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ANALYTICAL RESULTS REPORT
EMPIRE STATE OIL REFINERY

TDD R8-8509-23
CASE #4242

EPA REMEDIAL SITE PROJECT OFFICER: MARTHA ROSENBERG
E&E PROJECT OFFICER: ROBERT EDDY
REVIEWED BY: Karl Ford

SUBMITTED TO: KEITH SCHWAB, FIT-DPO
WILLIAM GEISE, REM-FIT COORDINATOR

DATE SUBMITTED: MAY 6, 1986

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ANALYTICAL RESULTS REPORT
EMPIRE STATE OIL REFINERY
TDD R8-8509-23
CASE #4242

I. INTRODUCTION

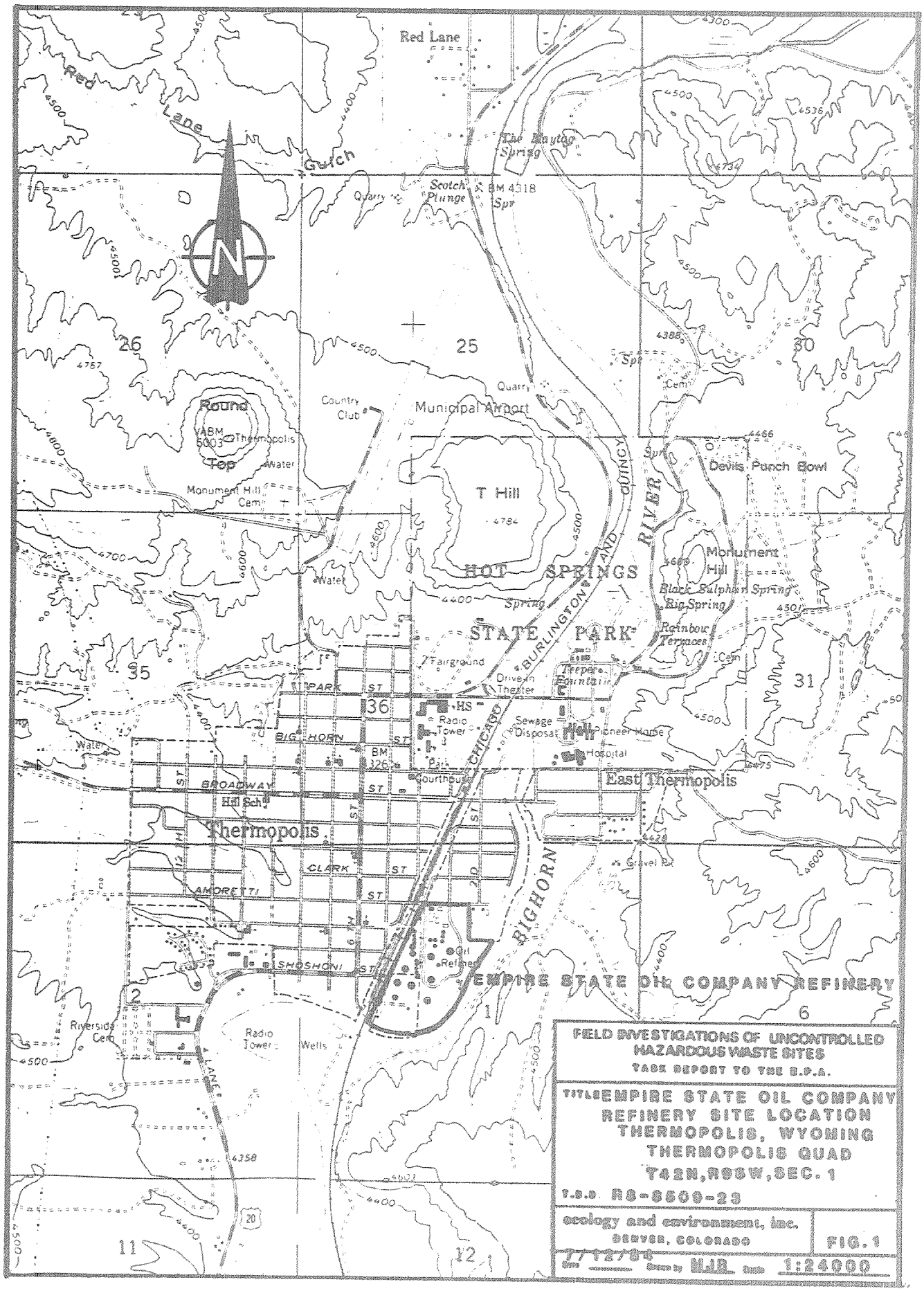
This report was prepared to satisfy the requirements of Technical Directive Document (TDD) R8-8509-23, issued to Ecology and Environment, Inc., Field Investigation Team (E&E FIT) by the Region VIII Environmental Protection Agency (EPA)

The samples discussed in this report were collected by the FIT on April 21, 1985, from Empire State Oil Company, Thermopolis, Wyoming (Figure 1). Two previous reports, the report of sampling activities and the Sampling Plan (R8-8503-20), present discussions regarding project objectives, sample documentation and field observations.

The objective of this investigation was to determine the existence of contamination resulting from activities at the Empire State Oil Company Refinery and the extent of contaminant migration toward the Big Horn River. The FIT also collected data which may be used for the completion of a site inspection (SI).

The Empire State Oil Company Refinery is located at the southeast edge of Thermopolis in central Wyoming. The legal description of the center of the site is NE 1/4, SW 1/4, NW 1/4 of Section 1, T. 42S, R.95W. The site is bounded on the east and south by the Big Horn River, on the west by a railroad spur, and on the north by Amoretti Street.

The refinery was operated by Empire State Oil Company from 1938 until its shutdown in 1969. In August of 1972, Ashland Oil Company acquired all domestic assets of Empire State Oil Company including their refinery installation in Thermopolis, Wyoming. Ashland Oil Company then deeded the property in September of 1972 to the Gottsche



FIELD INVESTIGATIONS OF UNCONTROLLED HAZARDOUS WASTE SITES

TASK REPORT TO THE E.P.A.

TITLE: EMPIRE STATE OIL COMPANY REFINERY SITE LOCATION THERMOPOLIS, WYOMING THERMOPOLIS QUAD T42N, R98W, SEC. 1

T.D.# R8-8509-23

ecology and environment, inc.
DENVER, COLORADO

FIG. 1

Date 11/12/84 Drawn by MJR Scale 1:24000

Foundation, which runs a rehabilitation center in Thermopolis. Mr. John Herrin, former president of Empire State Oil Company, stated that the capacity of the refinery was 7,000 barrels per day. Asphalt, fuel oil, diesel fuel, and distillate were produced, but no gasoline was produced because the crude oil that was utilized was too heavy. The facility had an API separator and several pits and ponds that can be seen on a Wyoming Highway Department aerial photograph. A large pond containing water used for fire protection and boiler water remains at the site.

All of the tanks were removed in 1974 by Ashland Oil Company and the site was leveled. Old refinery buildings remain on the north edge of the site, but otherwise the land is covered with vegetation and a few scattered piles of building materials.

II. QUALITY ASSURANCE

Three surface water samples were collected: an upstream, background sample (ES-SW-1), a downstream sample (ES-SW-2), and a sample from the pond (ES-SW-3). Three sediment samples (ES-SE-1, ES-SE-2, and ES-SE-3) were collected from locations corresponding to the surface water samples. Four soil samples were taken: a background sample (ES-SO-1) and three additional samples (ES-SO-2, ES-SO-3 and ES-SO-4) from various on-site locations shown in Figure 2). A field blank water sample (ES-BL-1) was prepared. A field duplicate (ES-SW-30) was taken from the same location as ES-SW-3.

All water, sediment and soil samples collected at Empire State Oil Company were analyzed for Hazardous Substance List (HSL) volatile organics, base/neutral/acids(B/N/A) extractable organics and Task 1 and 2 metals. One sample (ES-SO-4) was designated as medium hazard and was hand-delivered to Rocky Mountain Analytical Laboratory in Denver, Colorado. The remaining samples were shipped to ChemTech for inorganic analyses, and to Environmental Control Technology Corporation for organic analyses.

The organic data package was examined for quality assurance by an E&E FIT data reviewer. The findings are as follows:

1. Holding times were exceeded for samples ES-SW-2 and ES-BL-1 because samples had to be reanalyzed.

2. Several non-SPCC's and CCC's were not within contracts limits for calibration.

3. Methylene chloride, acetone, and 2-butanone were found in the field blank. Qualifications were made on the organic analyses based on these blank observations.

4. Some of the advisory limits on the matrix spike and matrix spike duplicate were exceeded.

The organic data was judged as acceptable for use with the noted qualifications.

The inorganic data package was examined for quality assurance by an E&E FIT reviewer. The data were judged acceptable for use with the qualifications noted below:

1. Many spike recovery requirements were not met. As a result, the data for some elements are flagged with an "r".

2. Low soil results for chromium are flagged with an "*" because of poor duplicate reproducibility.

3. Iron was detected in the blank and some of the samples at similar levels.

The following compounds were analyzed for, but the results are not usable because of poor quality control: vinyl acetate, 2-chloroethylvinylether, benzidine, 2-nitroaniline, benzidine and 3,3'-dichlorobenzidine. In the soil and sediment samples, the data

for antimony, beryllium, chromium, copper, lead, nickel, silver, thallium, and tin were not usable. In the surface water samples, iron mercury, silver, thallium and tin data were not usable.

A number of compounds were detected in the associated laboratory blanks. Where appropriate, these samples were qualified with a "b". A wide variation in the blind duplicate was noted for some organic compounds (acetone and 2-butanone) and metals (aluminum and calcium). The majority of the analyses were in close agreement, however.

III. ANALYTICAL RESULTS

Analytical results for the 1985 sampling effort at Empire State Refinery have been compiled in Tables 1, 2, 3 and 4. Corresponding sample locations are illustrated in Figure 2. Only those organic contaminants detected and only usable data are shown in the tables.

