values) corrected.

Abbreviations:
SFo = Oral Slope Factor
RfDo - Oral Reference Dose
URF - Inhalation Unit Risk Factor
RfC - Inhalation Reference Concentration
RS-ESL - Remediation-Specific Effects Screening Level
RfDi - Inhalation Reference Dose
SFi - Inhalation Slope Factor
MCL - Maximum Contaminant Level

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF (µg/m^3)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Acenaphthene	83-32-9	NA	I	---	---	6.0E-02	I	---	---	---	---	---	---	---	---
Acenaphthylene	208-96-8	D	I	---	---	6.0E-02	MA	---	---	---	---	---	---	---	---
Acetaldehyde	75-07-0	B2	I	---	---	---	---	2.2E-06	I	9.0E-03	RfC	I	7.7E-03	2.6E-03	---
Acetone	67-64-1	D	I	---	---	1.0E-01	I	---	---	5.9E-01	RS-ESL	---	---	1.7E-01	---
Acetone cyanohydrin	75-86-5	NA	I	---	---	8.0E-04	H	---	---	4.0E-03	RS-ESL	---	---	1.1E-03	---
Acetonitrile	75-05-8	NA	I	---	---	6.0E-03	I	---	---	3.4E-02	RS-ESL	---	---	9.7E-03	---
Acetophenone	98-86-2	D	I	---	---	1.0E-01	I	---	---	4.9E-02	RS-ESL	---	---	1.4E-02	---
Acifluorfen, sodium	62476-59-9	NA	I	---	---	1.3E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Acrolein	107-02-8	C	I	---	---	2.0E-02	H	---	---	2.0E-05	RfC	I	---	5.7E-06	---
Acrylamide	79-06-1	B2	I	4.5E+00	I	2.0E-04	I	1.3E-03	I	---	---	---	4.6E+00	---	---
Acrylic acid	79-10-7	NA	I	---	---	5.0E-01	I	---	---	1.0E-03	RfC	I	---	2.9E-04	---
Acrylonitrile	107-13-1	B1	I	5.4E-01	I	1.0E-03	H	6.8E-05	I	2.0E-03	RfC	I	2.4E-01	5.7E-04	---
Alachlor	15972-60-8	B2	H	8.0E-02	H	1.0E-02	I	---	---	---	---	---	---	---	2.0E-03
Aldicarb	116-06-3	D	I	---	---	1.0E-03	I	---	---	---	---	---	---	---	7.0E-03
Aldicarb sulfone	1646-88-4	NA	I	---	---	1.0E-03	I	---	---	---	---	---	---	---	7.0E-03
Aldrin	309-00-2	B2	I	1.7E+01	I	3.0E-05	I	4.9E-03	I	---	---	---	1.7E+01	---	---
Allyl alcohol	107-18-6	NA	I	---	---	5.0E-03	I	---	---	4.8E-03	RS-ESL	---	---	1.4E-03	---
Allyl chloride	107-05-1	C	I	---	---	---	---	---	---	1.0E-03	RfC	I	---	2.9E-04	---
Aluminum	7429-90-5	NA	I	---	---	1.0E+00	N	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Aminopyridine, 4-	504-24-5	D	I	---	---	2.0E-05	H	---	---	2.5E-04	RS-ESL	---	---	7.1E-05	---
Ammonia	7664-41-7	NA	I	---	---	---	---	---	---	1.0E-01	RfC	I	---	2.9E-02	---
Aniline	62-53-3	B2	I	5.7E-03	I	---	---	---	---	1.0E-03	RfC	I	---	2.9E-04	---
Anthracene	120-12-7	D	I	---	---	3.0E-01	I	---	---	---	---	---	---	---	---
Antimony	7440-36-0	NA	I	---	---	4.0E-04	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	6.0E-03
Aramite	140-57-8	B2	I	2.5E-02	I	5.0E-02	H	7.1E-06	I	---	---	---	2.5E-02	---	---
Arsenic[e]	7440-38-2	---	---	---	---	---	---	---	---	---	---	---	---	---	5.0E-02
Arsine	7784-42-1	NA	I	---	---	---	---	---	---	5.0E-05	RfC	I	---	1.4E-05	---
Asbestos	1332-21-4	A	I	---	---	---	---	7.7E-03	I	---	---	---	2.7E+01	---	7 mfl

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF (µg/m^3)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Atrazine	1912-24-9	C	II	2.2E-01	II	3.5E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	3.0E-03
Barium	7440-39-3	D	I	---	---	7.0E-02	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	2.0E+00
Benzene	71-43-2	A	I	2.9E-02	I	---	---	8.3E-06	I	6.0E-03	RfC	N	2.9E-02	1.7E-03	5.0E-03
Benzenethiol	108-98-5	NA	I	---	---	1.0E-05	H	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
Benzidine	92-87-5	A	I	2.3E+02	I	3.0E-03	I	6.7E-02	I	---	---	---	2.3E+02	---	---
Benz-a-anthracene	56-55-3	B2	I	7.3E-01	EPA-93	---	---	8.8E-05	EPA-93	---	---	---	3.1E-01	---	---
Benzo-a-pyrene	50-32-8	B2	I	7.3E+00	I	---	---	8.8E-04	N	---	---	---	3.1E+00	---	2.0E-04
Benzo-b-fluoranthene	205-99-2	B2	I	7.3E-01	EPA-93	---	---	8.8E-05	EPA-93	---	---	---	3.1E-01	---	---
Benzo-k-fluoranthene	207-08-9	B2	I	7.3E-02	EPA-93	---	---	8.8E-06	EPA-93	---	---	---	3.1E-02	---	---
Benzo-g,h,i-perylene	191-24-2	D	I	---	---	3.0E-02	MA	---	---	---	---	---	---	---	---
Benzoic acid	65-85-0	D	I	---	---	4.0E+00	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Benzotrichloride	98-07-7	B2	I	1.3E+01	I	---	---	---	---	8.0E-04	RS-ESL	---	---	2.3E-04	---
Benzyl alcohol	100-51-6	NA	I	---	---	3.0E-01	H	---	---	5.0E-02	RS-ESL	---	---	1.4E-02	---
Benzyl chloride	100-44-7	B2	I	1.7E-01	I	---	---	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Beryllium	7440-41-7	B1	I	---	---	2.0E-03	I	2.4E-03	I	2.0E+01	RfC	I	8.4E+00	5.7E+00	4.0E-03
Biphenyl, 1,1-	92-52-4	D	I	---	---	5.0E-02	I	---	---	1.3E-03	RS-ESL	---	---	3.7E-04	---
Bis (2-chloro-ethyl) ether	111-44-4	B2	I	1.1E+00	I	---	---	3.3E-04	I	---	---	---	1.2E+00	---	---
Bis (2-chloroisopropyl) ether	39638-32-9	NA	I	---	---	4.0E-02	I	---	---	---	---	---	---	---	---
Bis (2-chloromethyl) ether	542-88-1	A	I	2.2E+02	I	---	---	6.2E-02	I	---	---	---	2.2E+02	---	---
Bis (2-ethyl-hexyl) phthalate	117-81-7	B2	I	1.4E-02	I	2.0E-02	I	---	---	---	---	---	---	---	6.0E-03
Bromodichloromethane	75-27-4	B2	I	6.2E-02	I	2.0E-02	I	---	---	---	---	---	---	---	1.0E-01
Bromoform	75-25-2	B2	I	7.9E-03	I	2.0E-02	I	1.1E-06	I	---	---	---	3.9E-03	---	1.0E-01
Bromomethane	74-83-9	D	I	---	---	1.4E-03	I	---	---	5.0E-03	RfC	I	---	1.4E-03	---
Butadiene, 1,3-	106-99-0	B2	I	---	---	---	---	1.1E-04	Cote & Bayard, 1990	---	---	---	3.9E-01	---	---
Butanol, n-	71-36-3	D	I	---	---	1.0E-01	I	---	---	7.6E-02	RS-ESL	---	---	2.2E-02	---
Butylate	2008-41-5	NA	I	---	---	5.0E-02	I	---	---	---	---	---	---	---	---
Butyl benzyl phthalate	85-68-7	C	I	---	---	2.0E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Cacodylic acid	75-60-5	D	I	---	---	3.0E-03	H	---	---	---	---	---	---	---	---
Cadmium	7440-43-9	B1	I	---	---	1.0E-03/5.0E-04	I	1.8E-03	I	2.0E-04	RfC	A	6.3E+00	5.7E-05	5.0E-03
Captan	133-06-2	B2	H	3.5E-03	H	1.3E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Carbaryl	63-25-2	NA	I	---	---	1.0E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Carbazole	86-74-8	B2	H	2.0E-02	H	---	---	---	---	---	---	---	---	---	---
Carbofuran	1563-66-2	NA	I	---	---	5.0E-03	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	4.0E-02
Carbon disulfide	75-15-0	NA	I	---	---	1.0E-01	I	---	---	7.0E-01	RfC	I	---	2.0E-01	---
Carbon tetrachloride	56-23-5	B2	I	1.3E-01	I	7.0E-04	I	1.5E-05	I	2.0E-03	RfC	N	5.3E-02	5.7E-04	5.0E-03
Carbosulfan	55285-14-8	NA	I	---	---	1.0E-02	I	---	---	---	---	---	---	---	---
Chloral	75-87-6	NA	I	---	---	2.0E-03	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Chlordane	57-74-9	B2	I	3.5E-01	I	5.0E-04	I	1.0E-04	I	7.0E-04	RfC	I	3.5E-01	2.0E-04	2.0E-03
Chlorine	7782-50-5	NA	I	---	---	1.0E-01	I	---	---	1.5E-03	RS-ESL	---	---	4.3E-04	4.0E+00
Chloroanaline, p-	106-47-8	NA	I	---	---	4.0E-03	I	---	---	5.3E-03	RS-ESL	---	---	1.5E-03	---
Chlorobenzene	108-90-7	D	I	---	---	2.0E-02	I	---	---	4.6E-02	RS-ESL	---	---	1.3E-02	1.0E-01
Chlorobenzilate	510-15-6	B2	H	2.7E-01	H	2.0E-02	I	7.8E-05	H	---	---	---	2.7E-01	---	---
Chloro-1,3-butadiene, 2-	126-99-8	NA	I	---	---	---	---	---	---	7.0E-03	RfC	H	---	2.0E-03	---
Chlorodifluoromethane	75-45-6	NA	I	---	---	---	---	---	---	5.0E+01	RfC	I	---	1.4E+01	---
Chloroethane	75-00-3	NA	I	---	---	4.0E-01	N	---	---	1.0E+01	RfC	I	---	2.9E+00	---
Chloroform	67-66-3	B2	I	6.1E-03	I	1.0E-02	I	2.3E-05	I	9.7E-02	RfC	A	8.1E-02	2.8E-02	1.0E-01
Chloromethane	74-87-3	C	H	1.3E-02	H	---	---	1.8E-06	H	8.2E-01	RfC	A	6.3E-03	2.4E-01	---
Chloronaphthalene, 2-	91-58-7	NA	I	---	---	8.0E-02	I	---	---	---	---	---	---	---	---
Chlorophenol, 2-	95-57-8	NA	I	---	---	5.0E-03	I	---	---	3.0E-02	RS-ESL	---	---	8.6E-03	---
Chlorotoluene, o-	95-49-8	NA	I	---	---	2.0E-02	I	---	---	2.6E-01	RS-ESL	---	---	7.4E-02	---
Chlorpyrifos	2921-88-2	NA	I	---	---	3.0E-03	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	---
Chromium (III)	16065-83-1	NA	I	---	---	1.5E+00	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	1.0E-01
Chromium (VI)	18540-29-9	A	I	---	---	3.0E-03	I	1.2E-02	I	1.0E-04	RfC	I	4.2E+01	2.9E-05	1.0E-01
Chrysene	218-01-9	B2	I	7.3E-03	EPA-93	---	---	8.8E-07	EPA-93	---	---	---	3.1E-03	---	---
Cobalt	7440-48-4	NA	I	---	---	6.0E-02	N	---	---	2.0E-05	RS-ESL	---	---	5.7E-06	---
Copper	7440-50-8	D	I	---	---	4.0E-02	N	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	1.3E+00
Cresol, m-	108-39-4	C	I	---	---	5.0E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Cresol, o-	95-48-7	C	I	---	---	5.0E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Cresol, p-	106-44-5	C	I	---	---	5.0E-03	H	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Crotonaldehyde	123-73-9	C	I	1.9E+00	H	---	---	---	---	6.0E-03	RS-ESL	---	---	1.7E-03	---
Cumene	98-82-8	D	I	---	---	1.0E-01	I	---	---	4.0E-01	RfC	I	---	1.1E-01	---
Cyanide	57-12-5	D	I	---	---	2.0E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	2.0E-01
Cyanogen	460-19-5	NA	I	---	---	4.0E-02	I	---	---	2.1E-02	RS-ESL	---	---	6.0E-03	---
Cyclohexanone	108-94-1	NA	I	---	---	5.0E+00	I	---	---	1.0E-01	RS-ESL	---	---	2.9E-02	---
Cyclotrimethylenetrinitramine	121-82-4	C	I	1.1E-01	I	3.0E-03	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
DDD	72-54-8	B2	I	2.4E-01	I	---	---	---	---	---	---	---	---	---	---
DDE	72-55-9	B2	I	3.4E-01	I	---	---	---	---	---	---	---	---	---	---
DDT	50-29-3	B2	I	3.4E-01	I	5.0E-04	I	9.7E-05	I	---	---	---	3.4E-01	---	---
Di-n-butyl phthalate	84-74-2	D	I	---	---	1.0E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Di-n-ootyl phthalate	117-84-0	NA	I	---	---	2.0E-02	H	---	---	---	---	---	---	---	---
Diallate	2303-16-4	B2	H	6.1E-02	H	---	---	---	---	---	---	---	---	---	---
Diazinon	333-41-5	NA	I	---	---	9.0E-04	H	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Dibenz-a,h-anthracene	53-70-3	B2	I	7.3E+00	EPA-93	---	---	8.8E-04	EPA-93	---	---	---	3.1E+00	---	---
Dibromo-3-chloropropane, 1,2-	96-12-8	B2	H	1.4E+00	H	---	---	6.9E-07	H	2.0E-04	RfC	I	2.4E-03	5.7E-05	2.0E-04
Dibromochloromethane	124-48-1	C	I	8.4E-02	I	2.0E-02	I	---	---	---	---	---	---	---	1.0E-01
Dicamba	1918-00-9	NA	I	---	---	3.0E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFI[c] (mg/kg-day)$^{-1}$	RfDI[c] (mg/kg-day)	MCL[d] (mg/l)
Dichlorobenzene, 1,2-	95-50-1	D	I	---	---	9.0E-02	I	---	---	1.5E-01	RS-ESL	---	---	4.3E-02	6.0E-01
Dichlorobenzene, 1,4-	106-46-7	C	H	2.4E-02	H	---	---	---	---	8.0E-01	RfC	I	---	2.3E-01	7.5E-02
Dichlorobenzidine, 3,3-	91-94-1	B2	I	4.5E-01	I	---	---	---	---	---	---	---	---	---	---
Dichloro-2-butene, 1,4-	764-41-0	B2	H	---	---	---	---	2.6E-03	H	---	---	---	9.1E+00	---	---
Dichlorodifluoromethane	75-71-8	NA	I	---	---	2.0E-01	I	---	---	5.0E+00	RS-ESL	---	---	1.4E+00	---
Dichloroethane, 1,1-	75-34-3	C	I	---	---	1.0E-01	H	---	---	4.0E-01	RS-ESL	---	---	1.1E-01	---
Dichloroethane, 1,2-	107-06-2	B2	I	9.1E-02	I	---	---	2.6E-05	I	8.1E-01	RfC	A	9.1E-02	2.3E-01	5.0E-03
Dichloroethylene, 1,1-	75-35-4	C	I	6.0E-01	I	9.0E-03	I	5.0E-05	I	---	---	---	1.8E-01	---	7.0E-03
Dichloroethylene, cis-1,2-	156-59-2	D	I	---	---	1.0E-02	H	---	---	7.9E-01	RS-ESL	---	---	2.3E-01	7.0E-02
Dichloroethylene, trans-1,2	156-60-5	NA	I	---	---	2.0E-02	I	---	---	7.9E-01	RS-ESL	---	---	2.3E-01	1.0E-01
Dichlorophenol, 2,4-	120-83-2	NA	I	---	---	3.0E-03	I	---	---	5.3E-02	RS-ESL	---	---	1.5E-02	---
Dichlorophenoxyacetic acid, 2,4-	94-75-7	NA	I	---	---	1.0E-02	I	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	7.0E-02
Dichloropropane, 1,2-	78-87-5	B2	H	6.8E-02	H	9.0E-02	A	---	---	4.0E-03	RfC	I	---	1.1E-03	5.0E-03
Dichloropropanol, 2,3-	616-23-9	NA	I	---	---	3.0E-03	I	---	---	---	---	---	---	---	---
Dichloropropene, 1,3-	542-75-6	B2	I	1.8E-01	H	3.0E-04	I	3.7E-05	H	2.0E-02	RfC	I	1.3E-01	5.7E-03	---
Dichlorvos	62-73-7	B2	I	2.9E-01	I	5.0E-04	I	---	---	5.0E-04	RfC	I	---	1.4E-04	---
Dieldrin	60-57-1	B2	I	1.6E+01	I	5.0E-05	I	4.6E-03	I	---	---	---	1.6E+01	---	---
Diethylhexyl adipate	103-23-1	C	I	1.2E-03	I	6.0E-01	I	---	---	1.2E-01	RS-ESL	---	---	3.5E-02	---
Diethyl phthalate	84-66-2	D	I	---	---	8.0E-01	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Diethylstilbestrol	56-53-1	A	H	4.7E+03	H	---	---	---	---	---	---	---	---	---	---
Dimethoate	60-51-5	NA	I	---	---	2.0E-04	I	---	---	---	---	---	---	---	---
Dimethoxybenzidine, 3,3'-	119-90-4	B2	H	1.4E-02	H	---	---	---	---	---	---	---	---	---	---
Dimethylbenzidine, 3,3'-	119-93-7	B2	H	9.2E+00	H	---	---	---	---	---	---	---	---	---	---
Dimethyl phenol, 2,4-	105-67-9	NA	I	---	---	2.0E-02	I	---	---	1.7E-02	RS-ESL	---	---	4.7E-03	---
Dinitrobenzene, 1,3-	99-65-0	D	I	---	---	1.0E-04	I	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	---
Dinitrobenzene, 1,4-	100-25-4	NA	I	---	---	4.0E-04	H	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	---
Dinitrophenol, 2,4-	51-28-5	NA	I	---	---	2.0E-03	I	---	---	---	---	---	---	---	---
Dinitrotoluene, 2,4-	121-14-2	B2	I	6.8E-01	I (for mixed isomers)	2.0E-03	I	---	---	1.5E-04	RS-ESL	---	---	4.3E-05	---
Dinitrotoluene, 2,6-	606-20-2	B2	I	6.8E-01	I (for mixed isomers)	1.0E-03	H	---	---	1.5E-04	RS-ESL	---	---	4.3E-05	---
Dinoseb	88-85-7	D	I	---	---	1.0E-03	I	---	---	---	---	---	---	---	7.0E-03
Dioxane 1,4-	123-91-1	B2	I	1.1E-02	I	---	---	---	---	9.0E-02	RS-ESL	---	---	2.6E-02	---
Diphenylamine	122-39-4	NA	I	---	---	2.5E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Diphenylhydrazine, 1,2-	122-66-7	B2	I	8.0E-01	I	---	---	2.2E-04	I	---	---	---	7.7E-01	---	---
Diquat	85-00-7	NA	I	---	---	2.2E-03	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	2.0E-02
Disulfoton	298-04-4	NA	I	---	---	4.0E-05	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Diuron	330-54-1	NA	I	---	---	2.0E-03	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Endosulfan	115-29-7	NA	I	---	---	6.0E-03	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFI[c] (mg/kg-day)$^{-1}$	RfDI[c] (mg/kg-day)	MCL[d] (mg/l)
Endothall	145-73-3	NA	I	---	---	2.0E-02	I	---	---	---	---	---	---	---	1.0E-01
Endrin	72-20-8	D	I	---	---	3.0E-04	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	2.0E-03
Epichlorohydrin	106-89-8	B2	I	9.9E-03	I	2.0E-03	H	1.2E-06	I	1.0E-03	RfC	I	4.2E-03	2.9E-04	---
Ethion	563-12-2	NA	I	---	---	5.0E-04	I	---	---	4.0E-04	RS-ESL	---	---	1.1E-04	---
Ethoxy ethanol, 2-	110-80-5	NA	I	---	---	4.0E-01	H	---	---	2.0E-01	RfC	I	---	5.7E-02	---
Ethyl acetate	141-78-6	NA	I	---	---	9.0E-01	I	---	---	1.4E+00	RS-ESL	---	---	4.1E-01	---
Ethyl acrylate	140-88-5	B2	H	4.8E-02	H	---	---	---	---	1.6E-02	RS-ESL	---	---	4.6E-03	---
Ethyl benzene	100-41-4	D	I	---	---	1.0E-01	I	---	---	1.0E+00	RfC	I	---	2.9E-01	7.0E-01
Ethyl dipropylthiocarbamate, S-	759-94-4	NA	I	---	---	2.5E-02	I	---	---	---	---	---	---	---	---
Ethyl ether	60-29-7	NA	I	---	---	2.0E-01	I	---	---	1.2E+00	RS-ESL	---	---	3.5E-01	---
Ethyl methacrylate	97-63-2	NA	I	---	---	9.0E-02	H	---	---	5.0E-01	RS-ESL	---	---	1.4E-01	---
Ethyl-2-methyl benzene, 1-	611-14-3	D	(g)	---	---	2.0E-01	(g)	---	---	4.0E-01	RfC	(g)	---	1.1E-01	1.0E+00
Ethyl-4-methyl benzene, 1-	622-96-8	D	(g)	---	---	2.0E-01	(g)	---	---	4.0E-01	RfC	(g)	---	1.1E-01	1.0E+00
Ethylenediamine	107-15-3	D	I	---	---	2.0E-02	H	---	---	2.5E-02	RS-ESL	---	---	7.1E-03	---
Ethylene dibromide	106-93-4	B2	I	8.5E+01	I	---	---	2.2E-04	I	2.0E-04	RfC	H	7.7E-01	5.7E-05	5.0E-05
Ethylene glycol	107-21-1	NA	I	---	---	2.0E+00	I	---	---	2.6E-02	RS-ESL	---	---	7.4E-03	---
Ethylene oxide	75-21-8	B1	H	1.0E+00	H	---	---	1.0E-04	H	---	---	---	3.5E-01	---	---
Ethylene thiourea	96-45-7	B2	H	1.1E-01	H	8.0E-05	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Fluoranthene	206-44-0	D	I	---	---	4.0E-02	I	---	---	---	---	---	---	---	---
Fluorene	86-73-7	D	I	---	---	4.0E-02	I	---	---	---	---	---	---	---	---
Fluorine (soluble fluoride)	7782-41-4	NA	I	---	---	6.0E-02	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	4.0E+00
Formaldehyde	50-00-0	B1	I	---	---	2.0E-01	I	1.3E-05	I	---	---	---	4.6E-02	---	---
Formic acid	64-18-6	NA	I	---	---	2.0E+00	H	---	---	9.4E-03	RS-ESL	---	---	2.7E-03	---
Furan	110-00-9	NA	I	---	---	1.0E-03	I	---	---	2.8E-02	RS-ESL	---	---	8.0E-03	---
Furfural	98-01-1	NA	I	---	---	3.0E-03	I	---	---	8.0E-03	RS-ESL	---	---	2.3E-03	---
Glycidylaldehyde	765-34-4	B2	I	---	---	4.0E-04	I	---	---	1.0E-03	RfC	H	---	2.9E-04	---
Heptachlor	76-44-8	B2	I	4.5E+00	I	5.0E-04	I	1.3E-03	I	---	---	---	4.6E+00	---	4.0E-04
Heptachlor epoxide	1024-57-3	B2	I	9.1E+00	I	1.3E-05	I	2.6E-03	I	---	---	---	9.1E+00	---	2.0E-04
Hexachlorobenzene	118-74-1	B2	I	1.6E+00	I	8.0E-04	I	4.6E-04	I	---	---	---	1.6E+00	---	1.0E-03
Hexachlorobutadiene	87-68-3	C	I	7.8E-02	I	2.0E-04	H	2.2E-05	I	---	---	---	7.7E-02	---	---
Hexachlorocyclohexane, alpha	319-84-6	B2	I	6.3E+00	I	---	---	1.8E-03	I	---	---	---	6.3E+00	---	---
Hexachlorocyclohexane, beta	319-85-7	C	I	1.8E+00	I	---	---	5.3E-04	I	---	---	---	1.9E+00	---	---
Hexachlorocyclohexane, gamma[h]	58-89-9	B2	H	1.3E+00	H	3.0E-04	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
Hexachlorocyclohexane, techn	608-73-1	B2	I	1.8E+00	I	---	---	5.1E-04	I	---	---	---	1.8E+00	---	---
Hexachlorocyclopentadiene	77-47-4	D	I	---	---	7.0E-03	I	---	---	7.0E-05	RfC	H	---	2.0E-05	5.0E-02
Hexachloroethane	67-72-1	C	I	1.4E-02	I	1.0E-03	I	4.0E-06	I	---	---	---	1.4E-02	---	---
Hexachlorophene	70-30-4	NA	I	---	---	3.0E-04	I	---	---	---	---	---	---	---	---
Hexane, n-	110-54-3	NA	I	---	---	6.0E-02	H	---	---	2.0E-01	RfC	I	---	5.7E-02	---
Hexazinone	51235-04-2	NA	I	---	---	3.3E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF (µg/m^3)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Hydrazine	302-01-2	B2	I	3.0E+00	I	---	---	4.9E-03	I	---	---	---	1.7E+01	---	---
Indeno-1,2,3-cd-pyrene	193-39-5	B2	I	7.3E-01	EPA-93	---	---	8.8E-05	EPA-93	---	---	---	3.1E-01	---	---
Isobutyl alcohol	78-83-1	NA	I	---	---	3.0E-01	I	---	---	1.5E-01	RS-ESL	---	---	4.3E-02	---
Isophorone	78-59-1	C	I	9.5E-04	I	2.0E-01	I	---	---	2.3E-02	RS-ESL	---	---	6.6E-03	---
Kepone	143-50-0	NA	I	---	---	5.0E-04	A	---	---	---	---	---	---	---	
Lead (inorganic)	7439-92-1	---	---	---	---	---	---	---	---	---	---	---	---	---	1.5E-02
Malathion	121-75-5	NA	I	---	---	2.0E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Maleic anhydride	108-31-6	NA	I	---	---	1.0E-01	I	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	---
Maleic hydrazide	123-33-1	NA	I	---	---	5.0E-01	I	---	---	1.0E-01	RS-ESL	---	---	2.9E-02	---
Malononitrile	109-77-3	NA	I	---	---	2.0E-05	H	---	---	8.0E-03	RS-ESL	---	---	2.3E-03	---
Manganese	7439-96-5	D	I	---	---	1.4E-01/4.7E-02	I	---	---	5.0E-05	RfC	I	---	1.4E-05	---
Mercury	7439-97-6	D	I	---	---	3.0E-04	I (for $HgCl^2$)	---	---	3.0E-04	RfC	I	---	8.6E-05	2.0E-03
Methacrylonitrile	126-98-7	NA	I	---	---	1.0E-04	I	---	---	2.7E-03	RS-ESL	---	---	7.7E-04	---
Methanol	67-56-1	NA	I	---	---	5.0E-01	I	---	---	2.6E-01	RS-ESL	---	---	7.5E-02	---
Methomyl	16752-77-5	NA	I	---	---	2.5E-02	I	---	---	2.5E-03	RS-ESL	---	---	7.1E-04	---
Methoxychlor	72-43-5	D	I	---	---	5.0E-03	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	4.0E-02
Methoxyethanol, 2-	109-86-4	NA	I	---	---	---	---	---	---	2.0E-02	RfC	I	---	5.7E-03	---
Methyl ethyl ketone	78-93-3	D	I	---	---	6.0E-01	I	---	---	1.0E+00	RfC	I	---	2.9E-01	---
Methyl isobutyl ketone	108-10-1	NA	I	---	---	8.0E-02	H	---	---	2.1E-01	RS-ESL	---	---	5.9E-02	---
Methyl mercury	22967-92-6	C	I	---	---	1.0E-04	I	---	---	1.0E-05	RS-ESL	---	---	2.9E-06	---
Methyl methacrylate	80-62-6	E	I	---	---	1.4E+00	I	---	---	7.0E-01	RfC	I	---	2.0E-01	---
Methylnaphthalene, 2-	91-57-6	NA	I	---	---	4.0E-02	MA	---	---	---	---	---	---	---	---
Methyl parathion	298-00-0	NA	I	---	---	2.5E-04	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	---
Methylene-bis (2-chloroaniline) 4,4'-	101-14-4	B2	H	1.3E-01	H	7.0E-04	H	3.7E-05	H	---	---	---	1.3E-01	---	---
Methylene chloride	75-09-2	B2	I	7.5E-03	I	6.0E-02	I	4.7E-07	I	3.0E+00	RfC	H	1.6E-03	8.6E-01	5.0E-03
Molinate	2212-67-1	NA	I	---	---	2.0E-03	I	---	---	---	---	---	---	---	---
Molybdenum	7439-98-7	NA	I	---	---	5.0E-03	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
MTBE	1634-04-4	NA	I	1.7E-03	CA	1.0E-02	CA	4.5E-08	CA	3.0E+00	RfC	I	1.6E-04	8.6E-01	---
Naled	300-76-5	NA	I	---	---	2.0E-03	I	---	---	3.0E-03	RS-ESL	---	---	8.6E-04	---
Naphthalene	91-20-3	D	I	---	---	2.0E-02	I	---	---	3.0E-03	RfC	I	---	8.6E-04	---
Nickel and compounds	7440-02-0	A	I	---	---	2.0E-02	I	4.8E-04	I	---	---	---	1.7E+00	---	---
Nitrate	14797-55-8	NA	I	---	---	1.6E+00	I	---	---	---	---	---	---	---	1.0E+01
Nitrite	14797-65-0	NA	I	---	---	1.0E-01	I	---	---	---	---	---	---	---	1.0E+00
Nitroaniline, 2-	88-74-4	NA	I	---	---	---	---	---	---	2.0E-04	RfC	H	---	5.7E-05	---
Nitrobenzene	98-95-3	D	I	---	---	5.0E-04	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Nitropropane, 2-	79-46-9	B2	H	---	---	---	---	2.7E-03	H	2.0E-02	RfC	I	9.5E+00	5.7E-03	---
Nitroso-n-ethylurea, n-	759-73-9	B2	H	1.4E+02	H	---	---	---	---	---	---	---	---	---	---
Nitroso-methyl-ethyl-amine, n-	10595-95-6	B2	I	2.2E+01	I	---	---	---	---	---	---	---	---	---	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Nitrosodi-n-butylamine, n-	924-16-3	B2	I	5.4E+00	I	---	---	1.6E-03	I	---	---	---	5.6E+00	---	---
Nitrosodi-n-propylamine, n-	621-64-7	B2	I	7.0E+00	I	---	---	---	---	---	---	---	---	---	---
Nitrosodiethanolamine	1116-54-7	B2	I	2.8E+00	I	---	---	---	---	---	---	---	---	---	---
Nitrosodiethylamine, n-	55-18-5	B2	I	1.5E+02	I	---	---	4.3E-02	I	---	---	---	1.5E+02	---	---
Nitrosodimethylamine, n-	62-75-9	B2	I	5.1E+01	I	---	---	1.4E-02	I	---	---	---	4.9E+01	---	---
Nitrosodiphenylamine	86-30-6	B2	I	4.9E-03	I	---	---	---	---	---	---	---	---	---	---
Nitrosopyrrolidine, n-	930-55-2	B2	I	2.1E+00	I	---	---	6.1E-04	I	---	---	---	2.1E+00	---	---
Nitrotoluene, m-	99-08-1	NA	I	---	---	1.0E-02	H	---	---	1.1E-02	RS-ESL	---	---	3.1E-03	---
Nitrotoluene, o-	88-72-2	NA	I	---	---	1.0E-02	H	---	---	1.1E-02	RS-ESL	---	---	3.1E-03	---
Nitrotoluene, p-	99-99-0	NA	I	---	---	1.0E-02	H	---	---	1.1E-02	RS-ESL	---	---	3.1E-03	---
Octamethylpyrophosphoramide	152-16-9	NA	I	---	---	2.0E-03	H	---	---	---	---	---	---	---	---
Oxamyl	23135-22-0	NA	I	---	---	2.5E-02	I	---	---	---	---	---	---	---	2.0E-01
Parathion	56-38-2	C	I	---	---	6.0E-03	H	---	---	5.0E-05	RS-ESL	---	---	1.4E-05	---
Pebulate	1114-71-2	NA	I	---	---	5.0E-02	H	---	---	---	---	---	---	---	---
Pentachlorobenzene	608-93-5	D	I	---	---	8.0E-04	I	---	---	1.0E-01	RS-ESL	---	---	2.9E-02	---
Pentachloronitrobenzene	82-68-8	C	H	2.6E-01	H	3.0E-03	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
Pentachlorophenol	87-86-5	B2	I	1.2E-01	I	3.0E-02	I	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	1.0E-03
Phenanthrene	85-01-8	D	I	---	---	3.0E-02	MA	---	---	---	---	---	---	---	---
Phenol	108-95-2	D	I	---	---	6.0E-01	I	---	---	1.9E-02	RS-ESL	---	---	5.4E-03	---
Phenyl mercuric acetate	62-38-4	NA	I	---	---	8.0E-05	I	---	---	---	---	---	---	---	---
Phenylene diamine, m-	108-45-2	NA	I	---	---	6.0E-03	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Phenylene diamine, p-	106-50-3	NA	I	---	---	1.9E-01	H	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Phorate	298-02-2	NA	I	---	---	2.0E-04	H	---	---	5.0E-05	RS-ESL	---	---	1.4E-05	---
Phosphine	7803-51-2	D	I	---	---	3.0E-04	I	---	---	3.0E-04	RfC	I	---	8.6E-05	---
Phosphorus, white	7723-14-0	D	I	---	---	2.0E-05	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Phthalic anhydride	85-44-9	NA	I	---	---	2.0E+00	I	---	---	1.2E-01	RfC	H	---	3.4E-02	---
Polybrominated biphenyls	67774-32-7	B2	H	8.9E+00	H	7.0E-06	H	---	---	---	---	---	---	---	---
Polychlorinated biphenyls[j]	1336-36-3	---	---	---	---	---	---	---	---	---	---	---	---	---	5.0E-04
Pronamide	23950-58-5	NA	I	---	---	7.5E-02	I	---	---	---	---	---	---	---	---
Propargite	2312-35-8	NA	I	---	---	2.0E-02	I	---	---	---	---	---	---	---	---
Propargyl alcohol	107-19-7	NA	I	---	---	2.0E-03	I	---	---	2.3E-03	RS-ESL	---	---	6.6E-04	---
Propham	122-42-9	NA	I	---	---	2.0E-02	I	---	---	---	---	---	---	---	---
Propylene oxide	75-56-9	B2	I	2.4E-01	I	---	---	3.7E-06	I	3.0E-02	RfC	I	1.3E-02	8.6E-03	---
Pyrene	129-00-0	D	I	---	---	3.0E-02	I	---	---	---	---	---	---	---	---
Pyridine	110-86-1	NA	I	---	---	1.0E-03	I	---	---	1.5E-02	RS-ESL	---	---	4.3E-03	---
Quinoline	91-22-5	C	H	1.2E+01	H	---	---	---	---	5.0E-04	RS-ESL	---	---	1.4E-04	---
Selenium	7782-49-2	D	I	---	---	5.0E-03	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	5.0E-02
Selenourea	630-10-4	NA	I	---	---	5.0E-03	H	---	---	---	---	---	---	---	---
Silver	7440-22-4	D	I	---	---	5.0E-03	I	---	---	1.0E-05	RS-ESL	---	---	2.9E-06	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Sodium diethyldithiocarbamate	148-18-5	C	H	2.7E-01	H	3.0E-02	I	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Strychnine	57-24-9	NA	I	---	---	3.0E-04	I	---	---	---	---	---	---	---	---
Styrene	100-42-5	NA	I	---	---	2.0E-01	I	---	---	1.0E+00	RfC	I	---	2.9E-01	1.0E-01
Tetrachlorobenzene, 1,2,4,5-	95-94-3	NA	I	---	---	3.0E-04	I	---	---	3.5E-01	RS-ESL	---	---	1.0E-01	---
Tetrachloroethane, 1,1,1,2-	630-20-6	C	I	2.6E-02	I	3.0E-02	I	7.4E-06	I	---	---	---	2.6E-02	---	---
Tetrachloroethane, 1,1,2,2-	79-34-5	C	I	2.0E-01	I	3.0E-01	A	5.8E-05	I	---	---	---	2.0E-01	---	---
Tetrachloroethylene[h]	127-18-4	B2	I	5.2E-02	N	1.0E-02	I	5.8E-07	N	2.7E-01	RfC	A	2.0E-03	7.7E-02	5.0E-03
Tetrachlorophenol, 2,3,4,6-	58-90-2	NA	I	---	---	3.0E-02	I	---	---	7.0E-03	RS-ESL	---	---	2.0E-03	---
Tetraethyl dithiopyrophosphate	3689-24-5	NA	I	---	---	5.0E-04	I	---	---	2.0E-04	RS-ESL	---	---	5.7E-05	---
Tetraethyl lead	78-00-2	NA	I	---	---	1.0E-07	I	---	---	7.5E-05	RS-ESL	---	---	2.1E-05	---
Thallium and compounds (as thallium chloride)	7791-12-0	D	I	---	---	8.0E-05	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	2.0E-03
Thiofanox	39196-18-4	NA	I	---	---	3.0E-04	H	---	---	8.0E-04	RS-ESL	---	---	2.3E-04	---
Thiophanate-methyl	23564-05-8	NA	I	---	---	8.0E-02	I	---	---	---	---	---	---	---	---
Thiram	137-26-8	NA	I	---	---	5.0E-03	I	---	---	1.0E-03	RS-ESL	---	---	2.9E-04	---
Tin	7440-31-5	NA	I	---	---	6.0E-01	H	---	---	2.0E-02	RS-ESL	---	---	5.7E-03	---
Toluene	108-88-3	D	I	---	---	2.0E-01	I	---	---	4.0E-01	RfC	I	---	1.1E-01	1.0E+00
Toluenediamine, 2,4-	95-80-7	B2	H	3.2E+00	H	---	---	---	---	5.0E-03	RS-ESL	---	---	1.4E-03	---
Toluenediamine, 2,6-	823-40-5	NA	I	---	---	2.0E-01	H	---	---	---	---	---	---	---	---
Toluene diisocyanate, 2,4/2,6-	26471-62-5	NA	I	---	---	---	---	---	---	7.0E-05	RfC	I	---	2.0E-05	---
Toluidine, p-	106-49-0	C	H	1.9E-01	H	---	---	---	---	---	---	---	---	---	---
Toxaphene	8001-35-2	B2	I	1.1E+00	I	---	---	3.2E-04	I	---	---	---	1.1E+00	---	3.0E-03
TP Silvex, 2,4,5-	93-72-1	D	I	---	---	8.0E-03	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	5.0E-02
Triallate	2303-17-5	NA	I	---	---	1.3E-02	I	---	---	---	---	---	---	---	---
Tributyltin oxide	56-35-9	D	I	---	---	3.0E-04	I	---	---	5.0E-05	RS-ESL	---	---	1.4E-05	
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	NA	I	---	---	3.0E+01	I	---	---	3.0E+01	RfC	H	---	8.6E+00	---
Trichlorobenzene, 1,2,4-	120-82-1	D	I	---	---	1.0E-02	I	---	---	2.0E-01	RfC	H	---	5.7E-02	7.0E-02
Trichloroethane, 1,1,1-	71-55-6	D	I	---	---	2.0E-01	N	---	---	1.0E+00	RfC	N	---	2.9E-01	2.0E-01
Trichloroethane, 1,1,2-	79-00-5	C	I	5.7E-02	I	4.0E-03	I	1.6E-05	I	---	---	---	5.6E-02	---	5.0E-03
Trichloroethylene[h]	79-01-6	B2	I	1.1E-02	N	6.0E-03	N	1.7E-06	N	---	---	---	6.0E-03	---	5.0E-03
Trichlorofluoromethane	75-69-4	NA	I	---	---	3.0E-01	I	---	---	2.8E+00	RS-ESL	---	---	8.0E-01	---
Trichlorophenol, 2,4,5-	95-95-4	NA	I	---	---	1.0E-01	I	---	---	4.4E-02	RS-ESL	---	---	1.3E-02	---
Trichlorophenol, 2,4,6-	88-06-2	B2	I	1.1E-02	I	---	---	3.1E-06	I	---	---	---	1.1E-02	---	---
Trichlorophenoxyacetic acid, 2,4,5-	93-76-5	NA	I	---	---	1.0E-02	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Trichloropropane, 1,1,2-	598-77-6	NA	I	---	---	5.0E-03	I	---	---	6.0E-02	RS-ESL	---	---	1.7E-02	---
Trichloropropane, 1,2,3-	96-18-4	B2	H	7.0E+00	H	6.0E-03	I	---	---	6.0E-02	RS-ESL	---	---	1.7E-02	---
Triethylamine	121-44-8	NA	I	---	---	---	---	---	---	7.0E-03	RfC	I	---	2.0E-03	---
Trifluralin	1582-09-8	C	I	7.7E-03	I	7.5E-03	I	---	---	1.0E-02	RS-ESL	---	---	2.9E-03	---
Trimethylbenzene, 1,2,3-	526-73-8	NA	I	---	---	5.0E-02	(k)	---	---	6.0E-03	RfC	(k)	---	1.7E-03	1.0E+00
Trinitrobenzene, 1,3,5-	99-35-4	NA	I	---	---	3.0E-02	I	---	---	---	---	---	---	---	---