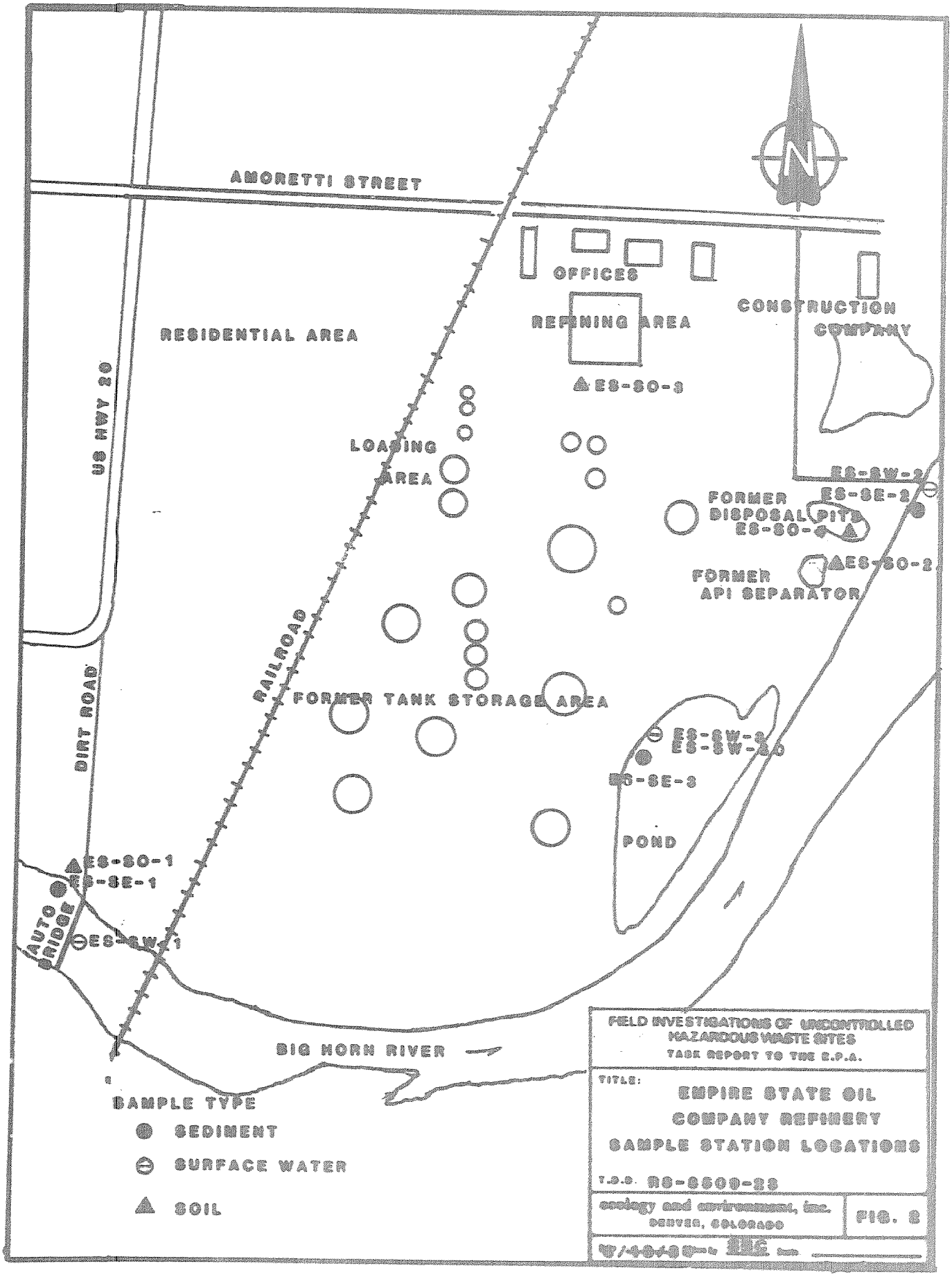
A review of the analytical data allows the following observations and conclusions.

A. SURFACE WATER AND SEDIMENTS

The finding of acetone, methylene chloride and 2-butanone in the surface water and sediment samples is associated with the finding of similar levels in the field decontamination blank and are, therefore, not considered to be associated with site contamination.

Two surface water and two sediment samples were taken from the Big Horn River. A comparison of the downgradient samples, ES-SW-2 and ES-SE-2, with the background samples, ES-SW-1 and ES-SE-1, suggests a release of toluene into the river. The toluene concentration rises from below detection to 57 ug/l in the surface water.

Sediment and surface water samples, ES-SE-3 and ES-SW-3, were collected from the pond shown in Figure 2. A comparison of the pond sediment sample with the background sediment sample (ES-SE-1)


AMORETTI STREET
N
OFFICES
CONSTRUCTION COMPANY
REFINING AREA
RESIDENTIAL AREA
US HWY 20
ES-SO-3
LOADING AREA
ES-SW-2
ES-SE-2
FORMER DISPOSAL PITS
ES-SO-4
ES-SO-2
FORMER API SEPARATOR
RAILROAD
FORMER TANK STORAGE AREA
DIRT ROAD
ES-SW-3
ES-SW-4
ES-SE-3
POND
ES-SO-1
ES-SE-1
AUTO BRIDGE
ES-SW-1
BIG HORN RIVER
SAMPLE TYPE
SEDIMENT
SURFACE WATER
SOIL
FIELD INVESTIGATIONS OF UNCONTROLLED HAZARDOUS WASTE SITES
TASK REPORT TO THE E.P.A.
TITLE:
EMPIRE STATE OIL COMPANY REFINERY
SAMPLE STATION LOCATIONS
T.O.O. R8-8509-28
ecology and environment, inc.
DENVER, COLORADO
FIG. 8

indicates the onsite presence of mercury. The mercury concentration in the pond is 1.7 mg/kg, as compared to below detection in the background sample. There also appears to be a slight release of aluminum and manganese into the pond.

Several tentatively identified compounds, many of which are hydrocarbons, were detected in the sediment samples. A more complete listing is found in Appendix A.

B. SOIL

Soil samples were collected from a background location (ES-SO-1), the former API separator (ES-SO-2), the refinery area (ES-SO-3), and the former disposal pit (ES-SO-4). The sample ES-SO-2 contained mercury at 0.5 mg/kg. Background soil concentrations in the western U.S. have a geometric mean of 0.05 mg/kg and normal range or 0.02 - 0.11 mg/kg (Schacklette, 1984 U.S.G.S. Prof Paper #1270). Toluene was also detected in the sample ES-SO-4 at concentrations far above expected, which may indicate actual presence of high concentrations in the soil.

IV. DISCUSSION

Thermopolis and the surrounding communities (population approximately 5,000) utilize surface water from the Big Horn River at the southwestern end of the Refinery. This source is augmented by ground water from a well field approximately 1,600 feet west-southwest of the Refinery during the summer equal to 50% of total usage.

The source of the municipal ground water supply is the Quaternary alluvial aquifer. As described by Berry and Littleton (1961) and Libra et al (1981), the hydrologic characteristics of this aquifer are:

Specific Capacity	0.3 - 70 gpm/ft
Permeability	2,200 - 4,400 gpd/ft^2
Transmissivity	200 - 80,000 gpd/ft

Recharge occurs primarily from direct penetration of precipitation,

and seepage from irrigation canals, surface streams and depressions. Discharge occurs mainly by evapotranspiration, stream gains and discharge from wells seeps and springs. Recharge of the aquifer occurs primarily from the river during the spring months and the process is reversed during the fall.

No data were available on aquifer storage coefficients and well drawdowns. The piezometric surfaces were at approximately 8 feet and the average depth of wells at 30 feet.

V. CONCLUSIONS

The above analytical results indicate a possible release of toluene into the Big Horn River from Empire State Oil Refinery. Mercury concentrations from the API separator soil sample were also elevated. However, the mercury results for water were of such poor quality that no conclusion could be reached from those data.

The FIT recommends a resampling of this site for the following reasons:

a. More data are needed for a better assessment of ground water contaminant release.

b. Approximately 1,600' to the south of ES-SO-4 is an active well field used to supply the community of Thermopolis and surrounding area (approximately 5,000 residents).

c. More completely assess the extent of the surface water release to the Big Horn River.

REFERENCES

Berry, D. W. and Littleton, R.T., Geology and Ground Water Resources of the Owl Creek Area, Hot Springs County, Wyoming, U.S.G.S. Water Supply Paper 1519, 1961.

Libra, R. et al, Occurrence and Characteristics of Ground Water in the Bighorn Basin, Wyoming. Water Resources Research Institute, University of Wyoming, June 1981.

TABLE 1

ORGANIC ANALYTICAL RESULTS, WATER SAMPLES (ug/l)
EMPIRE STATE OIL REFINERY, THERMOPOLIS, WYOMING
CASE #4242

	H1838	H1839	H1840	H1841	H1842
	ES-SW-1	ES-SW-2	ES-SW-3	ES-SW-30	ES-BL-1
Methylene Chloride	1600j	300j	12j	6j	22j
Acetone	82j	38j	140j		1400j
2-Butanone	14j	420j	200j		22j
Bis(2-ethylhexyl)phthalate	7j	2j	5j	5j	4j
Toluene		57	7		
Di-N-Butylphthalate			3		4

j - The associated numerical value is an estimated quantity because the amount detected is below the required limits or because quality control criteria were not met.

TABLE 2

ORGANIC ANALYTICAL RESULTS, SOILS ND SEDIMENTS (ug/kg)
EMPIRE STATE OIL REFINERY, THERMOPOLIS, WYOMING
CASE #4242

	H1843	H1845	H1849	H1844	H1846	H1847	
	ES-SE-1	ES-SE-2	ES-SE-3	ES-SO-1	ES-SO-2	ES-SO-3	ES-SO-4
Methylene Chloride	15j	40j	72j	15j	15j	10j	2500b
Acetone	22j	33j	37j	3j		3j	29000b
2-Butanone	6j	5j					
Di-N-Butylphthalate	700ub	660ub		540ub		450ub	
Bis (2-ethylhexyl) phthalate	1,100j	840j		290j		380j	
Toluene			3jb		37b	7ub	1500b

b - Compound was detected in the blank. Quantity reported is 5 X the amount found in the blank (10 for methylene chloride, acetone, toluene, nd phthalates).

ub - Estimated sample quantitation limit increased. Amount found in sample reported. Compound detected at 5 X the amount in blank (10 X for methylene chloride, acetone, toluene and phthalates).

j - The associated numerical value is an estimated quantity because the amount detected is below the required limits or because quality control criteria were not met.

jb - The value is an estimated amount detected below required limits and also detected in the blank.

TABLE 3

INORGANIC ANALYTICAL RESULTS, WATER SAMPLES (ug/l)
EMPIRE STATE OIL REFINERY, THERMOPOLIS, WYOMING
CASE #4242

	MBH243	MBH249	MBH244	MBH245	MBH246
	ES-SW-1	ES-SW-2	ES-SW-3	ES-SW-30	ES-BL-1
Aluminum	[147]	50u	1763	50u	50u
Antimony	50u	50u	50u	50u	50u
Arsenic	10u	10u	10u	10u	10u
Barium	50u	50u	50u	50u	50u
Beryllium	5u	5u	5u	5u	5u
Cadmium	5u	5u	5u	5u	5u
Calcium	61,580	50,890	71,040	46,290	[878]
Chromium	10u	10u	10u	10u	10u
Cobalt	20u	20u	20u	20u	20u
Copper	[23]	20u	[21]	20u	20u
Iron	[82]	20u	2,519	[83]p	[86]r
Lead	5u	5u	5u	5u	5u
Magnesium	20,150	17,260	87,900	86,870	150u
Manganese	15u	15u	247	147	15u
Mercury	0.2ur	0.2u	0.2u	0.2ur	0.2u
Nickel	[21]	20u	20u	20u	20u
Potassium	[2180]	[1762]	9297	8590	1000u
Selenium	5u	5u	5u	5u	5u
Silver	10u	10ur	10ur	10ur	10ur
Sodium	60,230	50,090	297,300	299,200	[1997]
Thallium	10u	10ur	10utr	10ufr	10ur
Tin	30u	30ur	300ur	300ur	30ur
Vanadium	20u	20u	20u	20u	20u
Zinc	32	[19]	28	41	20u
Cyanide	N/R	N/R	N/R	N/R	N/R

u - Material was analyzed for, but not detected. Value is the estimated sample quantitation limit.

[]- Value is below required reporting value.

R - Spike recovery did not meet required recovery limits.

TABLE 4
INORGANIC ANALYTICAL RESULTS, SOILS AND SEDIMENTS (mg/kg)
EMPIRE STATE OIL REFINERY, THERMOPOLIS, WYOMING
CASE #4242

	MHB247 ES-SE-1	MHB248 ES-SE-2	MHB253 ES-SE-3	MHB242 ES-SO-1	MHB250 ES-SO-2	MHB251 ES-SO-3
Aluminum	11226	7385	6192	18646	8255	12031
Antimony	40ur	32ur	47ur	29ur	32ur	25ur
Arsenic	8.0us	6.4u	9.4u	58	9.5	9.6
Barium	201	165	666	340	219	252
Beryllium	4.0ur	3.2ur	4.7ur	2.9ur	3.2ur	2.5ur
Cadmium	4.0u	4.3	4.7u	2.9u	3.2u	2.5u
Calcium	57580	47270	248214	52970	29594	40861
Chromium	29r*	14r*	14r*	39r*	26r*	31r*
Cobalt	16u	13u	19u	12u	13u	10u
Copper	16ur	13ur	19u	32r	13ur	14r
Iron	14503	10371	10226	24131	12957	15912
Lead	17r	5.9sr	128r	29r	3.2ur	16r
Magnesium	15970	11714	9492	17625	8141	13045
Manganese	370	353	1284	596	308	422
Mercury	0.16u	0.13u	1.7	0.12u	0.51	0.10u
Nickel	[19]r	13u	19ur	31r	[16]r	24r
Potassium	[2314]	[1395]	[1252]	5130	[1409]	[2048]
Selenium	4.0u	3.2u	4.7u	2.9u	3.2u	2.5u
Silver	8.6	6.4ur	9.4ur	5.8ur	6.3ur	5.1ur
Sodium	[941]	[1189]	[1902]	[996]	761u	[976]
Thallium	8.0ur	6.4ur	9.4ur	5.8ur	6.3ur	5.1ur
Tin	24ur	19ur	28ur	18ur	19ur	15ur
Vanadium	[29]	[22]	[24]	43	[29]	33
Zinc	37	18	23	119	19	32

u - Material was analyzed for, but not detected. Value is the estimated sample quantitation limit.

[] - Value is below required reporting limit

r - Spike recovery did not meet required recovery limits.

* - Duplicate results exceed R.P.D. limit.

APPENDIX A

QUALITY ASSURANCE REPORTS

REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW

Case No. 4242 Project No. _____

Site Empire Refinery

Contractor Laboratory Chemtech

Data Reviewer dM Roberts Date of Review 7/8/85

Sample Matrix 5 water + 6 soil Metals Analysis

Sample No.			
MHB 242	MHB 247	MHB 253	
243	248		
244	249		
245	250		
246	251		

( ) Data are acceptable for use

(✓) Data are acceptable for use with qualification noted ~~above~~ below

( ) Data are preliminary - pending action or verification

( ) Data are unacceptable

Action required by DPO?

No ✓ Yes ____ Following items require action _____

Action required by Project Officer (PO)?

No ✓ Yes ____

Form A

Inorganic Data Completeness Checklist

✓ Inorganic analysis data sheets

✓ Instrument Detection limits

✓ Duplicate results

✓ Spike results

✓ ICP interference check sample

✓ Blank results

✓ Raw data for calibration standards

✓ Raw data for blanks

✓ Raw data for samples

✓ Raw data for duplicates

✓ Raw data for spikes

✓ Initial calibration and calibration verification results

✓ Continuing calibration verification

✓ Trobbic Reports

Form B

All inorganic standards were within specified contract limits.

Yes ✓ No ____

Comments:

All inorganic detection limits met the contract requirements.

Yes ✓ No ____

Comments:

All matrix spike requirements were met.

Yes ____ No ✓

Comments:

Low Water:

Iron	14%
Mercury	20%
Silver	0%
Thallium	50%
Tin	0%

Low Soil:

Antimony	57%
Beryllium	126%
Chromium	127%
Copper	128%
Lead	264%
Nickel	127%
Silver	24%
Thallium	148%
Tin	280%

The interference check sample was run twice per eight hour shift. No massive interferences were present.

Yes ✓ No ____

Comments:

Form C

A blank was run with every twenty samples or less per case.

Yes ✓ No ____

How many elements were detected above the required detection limit? 0

How many elements were detected at greater than one half the amount detected in any sample?: 1

Comments: Iron detected in calibration and preparation blank at ~60 µg/l. Iron was detected in some low water samples at ~80 µg/l.

A duplicate sample was run with every twenty or fewer samples of a similar matrix, or one per case, whichever is more frequent.

Yes ✓ No ____

The RPD's were tabulated.

Yes ✓ No ____

Comments:

Low Soil: Chromium 48% RPD

All holding times were met.

Yes ✓ No ____

Comments:

Form D

Initial calibration data were reviewed. Initial calibration data were included in the package and met all contract requirements.

Yes ✓ No _____

Comments:

Continuing calibration data were reviewed and this data met all contract requirements.

Yes ✓ No _____

Comments:

Following are our findings:

Many spike recovery requirements were not met. As a result the results for some elements are flagged with an "R". Low soil results for chromium are flagged with an "+" because of poor duplicate reproducibility. It is noted on form C that iron was detected in the blanks and some of the samples at similar levels.

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHB 243

Date 5-30-85

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. G2-473-01 QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ✓ Soil ____ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	[147] P.	13.	Magnesium	20150 P.
2.	Antimony	50 UP.	14.	Manganese	15 UP.
3.	Arsenic	10 ~~UP~~ UF	15.	Mercury	0.2 U R
4.	Barium	50 UP.	16.	Nickel	[21] P.
5.	Beryllium	5 UP.	17.	Potassium	[2180] P.
6.	Cadmium	5 UP.	18.	Selenium	5 UF.
7.	Calcium	61580 P.	19.	Silver	10 UP. R
8.	Chromium	10 UP.	20.	Sodium	60230 P.
9.	Cobalt	20 UP.	21.	Thallium	10 UF. R
10.	Copper	[23] P.	22.	Tin	30 UF. R
11.	Iron	[82] P. R	23.	Vanadium	20 UP.
12.	Lead	5 UF.	24.	Zinc	32 P.

Cyanide NR Percent Solids (%)

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager L. Hedvat

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MMB 244

Date 5-30-85

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. G2-473-02 QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ✓ Soil ____ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	1763 P.	13.	Magnesium	87900 P.
2.	Antimony	50 UP.	14.	Manganese	247 P.
3.	Arsenic	10 UP. UF.	15.	Mercury	0.2 U R
4.	Barium	50 UP.	16.	Nickel	20 UP.
5.	Beryllium	5 UP.	17.	Potassium	9297 P.
6.	Cadmium	5 UP.	18.	Selenium	5 UF.
7.	Calcium	71040 P.	19.	Silver	10 UP. R
8.	Chromium	10 UP.	20.	Sodium	297300 P.
9.	Cobalt	20 UP.	21.	Thallium	10 UF. R
10.	Copper	[21] P.	22.	Tin	300 UF. R
11.	Iron	2519 P. R	23.	Vanadium	20 UP.
12.	Lead	5 UF.	24.	Zinc	28 P.

Cyanide NR Percent Solids (%)

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager [signature]

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MMB 245

Date 5-20-85

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. G2-473-03 QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ✓ Soil ____ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	50 UP.	13.	Magnesium	86870 P.
2.	Antimony	50 UP.	14.	Manganese	147 P.
3.	Arsenic	10 UP. UF	15.	Mercury	0.2 U R
4.	Barium	50 UP.	16.	Nickel	20 UP.
5.	Beryllium	5 UP.	17.	Potassium	8590 P.
6.	Cadmium	5 UP.	18.	Selenium	5 UF.
7.	Calcium	46290 P.	19.	Silver	10 UP. R
8.	Chromium	10 UP.	20.	Sodium	299200 P.
9.	Cobalt	20 UP.	21.	Thallium	10 UF. R
10.	Copper	20 UP.	22.	Tin	300 UF. R
11.	Iron	[83] P. R	23.	Vanadium	20 UP.
12.	Lead	5 UF.	24.	Zinc	41 P.

Cyanide NR Percent Solids (%)

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager C. Hedvat

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHB 246

Date 5-30-85

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. G2-473-04 QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ✓ Soil ____ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	50 UP.	13.	Magnesium	150 UP.
2.	Antimony	50 UP.	14.	Manganese	15 UP.
3.	Arsenic	10 ~~UP.~~ UF	15.	Mercury	0.2 U R
4.	Barium	50 UP.	16.	Nickel	20 UP.
5.	Beryllium	5 UP.	17.	Potassium	1000 UP.
6.	Cadmium	5 UP.	18.	Selenium	5 UF.
7.	Calcium	[878] P.	19.	Silver	10 UP. R
8.	Chromium	10 UP.	20.	Sodium	[1997] P.
9.	Cobalt	20 UP.	21.	Thallium	10 UF. R
10.	Copper	20 UP.	22.	Tin	30 UF. R
11.	Iron	[86] P. R	23.	Vanadium	20 UP.
12.	Lead	5 UF.	24.	Zinc	20 UP.

Cyanide NR Percent Solids (%) ____

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: ____

Lab Manager [signature]

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MMB 249

Date 5-20-85

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP

CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. G2-473-05

QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ✓ Soil ____ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	50 UP.	13.	Magnesium	17260 P.
2.	Antimony	50 UP.	14.	Manganese	15 UP.
3.	Arsenic	10 UP. UF	15.	Mercury	0.2 U R
4.	Barium	50 UP.	16.	Nickel	20 UP.
5.	Beryllium	5 UP.	17.	Potassium	[1762] P.
6.	Cadmium	5 UP.	18.	Selenium	5 UF.
7.	Calcium	50890. P.	19.	Silver	10 UP. R
8.	Chromium	10 UP.	20.	Sodium	50090 P.
9.	Cobalt	20 UP.	21.	Thallium	10 UF. R
10.	Copper	20 UP.	22.	Tin	30 UF. R
11.	Iron	20 UP. R	23.	Vanadium	20 UP.
12.	Lead	5 UF.	24.	Zinc	[19] P.

Cyanide NR

Percent Solids (%)

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager [signature]

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHB 242

Date 5-30-85

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. 62-473-06 QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low / Medium ____

Matrix: Water ____ Soil / Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	18646 P	13.	Magnesium	17625 P
2.	Antimony	29 UP R	14.	Manganese	596 P
3.	Arsenic	58 UF	15.	Mercury	0.12 U
4.	Barium	340 P	16.	Nickel	31 P R
5.	Beryllium	2.9 UP R	17.	Potassium	5130 P
6.	Cadmium	2.9 UP	18.	Selenium	2.9 UF
7.	Calcium	52970 P	19.	Silver	5.8 UP R
8.	Chromium	39 P R*	20.	Sodium	[996] P
9.	Cobalt	12 UP	21.	Thallium	5.8 UF R
10.	Copper	32 P R	22.	Tin	18 UF R
11.	Iron	24131 P	23.	Vanadium	43 P
12.	Lead	29 F R	24.	Zinc	119 P

Cyanide ____ Percent Solids (%) 85.7

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: ____

Lab Manager E Hebert

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHB 247

Date 5-20-85

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. 62-473-07 QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low / Medium ____

Matrix: Water ____ Soil / Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	11226 P	13.	Magnesium	15970 P
2.	Antimony	40 UP R	14.	Manganese	370 P
3.	Arsenic	8.0 UFS	15.	Mercury	0.16 U
4.	Barium	201 P	16.	Nickel	[19] P R
5.	Beryllium	4.0 UP R	17.	Potassium	[2314] P
6.	Cadmium	4.0 UP	18.	Selenium	4.0 UF
7.	Calcium	57580 P	19.	Silver	8.6 P R
8.	Chromium	29 P R*	20.	Sodium	[941] P
9.	Cobalt	16 UP	21.	Thallium	8.0 UF R
10.	Copper	16 UP R	22.	Tin	24 UF R
11.	Iron	14503 P	23.	Vanadium	[29] P
12.	Lead	17 F R	24.	Zinc	37 P

Cyanide ____ Percent Solids (%) 62.4

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: ____

Lab Manager E Hedrick

Form I

[illegible] Laboratory Program
[illegible] Management Office
[illegible] Alexandria, VA 22313
[illegible] 6-557-2490

EPA [illegible]

Date

[illegible] DATA SHEET

[illegible] GROUP

CASE NO. [illegible]

SOW NO. 784

[illegible] 413-08

QC REPORT NO.