Toxicity Factors[a]

(Last update: September 29, 1998)

Contaminant	CAS #	Class	Ref	SFo (mg/kg-day)$^{-1}$	Ref[b]	RfDo (mg/kg-day)	Ref[b]	URF ($\mu g/m^3$)$^{-1}$	Ref[b]	RfC (mg/m^3)	Ref[b]		SFi[c] (mg/kg-day)$^{-1}$	RfDi[c] (mg/kg-day)	MCL[d] (mg/l)
Trinitrophenylmethylnitramine	479-45-8	NA	I	---	---	1.0E-02	H	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Trinitrotoluene, 2,4,6-	118-96-7	C	I	3.0E-02	I	5.0E-04	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Uranium (soluble salts)	7440-61-1	NA	I	---	---	3.0E-03	I	---	---	---	---	---	---	---	2.0E-02
Vanadium	7440-62-2	NA	I	---	---	7.0E-03	H	---	---	5.0E-05	RS-ESL	---	---	1.4E-05	---
Vernam	1929-77-7	NA	I	---	---	1.0E-03	I	---	---	---	---	---	---	---	---
Vinyl acetate	108-05-4	NA	I	---	---	1.0E+00	H	---	---	2.0E-01	RfC	I	---	5.7E-02	---
Vinyl chloride	75-01-4	A	H	1.9E+00	H	2.0E-05	A	8.4E-05	H	---	---	---	2.9E-01	---	2.0E-03
Warfarin	81-81-2	NA	I	---	---	3.0E-04	I	---	---	1.0E-04	RS-ESL	---	---	2.9E-05	---
Xylene, m-	108-38-3	NA	I	---	---	2.0E+00	H	---	---	4.3E-01	RS-ESL	---	---	1.2E-01	1.0E+01
Xylene, o-	95-47-6	NA	I	---	---	2.0E+00	H	---	---	4.3E-01	RS-ESL	---	---	1.2E-01	1.0E+01
Xylene, p-	106-42-3	NA	I	---	---	2.0E+00	H	---	---	4.3E-01	RS-ESL	---	---	1.2E-01	1.0E+01
Xylenes	1330-20-7	D	I	---	---	2.0E+00	I	---	---	4.3E-01	RS-ESL	---	---	1.2E-01	1.0E+01
Zinc	7440-66-6	D	I	---	---	3.0E-01	I	---	---	---	---	---	---	---	---

Footnotes

[a]The general hierarchy of the sources for the toxicity factors is: USEPA Integrated Risk Information System (IRIS); USEPA Health Effects Assessment Summary Tables (HEAST); USEPA National Center for Environmental Assessment (NCEA); TNRCC Chronic Remediation-Specific Effects Screening Levels (RS-ESLs); Agency for Toxic Substances Disease Registry Minimal Risk Levels (ATSDR MRLs); other scientifically valid sources as approved by the executive director.

[b]Reference (Ref): A = ATSDR MRL, May 23, 1996; H = HEAST, July, 1997; I = IRIS, as of September 29, 1998; N = NCEA. References for SFi and RfDi values are the same as those for URF and RfC values, respectively.

CA = California Evironmental Protection Agency, 1998. *Public Health Goal for Methyl Tertiary Butyl Ether (MTBE) in Drinking Water*, Review Draft, Office of Environmental Health Hazard Assessment, April.
Cote and Bayard, 1990. Cancer Risk Assessment of 1,3-Butadiene, *Eviron. Health Perspect.*, 86:149-153.
EPA, 1993. *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons*, Office of Research and Development, EPA/600/R-93/089, July.
MA = MADEP, 1995. *Petroleum Hydrocarbon Toxicity Project Report: Polycyclic Aromatic Hydrocarbon Cancer Risk Evaluation Methods*, Massachusetts Department of Environmental Protection, Peer Review Draft, September.

[c]SFi and RfDi values are only applicable to Standard No. 2 of the existing Risk Reduction Rule. The SFi and RfDi values were calculated using the following equations: SFi = (URF x 1000 µg/mg x 70 kg) / (20 m^3/day); RfDi = (RfC x 20 m3/day) / (70 kg). URF and RfC values should be used in all cases under Standard No. 3 of the existing Risk Reduction Rule.

[d]MCLs listed for copper and lead are EPA action levels.

[e]Toxicity factors for arsenic not presented, as a policy level is employed as the Standard No. 2 Soil MSC values.

[f]The first value represents the toxicity value to be used for evaluating all residential and commercial/industrial soil pathways for cadmium; the second value represents the toxicity value to be used for evaluating the groundwater dermal pathway (if applicable) for cadmium; as an MCL is available, a risk-based calculation for the groundwater ingestion and groundwater protection pathways is not appropriate.

[g]Toluene was used as a surrogate for 1-ethyl-2-methyl benzene and 1-ethyl-4-methyl benzene due to a lack of chemical-specific information for these contaminants.

[h]These contaminants have been classified as B2/C carcinogens. For the purpose of calculating updated Standard No. 2 MSCs, Class B2 was assumed and a risk level of 10^{-6} was used for these contaminants.

[i]The first value represents the toxicity value to be used for evaluating all residential and commercial/industrial soil pathways and all commercial/industrial groundwater pathways for manganese; the second value represents the toxicity value to be used for evaluating all residential groundwater pathways for manganese.

[j]Toxicity factors for PCBs are not presented, as TSCA limits are employed as the Standard No. 2 Soil MSC values.

[k]1,2,4-Trimethylbenzene (NCEA) was used as a surrogate for 1,2,3-trimethylbenzene due to a lack of chemical-specific information for this contaminant.

Table 4-1 - Summary Statistics Of Surface Sample Population To Be Used For Risk Assessment Evaluations.

Metal	Sample Population/ Number of Detections/ Number of Detections Above SQL	SQL (mg/kg)	Range of Detections (mg/kg) Minimum	Maximum	Mean (mg/kg)	Standard Deviation	Distribution Type N=Normal L=Lognormal	UCL (mg/kg)
Aluminum	15/ 15 /15	100	1270	20700	6218	5375	L	9881
Antimony	15/ 0 / 0	15	----	----	----	----	♦	7.5
Arsenic	15/ 3 / 3	1	2.3	29.7	15.2	13.8	♦	7.0†
Barium	15/ 15 / 15	1	35.1	287	107.3	80	L	161.8
Cadmium	15/ 0 / 0	2.5	----	----	----	----	♦	1.25
Calcium	15/ 15 / 15	50	124	1090*	459	283.6	L	675
Chromium	15/ 15 / 15	2.5	3.2	22.8	11.7	6.1	L	16.7
Cobalt	15/ 15 / 13	2.5	1.5	19.1	6.8	5.1	L	10.8
Copper	15/ 15 / 11	2.5	0.88	6.7	2.4	1.7	L	3.5
Iron	15/ 15 / 15	5	2450	31000	10515	8311	L	17300
Lead	15/ 14 / 14	1	2.6	17.4*	6.8	4.5	L	14.6
Magnesium	15/ 15 / 15	50	68.4	474*	219	103.7	L	302
Manganese	15/ 15 / 15	2.5	10.9	2330	818.1	770.6	L	4646
Mercury	15/ 0 /0	0.5	----	----	----	----	♦	0.25
Nickel	15/ 15 / 15	4.0	1.5	6.3*	3.9	1.3	L	4.8
Potassium	15/ 15 / 15	50.0	133	481*	247.9	113.8	L	313
Selenium	15/ 0 / 0	1	----	----	----	----	♦	0.5
Silver	15/ 1 / 0	2.5	2.3	2.3	2.3	----	♦	1.3
Strontium	15/ 15 / 14	2.5	2.3	13.3*	5.7	3.0	L	7.8
Thallium	15/ 1 / 0	15	14.1	14.1	14.1	---	♦	7.5
Zinc	15/ 15 / 15	2.5	3.4	16.2	8.4	3.9	L	10.7

† See note on page 30.
♦ Indicates metals with insufficient quantified values to calculate distribution probability values.
* Indicates data sets with outlier values omitted.