[illegible] and Measured

[illegible]tion: Low ✓ Medium ___

[illegible] Soil ✓ Sludge ___

[illegible] (Circle One)

[illegible]	[illegible]	13.	Magnesium
[illegible]	[illegible]	14.	Manganese
[illegible]	[illegible]	15.	Mercury
[illegible]	[illegible]	16.	Nickel
[illegible]	[illegible]	17.	Potassium
[illegible]	[illegible]	18.	Selenium
[illegible]	[illegible]	19.	Silver
[illegible]	[illegible]	20.	Sodium
[illegible]	[illegible]	21.	Thallium
[illegible]	[illegible]	22.	Tin
[illegible]	[illegible]	23.	Vanadium
[illegible]	[illegible]	24.	Zinc
[illegible]	[illegible]		[illegible] Solids (%)

[illegible] standard result [illegible] flags or [illegible] of such flags [illegible] however.

[illegible]

[illegible] Manager

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MMB 250

Date 5-30-95

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP

CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. 62-473-09

QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	8255 P	13.	Magnesium	8141 P
2.	Antimony	32 UP R	14.	Manganese	308 P
3.	Arsenic	9.5 F	15.	Mercury	0.51
4.	Barium	219 P	16.	Nickel	[16] P R
5.	Beryllium	3.2 UP R	17.	Potassium	[1409] P
6.	Cadmium	3.2 UP	18.	Selenium	3.2 UF
7.	Calcium	29594 P	19.	Silver	6.3 UP R
8.	Chromium	26 P R	20.	Sodium	761 UP
9.	Cobalt	13 UP	21.	Thallium	6.3 UF R
10.	Copper	13 UP R	22.	Tin	19 UF R
11.	Iron	12957 P	23.	Vanadium	[29] P
12.	Lead	3.2 UFS R	24.	Zinc	19 P
Cyanide			Percent Solids (%)		78.8

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager [signature]

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHB 251

Date 5-30-85

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. G2-473-10 QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	12031 P	13.	Magnesium	13045 P
2.	Antimony	25 UP R	14.	Manganese	422 P
3.	Arsenic	9.6 F	15.	Mercury	0.10 U
4.	Barium	252 P	16.	Nickel	24 P R
5.	Beryllium	2.5 UP R	17.	Potassium	[2048] P
6.	Cadmium	2.5 UP	18.	Selenium	2.5 UF
7.	Calcium	40861 P	19.	Silver	5.1 UP R
8.	Chromium	31 P R*	20.	Sodium	[976] P
9.	Cobalt	10 UP	21.	Thallium	5.1 UF R
10.	Copper	14 P R	22.	Tin	15 UF R
11.	Iron	15912 P	23.	Vanadium	33 P
12.	Lead	16 F R	24.	Zinc	32 P

Cyanide ____ Percent Solids (%) 98.7

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: ____

Lab Manager [signature]

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MHB 253

Date 5-30-85

INORGANIC ANALYSIS DATA SHEET

LAB NAME CHEMTECH CONSULTING GROUP CASE NO. 4242

SOW NO. 784

LAB SAMPLE ID. NO. G2-473-11 QC REPORT NO. 473

Elements Identified and Measured

Concentration: Low / Medium ____

Matrix: Water ____ Soil / Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	6192 P	13.	Magnesium	9492 P
2.	Antimony	47 UP R	14.	Manganese	1284 P
3.	Arsenic	9.4 UF	15.	Mercury	1.7
4.	Barium	666 P	16.	Nickel	19 UP R
5.	Beryllium	4.7 UP R	17.	Potassium	[1252] P
6.	Cadmium	4.7 UP	18.	Selenium	4.7 UF
7.	Calcium	248214 P	19.	Silver	9.4 UP R
8.	Chromium	14 P R *	20.	Sodium	[1902] P
9.	Cobalt	19 UP	21.	Thallium	9.4 UF R
10.	Copper	19 UP R	22.	Tin	28 UF R
11.	Iron	10226 P	23.	Vanadium	[24] P
12.	Lead	128 F R	24.	Zinc	23 P

Cyanide ____ Percent Solids (%) 53.2

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: ____

Lab Manager E Hetrick

REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW

Case No. No Case Number.* Project No. R8-8602-11

Site Empire Oil Refinery

Contractor Laboratory Rocky Mountain Analytical

Data Reviewer Randy Geaves Date of Review 2/25/85

Sample Matrix 1 Soil - oily sample

Sample No.

ES-SO-4 Refining Area.

(✓) Data are acceptable for use

( ) Data are acceptable for use with qualification noted above

( ) Data are preliminary - pending action or verification

( ) Data are unacceptable

Action required by DPO?

No ✓ Yes ____ Following items require action ____

Action required by Project Officer (PO)?

No ✓ Yes ____

* This was not a regular analytical service, and did not involve a laboratory request by SMO.

Following are our findings:

One sample from Empire Oil Refinery and two samples from Ellerbys Oil Refinery were analyzed together. The QA/QC was the same for all three of these samples and, therefore, the data quality assurance review forms will be identical for both the Ellerbys & Empire review. This was an SAS laboratory request for Oily waste. VOA & BNA compounds were analyzed for, but pesticides / PCB's were not analyzed. The laboratory did perform all of the specified requirements of the SAS request and the overall quality of the data produced was good. The % difference between the initial and continuing calibration was out of control for several of the HSL compounds but since none of these compounds were observed in the samples, the effect is probably negligeable. The Oily matrix was effectively removed from the samples by the extraction procedure and the quality control was such that results should be reliable.

DFTPP and BFP Performance Results

The DFTPP performance results were all included and found to be within the specified criteria.

Yes ✓ No _____

Comments:

The BFB performance results were all included and found to be within the specified criteria.

Yes ✓ No _____

Comments:

The (DFTPP/BFB) performance result(s) was/were reviewed and the following abundance were found to fall outside the specified criteria:

Date	Compound	m/z	Required Abundance	Actual Abundance

All values were within Contract limits.

All samples were extracted and analyzed within contract holding times

Yes ✓ No _____

Comments: All extraction and analysis times were within contract required holding times.

Surrogate recoveries were reviewed. The recoveries were all within the contract limits.

Yes ✓ No. ____

Comments:

Surrogate recoveries were determined for the VOA, B/N fraction, and the acid fraction. All compounds were within the contract required limits for these fractions.

The matrix spike recovery data were reviewed. The Matrix spikes were performed and all data met contract requirements.

Yes ✓ No ____

Comments:

A matrix spike was performed, and the recovery of chlorobenzene were outside of the normal / usual limits. chlorobenzene; 172% Recovery, with limits of 60-133%. Other VOA spike recoveries were ok.

Duplicate Sample Analysis : BNA duplicate analysis was performed on this one sample but no HSL compounds were observed in either analysis. VOA duplicate analysis showed similar compounds at approximately the same concentrations, but all of the compounds observed were also in the blank analysis.

Initial calibration data were reviewed. Initial calibration data were included in the package and met all contract requirements.

Yes _____ No ✓

Comments: The initial calibration data was not included in the raw data package, but the results from the initial calibration were included on the summary sheets so that the values were available.

Continuing calibration data were reviewed and this data met all contract requirements.

Yes _____ No ✓

Comments: Several of the continuing calibration HSL compounds were outside of the contract limits. These compounds are listed on the enclosed sheets.

PESTICIDES

The laboratory met the pesticide linearity check criteria.
Yes _____ No _____

Comments:

N.A.

The % breakdown of 4,4DDT and of Endrin was less than 20%.
Yes _____ No _____

Comments:

N.A.

The dibutychlorendate retention time shift was within the specified limits.
Yes _____ No _____

Comments:

N.A.

The pesticide standard compounds showed a % D of the calibration factor of no more than 15% for the quantitation runs and 20% for the confirmation runs.
Yes _____ No _____

Comments:

N.A.

BLANK ANALYSIS RESULTS

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRDL)

	Sample	Date	Compound	Conc.	Samples Associated with this Blank
VOA		5/6	Methylene chloride.	630	µg/kg (All)
			Acetone	3900	
			2-Butanone	380	
			4-methyl-2-Pentanone	1900	
			Toluene	230	
			Xylene.	260	µg/kg (all samples)
BNA			All BNA Blank Compounds were T.I.C.'s,		
			Not HSL compounds.		
			— No pesticide analysis. —		

Remarks:

COMPOUNDS IDENTIFIED

Sample No. ES-SO-4 Soil Sample.

Hazardous Substances List (HSL) Compounds Detected:

	Compound Name	Amount (µg/kg)	Qualifier (if needed)	Comments
VOA	Methylene chloride	2500	B	compound found in Blank.
	Acetone	29,000	B	" "
	Toluene	1500	B	" "
BNA	— None Detected	—		
	— Pesticides	Not Analyzed.	—	

Tentatively Identified Compounds Detected: SEE ATTACHED PAGE #

— Mostly Hydrocarbons —

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
____ The spectra were examined and found to be of poor matching quality due to:

Remarks:

DATA QUALIFIER DEFINITIONS
Region 8

For the purposes of this data review document the following code letters and associated definitions are provided.

U - The material was analyzed for, but was not detected. The associated numerical value is the estimated sample quantitation limit.

J - The associated numerical value is an estimated quantity because the amount detected is below the required limits or because quality control criteria were not met.

UB - Estimated sample quantitation limit increased. Amount found in sample reported. Compound detected at <5 X the amount in blank (<10 X for methylene chloride, acetone, toluene and phthalates).

UJ - Detection limit is estimated because quality control criteria were not met.

JB - The value is an estimated amount detected below required limits and also detected in the blank.

B - Compound was detected in the blank. Quantity reported is >5 X the amount found in the blank (>10 X for methylene chloride, acetone, toluene, and phthalates).

R - Quality Control indicates that data is <u>not</u> usable (compound may or may not be present). Resampling and reanalysis is necessary for verification.

Z - No analytical result.

N - Presumptive evidence of presence of material (tentative identification).

DATA COMPLETENESS CHECKLIST

✓ Included; no problems
* Included; problems noted in review
O Not Included

✓ Case Narrative

✓ Quality Control Summary Package
- ✓ Surrogate Recovery Summary (Form II)
- ✓ MS/MSS Summary (Form III)
- ✓ Reagent Blank Summary (Form IV)
- ✓ GC/MS Tuning and Mass Calibration (Form V)

✓ Sample Data Package
- ✓ Holding Times (SMO Sample Traffice Reports)
- ✓ Organic Analysis Data Sheets (Form I; all four pages for each sample, arranged in increasing SMO number order)
- ✓ Reconsrtructed Ion Chromatogram(s) (RIC)
- O GC/EC Chromatograms
- ✓ Quantitation Reports
- ✓ Mass Spectral Data
- ✓ EPA/NIH Mass Spectral Library Search for TIC's

✓ Standards Data Package
- ✓ Current List of Laboratory/Instrumental Detection Limits
- Note → O Initial Calibration Data (Form VI) for each instrument
- ✓ Continuing Calibration Data (Form VII) for each instrument
- O Pesticide Evaluation Standards Summary (Form VIII)
- O Pesticide/PCB Standards Summary (Form IX)
- O Pesticide/PCB Identification (Form X; if any positive results)
- ✓ VOA and BNA Standards Reconstruction Ion Chromatograms (RIC)
- ✓ VOA and BNA Standards Quantitation Reports
- O Pesticide/PCB Standard Chromatograms and Data System Printouts

✓ Raw QC Data Package
- ✓ DFTPP and BFB mass spectra and mass listings
- ✓ Reagent Blank Data
  - ✓ Organic Analysis Data Sheets (Form I)
  - ✓ Reconstructed Ion Chromatograms (RIC)
  - ✓ Quantitation Reports
  - ✓ Mass Spectral Data
  - ✓ EPA/NIH Library Search of TIC's
  - O GC/EC Chromatograms and Data System Printouts
- ✓ Matrix Spike ONLY and Matrix Spike Duplicate ONLY Data
  - ✓ Organic Analysis Data Sheets (Form I)
  - ✓ Reconstructed Ion Chromatograms (RIC)
  - ✓ Quantitation Reports
  - ✓ Mass Spectral Data
  - ✓ EPA/NIH Library Search of TIC's
  - O GC/EC Chromatograms and Data System Printouts

SAMPLE DESCRIPTION INFORMATION

for

USEPA Region VIII

RMA Sample No.	Sample Description	Sample Type	Date Sampled	Date Received
4909-01	ES-SO-4 Refining area	Soil	4/21/85	4/29/85
4909-02	ER-SO-1 Oily soil area	Soil	4/20/85	4/29/85
4909-03	ER-SS-1 Pond sediment	Soil	4/20/85	4/29/85

May 29, 1985

ANALYTICAL RESULTS

for

USEPA Region VIII

REFINERY VOLATILE ORGANICS

Parameter	Units	Detection Limit	4909-01[a]	4909-02	4909-03
Acetonitrile	ug/kg	300	BDL	BDL	BDL
Acrolein	ug/kg	30	BDL	BDL	BDL
Acrylonitrile*	ug/kg	-	-	-	-
Benzene	ug/kg	5	BDL	BDL	BDL
Bis(chloromethyl)ether*	ug/kg	-	-	-	-
Carbon disulfide	ug/kg	5	BDL	BDL	BDL
Chlorobenzene	ug/kg	5	BDL	BDL	BDL
Chloroform	ug/kg	5	BDL	BDL	BDL
Chloromethane	ug/kg	10	BDL	BDL	BDL
Crotonaldehyde	ug/kg	200	BDL	BDL	BDL
1,2-Dibromoethane	ug/kg	20	BDL	BDL	BDL
1,1-Dichloroethane	ug/kg	5	BDL	BDL	BDL
1,2-Dichloroethane	ug/kg	5	BDL	BDL	BDL
1,1-Dichloroethylene	ug/kg	5	BDL	BDL	BDL
1,2-Dichloroethylene	ug/kg	5	BDL	BDL	BDL
Dichloromethane	ug/kg	10	BDL	BDL	61
Dichloropropane	ug/kg	-	NA	NA	NA
1,2-Dichloropropane	ug/kg	5	BDL	BDL	BDL
1,4-Dioxane	ug/kg	150	BDL	BDL	BDL
Ethyleneimine*	ug/kg	-	-	-	-
Ethylene oxide*	ug/kg	-	-	-	-
Methyl ethyl ketone	ug/kg	10	BDL	BDL	53
Styrene	ug/kg	5	BDL	BDL	BDL
Tetrachloroethanes	ug/kg	-	NA	NA	NA
1,1,2,2-Tetrachloroethane	ug/kg	5	BDL	BDL	BDL
Tetrachloroethylene	ug/kg	5	BDL	BDL	BDL
Toluene	ug/kg	5	2000	BDL	43

BDL = Below detection limit. NA = Not analyzed. *Not recovered using Method 8240, or no analytical standard available.
a = Detection limits 400 times higher.

ANALYTICAL RESULTS

for

USEPA Region VIII

REFINERY VOLATILE ORGANICS

Parameter	Units	Detection Limit	4909-01[a]	4909-02	4909-03
Trichloroethanes	ug/kg	-	NA	NA	NA
1,1,1-Trichloroethane	ug/kg	5	BDL	14	16
1,1,2-Trichloroethane	ug/kg	5	BDL	BDL	BDL
Trichloroethylene	ug/kg	5	BDL	BDL	BDL
Xylenes	ug/kg	-	NA	NA	NA
p-o-Xylene	ug/kg	5	BDL	BDL	BDL
m-Xylene	ug/kg	5	BDL	BDL	BDL

BDL = Below detection limit. NA = Not analyzed. *Not recovered using Method 8240, or no analytical standard available.
a = Detection limits 400 times higher.

ANALYTICAL RESULTS

for

USEPA Region VIII

REFINERY BASE/NEUTRAL ORGANICS

Parameter	Units	Detection Limit	4909-01	4909-02	4909-03
Aniline*	mg/kg	-	-	-	-
Anthracene	mg/kg	10	BDL	BDL	BDL
Benz(c)acridine*	mg/kg	-	-	-	-
Benz(a)anthracene	mg/kg	10	BDL	BDL	BDL
Benzo(b)fluoranthene	mg/kg	10	BDL	BDL	BDL
Benzo(j)fluoranthene*	mg/kg	-	-	-	-
Benzo(k)fluoranthene	mg/kg	10	BDL	BDL	BDL
Benzo(a)pyrene	mg/kg	10	BDL	BDL	BDL
Benzyl chloride*	mg/kg	-	-	-	-
Bis(2-ethylhexyl)phthalate	mg/kg	10	BDL	24	11
Butyl benzyl phthalate	mg/kg	5	BDL	BDL	BDL
2-Chloronaphthalene	mg/kg	5	BDL	BDL	BDL
Chrysene	mg/kg	10	BDL	BDL	BDL
Dibenz(a,h)acridine*	mg/kg	-	-	-	-
Dibenz(a,j)acridine	mg/kg	10	BDL	BDL	BDL
Dibenz(a,h)anthracene	mg/kg	10	BDL	BDL	BDL
Dibenzo(a,e)pyrene*	mg/kg	-	-	-	-
Dibenzo(a,h)pyrene*	mg/kg	-	-	-	-
Dibenzo(a,i)pyrene*	mg/kg	-	-	-	-
Di-n-butyl phthalate	mg/kg	5	BDL	BDL	BDL
Dichlorobenzenes	mg/kg	-	NA	NA	NA
o-Dichlorobenzene	mg/kg	5	BDL	BDL	BDL
m-Dichlorobenzene	mg/kg	5	BDL	BDL	BDL
p-Dichlorobenzene	mg/kg	5	BDL	BDL	BDL
Diethyl phthalate	mg/kg	50	BDL	BDL	BDL
7,12-Dimethylbenz(a)anthracene	mg/kg	5	BDL	BDL	BDL
Dimethyl phthalate	mg/kg	20	BDL	BDL	BDL
2,4-Dinitrotoluene	mg/kg	10	BDL	BDL	BDL
Di-n-octyl phthalate	mg/kg	5	BDL	BDL	BDL

BDL = Below detection limit. NA = Not analyzed. *Not recovered using Method 8270, or no analytical standard available.

ANALYTICAL RESULTS

for

USEPA Region VIII

REFINERY BASE/NEUTRAL ORGANICS (Cont.)

Parameter	Units	Detection Limit	4909-01	4909-02	4909-03
Fluoranthene	mg/kg	5	BDL	BDL	BDL
Indene	mg/kg	10	BDL	BDL	BDL
Indeno(1,2,3-c,d)pyrene	mg/kg	15	BDL	BDL	BDL
Methylbenz(c)phenanthrene	mg/kg	5	BDL	BDL	BDL
3-Methylcholanthrene	mg/kg	10	BDL	BDL	BDL
Methyl chrysene*	mg/kg	-	-	-	-
1-Methylnaphthalene	mg/kg	10	BDL	BDL	BDL
Naphthalene	mg/kg	5	BDL	BDL	BDL
Naphthylamine	mg/kg	-	NA	NA	NA
1-Naphthylamine	mg/kg	100	BDL	BDL	BDL
2-Naphthylamine	mg/kg	100	BDL	BDL	BDL
5-Nitroacenaphthene*	mg/kg	-	-	-	-
p-Nitroaniline	mg/kg	100	BDL	BDL	BDL
Nitrobenzene	mg/kg	10	BDL	BDL	BDL
Phenanthrene	mg/kg	5	BDL	BDL	BDL
Pyrene	mg/kg	10	BDL	BDL	BDL
Pyridine*	mg/kg	-	-	-	-
Quinoline	mg/kg	100	BDL	BDL	BDL
Trichlorobenzenes	mg/kg	-	NA	NA	NA
1,2,4-Trichlorobenzene	mg/kg	5	BDL	BDL	BDL
Trimethylbenz(a)anthracene*	mg/kg	-	-	-	-

BDL = Below detection limit. NA = Not analyzed. *Not recovered using Method 8270, or no analytical standard available.

ANALYTICAL RESULTS

for

USEPA Region VIII

REFINERY ACID ORGANICS

Parameter	Units	Detection Limit	4909-01	4909-02	4909-03
Benzenethiol*	mg/kg	-	-	-	-
p-Chloro-m-cresol	mg/kg	5	BDL	BDL	BDL
2-Chlorophenol	mg/kg	5	BDL	BDL	BDL
Cresols	mg/kg	-	NA	NA	NA
o-Cresol	mg/kg	5	BDL	BDL	BDL
p & m-Cresol	mg/kg	5	BDL	BDL	BDL
2,4-Dimethylphenol	mg/kg	5	BDL	BDL	BDL
4,6-Dinitro-o-cresol	mg/kg	5	BDL	BDL	BDL
2,4-Dinitrophenol	mg/kg	200	BDL	BDL	BDL
4-Nitrophenol	mg/kg	20	BDL	BDL	BDL
Pentachlorophenol	mg/kg	5	BDL	BDL	BDL
Phenol	mg/kg	10	BDL	BDL	BDL
Trichlorophenols	mg/kg	-	NA	NA	NA
2,4,5-Trichlorophenol	mg/kg	5	BDL	BDL	BDL
2,4,6-Trichlorophenol	mg/kg	5	BDL	BDL	BDL

BDL = Below detection limit. NA = Not analyzed. *Not recovered using Method 8270, or no analytical standard available.

ANALYTICAL RESULTS

for

USEPA Region VIII

REFINERY ACID ORGANICS

Parameter	Units	Detection Limit	4909-01	4909-02	4909-03
Benzenethiol*	mg/kg	-	-	-	-
p-Chloro-m-cresol	mg/kg	5	BDL	BDL	BDL
2-Chlorophenol	mg/kg	5	BDL	BDL	BDL
Cresols	mg/kg	-	NA	NA	NA
o-Cresol	mg/kg	5	BDL	BDL	BDL
p & m-Cresol	mg/kg	5	BDL	BDL	BDL
2,4-Dimethylphenol	mg/kg	5	BDL	BDL	BDL
4,6-Dinitro-o-cresol	mg/kg	5	BDL	BDL	BDL
2,4-Dinitrophenol	mg/kg	200	BDL	BDL	BDL
4-Nitrophenol	mg/kg	20	BDL	BDL	BDL
Pentachlorophenol	mg/kg	5	BDL	BDL	BDL
Phenol	mg/kg	10	BDL	BDL	BDL
Trichlorophenols	mg/kg	-	NA	NA	NA
2,4,5-Trichlorophenol	mg/kg	5	BDL	BDL	BDL
2,4,6-Trichlorophenol	mg/kg	5	BDL	BDL	BDL

BDL = Below detection limit. NA = Not analyzed. *Not recovered using Method 8270, or no analytical standard available.