Table 4-1 Groundwater Summary Statistics and Background Values

	No. of Samples	No. of Values Above Detection Limit	No. of Outliers [Outlier Value(s)]	Mean	Standard Deviation	Maximum Detected Value	Minimum Detected Value	Detection Limit(s)	MCL or *SMCL*	UTL	UCL
Water Quality Parameters											
pH	38	38	1 (10.8)	6.3	0.373	6.8	5.2		*6.5-8.5*	6.4	6.8
Specific Conductivity (umhos/cm)	38	38	0	3185	2673	8140	47		—	8140	3917
Anions (mg/L)											
Chloride	35	35	0	710	470	1416	10.2	1	*250*	1416	845
Nitrate/ nitrite	36	22	3 (1.7, 2.4, 10.5)	0.076	0.0462	0.18	0.03	0.01/0.5	10	0.27	0.06
Sulfate	35	33	0	893	825	3475	3	1.0 / 2.0	*250*	3475	1079
Metals (mg/L)											
Aluminum	38	38	4 (32.1, 47.0, 81.0, 90.0)	4.59	3.7	13.4	0.3	0.1/ 0.01/ 0.005	*0.05-0.2*	28.4	8.0
Antimony	5	0	0	—	—	—	—	0.1	0.006	0.05	0.1
Arsenic	38	12	0	0.011	0.005	0.022	0.0036	0.05/ 0.002/ 0.005	0.05	0.03	0.01
Barium	38	38	0	0.44	0.5	1.99	0.02	0.01/ 0.02	2.0	3.3	0.9
Cadmium	38	19	0	0.026	0.014	0.055	0.01	0.01	0.005	0.09	0.018
Calcium	10	10	0	139	116	320	6.8	0.1	—	478	207
Chromium	38	25	1 (0.29)	0.035	0.029	0.11	0.01	0.02/ 0.05	0.1	0.16	0.03
Cobalt	10	4	0	0.029	0.018	0.053	0.012	0.01/ 0.05	—	0.39	0.03
Copper	10	4	0	0.026	0.013	0.043	0.012	0.01	*1.0*	0.20	0.02
Iron	38	38	1 (160)	20.35	20.1	68	0.85	0.05/ 0.1	*0.3*	148	39

Table 4-1 Groundwater Summary Statistics and Background Values*

	No. of Samples	No. of Values Above Detection Limit	No. of Outliers [Outlier Value(s)]	Mean	Standard Deviation	Maximum Detected Value	Minimum Detected Value	Detection Limit(s)	MCL or *SMCL*	UTL	UCL
Lead	38	23	0	0.155	0.091	0.3	0.003	0.002/ 0.005/ 0.1	---	2.31	0.29
Magnesium	38	38	0	124.5	88.7	277	5.07	0.01/ 0.5	---	277	149
Manganese	38	38	0	3.9	2.78	11.8	0.21	0.01/ 0.02	*0.05*	11.8	4.6
Mercury	38	3	0	0.001	0	0.001	0.01	0.001	0.002	0.001	0.0005
Nickel	10	9	0	0.039	0.017	0.06	0.02	0.01	0.1	0.09	0.05
Potassium	5	5	1 (92.7)	4.45	0.968	5.5	3.2	0.2	---	9.4	5.6
Selenium	38	3	0	0.08	0.06	0.14	0.02	0.005/ 0.02	0.05	0.005	0.003
Silver	38	8	0	0.017	0.007	0.03	0.01	0.005/ 0.01	*0.1*	0.03	0.01
Sodium	33	33	0	563	455	1470	13.6	1.0	---	1470	697
Strontium	10	10	0	3.1	2.37	6.15	0.18	0.01	---	10.0	4.5
Thallium	10	0	0	---	---	---	---	0.1	0.002	0.1	0.05
Zinc	10	6	0	0.09	0.08	0.23	0.025	0.015/ 0.05	*5*	1.62	0.14

* Data to be used as guidelines to determine possible impact.

BUILDING 701

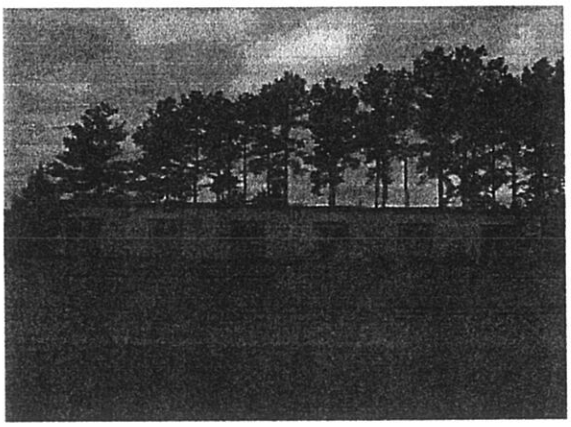
CLOSURE REPORT

Located At

Longhorn Army Ammunition Plant

Karnack, Texas

EPA ID No. TX6213820529
Solid Waste Registration No. 30990



Building 701
NOR 009

TABLE OF CONTENTS

DRAWINGS

TABLES

APPENDIX

1.0 INTRODUCTION

The U.S. Army has declared Longhorn Army Ammunition Plant excess and there is no further use for waste management units. To satisfy the requirements of 30 TAC Chapter 335 Building 701 has undergone closure.

2.0 BACKGROUND INFORMATION

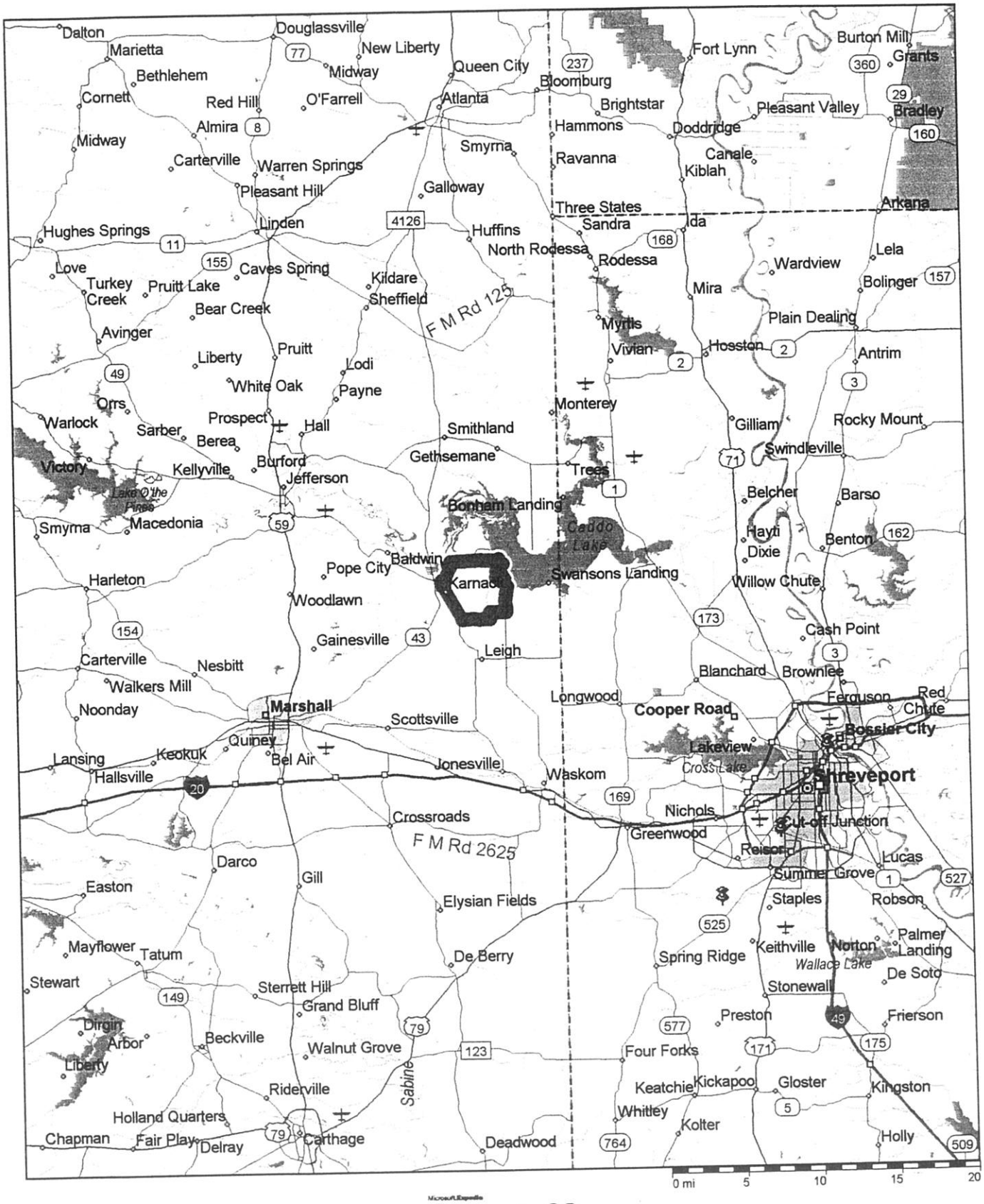
2.1 Location of Longhorn Army Ammunition Plant

Longhorn Army Ammunition Plant (LHAAP) is located in the northeast corner of Harrison County, Texas, approximately 3.6 miles from the Louisiana border. LHAAP is bordered by Caddo Lake, Caddo Lake State Park and the small town of Karnack. The plant is located approximately 30 miles west of Shreveport, Louisiana, with the nearest major city being Marshall, Texas, 15 miles to the southwest. Figure 1-1 illustrates the location of LHAAP. The installation has a total area of approximately 8,493 acres. State Highways 43 and 134 access the installation.

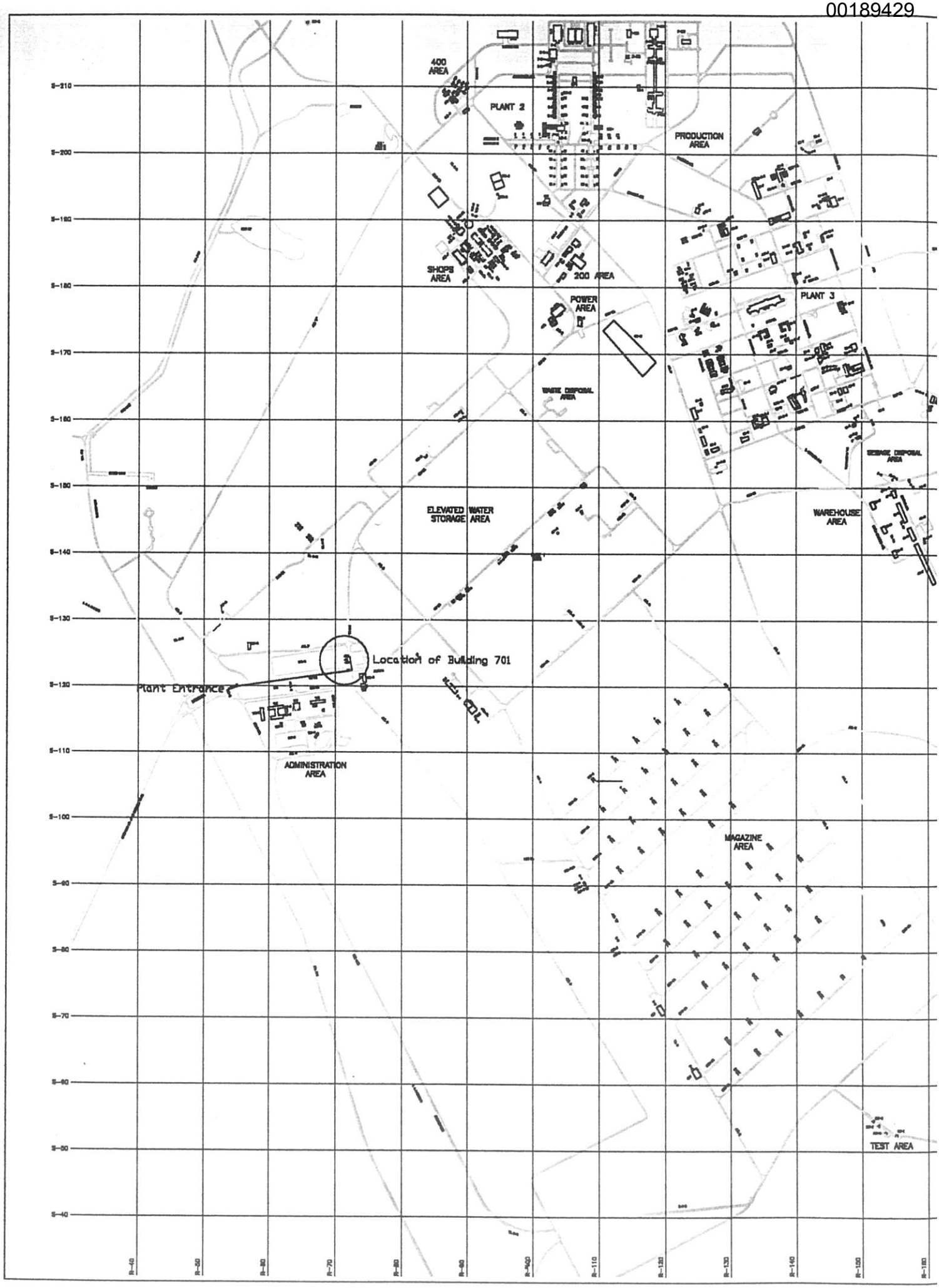
2.2 Location of Building 701

Building 701 is located on 6th street within the confines of Longhorn Army Ammunition Plant, Harrison County, Texas. The building is located near the Administration area of LHAAP.

LOCATION OF LONGHORN ARMY AMMUNITION PLANT

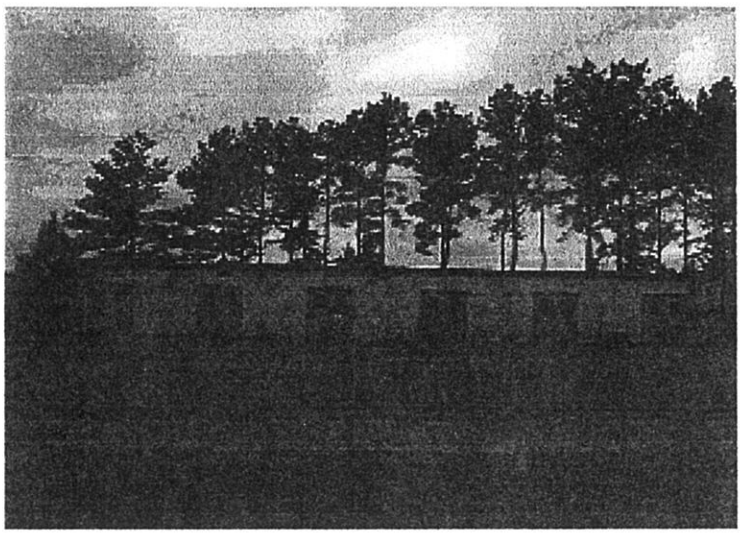


Streets98


400 AREA
PLANT 2
PRODUCTION AREA
SHOPS AREA
200 AREA
POWER AREA
PLANT 3
WASTE DISPOSAL AREA
SEWAGE DISPOSAL AREA
ELEVATED WATER STORAGE AREA
WAREHOUSE AREA
Location of Building 701
Plant Entrance
ADMINISTRATION AREA
MAGAZINE AREA
TEST AREA

2.3 Description of Building 701

The building is designated as waste management unit number 009 in the Longhorn AAP Notice of Registration. The building is ninety-six feet long by twenty feet deep. Six sets of double doors are evenly distributed along the front length and the rear length of the building. The building is constructed with a concrete slab and a wooden frame. The walls are covered with transite tiles and the roof is a shingle roof. The building currently has some file cabinets stored in the North end of the building.



Building 701
Looking across 6th St.

2.4 Description of Wastestreams

The following wastestreams are listed in the Longhorn AAP Notice of Registration as having been stored at building 701.

WASTESTREAM NUMBER	DESCRIPTION
178160	PCB Transformer
179430	PCB Contaminated Solids

No records on site other than the Notice of Registration indicate that the building was used for storage of hazardous materials. A U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) report entitled "Evaluation of Solid Waste Management Units Longhorn Army Ammunition Plant, Marshall, Texas 18-22 May 1987" indicates that the building was used from 1980 to 1984 for the storage of soil from the cleanup of transformer oil spills. The material was stored in 30 and 55-gallon drums. A copy of the title page and the section of the report concerning building 701 in enclosed as Appendix C

3.0 SPILL EVENTS

There are no recorded spill events that have taken place at Building 701. Inspection of the concrete slab revealed no oil stained areas.

4.0 DATA QUALITY

The following procedures were followed in order to ensure that data from sampling is of acceptable quality.

4.1 Quality Assurance Samples

Approximately 10% of the field samples were split for QC samples. Soil samples for building 701 were collected in conjunction with samples from building 707-C. Sample No. 707-C-W-SS was collected and split in duplicate as a QA/QC sample. The field sample and its duplicate were submitted to Analab Corporation. Analysis of the QC duplicate provides a measure of sample homogeneity.

4.2 Matrix Spike/Matrix Spike Duplicate Samples.

One matrix spike and matrix spike duplicate (MS/MSD) were collected for approximately 5% of the samples taken. MS/MSD's are samples of the environmental media that are spiked in the laboratory with a known concentration of a target analyte(s) to verify percent recoveries. They are primarily used to check sample matrix interference's and the precision of a given sample matrix. A MS/MSD is analyzed with every batch of samples; however, it is selected randomly by the laboratory and may not be from the same group of samples as those submitted for a particular project. The results for MS/MSD's were compared to EPA SW-846 to ensure that quality and precision are within acceptable limits.

4.3 Method Blank Results

Laboratory method blanks were prepared and analyzed by the laboratory after instrument tuning and calibration. When analyzed, all method blank samples were non-detect for constituents of concern. This demonstrates that interference's from the analytical system, glassware, and reagents were under control.

4.4 Discussion of Quality Assurance Sample Results

All laboratory quality control information is complete. All analyses were performed using specified methods within proper holding times. All matrix spikes and standards were within control limits for the wipe test sample. The surrogate and laboratory control recoveries experienced some interference's for the soil samples. All laboratory instrument calibration and procedures were carried out as required by the laboratory.

Soil samples collected exhibited a high background concentration of non-PCB constituents. This concentration was taken into account in calculating the percent recovery. A complete narrative of analytical results is located on pages 60-62 of the laboratory report entitled "Radian Analytical Services FPAS Report". Flag definitions are located on page 4 of the report.

5.0 DECONTAMINATION PROCEDURES

All waste was removed from building 701 in the prior to the time the LHAAP RCRA permit was issued and prior to the time of this closure. The building has not been used since for any storage of hazardous or non-hazardous waste.

A record search indicated that the building was likely used only temporarily for the storage of contaminated soil contained in drums, and there are no obvious stains on the floor. Due to this fact, it was decided to collect a wipe test sample from the concrete. If the wipe test contained any PCB's the concrete slab would be decontaminated. Analysis of the wipe test was non-detect for any PCB's or total petroleum hydrocarbons.

5.1 Disposition of Waste Streams

There was no waste generated during the sampling other than some equipment decontamination water, soiled sample gloves and napkins. The non-hazardous decontamination water was treated at the onsite Groundwater Treatment Plant. The gloves and napkins were subsequently disposed at an offsite at Safety Kleen's Pinehill Landfill in Kilgore, Texas.

5.2 Discussion of Decontamination Results

Table 4-1 lists the concrete wipe test sample analysis results for PCB's and TPH. Neither constituent was detected in the analysis.

Sample ID	Analysis Method	Constituent	Media	Results	Detection Limit
701	EPA Method 8082	PCB-1016	Concrete Wipe Test	ND	20 ug/wipe
		PCB-1221	Concrete Wipe Test	ND	20 ug/wipe
		PCB-1232	Concrete Wipe Test	ND	20 ug/wipe
		PCB-1242	Concrete Wipe Test	ND	20 ug/wipe
		PCB-1248	Concrete Wipe Test	ND	20 ug/wipe
		PCB-1254	Concrete Wipe Test	ND	20 ug/wipe
		PCB-1260	Concrete Wipe Test	ND	20 ug/wipe
701	TX Method 1005	>C10 to C28 TPH	Concrete Wipe Test	ND	1000 ug/wipe
		C6 to C10 TPH	Concrete Wipe Test	ND	1000 ug/wipe
		Total C6 to C28 TPH	Concrete Wipe Test	ND	1000 ug/wipe

6.0 INVESTIGATION OF SOILS

Soil sampling was performed in order to document if the soils at building 701 were impacted from storage of PCB contaminated materials. The soil was analyzed for PCB's and Total Petroleum Hydrocarbons.

Five soil samples were first collected on February 24, 1997 and analyzed for PCB's in order to satisfy a request from the EPA. Four samples were subsequently collected February 14, 2000 and analyzed for total petroleum hydrocarbons as a screen for any petroleum products that may have been spilled at the area. Detection of a petroleum product, other than asphalt type constituents, would indicate the possibility of transformer oil having been spilled at the building.

Each sample was collected in accordance with SW-846. Quality of the samples and analysis was ensured by the collection of a quality assurance/quality control (QA/QC) sample. Soil samples for building 701 were collected in conjunction with samples from building 707-C. Sample No. 707-C-W-SS was collected and split in duplicate as a QA/QC sample.

Soil samples were collected using a stainless steel auger. The auger was decontaminated between collection of each sample to prevent cross contamination. All sample locations were marked with a wooden stake and the ID number of the sample written on the wooden stake.

Sample containers were sealed and placed into an ice chest on ice for shipment to the laboratory. Samples were shipped utilizing a chain-of-custody. No compositing of the soil samples was performed. Laboratory reports are located in Appendix 1.

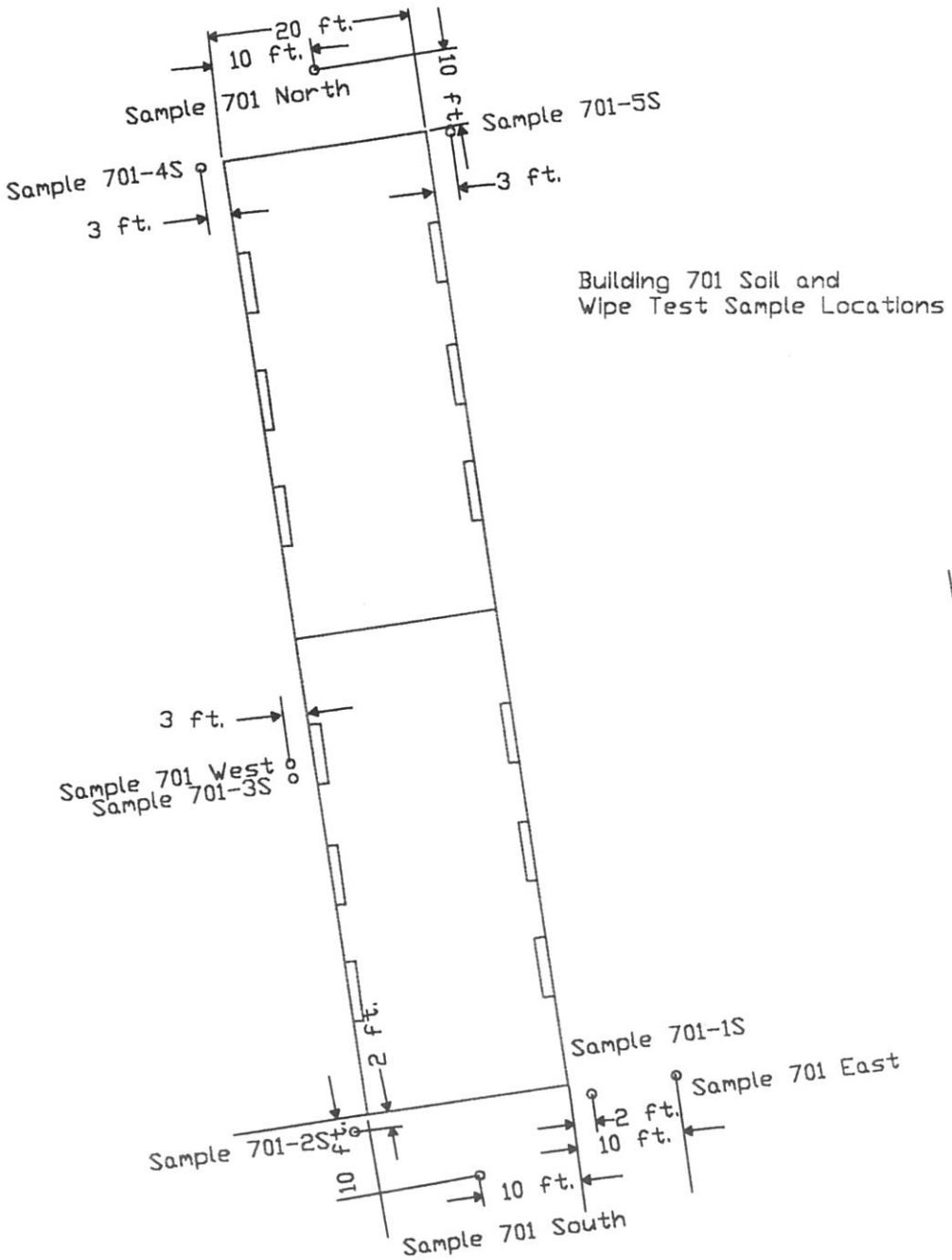
TABLE 6-1
SOIL ANALYSIS RESULTS

Sample ID	Analysis Method	Constituent	Results	Detection Limit
701-1S	EPA Method 8081	PCB-1016	ND	28.0 ug/kg
		PCB-1221	ND	50.7 ug/kg
		PCB-1232	ND	22.2 ug/kg
		PCB-1242	ND	37.5 ug/kg
		PCB-1248	ND	162 ug/kg
		PCB-1254	ND	25.9 ug/kg
		PCB-1260	ND	57.7 ug/kg
701-2S	EPA Method 8081	PCB-1016	ND	14.0 ug/kg
		PCB-1221	ND	25.2 ug/kg
		PCB-1232	ND	11.0 ug/kg
		PCB-1242	ND	18.7 ug/kg
		PCB-1248	ND	80.5 ug/kg
		PCB-1254	ND	12.9 ug/kg
		PCB-1260	ND	28.7 ug/kg
701-3S	EPA Method 8081	PCB-1016	ND	13.7 ug/kg
		PCB-1221	ND	24.8 ug/kg
		PCB-1232	ND	10.9 ug/kg
		PCB-1242	ND	18.4 ug/kg
		PCB-1248	ND	79.2 ug/kg
		PCB-1254	ND	12.7 ug/kg
		PCB-1260	ND	28.3 ug/kg
701-4S	EPA Method 8081	PCB-1016	ND	13.7 ug/kg
		PCB-1221	ND	24.7 ug/kg
		PCB-1232	ND	10.8 ug/kg
		PCB-1242	ND	18.3 ug/kg
		PCB-1248	ND	78.8 ug/kg
		PCB-1254	ND	12.6 ug/kg
		PCB-1260	ND	28.1 ug/kg
701-5S	EPA Method 8081	PCB-1016	ND	2.8 ug/kg
		PCB-1221	ND	5.07 ug/kg
		PCB-1232	ND	2.22 ug/kg
		PCB-1242	ND	3.75 ug/kg
		PCB-1248	ND	16.2 ug/kg
		PCB-1254	ND	2.59 ug/kg
		PCB-1260	ND	5.77 ug/kg
701-North-SS	TX Method 1005	>C10 to C28 TPH	ND	50.0 mg/kg
		C6 to C10 TPH	ND	50.0 mg/kg
		Total C6 to C28 TPH	ND	50.0 mg/kg
701-South-SS	TX Method 1005	>C10 to C28 TPH	ND	50.0 mg/kg
		C6 to C10 TPH	ND	50.0 mg/kg
		Total C6 to C28 TPH	ND	50.0 mg/kg
701-East-SS	TX Method 1005	>C10 to C28 TPH	ND	50.0 mg/kg
		C6 to C10 TPH	ND	50.0 mg/kg
		Total C6 to C28 TPH	ND	50.0 mg/kg
701-West-SS	TX Method 1005	>C10 to C28 TPH	ND	50.0 mg/kg
		C6 to C10 TPH	ND	50.0 mg/kg
		Total C6 to C28 TPH	ND	50.0 mg/kg

6.1 Soil Sample Locations

Nine soil samples were collected from the perimeter of building 701. Each sample was collected from depths from the surface to six inches deep from the ground surface.

Figure 6.1-1 describes the location where each soil sample was collected from building 701.



Building 701 Soil and
Wipe Test Sample Locations

7.0 CONCLUSIONS AND CERTIFICATION

Closure of building 701 has been accomplished in accordance with the requirements as stated in 30 TAC Chapter 335 and the requirements of Longhorn AAP Part B Hazardous Waste Permit 50195.

CFR 270.11(d)
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Decontamination and closure of building 701 has been completed in accordance with closure requirements.

U.S. Army Representative: _____ 10 April 2000

APPENDIX I

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

Louisiana Region

3100 Knight Street #2 -- Shreveport, LA 71105
318/219-9300 FAX 318/219-8300

Report Date: 03/21/2000

OWC, Inc.
9320 Hwy 80
Minden, LA 71055-
Attention: Bill Corrigan

Project Report: 126652
Client: OWC1
Project:
90 Day Area Closure - Bldg

Results for Project 126652

436351 Sample 701 - Wipe Test LHAAP Bldg./90-Day

Wipe Taken: 02/14/2000 0855 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
>C10 to C28 TPH	ND	ug/wipe	1000	TX Method 1005	02/17/2000 1649	KLB	
C6 to C10 TPH	ND	ug/wipe	1000	TX Method 1005	02/17/2000 1649	KLB	
Total C6 to C28 TPH	ND	ug/wipe	1000	TX Method 1005	02/17/2000 1649	KLB	

436352 Sample 701 - Wipe Test LHAAP Bldg./90-Day

Wipe Taken: 02/14/2000 0856 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
PCB-1016	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0150	KLB	12674-11-2
PCB-1221	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0150	KLB	11104-28-2
PCB-1232	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0150	KLB	11141-16-5
PCB-1242	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0150	KLB	53469-21-9
PCB-1248	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0150	KLB	12672-29-6
-1254	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0150	KLB	11097-69-1
PCB-1260	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0150	KLB	11096-82-5

436353 Sample 701 - Soil, North LHAAP Bldg./90-Day

Soil Taken: 02/14/2000 0910 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
>C10 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1723	KLB	
C6 to C10 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1723	KLB	
Total C6 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1723	KLB	

436354 Sample 701 - Soil, South LHAAP Bldg./90-Day

Soil Taken: 02/14/2000 0915 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
>C10 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1756	KLB	
C6 to C10 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1756	KLB	
Total C6 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1756	KLB	

436355 Sample 701 - Soil, East LHAAP Bldg./90-Day

Soil Taken: 02/14/2000 0920 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
>C10 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1830	KLB	
C6 to C10 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1830	KLB	
Total C6 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1830	KLB	

436356 Sample 701 - Soil, West LHAAP Bldg./90-Day

Soil Taken: 02/14/2000 0927 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
>C10 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1938	KLB	
C6 to C10 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1938	KLB	
Total C6 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 1938	KLB	

Sample Preparation Steps for Project 126652

Continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

Louisiana Region

3100 Knight Street #2 -- Shreveport, LA 71105
318/219-9300 FAX 318/219-8300

Project Report: 126652
Client: OWC1
Project:
90 Day Area Closure - Bldg

Sample Preparation Steps for Project 126652

436351 Sample 701 - Wipe Test LHAAP Bldg./90-Day

Wipe Taken: 02/14/2000 0855 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
1005 TPH Extraction: Solid	10/wipe	mls/wipe	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 1649	KLB

436352 Sample 701 - Wipe Test LHAAP Bldg./90-Day

Wipe Taken: 02/14/2000 0856 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
PCB Extraction: Wipe	20	ml/wipe	EPA Method 8082	02/21/2000 1200	DLH
Total Polychlorinated Biphenyls	Verified		EPA Method 8082	02/22/2000 0150	KLB

436353 Sample 701 - Soil, North LHAAP Bldg./90-Day

Soil Taken: 02/14/2000 0910 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
1005 TPH Extraction: Solid	10/10	mls/gms	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 1723	KLB

436354 Sample 701 - Soil, South LHAAP Bldg./90-Day

Soil Taken: 02/14/2000 0915 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
5 TPH Extraction: Solid	10/10	mls/gms	TNRCC TX 1005	02/16/2000 0930	ESI
RCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 1756	KLB

436355 Sample 701 - Soil, East LHAAP Bldg./90-Day

Soil Taken: 02/14/2000 0920 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
1005 TPH Extraction: Solid	10/10	mls/gms	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 1830	KLB

436356 Sample 701 - Soil, West LHAAP Bldg./90-Day

Soil Taken: 02/14/2000 0927 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
1005 TPH Extraction: Solid	10/10	mls/gms	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 1938	KLB

Organic Quality Control/Quality Assurance for Project 126652

TX Method 1005 Blank 02/17/2000 1

Compound	Result
C6 to C10 TPH	ND
>C10 to C28 TPH	ND

TX Method 1005 Standard 02/17/2000 1

Compound	Concentration	Result	%Difference
C6 to C10 TPH	500	485	-3.00
>C10 to C28 TPH	500	567	13.4

EPA Method 8082 Blank 02/21/2000 1

Compound	Result
PCB-1016	ND
-1221	ND
PCB-1232	ND

Continued

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Louisiana Region

3100 Knight Street #2 -- Shreveport, LA 71105
318/219-9300 FAX 318/219-8300

Project Report: 126652
Client: OWC1
Project:
90 Day Area Closure - Bldg

Organic Quality Control/Quality Assurance for Project 126652

PCB-1242	ND
PCB-1248	ND
PCB-1254	ND
PCB-1260	ND

EPA Method 8082 Standard 02/21/2000 1

Compound	Concentration	Result	%Difference
PCB-1260	1.00	1.02	2.00

RL is our Reporting Limit, or MAL (Minimum Analytical Level/Minimum Quantitation Level). The MAL takes into account the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL).

Our analytical result must be above this MAL before we report a value in the "Results" column of our report. Otherwise, we report ND (Not Detected above MAL), because the result is "<" (less than) the number in the MAL column.

I certify that the results were generated using the above specified methods.

Roy White

Roy White, M.S., QA/QC Director

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Louisiana Region
3100 Knight Street #2 -- Shreveport, LA 71105
318/219-9300 FAX 318/219-8300

Complete Environmental Service

P.O Box 170, Karnack, TX 75661 phone:903/679-2062 fax:903/679-2056

CONTRACTOR P.O. NO. 234008 / OWCI

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 668
DOYLINE, LA 71023

PROJECT NAME/NUMBER 90-Day Area Closure
REPORT RESULTS TO: Bill Corrigan

LAB DESTINATION Analab
PHONE NO ______ OFFICE (903) 679-2062
FAX (903) 679-2066

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
701	LHAAP, Bldg 701 wipe test	2/14/00 0855	TPH	glass, 4°C pentane		436351
701	LHAAP Bldg 701 wipe test	2/14/00 0856	PCB's	glass, 4°C hexane		436352
701-[illegible]	LHAAP Bldg. 701 Soil sample	2/14/00 0910	TPH	glass, 4°C		436353
701-[illegible]	LHAAP Bldg. 701 Soil sample	2/14/00 0915	TPH	glass, 4°C		436354
701-[illegible]	LHAAP Bldg. 701 soil sample	2/14/00 0930	TPH	glass, 4°C		436355
701-[illegible]	LHAAP Bldg. 701 soil sample	2/14/00 0947	TPH	glass, 4°C		436356

SPECIAL INSTRUCTIONS Method 1005-TPH

SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY [signature] CES 2-15-00 3. RELINQUISHED BY ______

1109 RECEIVED BY [signature] 2-15-00 RECEIVED BY Acnes 2-15-00

1221 RELINQUISHED BY [signature] 2-15-00 4. RELINQUISHED BY ______

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Louisiana Region

3100 Knight Street #2 -- Shreveport, LA 71105
318/219-9300 FAX 318/219-8300

Report Date: 03/21/2000

OWC, Inc.
9320 Hwy 80
Minden, LA 71055-
Attention: Bill Corrigan

Project Report: 126657
Client: OWC1
Project:
90 Day Closure - Bldg 707

Results for Project 126657

436357 Sample 707-C-Wipe Test LHAAP Bldg./90-Day

Wipe Taken: 02/14/2000 0945 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
>C10 to C28 TPH	ND	ug/wipe	1000	TX Method 1005	02/17/2000 2012	KLB	
C6 to C10 TPH	ND	ug/wipe	1000	TX Method 1005	02/17/2000 2012	KLB	
Total C6 to C28 TPH	ND	ug/wipe	1000	TX Method 1005	02/17/2000 2012	KLB	

436358 Sample 707-C-Wipe Test LHAAP Bldg./90-Day

Wipe Taken: 02/14/2000 0946 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
PCB-1016	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0125	KLB	12674-11-2
PCB-1221	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0125	KLB	11104-28-2
PCB-1232	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0125	KLB	11141-16-5
PCB-1242	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0125	KLB	53469-21-9
PCB-1248	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0125	KLB	12672-29-6
PCB-1254	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0125	KLB	11097-69-1
PCB-1260	ND	ug/wipe	20.0	EPA Method 8082	02/22/2000 0125	KLB	11096-82-5

436359 Sample 707-C-N-SS LHAAP Bldg./90-Day Closure

Soil Taken: 02/14/2000 1000 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
PCB-1016	ND	ug/kg	500	EPA Method 8082	02/22/2000 0215	KLB	12674-11-2
PCB-1221	ND	ug/kg	500	EPA Method 8082	02/22/2000 0215	KLB	11104-28-2
PCB-1232	ND	ug/kg	500	EPA Method 8082	02/22/2000 0215	KLB	11141-16-5
PCB-1242	ND	ug/kg	500	EPA Method 8082	02/22/2000 0215	KLB	53469-21-9
PCB-1248	ND	ug/kg	500	EPA Method 8082	02/22/2000 0215	KLB	12672-29-6
PCB-1254	500	ug/kg	500	EPA Method 8082	02/22/2000 0215	KLB	11097-69-1
PCB-1260	ND	ug/kg	500	EPA Method 8082	02/22/2000 0215	KLB	11096-82-5
>C10 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2046	KLB	
C6 to C10 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2046	KLB	
Total C6 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2046	KLB	

436360 Sample 707-C-S-SS LHAAP Bldg./90-Day Closure

Soil Taken: 02/14/2000 1007 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
PCB-1016	ND	ug/kg	500	EPA Method 8082	02/21/2000 2227	KLB	12674-11-2
PCB-1221	ND	ug/kg	500	EPA Method 8082	02/21/2000 2227	KLB	11104-28-2
PCB-1232	ND	ug/kg	500	EPA Method 8082	02/21/2000 2227	KLB	11141-16-5
PCB-1242	ND	ug/kg	500	EPA Method 8082	02/21/2000 2227	KLB	53469-21-9
PCB-1248	ND	ug/kg	500	EPA Method 8082	02/21/2000 2227	KLB	12672-29-6
PCB-1254	ND	ug/kg	500	EPA Method 8082	02/21/2000 2227	KLB	11097-69-1
PCB-1260	ND	ug/kg	500	EPA Method 8082	02/21/2000 2227	KLB	11096-82-5
>C10 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2120	KLB	
C6 to C10 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2120	KLB	

Continued

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Louisiana Region

3100 Knight Street #2 -- Shreveport, LA 71105
318/219-9300 FAX 318/219-8300

Project Report: 126657
Client: OWC1
Project:
90 Day Closure - Bldg 707

Results for Project 126657

436360 Sample 707-C-S-SS LHAAP Bldg./90-Day Closure Soil Taken: 02/14/2000 1007 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
Total C6 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2120	KLB	

436361 Sample 707-C-E-SS LHAAP Bldg./90-Day Closure Soil Taken: 02/14/2000 1005 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
PCB-1016	ND	ug/kg	500	EPA Method 8082	02/21/2000 2253	KLB	12674-11-2
PCB-1221	ND	ug/kg	500	EPA Method 8082	02/21/2000 2253	KLB	11104-28-2
PCB-1232	ND	ug/kg	500	EPA Method 8082	02/21/2000 2253	KLB	11141-16-5
PCB-1242	ND	ug/kg	500	EPA Method 8082	02/21/2000 2253	KLB	53469-21-9
PCB-1248	ND	ug/kg	500	EPA Method 8082	02/21/2000 2253	KLB	12672-29-6
PCB-1254	ND	ug/kg	500	EPA Method 8082	02/21/2000 2253	KLB	11097-69-1
PCB-1260	ND	ug/kg	500	EPA Method 8082	02/21/2000 2253	KLB	11096-82-5
>C10 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2154	KLB	
C6 to C10 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2154	KLB	
Total C6 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2154	KLB	

362 Sample 707-C-W-SS LHAAP Bldg./90-Day Closure Soil Taken: 02/14/2000 1012 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
PCB-1016	ND	ug/kg	500	EPA Method 8082	02/22/2000 0009	KLB	12674-11-2
PCB-1221	ND	ug/kg	500	EPA Method 8082	02/22/2000 0009	KLB	11104-28-2
PCB-1232	ND	ug/kg	500	EPA Method 8082	02/22/2000 0009	KLB	11141-16-5
PCB-1242	ND	ug/kg	500	EPA Method 8082	02/22/2000 0009	KLB	53469-21-9
PCB-1248	ND	ug/kg	500	EPA Method 8082	02/22/2000 0009	KLB	12672-29-6
PCB-1254	ND	ug/kg	500	EPA Method 8082	02/22/2000 0009	KLB	11097-69-1
PCB-1260	ND	ug/kg	500	EPA Method 8082	02/22/2000 0009	KLB	11096-82-5
>C10 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2227	KLB	
C6 to C10 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2227	KLB	
Total C6 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2227	KLB	

436363 Sample 707-C-W-SS-Dupe LHAAP Bldg./90-Day Soil Taken: 02/14/2000 1012 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
PCB-1016	ND	ug/kg	500	EPA Method 8082	02/22/2000 0034	KLB	12674-11-2
PCB-1221	ND	ug/kg	500	EPA Method 8082	02/22/2000 0034	KLB	11104-28-2
PCB-1232	ND	ug/kg	500	EPA Method 8082	02/22/2000 0034	KLB	11141-16-5
PCB-1242	ND	ug/kg	500	EPA Method 8082	02/22/2000 0034	KLB	53469-21-9
PCB-1248	ND	ug/kg	500	EPA Method 8082	02/22/2000 0034	KLB	12672-29-6
PCB-1254	520	ug/kg	500	EPA Method 8082	02/22/2000 0034	KLB	11097-69-1
PCB-1260	ND	ug/kg	500	EPA Method 8082	02/22/2000 0034	KLB	11096-82-5
>C10 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2301	KLB	
C6 to C10 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2301	KLB	
Total C6 to C28 TPH	ND	mg/kg	50.0	TX Method 1005	02/17/2000 2301	KLB	

Continued

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

Louisiana Region

3100 Knight Street #2 -- Shreveport, LA 71105
318/219-9300 FAX 318/219-8300

Project Report: 126657
Client: OWC1
Project:
90 Day Closure - Bldg 707

Results for Project 126657

436364 Sample 707-C-E.B. LHAAP Bldg./90-Day Closure Liquid Aqueous Taken: 02/14/2000 1020 By: Bill Corrigan

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
>C10 to C28 TPH	ND	mg/L	4.35	TX Method 1005	02/19/2000 0440	KLB	
C6 to C10 TPH	ND	mg/L	4.35	TX Method 1005	02/19/2000 0440	KLB	
Total C6 to C28 TPH	ND	mg/L	4.35	TX Method 1005	02/19/2000 0440	KLB	

436365 Sample 707-C-E.B. LHAAP Bldg./90-Day Closure Liquid Aqueous Taken: 02/14/2000 1021 By: Bill Corrigan

Parameter	Result	Unit	RL	Method	Analyzed	By	CAS
PCB-1016	ND	ug/L	1.00	EPA Method 8082	02/21/2000 1748	KLB	12674-11-2
PCB-1221	ND	ug/L	1.00	EPA Method 8082	02/21/2000 1748	KLB	11104-28-2
PCB-1232	ND	ug/L	1.00	EPA Method 8082	02/21/2000 1748	KLB	11141-16-5
PCB-1242	ND	ug/L	1.00	EPA Method 8082	02/21/2000 1748	KLB	53469-21-9
PCB-1248	ND	ug/L	1.00	EPA Method 8082	02/21/2000 1748	KLB	12672-29-6
PCB-1254	ND	ug/L	1.00	EPA Method 8082	02/21/2000 1748	KLB	11097-69-1
PCB-1260	ND	ug/L	1.00	EPA Method 8082	02/21/2000 1748	KLB	11096-82-5

Sample Preparation Steps for Project 126657

436357 Sample 707-C-Wipe Test LHAAP Bldg./90-Day Wipe Taken: 02/14/2000 0945 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
1005 TPH Extraction: Solid	10/wipe	mls/wipe	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 2012	KLB

436358 Sample 707-C-Wipe Test LHAAP Bldg./90-Day Wipe Taken: 02/14/2000 0946 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
PCB Extraction: Wipe	20	ml/wipe	EPA Method 8082	02/21/2000 1200	DLH
Total Polychlorinated Biphenyls	Verified		EPA Method 8082	02/22/2000 0125	KLB

436359 Sample 707-C-N-SS LHAAP Bldg./90-Day Closure Soil Taken: 02/14/2000 1000 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
PCB Total Sonic Extr. W/Hex	10/2	mls/grams	EPA Method 8082	02/21/2000 1200	DLH
Total Polychlorinated Biphenyls	Verified		EPA Method 8082	02/22/2000 0215	KLB
1005 TPH Extraction: Solid	10/10	mls/gms	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 2046	KLB

436360 Sample 707-C-S-SS LHAAP Bldg./90-Day Closure Soil Taken: 02/14/2000 1007 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
PCB Total Sonic Extr. W/Hex	10/2	mls/grams	EPA Method 8082	02/21/2000 1200	DLH
Total Polychlorinated Biphenyls	Verified		EPA Method 8082	02/21/2000 2227	KLB
1005 TPH Extraction: Solid	10/10	mls/gms	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 2120	KLB

Continued

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Louisiana Region

3100 Knight Street #2 -- Shreveport, LA 71105
318/219-9300 FAX 318/219-8300

Project Report: 126657
Client: OWC1
Project:
90 Day Closure - Bldg 707

Sample Preparation Steps for Project 126657

436361 Sample 707-C-E-SS LHAAP Bldg./90-Day Closure
Soil Taken: 02/14/2000 1005 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
PCB Total Sonic Extr. W/Hex	10/2 AS/BS	mls/grams	EPA Method 8082	02/21/2000 1200	DLH
Total Polychlorinated Biphenyls	Verified		EPA Method 8082	02/21/2000 2253	KLB
1005 TPH Extraction: Solid	10/10	mls/gms	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 2154	KLB

436362 Sample 707-C-W-SS LHAAP Bldg./90-Day Closure
Soil Taken: 02/14/2000 1012 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
PCB Total Sonic Extr. W/Hex	10/2	mls/grams	EPA Method 8082	02/21/2000 1200	DLH
Total Polychlorinated Biphenyls	Verified		EPA Method 8082	02/22/2000 0009	KLB
1005 TPH Extraction: Solid	10/10	mls/gms	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 2227	KLB

436363 Sample 707-C-W-SS-Dupe LHAAP Bldg./90-Day
Soil Taken: 02/14/2000 1012 By: Bill Corrigan Rec:02/15/2000

Parameter	Result	Unit	Method	Analyzed	By
PCB Total Sonic Extr. W/Hex	10/2	mls/grams	EPA Method 8082	02/21/2000 1200	DLH
l Polychlorinated Biphenyls	Verified		EPA Method 8082	02/22/2000 0034	KLB
1005 TPH Extraction: Solid	10/10	mls/gms	TNRCC TX 1005	02/16/2000 0930	ESI
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/17/2000 2301	KLB

436364 Sample 707-C-E.B. LHAAP Bldg./90-Day Closure
Liquid Aqueous Taken: 02/14/2000 1020 By: Bill Corrigan

Parameter	Result	Unit	Method	Analyzed	By
TNRCC 1005 TPH Expansion	Verified		TNRCC TX 1005	02/19/2000 0440	KLB
TNRCC TX 1005 TPH Extraction	3/34.43	mL/mL	TNRCC TX 1005	02/17/2000 1300	KLB

436365 Sample 707-C-E.B. LHAAP Bldg./90-Day Closure
Liquid Aqueous Taken: 02/14/2000 1021 By: Bill Corrigan

Parameter	Result	Unit	Method	Analyzed	By
PCB Liq-Liq Extr. W/Hex Exch.	10/980	mL/mL	EPA Method 8082	02/18/2000 0900	DLH
Total Polychlorinated Biphenyls	Verified		EPA Method 8082	02/21/2000 1748	KLB

Sample Specific Quality Control/Quality Assurance

436359 Sample 707-C-N-SS LHAAP Bldg./90-Day Closure
Soil Taken: 02/14/2000 1000 By: Bill Corrigan Rec:02/15/2000

GC Surrogate/Spike on Sample 436359 02/21/2000 1

Compound	Result	Concentration	%Recovery
Dibutylchlorendate (GC Surr)	98.0	100	98.0
Tetrachloro-m-Xylene (GC Surr.)	97.4	100	97.4

436360 Sample 707-C-S-SS LHAAP Bldg./90-Day Closure
Soil Taken: 02/14/2000 1007 By: Bill Corrigan Rec:02/15/2000

GC Surrogate/Spike on Sample 436360 02/21/2000 1

Compound	Result	Concentration	%Recovery
Dibutylchlorendate (GC Surr)	98.2	100	98.2
rachloro-m-Xylene (GC Surr.)	95.1	100	95.1

Continued

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Louisiana Region

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318/219-9300 FAX 318/219-8300

Project Report: 126657
Client: OWC1
Project:
90 Day Closure - Bldg 707

Sample Specific Quality Control/Quality Assurance

436361 Sample 707-C-E-SS LHAAP Bldg./90-Day Closure Soil Taken: 02/14/2000 1005 By: Bill Corrigan Rec:02/15/2000

GC Surrogate/Spike on Sample 436361 02/21/2000 1

Compound	Result	Concentration	%Recovery
Dibutylchlorendate (GC Surr)	102	100	102
Tetrachloro-m-Xylene (GC Surr.)	97.3	100	97.3

436362 Sample 707-C-W-SS LHAAP Bldg./90-Day Closure Soil Taken: 02/14/2000 1012 By: Bill Corrigan Rec:02/15/2000

GC Surrogate/Spike on Sample 436362 02/21/2000 1

Compound	Result	Concentration	%Recovery
Dibutylchlorendate (GC Surr)	104	100	104
Tetrachloro-m-Xylene (GC Surr.)	93.9	100	93.9

436363 Sample 707-C-W-SS-Dupe LHAAP Bldg./90-Day Soil Taken: 02/14/2000 1012 By: Bill Corrigan Rec:02/15/2000

GC Surrogate/Spike on Sample 436363 02/21/2000 1

Compound	Result	Concentration	%Recovery
Dibutylchlorendate (GC Surr)	106	100	106
Tetrachloro-m-Xylene (GC Surr.)	94.4	100	94.4

6365 Sample 707-C-E.B. LHAAP Bldg./90-Day Closure Liquid Aqueous Taken: 02/14/2000 1021 By: Bill Corrigan

GC Surrogate/Spike on Sample 436365 02/21/2000 1

Compound	Result	Concentration	%Recovery
Dibutylchlorendate (GC Surr)	88.4	100	88.4
Tetrachloro-m-Xylene (GC Surr.)	61.4	100	61.4

Organic Quality Control/Quality Assurance for Project 126657

TX Method 1005 Blank 02/17/2000 1

Compound	Result
C6 to C10 TPH	ND
>C10 to C28 TPH	ND

TX Method 1005 Standard 02/17/2000 1

Compound	Concentration	Result	%Difference
C6 to C10 TPH	500	485	-3.00
>C10 to C28 TPH	500	567	13.4

EPA Method 8082 Blank 02/21/2000 1

Compound	Result
PCB-1016	ND
PCB-1221	ND
PCB-1232	ND
PCB-1242	ND
PCB-1248	ND
PCB-1254	ND
PCB-1260	ND

EPA Method 8082 Standard 02/21/2000 1

Continued

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Louisiana Region

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318/219-9300 FAX 318/219-8300

Project Report: 126657
Client: OWC1
Project:
90 Day Closure - Bldg 707

Organic Quality Control/Quality Assurance for Project 126657

Compound	Concentration	Result	%Difference
PCB-1260	1.00	1.02	2.00

TX Method 1005 Blank 02/18/2000 1

Compound	Result
C6 to C10 TPH	ND
>C10 to C28 TPH	ND

TX Method 1005 Standard 02/18/2000 1

Compound	Concentration	Result	%Difference
C6 to C10 TPH	500	439	-12.2
>C10 to C28 TPH	500	477	-4.60

TX Method 1005 Matrix Spike/Duplicate on Sample 436300 02/18/2000 1

Compound	First (%)	Second (%)	%Difference
C6 to C10 TPH	96.8	96.0	-0.826
>C10 to C28 TPH	84.6	87.4	3.31

is our Reporting Limit, or MAL (Minimum Analytical Level/Minimum Quantitation Level). The MAL takes into count the Instrument Detection Limit (IDL), Method Detection Limit (MDL), and Practical Quantitation Limit (PQL), and any dilutions and/or concentrations performed during sample preparation (EQL).