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Sample Number
~~H17~~ H1848
4909-01
100ml

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: RMAL
Lab Sample ID No: 4909-01
Sample Matrix: ~~SIO~~ soil
Data Release Authorized By:

Case No:
QC Report No:
Contract No:
Date Sample Received:

$\frac{ug}{l} \times \frac{0.005l}{0.0001l} \times \frac{0.020l}{0.00246kg}$
$= 406\ ug/kg$

Volatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted/Prepared:
Date Analyzed: 5/6/85
Conc/Dil Factor: x406 pH
Percent Moisture:
Percent Moisture (Decanted):

CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	
74-83-9	Bromomethane	
75-01-4	Vinyl Chloride	
75-00-3	Chloroethane	
75-09-2	Methylene Chloride	2500 B BDL
67-64-1	Acetone	29600 B NR
75-15-0	Carbon Disulfide	
75-35-4	1, 1-Dichloroethene	
75-34-3	1, 1-Dichloroethane	
156-60-5	Trans-1, 2-Dichloroethene	
67-66-3	Chloroform	
107-06-2	1, 2-Dichloroethane	
78-93-3	2-Butanone	~~2000 JB~~ NO
71-55-6	1, 1, 1-Trichloroethane	
56-23-5	Carbon Tetrachloride	
108-05-4	Vinyl Acetate	
75-27-4	Bromodichloromethane	

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1, 1, 2, 2-Tetrachloroethane	
78-87-5	1, 2-Dichloropropane	
10061-02-6	Trans-1, 3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1, 1, 2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1, 3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
591-78-6	2-Hexanone	
108-10-1	4-Methyl-2-Pentanone	
127-18-4	Tetrachloroethene	
108-88-3	Toluene	1500 G 2000
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g., 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Environmental Protection Agency, CLP Sample Management Office,
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Sample Number
4909-01
100 uX

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	C6 Hydrocarbon	VOA	267	1600
2.	~~Unknown Hydrocarbon~~	~~VOA~~	~~321~~	~~640~~
3.	~~C6 Hydrocarbon~~	~~VOA~~	~~326~~	~~640~~
4.	~~Unknown~~	~~VOA~~	~~343~~	~~2500~~
5.	~~Hexene~~	~~VOA~~	~~476~~	~~3600~~
6.	Unknown Hydrocarbon	VOA	499	5100
7.	Trimethyl-Cyclohexane	VOA	512	31000
8.	C9 Unsaturated Hydrocarbon	VOA	527	5500
9.	Trimethyl-Cyclohexane	VOA	538	6300
10.	C9 Unsaturated Hydrocarbon	VOA	567	14000
11.	C9 Unsaturated Hydrocarbon	VOA	582	23000
12.	~~Dimethyl-Cyclohexane~~	~~VOA~~	~~600~~	~~15000~~
13.	Unknown	VOA	610	20000
14.	Unknown	VOA	635	5600
15.	C10 Hydrocarbon	VOA	673	9200
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Environmental Protection Agency. CLP Sample Management Office.
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Sample Number
4909-01
DUPLICATE

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: Rocky Mountain Analytical Lab
Lab Sample ID No: S4909A133
Sample Matrix: SOIL - GLYME
Data Release Authorized By:

Case No:
QC Report No:
Contract No:
Date Sample Received:

Volatile Compounds

$\left(\frac{0.005l}{0.00253kg}\right)\left(\frac{20ml}{0.100ml}\right) = 395\ l\,kg^{-1}$

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: –
Date Analyzed: 5/7/85
Conc/Dil Factor: 395 $l\,kg^{-1}$ pH –
Percent Moisture: –
Percent Moisture (Decanted): –

CAS Number		ug/l or ug/Kg (Circle One)	
74-87-3	Chloromethane		
74-83-9	Bromomethane		
75-01-4	Vinyl Chloride		
75-00-3	Chloroethane		
75-09-2	Methylene Chloride	2 J	BL
67-64-1	Acetone	28	NR
75-15-0	Carbon Disulfide		
75-35-4	1, 1-Dichloroethene		
75-34-3	1, 1-Dichloroethane		
156-60-5	Trans-1, 2-Dichloroethene		
67-66-3	Chloroform		
107-06-2	1, 2-Dichloroethane		
78-93-3	2-Butanone	2 NO	
71-55-6	1, 1, 1-Trichloroethane	1 J	BL
56-23-5	Carbon Tetrachloride		
108-05-4	Vinyl Acetate		
75-27-4	Bromodichloromethane		
	~~1,4-DIOXANE~~	~~39 NO~~	

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1, 1, 2, 2-Tetrachloroethane	
78-87-5	1, 2-Dichloropropane	
10061-02-6	Trans-1, 3-Dichloropropene	
79-01-6	Trichloroethene	
124-48-1	Dibromochloromethane	
79-00-5	1, 1, 2-Trichloroethane	
71-43-2	Benzene	
10061-01-5	cis-1, 3-Dichloropropene	
110-75-8	2-Chloroethylvinylether	
75-25-2	Bromoform	
591-78-6	2-Hexanone	
108-10-1	4-Methyl-2-Pentanone	
127-18-4	Tetrachloroethene	
108-88-3	Toluene	2
108-90-7	Chlorobenzene	
100-41-4	Ethylbenzene	
100-42-5	Styrene	
	Total Xylenes	

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (e.g., 10U) based on necessary concentration/dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action

Other Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report

Environmental Protection Agency. CLP Sample Management Office.
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Sample Number
4909-01
DUPLICATE

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	C_6 ALIPHATIC	VOA	360	1.6
2.	UNKNOWN	VOA	471	18
3.	C_{8-9} ALIPHATIC	VOA	500	1.9
4. 3073-66-3	1,1,3-TRIMETHYL CYCLOHEXANE	VOA	513	25
5.	C_3-SUBSTITUTED CYCLOHEXANE	VOA	527	4.4
6.	C_3-SUBSTITUTED CYCLOHEXANE	VOA	539	4.0
7.	C_3-SUBSTITUTED CYCLOHEXANE	VOA	568	6.4
8.	C_9-ALIPHATIC	VOA	583	9.2
9.	C_{10}-ALIPHATIC	VOA	611	18
10.	UNKNOWN	VOA	636	3.3
11.	C_{10}-ALIPHATIC	VOA	674	4.7
12.				
13.				
14.				
15.				
16.				
17.				
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27.				
28.				
29.				
30.				

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number
4904-01

Acid

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 5-9-85

Date Analyzed: 5-10-85

Conc/Dil Factor: ug/ml × 5.0 / 0.00121 kg × 1mg / 1000 ug = 4.13

CAS Number		mg/kg ~~ug/Lg~~ (Circle One)
62-75-9	N-Nitrosodimethylamine	ND
108-95-2	Phenol	
62-53-3	Aniline	
111-44-4	bis(-2-Chloroethyl)Ether	
95-57-8	2-Chlorophenol	
541-73-1	1, 3-Dichlorobenzene	
106-46-7	1, 4-Dichlorobenzene	
100-51-6	Benzyl Alcohol	
95-50-1	1, 2-Dichlorobenzene	
95-48-7	2-Methylphenol	
39638-32-9	bis(2-chloroisopropyl)Ether	
106-44-5	4-Methylphenol	
621-64-7	N-Nitroso-Di-n-Propylamine	
67-72-1	Hexachloroethane	
98-95-3	Nitrobenzene	
78-59-1	Isophorone	
88-75-5	2-Nitrophenol	
105-67-9	2, 4-Dimethylphenol	
65-85-0	Benzoic Acid	
111-91-1	bis(-2-Chloroethoxy)Methane	
120-83-2	2, 4-Dichlorophenol	
120-82-1	1, 2, 4-Trichlorobenzene	
91-20-3	Naphthalene	
106-47-8	4-Chloroaniline	
87-68-3	Hexachlorobutadiene	
59-50-7	4-Chloro-3-Methylphenol	
91-57-6	2-Methylnaphthalene	
77-47-4	Hexachlorocyclopentadiene	
88-06-2	2, 4, 6-Trichlorophenol	
95-95-4	2, 4, 5-Trichlorophenol	
91-58-7	2-Chloronaphthalene	
88-74-4	2-Nitroaniline	
131-11-3	Dimethyl Phthalate	
208-96-8	Acenaphthylene	
99-09-2	3 Nitroaniline	

CAS Number		mg/kg ~~ug/Lg~~ (Circle One)
83-32-9	Acenaphthene	ND
51-28-5	2, 4-Dinitrophenol	
100-02-7	4-Nitrophenol	
132-64-9	Dibenzofuran	
121-14-2	2, 4-Dinitrotoluene	
606-20-2	2, 6-Dinitrotoluene	
84-66-2	Diethylphthalate	
7005-72-3	4-Chlorophenyl-phenylether	
86-73-7	Fluorene	
100-01-6	4-Nitroaniline	
534-52-1	4, 6-Dinitro-2-Methylphenol	
86-30-6	N-Nitrosodiphenylamine (1)	
101-55-3	4-Bromophenyl-phenylether	
118-74-1	Hexachlorobenzene	
87-86-5	Pentachlorophenol	
85-01-8	Phenanthrene	
120-12-7	Anthracene	
84-74-2	Di-n-Butylphthalate	
206-44-0	Fluoranthene	
92-87-5	Benzidine	
129-00-0	Pyrene	
85-68-7	Butylbenzylphthalate	
91-94-1	3, 3'-Dichlorobenzidine	
56-55-3	Benzo(a)Anthracene	
117-81-7	bis(2-Ethylhexyl)Phthalate	
218-01-9	Chrysene	
117-84-0	Di-n-Octyl Phthalate	
205-99-2	Benzo(b)Fluoranthene	
207-08-9	Benzo(k)Fluoranthene	
50-32-8	Benzo(a)Pyrene	
193-39-5	Indeno(1, 2, 3-cd)Pyrene	
53-70-3	Dibenz(a, h)Anthracene	
191-24-2	Benzo(g, h, i)Perylene	

(1) Cannot be separated from diphenylamine

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number
4909-01

B/N

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 5-9-85

Date Analyzed: 5-10-85

Conc/Dil Factor: ~~ug/ml~~ = 5.0 ml / 0.00121 kg 1/1000 = 4.13

CAS Number		mg/kg ~~ug/l or ug/kg~~ (Circle One)
62-75-9	N-Nitrosodimethylamine	
108-95-2	Phenol	
62-53-3	Aniline	
111-44-4	bis(-2-Chloroethyl)Ether	
95-57-8	2-Chlorophenol	
541-73-1	1, 3-Dichlorobenzene	
106-46-7	1, 4-Dichlorobenzene	
100-51-6	Benzyl Alcohol	
95-50-1	1, 2-Dichlorobenzene	
95-48-7	2-Methylphenol	
39638-32-9	bis(2-chloroisopropyl)Ether	
106-44-5	4-Methylphenol	
621-64-7	N-Nitroso-Di-n-Propylamine	
67-72-1	Hexachloroethane	
98-95-3	Nitrobenzene	
78-59-1	Isophorone	
88-75-5	2-Nitrophenol	
105-67-9	2, 4-Dimethylphenol	
65-85-0	Benzoic Acid	
111-91-1	bis(-2-Chloroethoxy)Methane	
120-83-2	2, 4-Dichlorophenol	
120-82-1	1, 2, 4-Trichlorobenzene	
91-20-3	Naphthalene	
106-47-8	4-Chloroaniline	
87-68-3	Hexachlorobutadiene	
59-50-7	4-Chloro-3-Methylphenol	
91-57-6	2-Methylnaphthalene	
77-47-4	Hexachlorocyclopentadiene	
88-06-2	2, 4, 6-Trichlorophenol	
95-95-4	2, 4, 5-Trichlorophenol	
91-58-7	2-Chloronaphthalene	
88-74-4	2-Nitroaniline	
131-11-3	Dimethyl Phthalate	
208-96-8	Acenaphthylene	
99-09-2	3-Nitroaniline	