Our analytical result must be above this MAL before we report a value in the "Results" column of our report. Otherwise, we report ND (Not Detected above MAL), because the result is "<" (less than) the number in the MAL column.

I certify that the results were generated using the above specified methods.

Roy White

Roy White, M.S., QA/QC Director

00189448

ANA-LAB CORP. THE COMPLETE SERVICE LAB

Louisiana Region

3100 Knight Street #2 -- Shreveport, LA 71105

318/219-9300 FAX 318/219-8300

1 of 2

Complete Environmental Service

P.O Box 170, Karnack, TX 75661 phone:903/679-2062 fax:903/679-2056

CONTRACTOR P.O. NO. 234008 OWC1

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 658
DOYLINE, LA 71023

PROJECT NAME/NUMBER 90-Day Area Closure
REPORT RESULTS TO: Bill Corrigan

LAB DESTINATION Analab
PHONE NO
OFFICE (903) 679-2062
FAX (903) 679-2056

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
707-C	LHAAP Bldg 707-C	2-14-00 0945	TPH	glass, 4°C pentane		436357
707-C	LHAAP Bldg: 707-C	2-14-00 0946	PCB's	glass, 4°C hexane		436358
707-C-N-SS	LHAAP Bldg 707-C Soil Sample	2-14-00 10:00	TPH, PCB's	glass, 4°C		436359
707C-S-SS	LHAAP Bldg 707-C soil sample	2-14-00 10:07	TPH, PCB's	glass, 4°C		436360
707-C-E-SS	LHAAP Bldg. 707-C soil sample	2-14-00 10:05	TPH, PCB's	glass, 4°C		436361
707-C-W-SS	LHAAP Bldg. 707-C soil sample	2-14-00 10:12	TPH, PCB	glass, 4°C		436362
707-C-W-SS-Dup	LHAAP Bldg. 707-C soil sample duplicate	2-14-00 10:12	TPH, PCB	glass, 4°C		436363
707-C-EB	LHAAP Bldg. 707-C Equipment Blank	2-14-00 10:20	TPH	40ml, 2HE glass, H_2SO_4, 4°C		436364

SPECIAL INSTRUCTIONS

SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY William Corrigan, CES, 2-15-00 — 3. RELINQUISHED BY

1109 RECEIVED BY [signature] 2-15-00 — RECEIVED BY Agnes 2/15/00

1221 – RELINQUISHED BY [signature] 2-15-00 — 4. RELINQUISHED BY

ANA-LAB CORP.
THE COMPLETE SERVICE LAB

Louisiana Region
3100 Knight Street #2 -- Shreveport, LA 71105
318/219-9300 FAX 318/219-8300

2 of 2

Complete Environmental Service

P.O Box 170, Karnack, TX 75661 phone:903/679-2062 fax:903/679-2056

CONTRACTOR P.O. NO. 234008 OWC 1

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 658
DOYLINE, LA 71023

PROJECT NAME/NUMBER 90-Day Area Closure
REPORT RESULTS TO: ________

LAB DESTINATION Analab
PHONE NO ________ OFFICE (903) 679-2062
FAX (903) 679-2056

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
707-C-EB	CHMP Bldg. 707-C Equipment Blank.	2-14-00 1012	~~PE~~ PCB's	1 liter amber glass, 4°C		436365

SPECIAL INSTRUCTIONS ________

SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY Victor Corrigo, CES, 2-15-00 3. RELINQUISHED BY ________

1109 RECEIVED BY Curtis Kidwell 2-15-00 RECEIVED BY Assecs 2/15/00

1224 RELINQUISHED BY Curtis Kidwell 2-15-00 4. RELINQUISHED BY ________

APPENDIX II

RADIAN ANALYTICAL SERVICES
FPAS REPORT
TABLE OF CONTENTS

Work Order # 9702501

Client LONGHORN
Facility KARNAK, TX
Client Code LONGHORN P

Certified By
Date 3/13/97

03/12/97 11:33:38

WORK ORDER SUMMARY

Report LONGHORN AMMUNITION PLANT
To PO BOX 107
KARNACK,TX 75661
Attention BILL CORRIGAN

Client Code LONGHORN P
Client LONGHORN
Facility KARNAK, TX
Work ID PCB DRUMS

Work Order # 9702501

RCN 006063-4405-02

Prepared Radian Analytical Services
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70224CJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
701-1S	01A	354SSA00	Soxhlet Extraction SW846
		364SSA00	GPC Cleanup SW846
		8081SAPC	Pesticides/PCBs by GC/ECD
		CK1SSA00	Primary KD conc. SW846
701-2S	02A	354SSA00	Soxhlet Extraction SW846
		364SSA00	GPC Cleanup SW846
		8081SAPC	Pesticides/PCBs by GC/ECD
		CK1SSA00	Primary KD conc. SW846
701-3S	03A	354SSA00	Soxhlet Extraction SW846
		364SSA00	GPC Cleanup SW846
		8081SAPC	Pesticides/PCBs by GC/ECD
		CK1SSA00	Primary KD conc. SW846
701-4S	04A	354SSA00	Soxhlet Extraction SW846
		364SSA00	GPC Cleanup SW846
		8081SAPC	Pesticides/PCBs by GC/ECD
		CK1SSA00	Primary KD conc. SW846
701-5S	05A	354SSA00	Soxhlet Extraction SW846
		364SSA00	GPC Cleanup SW846
		8081SAPC	Pesticides/PCBs by GC/ECD
		CK1SSA00	Primary KD conc. SW846
701-5S	06A MS	354SSA00	Soxhlet Extraction SW846
		364SSA00	GPC Cleanup SW846
		8081SAPC	Pesticides/PCBs by GC/ECD

WORK ORDER SUMMARY (Cont'd)

Report LONGHORN AMMUNITION PLANT
To PO BOX 107
KARNACK,TX 75661
Attention BILL CORRIGAN

Client Code LONGHORN P
Client LONGHORN
Facility KARNAK, TX
Work ID PCB DRUMS

Work Order # 9702501

RCN 006063-4405-02

Prepared Radian Analytical Services
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70224CJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
701-5S	06A MS	CK1SSA00	Primary KD conc. SW846
	07A MSD	354SSA00	Soxhlet Extraction SW846
		364SSA00	GPC Cleanup SW846
		8081SAPC	Pesticides/PCBs by GC/ECD
		CK1SSA00	Primary KD conc. SW846

WORK ORDER COMMENTS

All extracts except 05A required dilutions of 5 or 10x because the samples contained high levels of non-Arochlor, ECD active compounds.

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

ANALYTICAL PROTOCOL SUMMARY

Client LONGHORN
Facility KARNAK, TX
Client Code LONGHORN P
Method Pesticides/PCBs by GC/ECD

Specification # 8081

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
701-1S	9702501-01A	8081SAPC	3540970226113000	CHGC6A70306120002
701-1S	9702501-01A	8081SAPC	3540970226113000	CHGC6B70306120002
701-2S	9702501-02A	8081SAPC	3540970226113000	CHGC6A70306120002
701-2S	9702501-02A	8081SAPC	3540970226113000	CHGC6B70306120002
701-3S	9702501-03A	8081SAPC	3540970226113000	CHGC6A70306120002
701-3S	9702501-03A	8081SAPC	3540970226113000	CHGC6B70306120002
701-4S	9702501-04A	8081SAPC	3540970226113000	CHGC6A70306120002
701-4S	9702501-04A	8081SAPC	3540970226113000	CHGC6B70306120002
701-5S	9702501-05A	8081SAPC	3540970226113000	CHGC6A70306120002
701-5S	9702501-05A	8081SAPC	3540970226113000	CHGC6B70306120002

Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Project Sample ID:	701-1S		701-1S		701-2S		701-2S	
Lab ID:	9702501-01A		9702501-01A		9702501-02A		9702501-02A	
File ID:	K67CF47		L67CF47		K67CF49		L67CF49	
Date Collected:	02/24/97		02/24/97		02/24/97		02/24/97	
Date Prepared:	02/26/97		02/26/97		02/26/97		02/26/97	
Date Analyzed:	03/07/97 22:07		03/07/97 22:07		03/07/97 23:27		03/07/97 23:27	
Dilution Factor:	10.0		10.0		5.00		5.00	
Matrix:	Solid		Solid		Solid		Solid	
Units:	ug/kg		ug/kg		ug/kg		ug/kg	
Report as:	received		received		received		received	
Column:	PRIMARY		SECONDARY		PRIMARY		SECONDARY	
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
PCB-1016	ND	28.0	ND	25.6	ND	14.0	ND	12.8
PCB-1221	ND	50.7	ND	40.8	ND	25.2	ND	20.3
PCB-1232	ND	22.2	ND	38.7	ND	11.0	ND	19.3
PCB-1242	ND	37.5	ND	40.7	ND	18.7	ND	20.3
PCB-1248	ND	162	ND	150	ND	80.5	ND	74.6
PCB-1254	ND	25.9	ND	36.3	ND	12.9	ND	18.1
PCB-1260	ND	57.7	ND	26.6	ND	28.7	ND	13.3

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
Decachlorobiphenyl	114	81	81	84
Dibutylchlorendate	113	78	82	66
2,4,5,6-Tetrachloro-m-xylene	93	102	85	94

Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Project Sample ID:	701-3S		701-3S		701-4S		701-4S	
Lab ID:	9702501-03A		9702501-03A		9702501-04A		9702501-04A	
File ID:	K67CF51		L67CF51		K67CF52		L67CF52	
Date Collected:	02/24/97		02/24/97		02/24/97		02/24/97	
Date Prepared:	02/26/97		02/26/97		02/26/97		02/26/97	
Date Analyzed:	03/08/97 00:48		03/08/97 00:48		03/08/97 01:29		03/08/97 01:29	
Dilution Factor:	5.00		5.00		5.00		5.00	
Matrix:	Solid		Solid		Solid		Solid	
Units:	ug/kg		ug/kg		ug/kg		ug/kg	
Report as:	received		received		received		received	
Column:	PRIMARY		SECONDARY		PRIMARY		SECONDARY	
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
PCB-1016	ND	13.7	ND	12.6	ND	13.7	ND	12.5
PCB-1221	ND	24.8	ND	20.0	ND	24.7	ND	19.9
PCB-1232	ND	10.9	ND	19.0	ND	10.8	ND	18.9
PCB-1242	ND	18.4	ND	19.9	ND	18.3	ND	19.8
PCB-1248	ND	79.2	ND	73.3	ND	78.8	ND	73.0
PCB-1254	ND	12.7	ND	17.8	ND	12.6	ND	17.7
PCB-1260	ND	28.3	ND	13.0	ND	28.1	ND	13.0

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
Decachlorobiphenyl	97	106	87	92
Dibutylchlorendate	81	75	75	92
2,4,5,6-Tetrachloro-m-xylene	101	111	107	100

Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Project Sample ID:	701-5S		701-5S					
Lab ID:	9702501-05A		9702501-05A					
File ID:	K67CF44		L67CF44					
Date Collected:	02/24/97		02/24/97					
Date Prepared:	02/26/97		02/26/97					
Date Analyzed:	03/07/97 20:05		03/07/97 20:05					
Dilution Factor:	1.00		1.00					
Matrix:	Solid		Solid					
Units:	ug/kg		ug/kg					
Report as:	received		received					
Column:	PRIMARY		SECONDARY					
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
PCB-1016	ND	2.80	ND	2.56				
PCB-1221	ND	5.07	ND	4.08				
PCB-1232	ND	2.22	ND	3.87				
PCB-1242	ND	3.75	ND	4.07				
PCB-1248	ND	16.2	ND	15.0				
PCB-1254	ND	2.59	ND	3.63				
PCB-1260	ND	5.77	ND	2.66				

Surrogate(s)	Recovery %	Recovery %	Recovery %	Recovery %
Decachlorobiphenyl	90	95		
Dibutylchlorendate	83	81		
2,4,5,6-Tetrachloro-m-xylene	82	87		

INITIAL CALIBRATION

Initial Calibration # GC6A970115120000
Calibration Date 01/15/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6A
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	RF	% RSD	Correlation Coefficient
Aldrin	14139 2.0	35856 5.0	76895 10.0	174269 20.0	522657 50	1158352 100	2356835 200	0.000113	22.0	1.000
alpha-BHC	5731 1.0	14789 2.5	32027 5.0	73693 10.0	232998 25	538496 50	1124662 100	0.000132	27.3	0.999
beta-BHC	18174 4.0	47501 10.0	102044 20.0	213526 40.0	543799 100	1083429 200	2060076 400	0.000196	7.72	1.000
delta-BHC	10388 2.0	28028 5.0	63774 10.0	150794 20.0	445844 50	957890 100	1908743 200	0.000140	26.1	1.000
gamma-BHC	6317 1.0	16053 2.5	33682 5.0	75978 10.0	227837 25	516609 50	1063982 100	0.000128	21.9	0.999
alpha-Chlordane	15994 2.0	41948 5.0	84192 10.0	173757 20.0	498955 50	1030720 100	2070659 200	0.000110	11.1	1.000
gamma-Chlordane	17626 2.0	44534 5.0	91859 10.0	191275 20.0	518758 50	1105533 100	2214097 200	0.000102	10.5	1.000
4,4'-DDD	19676 4.0	48947 10.0	108525 20.0	242606 40.0	682171 100	1422865 200	2822153 400	0.000169	16.6	1.000
4,4'-DDE	15882 2.0	33154 5.0	70016 10.0	155711 20.0	464404 50	1024326 100	2096421 200	0.000121	18.0	1.000
4,4'-DDT	26357 4.0	63127 10.0	136678 20.0	305955 40.0	839696 100	1764976 200	3459063 400	0.000134	14.3	1.000

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

Initial Calibration # GC6A970115120000
Calibration Date 01/15/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6A
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	RF	% RSD	Correlation Coefficient
Dieldrin	28331 2.0	34016 5.0	71273 10.0	155412 20.0	459114 50	1036499 100	2133230 200	0.000112	25.1	0.999
Endosulfan I	20013 2.0	36404 5.0	72728 10.0	154005 20.0	422580 50	923843 100	1878712 200	0.000120	13.0	1.000
Endosulfan II	28272 4.0	69007 10.0	141256 20.0	297313 40.0	772783 100	1591757 200	3071163 400	0.000135	6.27	1.000
Endosulfan Sulfate	28394 4.0	66070 10.0	136502 20.0	292663 40.0	765366 100	1597543 200	3164633 400	0.000137	7.83	1.000
Endrin	24571 4.0	63769 10.0	139572 20.0	315076 40.0	895041 100	1882745 200	3701707 400	0.000131	18.5	1.000
Endrin Aldehyde	19835 4.0	50395 10.0	103489 20.0	213277 40.0	548778 100	1177295 200	2267409 400	0.000187	6.37	1.000
Endrin Ketone	26411 4.0	68398 10.0	143052 20.0	300669 40.0	755635 100	1495638 200	2838272 400	0.000140	5.42	1.000
Heptachlor	20250 2.0	48492 5.0	98088 10.0	207113 20.0	563210 50	1207401 100	2399612 200	0.0000935	10.1	1.000
Heptachlor epoxide	16983 2.0	40803 5.0	82527 10.0	176122 20.0	489870 50	1063209 100	2139553 200	0.000109	12.1	1.000
Isodrin	14658 2.0	36668 5.0	76906 10.0	170048 20.0	480587 50	1032726 100	2052990 200	0.000117	15.3	1.000

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

Initial Calibration # GC6A970115120000
Calibration Date 01/15/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6A
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	RF	% RSD	Correlation Coefficient
Methoxychlor	78725 16	192597 40.0	384787 80.0	746849 160.0	1756940 400	3409430 800	6346047 1600	0.000221	8.26	0.999
Mirex	41250 5.0	98551 12.5	189129 25.0	364214 50.0	866898 125	1689961 250	3197386 500	0.000138	9.34	1.000
PCB-1016	110663 50	211637 100	514457 250	1023929 500	1460028 750	1828878 1000		0.000493	6.84	0.998
PCB-1232	63187 50	121318 100	295245 250	597307 500	849058 750	1073216 1000		0.000852	5.92	0.998
PCB-1242	95660 50	189164 100	443107 250	1247964 750	1599648 1000	831932 500		0.000574	7.39	1.000
PCB-1248	141203 50	2148463 1000	661230 250	1217872 500	1680691 750	302182 100		0.000398	13.3	0.998
PCB-1260	260984 50	435714 100	1059259 250	2079190 500	3030895 750	3806683 1000		0.000234	10.5	0.999
Toxaphene	95835 50	147851 100	420414 250	886829 500	1453043 750	1975026 1000		0.000563	11.6	0.999
Dibutylchlorendate Surrogate	46416 8.0	116828 20	243066 40	513898 80	1349139 200	2741235 400	5291161 800	0.000158	7.75	1.000
2,4,5,6-Tetrachloro-m-xylene Surrogate	29271 4.0	76716 10	162613 20	328958 40	839474 100	1658315 200	3102981 400	0.000126	5.09	0.999

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

INITIAL CALIBRATION Cont'd

Initial Calibration # GC6A970115120000
Calibration Date 01/15/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6A
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	RF	% RSD	Correlation Coefficient
Decachlorobiphenyl	78582	193256	380241	742379	1760376	3387687	6294508	0.000111	8.76	0.999
Surrogate	8.0	20	40	80	200	400	800			

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

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INITIAL CALIBRATION UPDATE

Initial Calibration # GC6A970128120000
Calibration Date 01/28/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6A
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	__ / RF	% RSD	Correlation Coefficient
Chlordane	108852 50	224204 100	600913 250	1262432 500	2131269 750	2894118 1000		0.000402	11.9	0.998
PCB-1221	25742 50	50152 100	118423 250	235436 500	347699 750	446322 1000		0.00209	5.25	1.000
PCB-1254	175601 50	348194 100	761069 250	1465895 500	2169514 750	2808392 1000		0.000324	9.54	1.000

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

INITIAL CALIBRATION UPDATE

Initial Calibration # GC6A970303120000
Calibration Date 03/03/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081WA01

Instrument GC6A
Analyst MH
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/kg	__ / RF	% RSD	Correlation Coefficient
Chlordane	117099 50	249068 100	658346 250	1548624.9 500	2177839 750	2923639 1000		0.000370	10.9	0.999

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

INITIAL CALIBRATION

Initial Calibration # GC6B970115120000
Calibration Date 01/15/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6B
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	RF	% RSD	Correlation Coefficient
Aldrin	10667 2.0	25817 5.0	50327 10.0	102734 20.0	262785 50	528284 100	1015476 200	0.000193	3.14	1.000
alpha-BHC	5359 1.0	13237 2.5	27145 5.0	57755 10.0	164434 25	352794 50	703470 100	0.000167	12.7	1.000
beta-BHC	14653 4.0	34914 10.0	67489 20.0	128517 40.0	300169 100	566163 200	1042683 400	0.000320	12.4	0.999
delta-BHC	9411 2.0	23849 5.0	50698 10.0	109682 20.0	300266 50	612600 100	1183662 200	0.000186	11.4	1.000
gamma-BHC	6207 1.0	14303 2.5	28762 5.0	59958 10.0	159414 25	337230 50	661005 100	0.000162	7.37	1.000
alpha-Chlordane	13027 2.0	27872 5.0	54650 10.0	103936 20.0	239304 50	462234 100	865128 200	0.000195	13.4	0.999
gamma-Chlordane	11610 2.0	27347 5.0	52562 10.0	101160 20.0	244378 50	478732 100	906180 200	0.000197	8.46	1.000
4,4'-DDD	12354 4.0	29885 10.0	61227 20.0	126568 40.0	323333 100	649130 200	1244260 400	0.000320	3.47	1.000
4,4'-DDE	8983 2.0	21657 5.0	42673 10.0	85560 20.0	217201 50	438798 100	848649 200	0.000231	2.28	1.000
4,4'-DDT	15977 4.0	37437 10.0	74152 20.0	148766 40.0	365452 100	724833 200	1373328 400	0.000271	4.89	1.000,

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

INITIAL CALIBRATION Cont'd

Initial Calibration # GC6B970115120000
Calibration Date 01/15/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6B
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	RF	% RSD	Correlation Coefficient
Dieldrin	10557 2.0	24005 5.0	46158 10.0	91651 20.0	230040 50	469508 100	903554 200	0.000212	5.95	1.000
Endosulfan I	13858 2.0	27249 5.0	50745 10.0	98041 20.0	232353 50	451338 100	843686 200	0.000200	15.1	0.999
Endosulfan II	20286 4.0	48449 10.0	88019 20.0	169783 40.0	395735 100	765098 200	1419286 400	0.000237	12.8	0.999
Endosulfan Sulfate	19959 4.0	43757 10.0	81247 20.0	157142 40.0	360720 100	690529 200	1294479 400	0.000258	14.4	0.999
Endrin	17103 4.0	41209 10.0	81678 20.0	163621 40.0	406214 100	803348 200	1529884 400	0.000246	3.36	1.000
Endrin Aldehyde	12600 4.0	30057 10.0	55647 20.0	105073 40.0	244602 100	486755 200	874132 400	0.000381	12.9	0.998
Endrin Ketone	17122 4.0	41932 10.0	82701 20.0	164183 40.0	388720 100	767062 200	1432428 400	0.000251	6.67	0.999
Heptachlor	15890 2.0	36121 5.0	68710 10.0	133088 20.0	315546 50	613665 100	1144676 200	0.000151	11.1	0.999
Heptachlor epoxide	12974 2.0	29688 5.0	55985 10.0	107753 20.0	257555 50	501091 100	938822 200	0.000185	11.0	0.999
Isodrin	10730 2.0	25160 5.0	49102 10.0	97838 20.0	240955 50	472801 100	888778 200	0.000205	6.56	0.999

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

INITIAL CALIBRATION Cont'd

Initial Calibration # GC6B970115120000
Calibration Date 01/15/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6B
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	RF	% RSD	Correlation Coefficient
Methoxychlor	41449 16	92609 40.0	171030 80.0	321630 160.0	714208 400	1358070 800	2526401 1600	0.000509	17.5	0.999
Mirex	26308 5.0	57069 12.5	101638 25.0	181472 50.0	380875 125	662967 250	1184758 500	0.000294	29.0	0.997
PCB-1016	78226 50	140938 100	309766 250	558800 500	785154 750	954629 1000		0.000842	18.3	0.996
PCB-1232	42553 50	80315 100	174469 250	314560 500	429981 750	544580 1000		0.00150	17.7	0.998
PCB-1242	69928 50	123621 100	268727 250	675461 750	850875 1000	480817 500		0.000963	18.6	0.998
PCB-1248	91885 50	1108981 1000	382873 250	665287 500	894117 750	183727 100		0.000706	21.4	0.996
PCB-1260	105644 50	194881 100	436479 250	793293 500	1105927 750	1349852 1000		0.000601	16.9	0.996
Toxaphene	59717 50	74386 100	194870 250	358722 500	539669 750	708939 1000		0.00128	17.2	1.000
Dibutylchlorendate Surrogate	33074 8.0	69775 20	130386 40	243797 80	555897 200	1050228 400	1954449 800	0.000330	17.5	0.999
2,4,5,6-Tetrachloro-m-xylene Surrogate	23567 4.0	56014 10	107533 20	200982 40	466286 100	871504 200	1594046 400	0.000204	14.6	0.999