CAS Number		mg/kg ~~ug/l or ug/kg~~ (Circle One)
83-32-9	Acenaphthene	
51-28-5	2, 4-Dinitrophenol	
100-02-7	4-Nitrophenol	
132-64-9	Dibenzofuran	
121-14-2	2, 4-Dinitrotoluene	
606-20-2	2, 6-Dinitrotoluene	
84-66-2	Diethylphthalate	
7005-72-3	4-Chlorophenyl-phenylether	
86-73-7	Fluorene	
100-01-6	4-Nitroaniline	
534-52-1	4, 6-Dinitro-2-Methylphenol	
86-30-6	N-Nitrosodiphenylamine (1)	
101-55-3	4-Bromophenyl-phenylether	
118-74-1	Hexachlorobenzene	
87-86-5	Pentachlorophenol	
85-01-8	Phenanthrene	
120-12-7	Anthracene	
84-74-2	Di-n-Butylphthalate	
206-44-0	Fluoranthene	
92-87-5	Benzidine	
129-00-0	Pyrene	
85-68-7	Butylbenzylphthalate	
91-94-1	3, 3'-Dichlorobenzidine	
56-55-3	Benzo(a)Anthracene	
117-81-7	bis(2-Ethylhexyl)Phthalate	
218-01-9	Chrysene	
117-84-0	Di-n-Octyl Phthalate	
205-99-2	Benzo(b)Fluoranthene	
207-08-9	Benzo(k)Fluoranthene	
50-32-8	Benzo(a)Pyrene	
193-39-5	Indeno(1, 2, 3-cd)Pyrene	
53-70-3	Dibenz(a, h)Anthracene	
191-24-2	Benzo(g, h, i)Perylene	

(1)-Cannot be separated from diphenylamine

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
4909-01

Acid Duplicate

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 5-9-85

Date Analyzed: 5-10-85

Conc/Dil Factor: 1 ml & 5.0 ml

0.00139 kg * 1/1000 = 3.77

100/47

CAS Number		mg/kg ~~ug/l or ug/Kg~~ (Circle One)
62-75-9	N-Nitrosodimethylamine	ND
108-95-2	Phenol	
62-53-3	Aniline	
111-44-4	bis(-2-Chloroethyl)Ether	
95-57-8	2-Chlorophenol	
541-73-1	1, 3-Dichlorobenzene	
106-46-7	1, 4-Dichlorobenzene	
100-51-6	Benzyl Alcohol	
95-50-1	1, 2-Dichlorobenzene	
95-48-7	2-Methylphenol	
39638-32-9	bis(2-chloroisopropyl)Ether	
106-44-5	4-Methylphenol	
621-64-7	N-Nitroso-Di-n-Propylamine	
67-72-1	Hexachloroethane	
98-95-3	Nitrobenzene	
78-59-1	Isophorone	
88-75-5	2-Nitrophenol	
105-67-9	2, 4-Dimethylphenol	
65-85-0	Benzoic Acid	
111-91-1	bis(-2-Chloroethoxy)Methane	
120-83-2	2, 4-Dichlorophenol	
120-82-1	1, 2, 4-Trichlorobenzene	
91-20-3	Naphthalene	
106-47-8	4-Chloroaniline	
87-68-3	Hexachlorobutadiene	
59-50-7	4-Chloro-3-Methylphenol	
91-57-6	2-Methylnaphthalene	
77-47-4	Hexachlorocyclopentadiene	
88-06-2	2, 4, 6-Trichlorophenol	
95-95-4	2, 4, 5-Trichlorophenol	
91-58-7	2-Chloronaphthalene	
88-74-4	2-Nitroaniline	
131-11-3	Dimethyl Phthalate	
208-96-8	Acenaphthylene	
99-09-2	3 Nitroaniline	

CAS Number		mg/kg ~~ug/l or ug/Kg~~ (Circle One)
83-32-9	Acenaphthene	ND
51-28-5	2, 4-Dinitrophenol	
100-02-7	4-Nitrophenol	
132-64-9	Dibenzofuran	
121-14-2	2, 4-Dinitrotoluene	
606-20-2	2, 6-Dinitrotoluene	
84-66-2	Diethylphthalate	
7005-72-3	4-Chlorophenyl-phenylether	
86-73-7	Fluorene	
100-01-6	4-Nitroaniline	
534-52-1	4, 6-Dinitro-2-Methylphenol	
86-30-6	N-Nitrosodiphenylamine (1)	
101-55-3	4-Bromophenyl-phenylether	
118-74-1	Hexachlorobenzene	
87-86-5	Pentachlorophenol	
85-01-8	Phenanthrene	
120-12-7	Anthracene	
84-74-2	Di-n-Butylphthalate	
206-44-0	Fluoranthene	
92-87-5	Benzidine	
129-00-0	Pyrene	
85-68-7	Butylbenzylphthalate	
91-94-1	3, 3'-Dichlorobenzidine	
56-55-3	Benzo(a)Anthracene	
117-81-7	bis(2-Ethylhexyl)Phthalate	
218-01-9	Chrysene	
117-84-0	Di-n-Octyl Phthalate	
205-99-2	Benzo(b)Fluoranthene	
207-08-9	Benzo(k)Fluoranthene	
50-32-8	Benzo(a)Pyrene	
193-39-5	Indeno(1, 2, 3-cd)Pyrene	
53-70-3	Dibenz(a, h)Anthracene	
191-24-2	Benzo(g, h, i)Perylene	

(1) Cannot be separated from diphenylamine

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H909-01 B/N
Duplicate

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: 5-8-85

Date Analyzed: 5-21-85

Conc/Dil Factor: $\frac{ug}{ml} = \frac{5.0ml}{0.00147 \times 1000} = 3.4$

CAS Number		~~[illegible]~~ (Circle One)
62-75-9	N-Nitrosodimethylamine	ND
108-95-2	Phenol	
62-53-3	Aniline	
111-44-4	bis(-2-Chloroethyl)Ether	
95-57-8	2-Chlorophenol	
541-73-1	1, 3-Dichlorobenzene	
106-46-7	1, 4-Dichlorobenzene	
100-51-6	Benzyl Alcohol	
95-50-1	1, 2-Dichlorobenzene	
95-48-7	2-Methylphenol	
39638-32-9	bis(2-chloroisopropyl)Ether	
106-44-5	4-Methylphenol	
621-64-7	N-Nitroso-Di-n-Propylamine	
67-72-1	Hexachloroethane	
98-95-3	Nitrobenzene	
78-59-1	Isophorone	
88-75-5	2-Nitrophenol	
105-67-9	2, 4-Dimethylphenol	
65-85-0	Benzoic Acid	
111-91-1	bis(-2-Chloroethoxy)Methane	
120-83-2	2, 4-Dichlorophenol	
120-82-1	1, 2, 4-Trichlorobenzene	
91-20-3	Naphthalene	
106-47-8	4-Chloroaniline	
87-68-3	Hexachlorobutadiene	
59-50-7	4-Chloro-3-Methylphenol	
91-57-6	2-Methylnaphthalene	
77-47-4	Hexachlorocyclopentadiene	
88-06-2	2, 4, 6-Trichlorophenol	
95-95-4	2, 4, 5-Trichlorophenol	
91-58-7	2-Chloronaphthalene	
88-74-4	2-Nitroaniline	
131-11-3	Dimethyl Phthalate	
208-96-8	Acenaphthylene	
99-09-2	3-Nitroaniline	

CAS Number		~~[illegible]~~ (Circle One)
83-32-9	Acenaphthene	ND
51-28-5	2, 4-Dinitrophenol	
100-02-7	4-Nitrophenol	
132-64-9	Dibenzofuran	
121-14-2	2, 4-Dinitrotoluene	
606-20-2	2, 6-Dinitrotoluene	
84-66-2	Diethylphthalate	
7005-72-3	4-Chlorophenyl-phenylether	
86-73-7	Fluorene	
100-01-6	4-Nitroaniline	
534-52-1	4, 6-Dinitro-2-Methylphenol	
86-30-6	N-Nitrosodiphenylamine (1)	
101-55-3	4-Bromophenyl-phenylether	
118-74-1	Hexachlorobenzene	
87-86-5	Pentachlorophenol	
85-01-8	Phenanthrene	
120-12-7	Anthracene	
84-74-2	Di-n-Butylphthalate	
206-44-0	Fluoranthene	
92-87-5	Benzidine	
129-00-0	Pyrene	
85-68-7	Butylbenzylphthalate	
91-94-1	3, 3'-Dichlorobenzidine	
56-55-3	Benzo(a)Anthracene	
117-81-7	bis(2-Ethylhexyl)Phthalate	
218-01-9	Chrysene	
117-84-0	Di-n-Octyl Phthalate	
205-99-2	Benzo(b)Fluoranthene	
207-08-9	Benzo(k)Fluoranthene	
50-32-8	Benzo(a)Pyrene	
193-39-5	Indeno(1, 2, 3-cd)Pyrene	
53-70-3	Dibenz(a, h)Anthracene	
191-24-2	Benzo(g, h, i)Perylene	

(1) Cannot be separated from diphenylamine

Form I

REGION VIII SUMMARY OF DATA QUALITY ASSURANCE REVIEW

Case No. 4242. Project No. 4242

Site Empire State Refinery

Contractor Laboratory

Data Reviewer Randy Greaves. Date of Review 10/4/85.

Sample Matrix water and soil

Sample No. H1839 H1843(s) H1849(s)

H1839 H1844(s)

H1840 H1845(s)

H1841 H1846(s)

H1842 H1847(s)

( ) Data are acceptable for use

(✓) Data are acceptable for use with qualification noted above

( ) Data are preliminary - pending action or verification

( ) Data are unacceptable

Action required by DPO?

No ✓ Yes ____ Following items require action

Action required by Project Officer (PO)?

No ✓ Yes ____

Following are our findings:

① holding times were exceeded for samples H1839 and H1842 because samples had to be re-analyzed.

② 1,2-Dichloropropane was the only CCC compound with a $\bar{RF} < 0.30$ for the initial calibrations. None of the SPCC's were out of specification for the initial calibration. SPCC's and CCC's were all within contract requirements for the continuing calibration. Several of the Non-SPCC's + CCC's compounds were not within contract limits and are listed on the calibration review sheets.

③ Methylene Chloride, acetone and butanone were the most common blank VOA compounds. Phthalates were the most common extractable contaminate. Several VOA, HSL compounds were indicated as present at below the CRDL but because of the low concentrations these compounds are not significant. Qualification were made to the organic analysis sheets based on the blank observations. These qualification are listed on the HSL compound detected sheets.

④ Some of the advisory limits on the matrix spike and matrix spike duplicate were exceeded and the particular compounds are listed under the MS/MSD review sections. No action was taken as a result of the MS/MSD results.

DFTPP and BFP Performance Results

The DFTPP performance results were all included and found to be within the specified criteria.

Yes ✓ No ____

Comments: All results good.

The BFB performance results were all included and found to be within the specified criteria.

Yes ✓ No ____

Comments: All raw data and summary sheet results were within contract requirement.

The (DFTPP/BFB) performance result(s) was/were reviewed and the following abundance were found to fall outside the specified criteria:

Date	Compound	m/z	Required Abundance	Actual Abundance
		None		

All samples were extracted and analyzed within contract holding times

Yes ____ No ✓

Comments: Holding times were exceeded for extraction of samples H1839 and H1842 because these had to be re-analyzed because surrogate recoveries were out of control. This was an unavoidable situation and re-analysis results with exceeded holding times and good surrogate recoveries are preferable to poor surrogate recoveries and good holding times.

Initial calibration data were reviewed. Initial calibration data were included in the package and met all contract requirements.