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

INITIAL CALIBRATION Cont'd

Initial Calibration # GC6B970115120000
Calibration Date 01/15/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6B
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	__ / RF	% RSD	Correlation Coefficient
Decachlorobiphenyl Surrogate	52043 8.0	114148 20	202690 40	355396 80	739553 200	1310749 400	2318925 800	0.000239	29.6	1.000

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

INITIAL CALIBRATION UPDATE

Initial Calibration # GC6B970128120000
Calibration Date 01/28/97 12:00:00

Sol'n # _____
Method Pesticides/PCBs by GC/ECD
Test Code 8081SAFM

Instrument GC6B
Analyst JSE
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	Response Area Counts / Reference Conc. ug/kg	__ RF	% RSD	Correlation Coefficient
Chlordane	67038 50	130496 100	314620 250	628589 500	934161 750	1220758 1000		0.000787	3.52	1.000
PCB-1221	17344 50	33106 100	72656 250	128813 500	184934 750	234378 1000		0.00359	15.8	0.999
PCB-1254	90161 50	173401 100	372118 250	660324 500	947791 750	1200679 1000		0.000697	16.6	0.999

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

INITIAL CALIBRATION UPDATE

Initial Calibration # GC6B970303120000
Calibration Date 03/03/97 12:00:00

Sol'n # _____
Method GC6B970128120000
Test Code 8081WA01

Instrument GC6B
Analyst MH
Reviewer MJD

Analytes	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/L	Response Area Counts / Reference Conc. ug/kg	__ / RF	% RSD	Correlation Coefficient
Chlordane	76623 50	151439 100	360886 250	772455 500	1054809 750	1389682 1000		0.000680	4.73	0.998

Specification Limits %RSD < 20% or correlation coefficient ≥ 0.995

EXTRACTION BATCH SUMMARY

Extraction Batch # 3540970226113000

Method Soxhlet Extraction SW846
Test Code 354SSA00

Extraction Start Date/Time 02/26/97 11:30:00
Extraction Stop Date/Time 02/27/97 06:45:00

Analyst LAR
Reviewer KMG

Sample	Project Sample ID	Lab Sample ID	Sample Size g	Cleanup Method
1	701-1S	9702501-01A	10.02	GPC
2	701-2S	9702501-02A	10.06	GPC
3	701-3S	9702501-03A	10.23	GPC
4	701-4S	9702501-04A	10.28	GPC
5	701-5S	9702501-05A	10.02	GPC
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

Quality Control	Project Sample ID	Lab Sample ID	Sample Size g	Cleanup Method
Blank		BLK97948	---	GPC
Detectability Check Sample		DCS971506	---	GPC
Laboratory Control Sample		LCS971505	---	GPC
Laboratory Control Sample Duplicate		LCSD971505	---	GPC
Matrix Spike	701-5S	9702501-06A	10.12	GPC
Matrix Spike Duplicate	701-5S	9702501-07A	10.02	GPC

ANALYSIS BATCH SUMMARY

Analysis Batch # CHGC6A70306120002

Method Pesticides/PCBs by GC/ECD
Test Code 8081SAPC
Initial Calibration # GC6A970115120000
Calibration Date 01/15/97

Analysis Start Date/Time 03/06/97 12:00:00
Analysis Stop Date/Time

Instrument GC6A
Analyst RBW
Reviewer MJD

Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
35 03/07/97 13:55		17DR_PCB 16	Continuing Calibration Verification	K67CF35
36 03/07/97 14:40		26DR_PCB 21	Continuing Calibration Verification	K67CF36
37 03/07/97 15:21		3DR_PCB 123	Continuing Calibration Verification	K67CF37
38 03/07/97 16:01		4DR_PCB 124	Continuing Calibration Verification	K67CF38
39 03/07/97 16:42		5DR_PCB 124	Continuing Calibration Verification	K67CF39
40 03/07/97 17:23		BLK97948 BM	Blank, Method	K67CF40
41 03/07/97 18:03		LCS971505	Lab Control Sample	K67CF41
42 03/07/97 18:44		LCSD971505	Lab Control Sample Duplicate	K67CF42
43 03/07/97 19:24		DCS971506	Detectability Check Sample	K67CF43
44 03/07/97 20:05	701-5S	9702501-05A	Sample	K67CF44
45 03/07/97 20:45	701-5S	9702501-06A	Matrix Spike	K67CF45
46 03/07/97 21:26	701-5S	9702501-07A	Matrix Spike Duplicate	K67CF46
47 03/07/97 22:07	701-1S	9702501-01A	Sample	K67CF47
48 03/07/97 22:47	701-1S	9702501-01A	Sample	K67CF48
49 03/07/97 23:27	701-2S	9702501-02A	Sample	K67CF49
50 03/08/97 00:08	701-2S	9702501-02A	Sample	K67CF50
51 03/08/97 00:48	701-3S	9702501-03A	Sample	K67CF51
52 03/08/97 01:29	701-4S	9702501-04A	Sample	K67CF52
53 03/08/97 02:09		HB BS_	Blank, System	K67CF53
54 03/08/97 02:50		17DR_PCB 16	Continuing Calibration Verification	K67CF54
55 03/08/97 03:30		26DR_PCB 21	Continuing Calibration Verification	K67CF55
56 03/08/97 04:11		3DR_PCB 123	Continuing Calibration Verification	K67CF56
57 03/08/97 04:51		4DR_PCB 124	Continuing Calibration Verification	K67CF57
58 03/08/97 05:32		5DR_PCB 124	Continuing Calibration Verification	K67CF58

RESULTS

Work Order # 9702501

Extraction Batch # 3540970226113000

Analysis Batch # CHGC6A70306120002

Project Sample ID 701-5S | Date Collected 02/24/97 | Instrument GC6A | Reporting Subset ___ | Matrix S

Lab Sample ID 9702501-05A | Date Received 02/25/97 | Column PRIMARY | Spikes Subset ___ | Report As received

File # K67CF44 | Date Prepared 02/26/97 | Analyst RBW | Specs Subset ___ | % Moisture ____

Method Pesticides/PCBs by SW8081 | Date Analyzed 03/07/97 20:05 | Reviewer MJD

Test Code 8081SAPC

Analyte	CAS #	Aliquot Mass/Volume 10.02 (g) Extract/Digestate Volume 5 (mL) Dilution Factor 1.00 — Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	2.80	2.80
PCB-1221	11104-28-2	ND	5.07	5.07
PCB-1232	11141-16-5	ND	2.22	2.22
PCB-1242	53469-21-9	ND	3.75	3.75
PCB-1248	12672-29-6	ND	16.2	16.2
PCB-1254	11097-69-1	ND	2.59	2.59
PCB-1260	11096-82-5	ND	5.77	5.77

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	2051-24-3	99.8	90.0	90	45	119
Dibutylchlorendate	1770-80-5	99.8	82.6	83	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	99.8	82.3	82	57	129

RESULTS

Work Order # 9702501

Extraction Batch # 3540970226113000

Analysis Batch # CHGC6A70306120002

Project Sample ID 701-1S | Date Collected 02/24/97 | Instrument GC6A | Reporting Subset ___ | Matrix S

Lab Sample ID 9702501-01A | Date Received 02/25/97 | Column PRIMARY | Spikes Subset ___ | Report As received

File # K67CF47 | Date Prepared 02/26/97 | Analyst RBW | Specs Subset ___ | % Moisture ____

Method Pesticides/PCBs by SW8081 | Date Analyzed 03/07/97 22:07 | Reviewer MJD

Test Code 8081SAPC

Aliquot Mass/Volume 10.02 (g)
Extract/Digestate Volume 5 (mL)
Dilution Factor 10.0

Analyte	CAS #	Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	28.0	28.0
PCB-1221	11104-28-2	ND	50.7	50.7
PCB-1232	11141-16-5	ND	22.2	22.2
PCB-1242	53469-21-9	ND	37.5	37.5
PCB-1248	12672-29-6	ND	162	162
PCB-1254	11097-69-1	ND	25.9	25.9
PCB-1260	11096-82-5	ND	57.7	57.7

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphehyl	2051-24-3	99.8	113	114	45	119
Dibutylchlorendate	1770-80-5	99.8	113	113	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	99.8	93.2	93	57	129

Extraction Batch # 3540970226113000

Analysis Batch # CHGC6A70306120002

Project Sample ID 701-2S | Date Collected 02/24/97 | Instrument GC6A | Reporting Subset ___ | Matrix S

Lab Sample ID 9702501-02A | Date Received 02/25/97 | Column PRIMARY | Spikes Subset ___ | Report As received

File # K67CF49 | Date Prepared 02/26/97 | Analyst RBW | Specs Subset ___ | % Moisture _____

Method Pesticides/PCBs by SW8081 | Date Analyzed 03/07/97 23:27 | Reviewer MJD

Test Code 8081SAPC

Analyte	CAS #	Aliquot Mass/Volume 10.06 (g) Extract/Digestate Volume 5 (mL) Dilution Factor 5.00 — Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	14.0	14.0
PCB-1221	11104-28-2	ND	25.2	25.2
PCB-1232	11141-16-5	ND	11.0	11.0
PCB-1242	53469-21-9	ND	18.7	18.7
PCB-1248	12672-29-6	ND	80.5	80.5
PCB-1254	11097-69-1	ND	12.9	12.9
PCB-1260	11096-82-5	ND	28.7	28.7

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	2051-24-3	99.4	80.8	81	45	119
Dibutylchlorendate	1770-80-5	99.4	81.4	82	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	99.4	84.4	85	57	129

R E S U L T S

Work Order # 9702501

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Extraction Batch # 3540970226113000

Analysis Batch # CHGC6A70306120002

Project Sample ID 701-3S | Date Collected 02/24/97 | Instrument GC6A | Reporting Subset ___ | Matrix S

Lab Sample ID 9702501-03A | Date Received 02/25/97 | Column PRIMARY | Spikes Subset ___ | Report As received

File # K67CF51 | Date Prepared 02/26/97 | Analyst RBW | Specs Subset ___ | % Moisture ___

Method Pesticides/PCBs by SW8081 | Date Analyzed 03/08/97 00:48 | Reviewer MJD

Test Code 8081SAPC

Analyte	CAS #	Aliquot Mass/Volume 10.23 (g) Extract/Digestate Volume 5 (mL) Dilution Factor 5.00 Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	13.7	13.7
PCB-1221	11104-28-2	ND	24.8	24.8
PCB-1232	11141-16-5	ND	10.9	10.9
PCB-1242	53469-21-9	ND	18.4	18.4
PCB-1248	12672-29-6	ND	79.2	79.2
PCB-1254	11097-69-1	ND	12.7	12.7
PCB-1260	11096-82-5	ND	28.3	28.3

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	2051-24-3	97.8	94.7	97	45	119
Dibutylchlorendate	1770-80-5	97.8	78.7	81	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	97.8	99.0	101	57	129

RESULTS

Work Order # 9702501

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Extraction Batch # 3540970226113000

Analysis Batch # CHGC6A70306120002

Project Sample ID 701-4S | Date Collected 02/24/97 | Instrument GC6A | Reporting Subset ___ | Matrix S

Lab Sample ID 9702501-04A | Date Received 02/25/97 | Column PRIMARY | Spikes Subset ___ | Report As received

File # K67CF52 | Date Prepared 02/26/97 | Analyst RBW | Specs Subset ___ | % Moisture ____

Method Pesticides/PCBs by SW8081 | Date Analyzed 03/08/97 01:29 | Reviewer MJD

Test Code 8081SAPC

Analyte	CAS #	Aliquot Mass/Volume 10.28 (g) Extract/Digestate Volume 5 (mL) Dilution Factor 5.00 — Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	13.7	13.7
PCB-1221	11104-28-2	ND	24.7	24.7
PCB-1232	11141-16-5	ND	10.8	10.8
PCB-1242	53469-21-9	ND	18.3	18.3
PCB-1248	12672-29-6	ND	78.8	78.8
PCB-1254	11097-69-1	ND	12.6	12.6
PCB-1260	11096-82-5	ND	28.1	28.1

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	2051-24-3	97.3	84.6	87	45	119
Dibutylchlorendate	1770-80-5	97.3	73.0	75	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	97.3	104	107	57	129

LABORATORY BLANK INFORMATION

Extraction Batch # 3540970226113000
Analysis Batch # CHGC6A70306120002

Lab Sample ID BLK97948 BM
File # K67CF40
Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Date Prepared 02/26/97
Date Analyzed 03/07/97 17:23

Instrument GC6A
Column PRIMARY
Analyst RBW
Reviewer MJD

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix S

Analyte	Aliquot Mass/Volume 10 (g) Extract/Digestate Volume 5 (mL) Dilution Factor 1.0000 Measured Conc. ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	ND	2.81	2.81
PCB-1221	ND	5.08	5.08
PCB-1232	ND	2.22	2.22
PCB-1242	ND	3.76	3.76
PCB-1248	ND	16.2	16.2
PCB-1254	ND	2.60	2.60
PCB-1260	ND	5.78	5.78

Surrogate(s)	Spiked Conc. ug/kg	Measured Conc. ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	100	98.4	98	45	119
Dibutylchlorendate	100	91.0	91	35	149
2,4,5,6-Tetrachloro-m-xylene	100	93.5	94	57	129

LABORATORY CONTROL SAMPLE

Extraction Batch # 3540970226113000

Analysis Batch # CHGC6A70306120002

Method Pesticides/PCBs by SW8081
Test Code 8081SAMP

Date Prepared 02/26/97
Date Analyzed 03/07/97 18:44

Instrument GC6A
Column PRIMARY
Analyst RBW
Reviewer MJD

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix S
Report As received
% Moisture _____
Aliquot Mass or Vol 10 (g)
Extract Mass or Vol 5 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-654	100 uL	SP-1-651	100 uL

LCS Lab Sample ID: LCS971505 File ID: K67CF41

LCS Duplicate Lab Sample ID: LCSD971505 File ID: K67CF42

Analyte	LCS Spiked Conc. ug/kg	LCS Measured Conc. ug/kg	LCS Rec. %	LCSD Spiked Conc. ug/kg	LCSD Measured Conc. ug/kg	LCSD Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
PCB-1016	250	201	80	250	241	97	50	114	19 Q	17
PCB-1260	250	199	80	250	222	89	35	127	11	21
Surrogate(s)										
Decachlorobiphenyl	100	90.1	90	100	101	101	45	119		
Dibutylchlorendate	100	80.8	81	100	91.6	92	35	149		
2,4,5,6-Tetrachloro-m-xylene	100	79.3	79	100	97.6	98	57	129		

MATRIX SPIKE(S)

Work Order # 9702501

Extraction Batch # 3540970226113000

Analysis Batch # CHGC6A70306120002

Project Sample ID 701-5S
Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Date Collected 02/24/97
Date Received 02/25/97
Date Prepared 02/26/97
Date Analyzed 03/07/97 21:26

Instrument GC6A
Column PRIMARY
Analyst RBW
Reviewer MJD

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix S
Report As received
% Moisture _____

Spike Sol'n #	Vol. Added	Surrogate Sol'n	Vol. Added
SP-1-654	100 uL	SP-1-651	100 uL

Sample Lab Sample ID 9702501-05A
File # K67CF44
Aliquot Mass/Vol 10.02 (g)
Extract Mass/Vol 5 (mL)
Dil Fact. 1.00

Spiked Sample Lab Sample ID 9702501-06A MS
File # K67CF45
Aliquot Mass/Vol 10.12 (g)
Extract Mass/Vol 5 (mL)
Dil Fact. 1.00

Spiked Sample Dup Lab Sample ID 9702501-07A MSD
File # K67CF46
Aliquot Mass/Vol 10.02 (g)
Extract Mass/Vol 5 (mL)
Dil Fact. 1.00

Analyte	Spike Sol'n Conc. ug/kg	Measured Conc. ug/kg	Spiked Conc. ug/kg	Measured Conc. ug/kg	Rec. %	Spiked Conc. ug/kg	Measured Conc. ug/kg	Rec. %	Recovery Specification Limits Low %	Recovery Specification Limits High %	RPD Result %	RPD Specification Limit %
PCB-1016	25	ND	247	228 X	88	250	233 X	89	50	114	1.1	17
PCB-1260	25	ND	247	210 Y	79	250	197 Y	73	35	127	7.9	21
Surrogate(s)												
Decachlorobiphenyl	10	90.0	98.8	104	105	99.8	96.5	97	45	119		
Dibutylchlorendate	10	82.6	98.8	90.7	92	99.8	84.2	84	35	149		
2,4,5,6-Tetrachloro-m-xylene	10	82.3	98.8	93.9	95	99.8	92.7	93	57	129		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120001
Initial Calibration # GC6A970115120000

Lab Sample ID 17DR PCB 16 Date Analyzed 03/07/97 13:55 Reporting Subset ___ Instrument GC6A
File # K67CF35 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081SAPC

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
PCB-1016	487	500	97	85	115
PCB-1260	479	500	96	85	115
Surrogate(s)					
Decachlorobiphenyl	100	100	100	85	115
Dibutylchlorendate	108	100	108	85	115
2,4,5,6-Tetrachloro-m-xylene	86.3	100	86	85	115

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120001
Initial Calibration # GC6A970115120000

Lab Sample ID 26DR PCB 21
File # K67CF36
Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Date Analyzed 03/07/97 14:40

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument GC6A
Analyst RBW
Reviewer MJD

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1221	516	500	103	85	115
PCB-1254	538	500	108	85	115

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120001
Initial Calibration # GC6A970115120000

Lab Sample ID 3DR PCB 123 Date Analyzed 03/07/97 15:21 Reporting Subset ___ Instrument GC6A
File # K67CF37 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081SAPC

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1232	557	500	111	85	115

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120001
Initial Calibration # GC6A970115120000

Lab Sample ID 4DR PCB 124 Date Analyzed 03/07/97 16:01 Reporting Subset ___ Instrument GC6A
File # K67CF38 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081SAPC

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1242	528	500	106	85	115

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120001

Initial Calibration # GC6A970115120000

Lab Sample ID 5DR PCB 124 | Date Analyzed 03/07/97 16:42 | Reporting Subset ___ | Instrument GC6A

File # K67CF39 | Spikes Subset ___ | Analyst RBW

Method Pesticides/PCBs by SW8081 | Specs Subset ___ | Reviewer MJD

Test Code 8081SAPC

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1248	528	500	106	85	115

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120002
Initial Calibration # GC6A970115120000

Lab Sample ID 17DR PCB 16
File # K67CF54
Method Pesticides/PCBs by SW8081
Test Code 8081WAPC

Date Analyzed 03/08/97 02:50

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument GC6A
Analyst RBW
Reviewer MJD

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
PCB-1016	487	500	97	85	115
PCB-1260	447	500	89	85	115

Surrogate(s)					
Decachlorobiphenyl	95.2	100	95	85	115
Dibutylchlorendate	106	100	106	85	115
2,4,5,6-Tetrachloro-m-xylene	89.2	100	89	85	115

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120002
Initial Calibration # GC6A970115120000

Lab Sample ID 26DR PCB 21 Date Analyzed 03/08/97 03:30 Reporting Subset ___ Instrument GC6A
File # K67CF55 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081WAPC

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1221	469	500	94	85	115
PCB-1254	469	500	94	85	115

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120002
Initial Calibration # GC6A970115120000

Lab Sample ID 3DR PCB 123
File # K67CF56
Method Pesticides/PCBs by SW8081
Test Code 8081WAPC

Date Analyzed 03/08/97 04:11

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument GC6A
Analyst RBW
Reviewer MJD

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1232	496	500	99	85	115

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120002
Initial Calibration # GC6A970115120000

Lab Sample ID 4DR PCB 124 Date Analyzed 03/08/97 04:51 Reporting Subset ___ Instrument GC6A
File # K67CF57 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081WAPC

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1242	486	500	97	85	115

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6A70306120002
Initial Calibration # GC6A970115120000

Lab Sample ID 5DR PCB 124 Date Analyzed 03/08/97 05:32 Reporting Subset ___ Instrument GC6A
File # K67CF58 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081WAPC

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1248	465	500	93	85	115

ANALYSIS BATCH SUMMARY

Analysis Batch # CHGC6B70306120002

Method Pesticides/PCBs by GC/ECD
Test Code 8081SAPC
Initial Calibration # GC6B970115120000
Calibration Date 01/15/97

Analysis Start Date/Time 03/06/97 12:00:00
Analysis Stop Date/Time

Instrument GC6B
Analyst RBW
Reviewer MJD

Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
35 03/07/97 13:55		17DR_PCB 16	Continuing Calibration Verification	L67CF35
36 03/07/97 14:40		26DR_PCB 21	Continuing Calibration Verification	L67CF36
37 03/07/97 15:21		3DR_PCB 123	Continuing Calibration Verification	L67CF37
38 03/07/97 16:01		4DR_PCB 124	Continuing Calibration Verification	L67CF38
39 03/07/97 16:42		5DR_PCB 124	Continuing Calibration Verification	L67CF39
40 03/07/97 17:23		BLK97948 BM	Blank, Method	L67CF40
41 03/07/97 18:03		LCS971505	Lab Control Sample	L67CF41
42 03/07/97 18:44		LCSD971505	Lab Control Sample Duplicate	L67CF42
43 03/07/97 19:24		DCS971506	Detectability Check Sample	L67CF43
44 03/07/97 20:05	701-5S	9702501-05A	Sample	L67CF44
45 03/07/97 20:45	701-5S	9702501-06A	Matrix Spike	L67CF45
46 03/07/97 21:26	701-5S	9702501-07A	Matrix Spike Duplicate	L67CF46
47 03/07/97 22:07	701-1S	9702501-01A	Sample	L67CF47
48 03/07/97 22:47	701-1S	9702501-01A	Sample	L67CF48
49 03/07/97 23:27	701-2S	9702501-02A	Sample	L67CF49
50 03/08/97 00:08	701-2S	9702501-02A	Sample	L67CF50
51 03/08/97 00:48	701-3S	9702501-03A	Sample	L67CF51
52 03/08/97 01:29	701-4S	9702501-04A	Sample	L67CF52
53 03/08/97 02:09		HB BS_	Blank, System	L67CF53
54 03/08/97 02:50		17DR_PCB 16	Continuing Calibration Verification	L67CF54
55 03/08/97 03:30		26DR_PCB 21	Continuing Calibration Verification	L67CF55
56 03/08/97 04:11		3DR_PCB 123	Continuing Calibration Verification	L67CF56
57 03/08/97 04:51		4DR_PCB 124	Continuing Calibration Verification	L67CF57
58 03/08/97 05:32		5DR_PCB 124	Continuing Calibration Verification	L67CF58

RESULTS

Work Order # 9702501

Extraction Batch # 3540970226113000

Analysis Batch # CHGC6B70306120002

Project Sample ID 701-5S | Date Collected 02/24/97 | Instrument GC6B | Reporting Subset ___ | Matrix S

Lab Sample ID 9702501-05A | Date Received 02/25/97 | Column SECONDARY | Spikes Subset ___ | Report As received

File # L67CF44 | Date Prepared 02/26/97 | Analyst RBW | Specs Subset ___ | % Moisture _____

Method Pesticides/PCBs by SW8081 | Date Analyzed 03/07/97 20:05 | Reviewer MJD

Test Code 8081SAPC

Analyte	CAS #	Aliquot Mass/Volume 10.02 (g) Extract/Digestate Volume 5 (mL) Dilution Factor 1.00 — Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	2.56	2.56
PCB-1221	11104-28-2	ND	4.08	4.08
PCB-1232	11141-16-5	ND	3.87	3.87
PCB-1242	53469-21-9	ND	4.07	4.07
PCB-1248	12672-29-6	ND	15.0	15.0
PCB-1254	11097-69-1	ND	3.63	3.63
PCB-1260	11096-82-5	ND	2.66	2.66

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	2051-24-3	99.8	94.4	95	45	119
Dibutylchlorendate	1770-80-5	99.8	80.7	81	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	99.8	87.2	87	57	129

RESULTS

Extraction Batch # 3540970226113000
Analysis Batch # CHGC6B70306120002

Project Sample ID 701-1S
Lab Sample ID 9702501-01A
File # L67CF47
Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Date Collected 02/24/97
Date Received 02/25/97
Date Prepared 02/26/97
Date Analyzed 03/07/97 22:07

Instrument GC6B
Column SECONDARY
Analyst RBW
Reviewer MJD

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix S
Report As received
% Moisture _____

Aliquot Mass/Volume
10.02 (g)
Extract/Digestate Volume
5 (mL)
Dilution Factor 10.0

Analyte	CAS #	Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	25.6	25.6
PCB-1221	11104-28-2	ND	40.8	40.8
PCB-1232	11141-16-5	ND	38.7	38.7
PCB-1242	53469-21-9	ND	40.7	40.7
PCB-1248	12672-29-6	ND	150	150
PCB-1254	11097-69-1	ND	36.3	36.3
PCB-1260	11096-82-5	ND	26.6	26.6

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	2051-24-3	99.8	81.1	81	45	119
Dibutylchlorendate	1770-80-5	99.8	77.3	78	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	99.8	102	102	57	129

RESULTS

Work Order # 9702501

Extraction Batch # 3540970226113000

Analysis Batch # CHGC6B70306120002

Project Sample ID 701-2S | Date Collected 02/24/97 | Instrument GC6B | Reporting Subset ___ | Matrix S

Lab Sample ID 9702501-02A | Date Received 02/25/97 | Column SECONDARY | Spikes Subset ___ | Report As received

File # L67CF49 | Date Prepared 02/26/97 | Analyst RBW | Specs Subset ___ | % Moisture ____

Method Pesticides/PCBs by SW8081 | Date Analyzed 03/07/97 23:27 | Reviewer MJD

Test Code 8081SAPC

Aliquot Mass/Volume 10.06 (g)
Extract/Digestate Volume 5 (mL)
Dilution Factor 5.00

Analyte	CAS #	Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	12.8	12.8
PCB-1221	11104-28-2	ND	20.3	20.3
PCB-1232	11141-16-5	ND	19.3	19.3
PCB-1242	53469-21-9	ND	20.3	20.3
PCB-1248	12672-29-6	ND	74.6	74.6
PCB-1254	11097-69-1	ND	18.1	18.1
PCB-1260	11096-82-5	ND	13.3	13.3

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	2051-24-3	99.4	84.0	84	45	119
Dibutylchlorendate	1770-80-5	99.4	65.6	66	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	99.4	93.3	94	57	129

RESULTS

Extraction Batch # 3540970226113000
Analysis Batch # CHGC6B70306120002

Project Sample ID 701-3S
Lab Sample ID 9702501-03A
File # L67CF51
Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Date Collected 02/24/97
Date Received 02/25/97
Date Prepared 02/26/97
Date Analyzed 03/08/97 00:48

Instrument GC6B
Column SECONDARY
Analyst RBW
Reviewer MJD

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix S
Report As received
% Moisture ____

Aliquot Mass/Volume
10.23 (g)
Extract/Digestate Volume
5 (mL)
Dilution Factor 5.00

Analyte	CAS #	Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	12.6	12.6
PCB-1221	11104-28-2	ND	20.0	20.0
PCB-1232	11141-16-5	ND	19.0	19.0
PCB-1242	53469-21-9	ND	19.9	19.9
PCB-1248	12672-29-6	ND	73.3	73.3
PCB-1254	11097-69-1	ND	17.8	17.8
PCB-1260	11096-82-5	ND	13.0	13.0

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	2051-24-3	97.8	103	106	45	119
Dibutylchlorendate	1770-80-5	97.8	73.2	75	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	97.8	109	111	57	129

RESULTS

Work Order # 9702501
Page 46

Extraction Batch # 3540970226113000
Analysis Batch # CHGC6B70306120002

Project Sample ID 701-4S
Lab Sample ID 9702501-04A
File # L67CF52
Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Date Collected 02/24/97
Date Received 02/25/97
Date Prepared 02/26/97
Date Analyzed 03/08/97 01:29

Instrument GC6B
Column SECONDARY
Analyst RBW
Reviewer MJD

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix S
Report As received
% Moisture _____

Analyte	CAS #	Aliquot Mass/Volume 10.28 (g) Extract/Digestate Volume 5 (mL) Dilution Factor 5.00 Measured Concentration ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	12674-11-2	ND	12.5	12.5
PCB-1221	11104-28-2	ND	19.9	19.9
PCB-1232	11141-16-5	ND	18.9	18.9
PCB-1242	53469-21-9	ND	19.8	19.8
PCB-1248	12672-29-6	ND	73.0	73.0
PCB-1254	11097-69-1	ND	17.7	17.7
PCB-1260	11096-82-5	ND	13.0	13.0

Surrogate(s)	CAS #	Spiked Conc. ug/kg	Measured Concentration ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	2051-24-3	97.3	89.3	92	45	119
Dibutylchlorendate	1770-80-5	97.3	89.3	92	35	149
2,4,5,6-Tetrachloro-m-xylene	88077-09-8	97.3	96.9	100	57	129

LABORATORY BLANK INFORMATION

Extraction Batch # 3540970226113000
Analysis Batch # CHGC6B70306120002

Lab Sample ID BLK97948 BM
File # L67CF40
Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Date Prepared 02/26/97
Date Analyzed 03/07/97 17:23

Instrument GC6B
Column SECONDARY
Analyst RBW
Reviewer MJD

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix S

Analyte	Aliquot Mass/Volume 10 (g) Extract/Digestate Volume 5 (mL) Dilution Factor 1.0000 Measured Conc. ug/kg	Detection Limit ug/kg	Reporting Limit ug/kg
PCB-1016	ND	2.57	2.57
PCB-1221	ND	4.09	4.09
PCB-1232	ND	3.88	3.88
PCB-1242	ND	4.08	4.08
PCB-1248	ND	15.0	15.0
PCB-1254	ND	3.64	3.64
PCB-1260	ND	2.67	2.67

Surrogate(s)	Spiked Conc. ug/kg	Measured Conc. ug/kg	Recovery %	Specification Limits Low %	Specification Limits High %
Decachlorobiphenyl	100	103	103	45	119
Dibutylchlorendate	100	87.8	88	35	149
2,4,5,6-Tetrachloro-m-xylene	100	99.0	99	57	129

LABORATORY CONTROL SAMPLE

Extraction Batch # 3540970226113000
Analysis Batch # CHGC6B70306120002

Method Pesticides/PCBs by SW8081
Test Code 8081SAMP
Date Prepared 02/26/97
Date Analyzed 03/07/97 18:44
Instrument GC6B
Column SECONDARY
Analyst RBW
Reviewer MJD
Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___
Matrix S
Report As received
% Moisture _____
Aliquot Mass or Vol 10 (g)
Extract Mass or Vol 5 (mL)

Control Std. #	Vol. Added	Surrogate Sol'n #	Vol. Added
SP-1-654	100 uL	SP-1-651	100 uL

LCS Lab Sample ID LCS971505, File ID L67CF41
LCS Duplicate Lab Sample ID LCSD971505, File ID L67CF42

Analyte	LCS Spiked Conc. ug/kg	LCS Measured Conc. ug/kg	LCS Rec. %	LCSD Spiked Conc. ug/kg	LCSD Measured Conc. ug/kg	LCSD Rec. %	Recovery Spec. Limits Low %	Recovery Spec. Limits High %	RPD Result %	RPD Spec. Limit %
PCB-1016	250	200	80	250	231	92	50	114	14	17
PCB-1260	250	198	79	250	220	88	35	127	11	21
Surrogate(s)										
Decachlorobiphenyl	100	95.1	95	100	105	105	45	119		
Dibutylchlorendate	100	110 F	110	100	123 F	123	35	149		
2,4,5,6-Tetrachloro-m-xylene	100	85.0	85	100	103	103	57	129		

MATRIX SPIKE(S)

Work Order # 9702501

Extraction Batch # 3540970226113000

Analysis Batch # CHGC6B70306120002

Project Sample ID 701-5S
Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Date Collected 02/24/97
Date Received 02/25/97
Date Prepared 02/26/97
Date Analyzed 03/07/97 21:26

Instrument GC6B
Column SECONDARY
Analyst RBW
Reviewer MJD

Reporting Subset ___ ___
Spikes Subset ___ ___
Specs Subset ___ ___

Matrix S
Report As received
% Moisture _____

Spike Sol'n #	Vol. Added		Surrogate Sol'n	Vol. Added	
SP-1-654	100	uL	SP-1-651	100	uL

Sample	Spiked Sample	Spiked Sample Dup
Lab Sample ID: 9702501-05A	Lab Sample ID: 9702501-06A MS	Lab Sample ID: 9702501-07A MSD
File # L67CF44	File # L67CF45	File # L67CF46
Aliquot Mass/Vol: 10.02 (g)	Aliquot Mass/Vol: 10.12 (g)	Aliquot Mass/Vol: 10.02 (g)
Extract Mass/Vol: 5 (mL)	Extract Mass/Vol: 5 (mL)	Extract Mass/Vol: 5 (mL)
Dil Fact. 1.00	Dil Fact. 1.00	Dil Fact. 1.00

Analyte	Spike Sol'n Conc. ug/kg	Measured Conc. ug/kg	Spiked Conc. ug/kg	Measured Conc. ug/kg	Rec. %	Spiked Conc. ug/kg	Measured Conc. ug/kg	Rec. %	Recovery Specification Limits Low %	Recovery Specification Limits High %	RPD Result %	RPD Specification Limit %
PCB-1016	25	ND	247	229 X	92	250	232 X	92	50	114	0	17
PCB-1260	25	ND	247	307 Y	96	250	257 Y	74	35	127	26 Q	21
Surrogate(s)												
Decachlorobiphenyl	10	94.4	98.8	105	107	99.8	101	101	45	119		
Dibutylchlorendate	10	80.7	98.8	121 F	122	99.8	116 F	116	35	149		
2,4,5,6-Tetrachloro-m-xylene	10	87.2	98.8	98.7	100	99.8	98.1	98	57	129		

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120001
Initial Calibration # GC6B970115120000

Lab Sample ID 17DR PCB 16 | Date Analyzed 03/07/97 13:55 | Reporting Subset ___ | Instrument GC6B
File # L67CF35 | Spikes Subset ___ | Analyst RBW
Method Pesticides/PCBs by SW8081 | Specs Subset ___ | Reviewer MJD
Test Code 8081SAPC

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
PCB-1016	466	500	93	80	120
PCB-1260	466	500	93	80	120

Surrogate(s)					
Decachlorobiphenyl	107	100	107	80	120
Dibutylchlorendate	181 F	100	181 Q	80	120
2,4,5,6-Tetrachloro-m-xylene	93.7	100	94	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120001

Initial Calibration # GC6B970115120000

Lab Sample ID 26DR PCB 21 Date Analyzed 03/07/97 14:40 Reporting Subset ___ Instrument GC6B

File # L67CF36 Spikes Subset ___ Analyst RBW

Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD

Test Code 8081SAPC

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1221	491	500	98	80	120
PCB-1254	489	500	98	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120001
Initial Calibration # GC6B970115120000

Lab Sample ID 3DR PCB 123 Date Analyzed 03/07/97 15:21 Reporting Subset ___ Instrument GC6B
File # L67CF37 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081SAPC

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1232	518	500	104	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120001
Initial Calibration # GC6B970115120000

Lab Sample ID 4DR PCB 124
File # L67CF38
Method Pesticides/PCBs by SW8081
Test Code 8081SAPC

Date Analyzed 03/07/97 16:01

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument GC6B
Analyst RBW
Reviewer MJD

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1242	491	500	98	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120001
Initial Calibration # GC6B970115120000

Lab Sample ID 5DR PCB 124 Date Analyzed 03/07/97 16:42 Reporting Subset ___ Instrument GC6B
File # L67CF39 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081SAPC

Analyte	Measured Concentration ug/kg	Reference Concentration ug/kg	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1248	480	500	96	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120002
Initial Calibration # GC6B970115120000

Lab Sample ID 17DR PCB 16 | Date Analyzed 03/08/97 02:50 | Reporting Subset ___ | Instrument GC6B
File # L67CF54 | Spikes Subset ___ | Analyst RBW
Method Pesticides/PCBs by SW8081 | Specs Subset ___ | Reviewer MJD
Test Code 8081WAPC

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits Low %	Recovery Specification Limits High %
PCB-1016	463	500	93	80	120
PCB-1260	447	500	89	80	120

Surrogate(s)					
Decachlorobiphenyl	101	100	101	80	120
Dibutylchlorendate	176 F	100	176 Q	80	120
2,4,5,6-Tetrachloro-m-xylene	94.8	100	95	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120002
Initial Calibration # GC6B970115120000

Lab Sample ID 26DR PCB 21 Date Analyzed 03/08/97 03:30 Reporting Subset ___ Instrument GC6B
File # L67CF55 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081WAPC

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1221	454	500	91	80	120
PCB-1254	437	500	87	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120002
Initial Calibration # GC6B970115120000

Lab Sample ID 3DR PCB 123 Date Analyzed 03/08/97 04:11 Reporting Subset ___ Instrument GC6B
File # L67CF56 Spikes Subset ___ Analyst RBW
Method Pesticides/PCBs by SW8081 Specs Subset ___ Reviewer MJD
Test Code 8081WAPC

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1232	469	500	94	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120002
Initial Calibration # GC6B970115120000

Lab Sample ID 4DR PCB 124 | Date Analyzed 03/08/97 04:51 | Reporting Subset ___ | Instrument GC6B
File # L67CF57 | Spikes Subset ___ | Analyst RBW
Method Pesticides/PCBs by SW8081 | Specs Subset ___ | Reviewer MJD
Test Code 8081WAPC

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1242	464	500	93	80	120

CONTINUING (OR DAILY) CALIBRATION VERIFICATION

Analysis Batch # CHGC6B70306120002
Initial Calibration # GC6B970115120000

Lab Sample ID 5DR PCB 124
File # L67CF58
Method Pesticides/PCBs by SW8081
Test Code 8081WAPC

Date Analyzed 03/08/97 05:32

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Instrument GC6B
Analyst RBW
Reviewer MJD

Analyte	Measured Concentration ug/L	Reference Concentration ug/L	Recovery %	Recovery Specification Limits	
				Low %	High %
PCB-1248	454	500	91	80	120

Method Pesticides/PCBs by GC/ECD Specification# _____

Lab Sample ID / File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action
LCS971505 L67CF41		Dibutylchlorendate	F	Dibutylchlorendate coelutes with an isomer of Arochlor 1260 on the DB-608 column causing this surrogate recovery to be biased high whenever this Arochlor is present, such as in matrix spikes and laboratory control samples.	
LCSD971505 L67CF42		Dibutylchlorendate	F	Dibutylchlorendate coelutes with an isomer of Arochlor 1260 on the DB-608 column causing this surrogate recovery to be biased high whenever this Arochlor is present, such as in matrix spikes and laboratory control samples.	
9702501-06A K67CF45	701-5S	PCB 1016	X	PCB 1016 not detected in parent sample. The background concentration contributed by non-PCB constituents is 11.0 ug/kg. This background concentration was taken into account when calculating the percent recovery reported.	
9702501-06A K67CF45	701-5S	PCB 1260	Y	PCB 1260 not detected in parent sample. The background concentration contributed by non-PCB constituents is 14.7 ug/kg. This background concentration was taken into account when calculating the percent recovery reported.	
9702501-06A L67CF45	701-5S	Dibutylchlorendate	F	Dibutylchlorendate coelutes with an isomer of Arochlor 1260 on the DB-608 column causing this surrogate recovery to be biased high whenever this Arochlor is present, such as in matrix spikes and laboratory control samples.	

Method Pesticides/PCBs by GC/ECD Specification# _____

Lab Sample ID / File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action
9702501-06A L67CF45	701-5S	PCB 1016	X	PCB 1016 not detected in parent sample. The background concentration contributed by non-PCB constituents is 2.11 ug/kg. This background concentration was taken into account when calculating the percent recovery reported.	
9702501-06A L67CF45	701-5S	PCB 1260	Y	PCB 1260 not detected in parent sample. The background concentration contributed by non-PCB constituents is 71.0 ug/kg. This background concentration was taken into account when calculating the percent recovery reported.	
9702501-07A K67CF46	701-5S	PCB 1016	X	PCB 1016 not detected in parent sample. The background concentration contributed by non-PCB constituents is 11.0 ug/kg. This background concentration was taken into account when calculating the percent recovery reported.	
9702501-07A K67CF46	701-5S	PCB 1260	Y	PCB 1260 not detected in parent sample. The background concentration contributed by non-PCB constituents is 14.7 ug/kg. This background concentration was taken into account when calculating the percent recovery reported.	
9702501-07A L67CF46	701-5S	Dibutylchlorendate	F	Dibutylchlorendate coelutes with an isomer of Arochlor 1260 on the DB-608 column causing this surrogate recovery to be biased high whenever this Arochlor is present, such as in matrix spikes and laboratory control samples.	

Method Pesticides/PCBs by GC/ECD Specification# _____

Lab Sample ID / File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action
9702501-07A L67CF46	701-5S	PCB 1016	X	PCB 1016 not detected in parent sample. The background concentration contributed by non-PCB constituents is 2.11 ug/kg. This background concentration was taken into account when calculating the percent recovery reported.	
9702501-07A L67CF46	701-5S	PCB 1260	Y	PCB 1260 not detected in parent sample. The background concentration contributed by non-PCB constituents is 71.0 ug/kg. This background concentration was taken into account when calculating the percent recovery reported.	
17DR_PCB 16 L67CF35		Dibutylchlorendate	F	Dibutylchlorendate coelutes with an isomer of Arochlor 1260 on the DB-608 column causing this surrogate recovery to be biased high whenever this Arochlor is present, such as in matrix spikes and laboratory control samples.	
17DR_PCB 16 L67CF54		Dibutylchlorendate	F	Dibutylchlorendate coelutes with an isomer of Arochlor 1260 on the DB-608 column causing this surrogate recovery to be biased high whenever this Arochlor is present, such as in matrix spikes and laboratory control samples.	

QUALITY CONTROL EXCEPTION REPORT
SUMMARY

QCER #	Analysis Batch Number
970307-13	CHGC6_70306120002
970307-14	CHGC6_70306120002

00189515

QUALITY CONTROL EXCEPTION REPORT
LEVEL 2 - ANALYTICAL

REPORT COPY 9702501

QCER # 970307-13

Revised:

Analyst: RBW_JSE Instrument: GC6 Date Analyzed: 03/07/97
Batch #: CHGC6_70306120002 Matrix: solid Status: C
Prot Spec: 8081 Analysis File #: K67CF

Lab Sample ID:	Client ID:	CSC:	Project Sample ID:
9702501	LONGHORN_P	JAL	

SAMPLE PREPARATION:

PROBLEM IDENTIFICATION

Sample Went Dry _
Loss of ____ % of Sample _
Emulsion Formed _
Blank Contamination _
Instrument _
Hold Time _
MS/MSD Not Available _
Instrument _
Other (Describe) _

CORRECTIVE ACTION TAKEN

Reprepare Sample _
Sample Sent for Analysis _
Resample _
Other (Describe) _

Comments:

SAMPLE ANALYSIS:

PROBLEM IDENTIFICATION

Surrogate Recovery _
MS/MSD Recovery _
LCS/LCSD Recovery _
MS/MSD Precision _
LCS/LCSD Precision X
Standard _
Blank Contamination _
Instrument _
Hold Time _
No MS/MSD Available for Batch _
Sample pH _
Dil. Due to Hi-Level Non-Target Analytes _
Serial Dilution _
Analytical Spike _
Internal Standard _
Other (Describe) _

PROBABLE CAUSE

Matrix Effect _
Instrument _
Spiking Error _
Contamination _
Coelution _
Unknown X
Other(Describe) _

CORRECTIVE ACTION TAKEN

Reprepare Sample _
Reanalyze Sample _
Reanalyze LCS/LCSD _
Recalibrate Instrument _
Analyze Out of Hold Time _
Prepare New Standard _
Flag Data X
Resample _
Analyze by MSA _
Perform Analytical Spike _
No Action Required _
Level 3 QCER to Follow _
Other (Describe) _

Comments: The RPD for PCB 1016 is outside of tolerance in LCS/LCSD. RPD for PCB 1016 is within limits in MS/MSD. There is no PCB 1016 found in the samples.

Distribution: CSC, Lab, Report

QUALITY CONTROL EXCEPTION REPORT **REPORT COPY 9702501**
LEVEL 2 - ANALYTICAL

QCER # 970307-14 **Revised:**

Analyst: RBW_JSE Instrument: GC6 Date Analyzed: 03/07/97
Batch #: CHGC6_70306120002 Matrix: solid Status: C
Prot Spec: 8081 Analysis File #: K67CF

Lab Sample ID:	Client ID:	CSC:	Project Sample ID:
9702501	LONGHORN_P	JAL	
9702485			

SAMPLE PREPARATION:

PROBLEM IDENTIFICATION
Sample Went Dry _
Loss of ____ % of Sample _
Emulsion Formed _
Blank Contamination _
Instrument _
Hold Time _
MS/MSD Not Available _
Instrument _
Other (Describe) _

CORRECTIVE ACTION TAKEN
Reprepare Sample _
Sample Sent for Analysis _
Resample _
Other (Describe) _

Comments:

SAMPLE ANALYSIS:

PROBLEM IDENTIFICATION
Surrogate Recovery X
MS/MSD Recovery _
LCS/LCSD Recovery _
MS/MSD Precision _
LCS/LCSD Precision _
Standard _
Blank Contamination _
Instrument _
Hold Time _
No MS/MSD Available for Batch _
Sample pH _
Dil. Due to Hi-Level Non-Target Analytes _
Serial Dilution _
Analytical Spike _
Internal Standard _
Other (Describe) _

PROBABLE CAUSE
Matrix Effect X
Instrument _
Spiking Error _
Contamination _
Coelution _
Unknown _
Other(Describe) _

CORRECTIVE ACTION TAKEN
Reprepare Sample _
Reanalyze Sample _
Reanalyze LCS/LCSD _
Recalibrate Instrument _
Analyze Out of Hold Time _
Prepare New Standard _
Flag Data X
Resample _
Analyze by MSA _
Perform Analytical Spike _
No Action Required _
Level 3 QCER to Follow _
Other (Describe) _

Comments: DBC recovery is outside of upper tolerance on confirmation (DB-608) column of PCB 1016/1260 CCVs. There is a peak in PCB 1260 that is known to coelute with DBC on this column.

Distribution: CSC, Lab, Report

RADIAN International LLC

CONTRACTOR P.O. NO. N/A

CHAIN-OF-CUSTODY RECORD

LONGHORN ARMY AMMUNITION PLANT
P.O. BOX 658
DOYLINE, LA 71023

PROJECT NAME/NUMBER 006063.440502 LAB DESTINATION Radian Lab. Attn: Jane Lindsey
REPORT RESULTS TO: Bill Corrigan PHONE NO OFFICE (903) 679-2219
FAX (903) 679-2910

SAMPLE NUMBER	SAMPLE LOCATION & DESCRIPTION	DATE & TIME COLLECTED	ANALYSIS TYPE	CONTAINER PRESERVATIVE	INITIALS	CONDITION ON RECEIPT (NAME & DATE)
✓ 701-15	Longhorn AAP Bldg. 701 SE Corner	02/24/97 1301	Total PCB's	250 ml Plastic	WRC	
✓ 701-25	Longhorn AAP Bldg. 701 SW Corner	02/24/97 1310	Total PCB's	250 ml Plastic	WRC	
✓ 701-35	Longhorn AAP Bldg. 701, W Center	02/24/97 1322	Total PCB's	250 ml Plastic	WRC	
✓ 701-45	Longhorn AAP Bldg. 701, NW Corner	02/24/97 1334	Total PCB's	250 ml Plastic	WRC	
✓ 701-55	Longhorn AAP Bldg. 701, NE Corner	02/24/97 1348	Total PCB's	250 ml Plastic	WRC	
	* All samples pulled from 0-6" depth with the exception of # 701-35.					701-35 was 9-12" deep
	because of packed gravel.					

SPECIAL INSTRUCTIONS
SIGNATURES: (NAME, COMPANY, DATE AND TIME)

RELINQUISHED BY W.R. Corrigan, LMM, 2/24/97, 1430 3. RELINQUISHED BY

RECEIVED BY Tom Braga 2/25/97 1030 RECEIVED BY

RELINQUISHED BY 4. RELINQUISHED BY

addendum 970168

00189517

00189518

FedEx USA Airbill

Tracking Number 1511167873

Recipient's Copy

From
Date 2/24/97
Sender's Name Bill Corrigan Phone (907) 679-2219
Company Radian Intl. LLC Dept./Floor/Suite/Room
Address Longhorn Army Ammunition Plant
Karnack State TX Zip 75661
Your Internal Billing Reference Information

To
Recipient's Name Sample Control Phone (512) 834-0855
Company Radian Intl. LLC. Dept./Floor/Suite/Room
Address 14046 Summit Drive
(HOLD" at FedEx location, print FedEx address here)
Austin State TX Zip 78728

For HOLD at FedEx Location check here
☐ Hold Weekday (Not available with FedEx First Overnight)
☐ Hold Saturday (Not available at all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

For Saturday Delivery check here
☐ (Extra Charge. Not available to all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

1511167873

4a Express Package Service *Packages under 150 lbs.* Delivery commitment may be later in some areas
☐ FedEx Priority Overnight (Next business morning)
☒ FedEx Standard Overnight (Next business afternoon)
☐ FedEx 2Day* (Second business day)
☐ FedEx Government Overnight (Authorized use only)
☐ NEW FedEx First Overnight (Earliest next business morning delivery to select locations) Higher rates apply
* FedEx Letter Rate not available. Minimum charge. One pound FedEx 2Day rate

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas
☐ FedEx Overnight Freight (Next business-day service for any distance)
☐ FedEx 2Day Freight (Second business-day service for any distance)
☐ FedEx Express Saver Freight (Up to 3 business-day service based upon distance)
(Call for delivery schedule. See back for detailed descriptions of freight products.)

5 Packaging
☐ FedEx Letter ☐ FedEx Pak (Declared value limit $500) ☒ FedEx Box ☐ FedEx Tube ☐ Other Pkg.

6 Special Handling
Does this shipment contain dangerous goods? ☐ Yes (As per attached Shipper's Declaration) ☐ Yes (Shipper's Declaration not required)
☐ Dry Ice Dry Ice, 9, UN 1845 III, _____ x _____ kg, 904 (Dangerous Goods Shipper's Declaration not required)
CA ☐ Cargo Aircraft Only

7 Payment Obtain Recipient FedEx Account No.
Bill to: ☒ Sender (Account no. in section 1 will be billed) ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check (Enter FedEx account no. or Credit Card no. below)

Total Packages	Total Weight	Total Declared Value*	Total Charges
		$ .00	$

* When declaring a value higher than $100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

Credit Card Auth.

8 Release Signature
Bill Corriga
Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

238

Questions?
Call 1·800·Go·FedEx (1-800-463-3339)

* Rev. Date 3/96
PART #147957
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(CONTINUATION PAGE)

CONDITION OF BOTTLES/CONTAINERS **VERIFIED BY:** TJB *(Comment any problems)*

Bottles received match COC ☐YES ☒NO Bottles received intact ☒YES ☐NO

Samples screened for radioactivity ☐YES ☒N/A Samples received from USDA restricted area ☐YES ☒NO

See additional discrepancy sheet ☐YES ☒NO

Comments: Log Per Sample label per JAL ~~Label~~ Log Per JAL + PROJECT TEAM

SAMPLE ID ON CHAIN 701-21 ID ON CHAIN OB 701-25, SAMPLE received IN Plastic.

pH OF SAMPLES/PRESERVATION **VERIFIED BY:** TJB *(Comment any problems)*

Base preserved samples are > 12pH ☐YES ☐NO Acid preserved samples are <2pH ☐YES ☐NO ☒N/A

Water samples for Cyanide checked ☐YES ☐NO

Water Sulfide samples appear to be preserved with zinc acetate ☐YES ☐NO

Water samples checked for chlorine per specification? ☐YES ☐NO
(If free chlorine present, indicate presence on COC)

If pH/preservation is outside acceptable limits, Client Services was notified ☐NA

(_____CSC) ☐YES

ADJUST ☐YES ☐NO

Sample IDs, analysis and pH of any samples received outside of acceptable pH range:

Field Sample ID	Analysis	pH	Field Sample ID	Analysis	pH

Comments:

SHIPPING DOCUMENTATION

Freight bill is available and attached to chain-of-custody. Freight bill No.: 1511167473 ☒YES ☐NO

OTHER COMMENTS:

Client Chain-of-Custody is signed, dated with time of receipt, and addendum number is noted in the comments section.

Sample Control Addendum Verified By: [signature] Date: 2/25/97

PAGE 1 RADIAN CORP. INVOICE ORD # 97-02-496

02/27/97 14:02:19 INVOICE # not set

INVOICE TO: RADIAN INTERNATIONAL, LLC
PO BOX 201088
AUSTIN, TX 78720-1088

ATTEN: ACCOUNTING

REMIT TO: Radian Corporation
Box 841687
Dallas, TX 75284-1687

ATTEN: Accounts Receivable
PHONE: 512-454-4797

TERMS: net 30 days

WORK ID: STP VERIFICATION
P.O. #: 640-082-03-00

REPORT TO: RADIAN INTERNATIONAL, LLC
PO BOX 201088
AUSTIN, TX 78720-1088

ATTEN: JIM BOB OWENS

RECEIVED: 02/25/97 CLIENT: LONGHORN S
REPORTED: 02/27/97 PROJECT:

CUSTOMER SERVICE COORDINATOR: JALINDSEY
MARKETING REPRESENTATIVE: A BOU ONK

ID	SAMPLE DESCRIPTION	CODE	DESCRIPTION	PRICE	QTY	AMOUNT
TESTS						
01A	LH18/24-WF-2001-OF	MSRASA00	% Moisture, ASTMD2216 Mod.			
02A	LH18/24-TS-2001-OF	MSRASA00	% Moisture, ASTMD2216 Mod.			
03A	LH18/24-WF-2004-OF	MSRASA00	% Moisture, ASTMD2216 Mod.			
04A	LH18/24-TS-2004-OF	MSRASA00	% Moisture, ASTMD2216 Mod.			
05A	LH18/24-WF-2007-OF	MSRASA00	% Moisture, ASTMD2216 Mod.			
06A	LH18/24-TS-2007-OF	MSRASA00	% Moisture, ASTMD2216 Mod.			
					6	

QUOTED PRICE $0.00

TOTAL INVOICE AMOUNT $0.00

RADIAN ANALYTICAL SERVICES

FPAS REPORT

TABLE OF CONTENTS

Work Order # 9702500

Client LONGHORN

Facility KARNAK, TX

Client Code LONGHORN P

Certified By

Date 2-28-97

02/27/97 14:00:38

WORK ORDER SUMMARY

Report LONGHORN AMMUNITION PLANT
To PO BOX 107
KARNACK,TX 75661
Attention BILL CORRIGAN

Client Code LONGHORN P
Client LONGHORN
Facility KARNAK, TX
Work ID PCB DRUMS

Work Order # 9702500
Page 1

RCN 006063-4405-02

Prepared Radian Analytical Services
By 14046 Summit Dr., Bldg. B
P. O. Box 201088
Austin, TX 78720-1088

CSC JALINDSEY

Case # NA
SDG # NA
RAS # 70224CJAL

New York ELAP ID #: 10915

Project Sample ID/ Description	Lab Sample ID	Test Code(s)	Method Desciption
701-1S	01A	MSRSSA00	Percent Moisture SW846
701-2S	02A	MSRSSA00	Percent Moisture SW846
701-3S	03A	MSRSSA00	Percent Moisture SW846
701-4S	04A	MSRSSA00	Percent Moisture SW846
701-5S	05A	MSRSSA00	Percent Moisture SW846

FLAG DEFINITIONS

Flag	Definition
< DL	Result less than stated Detection Limit and greater than or equal to zero.
NA	Analyte concentration not available for this analysis.
NC	RPD and/or % Recovery not calculated. See Narrative for explanation.
ND	Not detected. No instrument response for analyte or result less than zero.
NR	Not reported. Result greater than or equal to stated Detection Limit and less than specified Reporting Limit.
NS	Analyte not spiked.
B	Analyte detected in method blank at concentration greater than the Reporting Limit (and greater than zero).
C	Confirming data obtained using second GC column or GCMS.
E	Analyte concentration exceeded calibration range.
F	Interference or coelution suspected. See Narrative for explanation.
H	Presence of analyte previously confirmed by historical data.
I	Analyte identification suspect. See Narrative for explanation.
J	Result is less than stated Detection Limit but greater than or equal to specified Reporting Limit.
K	Peak did not meet method identification criteria. Analyte not detected on other GC column.
M	Result modified from previous Report. See Narrative for explanation.
P	Analyte not confirmed. Results from primary and secondary GC columns differ by greater than a factor of 3.
Q	QC result does not meet tolerance in Protocol Specification.
R	Result reported elsewhere.
S	Analyte concentration obtained using Method of Standard Additions (MSA).
T	Second column confirmational analysis not performed.
X	See Narrative for explanation.
Y	See Narrative for explanation.
Z	See Narrative for explanation.

Client LONGHORN Specification # MSRS-D
Facility KARNAK, TX
Client Code LONGHORN P
Method Percent Moisture SW846

Project Sample ID/Description	Lab Sample ID	Test Code(s)	Extraction/Digestion Batch #	Analysis Batch #
701-1S	9702500-01A	MSRSSA00	NA	EXMSRS70226104501
701-2S	9702500-02A	MSRSSA00	NA	EXMSRS70226104501
701-3S	9702500-03A	MSRSSA00	NA	EXMSRS70226104501
701-4S	9702500-04A	MSRSSA00	NA	EXMSRS70226104501
701-5S	9702500-05A	MSRSSA00	NA	EXMSRS70226104501
701-5S	9702500-05A	MSRSSA00	NA	EXMSRS70226104501

Method Percent moisture, SW846
Test Code MSRSSA00

Project Sample ID:	701-1S		701-2S		701-3S		701-4S	
Lab ID:	9702500-01A		9702500-02A		9702500-03A		9702500-04A	
File ID:	MSRS022610-1		MSRS022610-2		MSRS022610-3		MSRS022610-4	
Date Collected:	02/24/97		02/24/97		02/24/97		02/24/97	
Date Prepared:								
Date Analyzed:	02/26/97 10:45		02/26/97 10:45		02/26/97 10:45		02/26/97 10:45	
Dilution Factor:	1		1		1		1	
Matrix:	Solid		Solid		Solid		Solid	
Units:	%		%		%		%	
Report as:								
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Percent moisture	15.3		22.2		5.96		20.8	

Method Percent moisture, SW846

Test Code MSRSSA00

Project Sample ID:	701-5S		701-5S					
Lab ID:	9702500-05A		9702500-05A					
File ID:	MSRS022610-5		MSRS022610-6					
Date Collected:	02/24/97		02/24/97					
Date Prepared:								
Date Analyzed:	02/26/97 10:45		02/26/97 10:45:00					
Dilution Factor:	1		1					
Matrix:	Solid		Solid					
Units:	%		%					
Report as:								
Column:								
Analyte	Conc.	DL	Conc.	DL	Conc.	DL	Conc.	DL
Percent moisture	13.7		13.9					

ANALYSIS BATCH SUMMARY

Analysis Batch # EXMSRS70226104501

Method Percent Moisture SW846
Test Code MSRSSA00
Initial Calibration # NA
Calibration Date NA

Analysis Start Date/Time 02/26/97 10:45:00
Analysis Stop Date/Time 02/27/97 09:10:00

Instrument MSRS
Analyst JEC
Reviewer TMR

Sequence/Analysis Time	Project Sample ID	Lab Sample ID	Sample Type	Analysis File #
1 02/26/97 10:45	701-1S	9702500-01A	Sample	MSRS022610-1
2 02/26/97 10:45	701-2S	9702500-02A	Sample	MSRS022610-2
3 02/26/97 10:45	701-3S	9702500-03A	Sample	MSRS022610-3
4 02/26/97 10:45	701-4S	9702500-04A	Sample	MSRS022610-4
5 02/26/97 10:45	701-5S	9702500-05A	Sample	MSRS022610-5
6 02/26/97 10:45:00	701-5S	9702500-05A	Sample Duplicate	MSRS022610-6

RESULTS

Extraction Batch # _____
Analysis Batch # EXMSRS70226104501

Project Sample ID 701-1S
Lab Sample ID 9702500-01A
File # MSRS022610-1
Method Percent moisture, SW846
Test Code MSRSSA00

Date Collected 02/24/97
Date Received 02/25/97
Date Prepared _____
Date Analyzed 02/26/97 10:45

Instrument MSRS
Column _____
Analyst JEC
Reviewer TMR

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix S
Report As NA
% Moisture NA

Analyte	CAS #	Aliquot Mass/Volume _____ (g) Extract/Digestate Volume _____ (mL) Dilution Factor 1 Measured Concentration %	Detection Limit	Reporting Limit
Percent moisture	NO_CAS	15.3		

RESULTS

Extraction Batch # _____
Analysis Batch # EXMSRS70226104501

Project Sample ID 701-2S | Date Collected 02/24/97 | Instrument MSRS | Reporting Subset ___ | Matrix S
Lab Sample ID 9702500-02A | Date Received 02/25/97 | Column _____ | Spikes Subset ___ | Report As NA
File # MSRS022610-2 | Date Prepared _____ | Analyst JEC | Specs Subset ___ | % Moisture NA
Method Percent moisture, SW846 | Date Analyzed 02/26/97 10:45 | Reviewer TMR
Test Code MSRSSA00

Analyte	CAS #	Aliquot Mass/Volume _____ (g) Extract/Digestate Volume _____ (mL) Dilution Factor 1 Measured Concentration %	Detection Limit	Reporting Limit
Percent moisture	NO_CAS	22.2		

R E S U L T S

Extraction Batch # _____
Analysis Batch # EXMSRS70226104501

Project Sample ID 701-3S | Date Collected 02/24/97 | Instrument MSRS | Reporting Subset ___ | Matrix S
Lab Sample ID 9702500-03A | Date Received 02/25/97 | Column _____ | Spikes Subset ___ | Report As NA
File # MSRS022610-3 | Date Prepared _____ | Analyst JEC | Specs Subset ___ | % Moisture NA
Method Percent moisture, SW846 | Date Analyzed 02/26/97 10:45 | Reviewer TMR
Test Code MSRSSA00

Analyte	CAS #	Aliquot Mass/Volume _____ (g) Extract/Digestate Volume _____ (mL) Dilution Factor 1 — Measured Concentration %	Detection Limit	Reporting Limit
Percent moisture	NO_CAS	5.96		

RESULTS

Extraction Batch # _____
Analysis Batch # EXMSRS70226104501

Project Sample ID 701-4S | Date Collected 02/24/97 | Instrument MSRS | Reporting Subset ___ | Matrix S
Lab Sample ID 9702500-04A | Date Received 02/25/97 | Column _____ | Spikes Subset ___ | Report As NA
File # MSRS022610-4 | Date Prepared _____ | Analyst JEC | Specs Subset ___ | % Moisture NA
Method Percent moisture, SW846 | Date Analyzed 02/26/97 10:45 | Reviewer TMR
Test Code MSRSSA00

Analyte	CAS #	Aliquot Mass/Volume _____ (g) Extract/Digestate Volume _____ (mL) Dilution Factor 1 — Measured Concentration %	Detection Limit	Reporting Limit
Percent moisture	NO_CAS	20.8		

RESULTS

Extraction Batch # _____
Analysis Batch # EXMSRS70226104501

Project Sample ID 701-5S
Lab Sample ID 9702500-05A
File # MSRS022610-5
Method Percent moisture, SW846
Test Code MSRSSA00

Date Collected 02/24/97
Date Received 02/25/97
Date Prepared _____
Date Analyzed 02/26/97 10:45

Instrument MSRS
Column _____
Analyst JEC
Reviewer TMR

Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix S
Report As NA
% Moisture NA

Analyte	CAS #	Aliquot Mass/Volume _____ (g) Extract/Digestate Volume _____ (mL) Dilution Factor 1 Measured Concentration %	Detection Limit	Reporting Limit
Percent moisture	NO_CAS	13.7		

RESULTS

Extraction Batch # _____
Analysis Batch # EXMSRS70226104501

Project Sample ID 701-5S | Date Collected 02/24/97 | Instrument MSRS | Reporting Subset ___ | Matrix S
Lab Sample ID 9702500-05A | Date Received 02/25/97 | Column _____ | Spikes Subset ___ | Report As NA
File # MSRS022610-6 | Date Prepared _____ | Analyst JEC | Specs Subset ___ | % Moisture NA
Method Percent moisture, SW846 | Date Analyzed 02/26/97 10:45:00 | Reviewer TMR
Test Code MSRSSA00

Analyte	CAS #	Aliquot Mass/Volume _____ (g) Extract/Digestate Volume 1 (mL) Dilution Factor 1 Measured Concentration %	Detection Limit	Reporting Limit
Percent moisture	NO_CAS	13.9		

SAMPLE DUPLICATES

Extraction Batch # _____

Analysis Batch # EXMSRS70226104501

Project Sample ID 701-5S
Method Percent moisture, SW846
Test Code MSRSSA00

Date Collected 02/24/97
Date Received 02/25/97
Date Prepared _____
Date Analyzed 02/26/97 10:45:00

Instrument MSRS
Column _____
Analyst JEC
Reviewer TMR

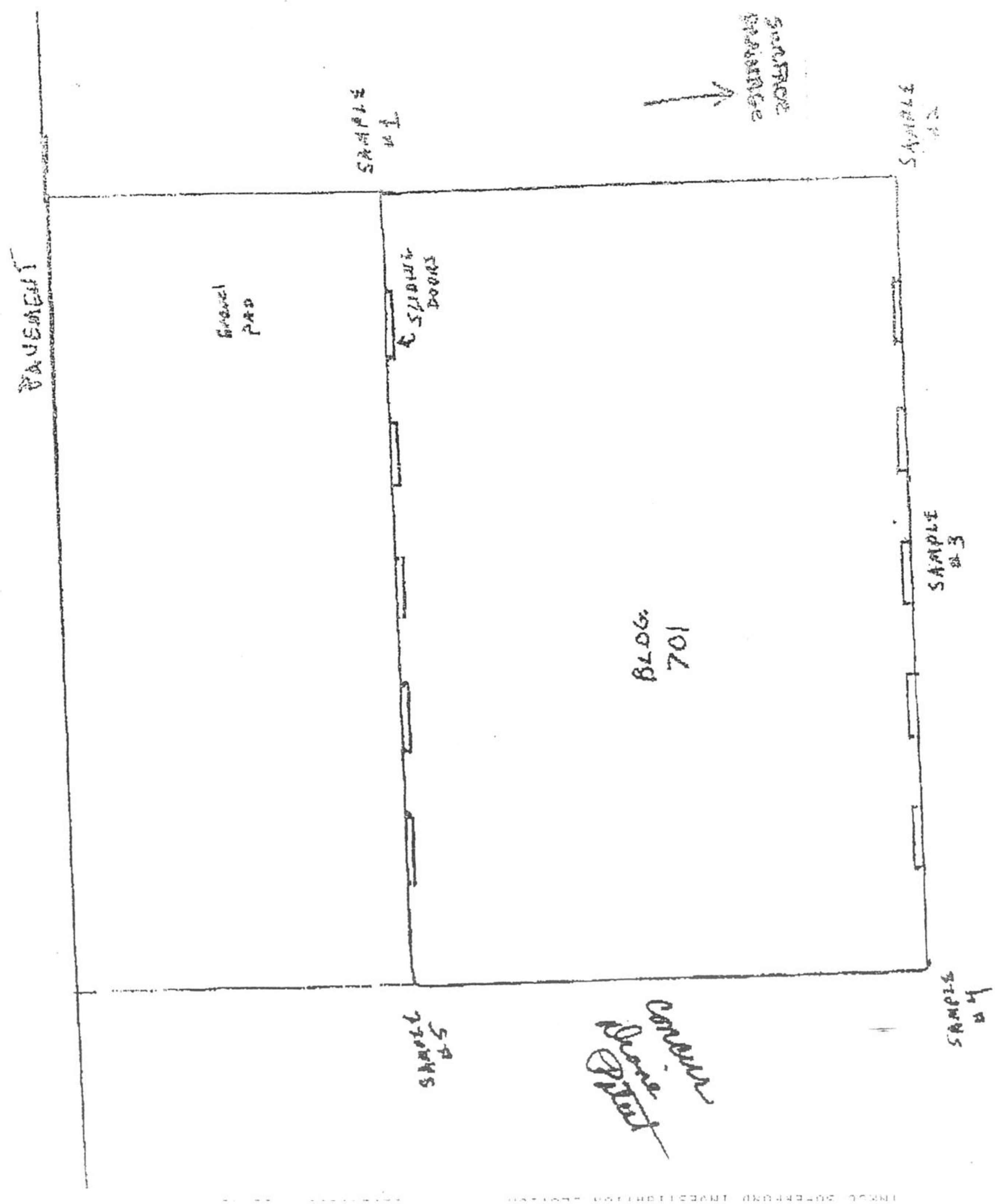
Reporting Subset ___
Spikes Subset ___
Specs Subset ___

Matrix S
Report As _____

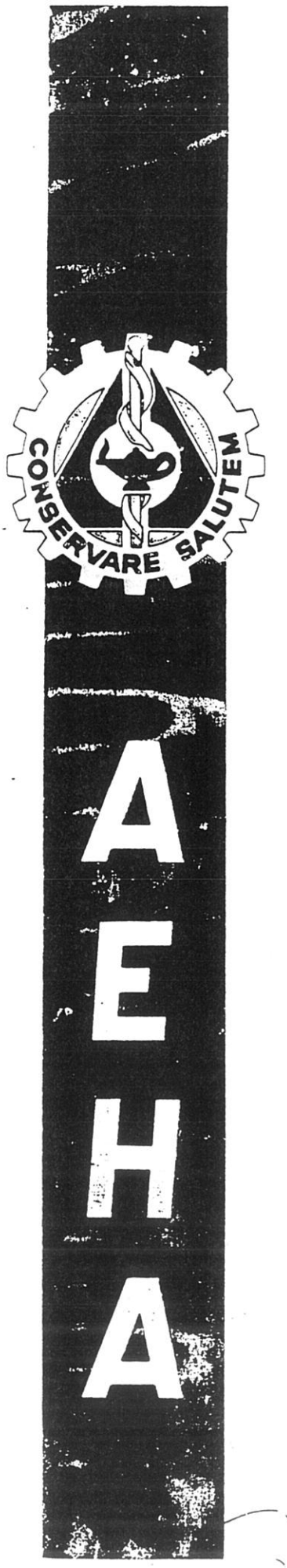
	Sample Lab Sample ID 9702500-05A Dil Fact. 1	Duplicate Lab Sample ID 9702500-05A Dil Fact. 1	RPD	
Analyte	Measured Conc. %	Measured Conc. %	Result	Specification Limit %
Percent moisture	13.7	13.9	1.8	20

Method Percent Moisture SW846 Specification# MSRS-D

Lab Sample ID / File ID	Project Sample ID/Description	Analyte	Flag	Comment/Narrative	Corrective Action


PAVEMENT
Gravel PAD
SLIDING DOORS
SAMPLE #1
SAMPLE #2
SAMPLE #3
SAMPLE #4
SAMPLE #5
SURFACE DRAINAGE
BLDG 701

APPENDIX III



UNITED STATES ARMY ENVIRONMENTAL HYGIENE AGENCY

ABERDEEN PROVING GROUND, MD 21010-5422

FINAL REPORT
GROUND-WATER CONTAMINATION SURVEY
NO. 38-26-0851-89
EVALUATION OF SOLID WASTE MANAGEMENT UNITS
LONGHORN ARMY AMMUNITION PLANT, MARSHALL, TEXAS
18-22 MAY 1987

DEPARTMENT OF THE ARMY
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY
ABERDEEN PROVING GROUND, MARYLAND 21010-5422

REPLY TO ATTENTION OF

HSHB-ME-SG

FINAL REPORT
GROUND-WATER CONTAMINATION SURVEY
NO. 38-26-0851-89
EVALUATION OF SOLID WASTE MANAGEMENT UNITS
LONGHORN ARMY AMMUNITION PLANT, MARSHALL, TEXAS
18-22 MAY 1987

1. AUTHORITY. Letter, AMC, AMCEN-A, 13 November 1986, subject: Request for Technical Support, Evaluation of Solid Waste Management Units at U.S. Army Material Command (AMC) Installations.

2. PURPOSE. The purpose of this survey was to identify, describe, and evaluate all solid waste management units (SWMU's) as part of a pending Resource Conservation and Recovery Act Part B permit application under Section 3004(u) of the Hazardous and Solid Waste Amendments of 1984, and to delineate those units requiring further sampling, investigation, or corrective action.

3. GENERAL.

a. Personnel Contacted.

(1) Mr. Don E. Maley, Chief Engineer, Longhorn Army Ammunition Plant (LHAAP).

(2) Mr. A. Bruce Childress, Jr., Environmental Coordinator, Morton Thiokol, Inc., Longhorn Division, Marshall, TX.

b. Background. Under the Resource Conservation and Recovery Act, Hazardous and Solid Waste Amendments of 1984, Part B permits issued after 8 November 1984 shall require identification and corrective action at any SWMU located on the installation which is releasing hazardous constituents or hazardous wastes to the environment. This requirement applies to all SWMU's regardless of when the waste was placed in the SWMU (reference 8a).

4. FINDINGS AND DISCUSSION.

a. Geohydrology.

(1) The LHAAP is underlain by the early Tertiary age Wilcox Group and some younger alluvium and terrace deposits. The Wilcox group consists predominantly of fluvial-deltaic sand and mud. Structurally, LHAAP lies on the north side of a structural high called the Sabine Uplift (Figure 1). Strata dip gently to the north-northwest into an extension of the East Texas Basin or Embayment, which wraps around the Sabine Uplift on the north to join the North Louisiana Basin further east.

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MAP LOCATION/SITE NUMBER: LHAAP-33 (see Figure A-27).

a. SWMU Name: Bldg-701.

b. Unit Characteristics.

(1) Type of Unit: Building.

(2) Design Features: Wooden frame building with shingles and concrete floor, approximately 25 x 110 feet. Only the north half of the building was used for storage.

(3) Operating Practices: PCB-contaminated material from the cleanup of transformer spills was stored in 30 and 55-gallon drums. The building was currently being used by security to shred classified documents.

(4) Period of Operation: 1980 until 1984.

c. Waste Characteristics.

(1) Type of Wastes Placed in the Site: PCB-contaminated solid material (mostly soil) from spill cleanup.

(2) Migration and Dispersal Characteristics of the Waste: None, due to containerization of waste.

d. Migration Pathways: None.

e. Evidence of Release: None.

f. Exposure Potential: None.