Yes _____ No ✓ (because of 1,2-Dichloropropane)

Comments:

	Compound	RF	Spec.		
March 25,	2-Butanone	0.028	i.e., < 0.05	— Flag R neg.	- Flag J pos.
	Vinyl acetate	0.007	" "	"	"
	2-chloroethylvinylether	0.04	i.e., < 0.05	"	"

1,2-Dichloropropane. RF = 0.268 i.e., < 0.30 for ccc. — Flag J or UJ

Compound	% RSD	Spec
Acetone	44.8	i.e. > 30.%
Vinyl acetate	38.4	i.e. > 30 %
4-chloroaniline	41.3	i.e., > 30%
3-Nitroaniline	58.9	i.e., > 30 %

} Flag UJ for neg. results. Flag J for pos. results.

The above values were flagged as indicated above. Only one of the above compounds was a ccc or an spcc i.e. - 1,2-Dichloropropane. This compound was flagged J if present and UJ in not present. All other contract requirements were met.

Continuing calibration data were reviewed and this data met all contract requirements.

Yes ✓ No _____

Comments: The compound given below were marked as indicated. None of the compound given below were spcc or ccc's.

	Compound	RF	Spec
	Vinyl acetate	0.014	< 0.05
	2-chloroethylvinyl ether	0.041	< 0.05
pr30	2-Butanone.	0.048	< 0.05

① pos. Flag J
② Neg Flag R

(VOA'S ONLY)

Compound.	% D	Spec.	Date
Methylene chloride.	-34	25	Apr 26
acetone	-49, 63	25	4/27
2-butanone	-39, 82		"
1,1,1-trichloroethane	42, 39		
~~Carbon Tetrachloride~~	~~29, 20~~		
Vinyl chloride.	100, 100		4/27
~~Trans-1,3-dichloropropene~~	26		
~~cis-1,3 " " "~~	~~26~~		
2-Hexanone.	30		
1,1,2,2-Tetrachloroethane	41, 55	25	4/26 4/27
4-Methyl-2-Pentanone.	—	24	4/27

(VOA'S ONLY)

pos. Flag J.
Neg Flag UJ

Initial calibration data were reviewed. Initial calibration data were included in the package and met all contract requirements.

Yes _____ NO _____

Comments: see last page.

Continuing calibration data were reviewed and this data met all contract requirements.

Yes ✓ No _____

None of the compounds below were CCC's or SPCC!

Comments: continuation of last page. Below are all BNA calibration results.

Compound	% D	Spec.
Anthracene.	27%	25
bis(2-chloroethyl) Ether	60%	25
4-Chloroaniline	45%	25
3-nitroaniline	69%	25
Benzoic acid	47 & 27%	25
Acenaphthylene	34	25
4-nitroaniline.	47	25
Benzo[K] fluoranthene	26	25
aniline,	51	25
2,4-dinitrophenol	29	25
4-nitrophenol.	37	25

Compound	RF	Spec	
Benzidine	—	0.05	pos. Flag J
3,3-dichlorobenzidine	—	0.05	neg. Flag R
3-Nitroaniline.	0.034	>0.05	

Compound	% D	Spec.	
4-Bromophenyl phenyl ether	34	25	
Hexachlorobenzene	43	25	
bis (2-Ethylhexyl) Phthalate	28	25	

↑

pos. Flag J

neg. Flag UJ

Surrogate recoveries were reviewed. The recoveries were all within the contract limits.

Yes ✓ No. ____

Comments: All values reported on the water and soil surrogate summary report forms were within contract limits. Individual calculations of compound recoveries show that summary sheet values are correct.

The matrix spike recovery data were reviewed. The Matrix spikes were performed and all data met contract requirements.

Yes ____ No ✓

Comments:

Low Water: Phenol + 4-Nitrophenol — both were outside the QC advisory range for % rec. from a water spike.

All water RPD were ok.

Low level soil: 1,2,4-Trichlorobenzene RPD was to high.
1,4-Dichlorobenzene. RPD was also to high.

Medium level soil: 2,4-Dinitrotoluene — % rec out of control.
Phenol — % rec. out of control.

All RPD's were within spec. for the medium level soil.

NA = Not Applicable.

PESTICIDES

The laboratory met the pesticide linearity check criteria.
Yes _____ No _____

Comments:

NA

The % breakdown of 4,4DDT and of Endrin was less than 20%.
Yes _____ No _____

Comments:

NA

The dibutychlorendate retention time shift was within the specified limits.
Yes _____ No _____

Comments:

NA

The pesticide standard compounds showed a % D of the calibration factor of no more than 15% for the quantitation runs and 20% for the confirmation runs.
Yes _____ No _____

Comments:

NA.

BLANK ANALYSIS RESULTS BNA, water & soil

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRDL)

[Soil = µg/kg; H2O = µg/l]

Sample	Date	Compound	Conc.	Samples Associated with this Blank
MB-1	5/16	Phenol	6	H1838 - H1842
(BNA / H2O)		x,y,z-Trichloro-1-propene	60	" "
MB-3	5/22	Di-n-butyl phthalate	420	H1843 to H1847, H1849
(BNA/soil)		bis(2-Ethylhexyl) phthalate	210	
		2(3H)-Furanone, dihydro-1	200	
		22'-oxybis-diacetate-ethanol	2000	
		bis(2-ethylhexyl) ester hexanedioic acid	300	
MB-5	5/18	bis(2-Ethylhexyl) phthalate	1800	
(BNA/soil)		Dihydro-2(3H)-furanone +	3000	
		1,1,2,2-tetrachloroethane	-	
		2,2'-oxybis-diacetate ethanol	4000	H1843 to H1847, H1849

Remarks: there were other HSL compound present in the blank at levels below the CRDL (~ 0.1 to 0.7 ppb). These are not important and also not confirmed because of their low concentrations.

BLANK ANALYSYS RESULTS — VOA, water & Soil

The blank analysis were reviewed. The contaminants in the blank are listed below: (*Indicates amounts above CRDL)

[Soil = µg/Kg; H2O = µg/l]

Sample	Date	Compound	Conc.	Samples Associated with this Blank
MB-1	4/26	Methylene chloride.	2	H 1838 - H 1842
(VOA / H2O)		Acetone	2	
		2-Butanone.	1	
MB-2	4/27	Methylene chloride	7	
(VOA / H2O)		Acetone	5	
		2-Butanone.	1	
		Hexane	8	
		1,1'-oxybis-ethane	6	H 1838 to H 1842
MB-3	4/30	Methylene chloride.	9	H 1843 - H 1847, H 1849
(VOA/soil)		acetone	47	
		2-Butanone	2	
		Toluene	2	
MB-4	5/1	Methylene chloride	18	
(VOA / soil)		Acetone	20	
		2-Butanone.	2	H 1843 to H 1847, H 1849

Remarks: For MB-1 through MB-3 there were several HSL compounds which were indicated as present in the raw data at a concentration of < 1 ppb. These compounds were present below the CRDL and were not listed above for that reason. 2-Butanone was included in MB-2 eventhough the mass spectral confirmation was not adequate.

DATA COMPLETENESS CHECKLIST

✓ Included; no problems
* Included: problems noted in review
O Not Included
Not Applicable = NA

✓ Case Narrative

✓ Quality Control Summary Package
- ✓ Surrogate Recovery Summary (Form II)
- ✓ MS/MSS Summary (Form III)
- ✓ Reagent Blank Summary (Form IV)
- ✓ GC/MS Tuning and Mass Calibration (Form V)

✓ Sample Data Package
- * Holding Times (SMO Sample Traffice Reports)
- ✓ Organic Analysis Data Sheets (Form I; all four pages for each sample, arranged in increasing SMO number order)
- ✓ Reconsrtructed Ion Chromatogram(s) (RIC)
- NA GC/EC Chromatograms
- ✓ Quantitation Reports
- ✓ Mass Spectral Data
- ✓ EPA/NIH Mass Spectral Library Search for TIC's

✓ Standards Data Package
- ✓ Current List of Laboratory/Instrumental Detection Limits
- * Initial Calibration Data (Form VI) for each instrument
- * Continuing Calibration Data (Form VII) for each instrument
- NA Pesticide Evaluation Standards Summary (Form VIII)
- NA Pesticide/PCB Standards Summary (Form IX)
- NA Pesticide/PCB Identification (Form X; if any positive results)
- ✓ VOA and BNA Standards Reconstruction Ion Chromatograms (RIC)
- ✓ VOA and BNA Standards Quantitation Reports
- NA Pesticide/PCB Standard Chromatograms and Data System Printouts

✓ Raw QC Data Package
- ✓ DFTPP and BFB mass spectra and mass listings
- ✓ Reagent Blank Data
  - ✓ Organic Analysis Data Sheets (Form I)
  - ✓ Reconstructed Ion Chromatograms (RIC)
  - ✓ Quantitation Reports
  - ✓ Mass Spectral Data
  - ✓ EPA/NIH Library Search of TIC's
  - NA GC/EC Chromatograms and Data System Printouts

- ✓ Matrix Spike and Matrix Spike Duplicate Data
  - ✓ Organic Analysis Data Sheets (Form I)
  - ✓ Reconstructed Ion Chromatograms (RIC)
  - ✓ Quantitation Reports
  - ✓ Mass Spectral Data
  - ✓ EPA/NIH Library Search of TIC's
  - NA GC/EC Chromatograms and Data System Printouts

DATA QUALIFIER DEFINITIONS
Region 8

For the purposes of this data review document the following code letters and associated definitions are provided.

U - The material was analyzed for, but was not detected. The associated numerical value is the estimated sample quantitation limit.

J - The associated numerical value is an estimated quantity because the amount detected is below the required limits or because quality control criteria were not met.

UB - Estimated sample quantitation limit increased. Amount found in sample reported. Compound detected at <5 X the amount in blank (<10 X for methylene chloride, acetone, toluene and phthalates).

UJ - Detection limit is estimated because quality control criteria were not met.

JB - The value is an estimated amount detected below required limits and also detected in the blank.

B - Compound was detected in the blank. Quantity reported is >5 X the amount found in the blank (>10 X for methylene chloride, acetone, toluene, and phthalates).

R - Quality Control indicates that data is <u>not</u> usable (compound may or may not be present). Resampling and reanalysis is necessary for verification.

Z - No analytical result.

N - Presumptive evidence of presence of material (tentative identification).

COMPOUNDS IDENTIFIED

Sample No. H 1838

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/l)	Qualifier (if needed)	Comments : reason for qualifier.
Methylene chloride	1600	J	% D of continuing calibration
acetone	82	J	% D of " "
2-butanone.	14	J	initial calibration, RF < 0.05
bis (2-ethylhexyl) phthalate	7	J	% D of continuing calibration.

Tentatively Identified Compounds Detected: see page # 3-004

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: Even if the above compounds were not qualified J, as a result of calibrations, all of the above were also found in the reagent blanks and would have been qualified UB, JB or B. Because the above compounds were in the blank runs, results should not be considered useful.

COMPOUNDS IDENTIFIED

Sample No. 1839

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/l)	Qualifier (if needed)	Comments
Methylene chloride	300	J	see H 1838 comments
acetone	38	J	
2-Butanone.	420	J	
Toluene.	57		
bis(2-ethylhexyl) phthalate	2	J	see H/1838 comments

Tentatively Identified Compounds Detected: see page # 3-030

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.

___ The spectra were examined and found to be of poor matching quality due to:

Remarks: see H/1838 comments.

COMPOUNDS IDENTIFIED

Sample No. H 1840 water / Low.

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/l)	Qualifier (if needed)	Comments
Methylene chloride.	12	J	see comments H1838
Acetone	140	J	
2-Butanone	200	J	
Toluene	7		
di-n-butyl phthalate	3		
bis (2-Ethylhexyl) phthalate	5	J	see comments H1838

Tentatively Identified Compounds Detected: see page # 3-056.

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: see comments H1838

COMPOUNDS IDENTIFIED

Sample No. H 1841 low water

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/L)	Qualifier (if needed)	Comments
Methylene chloride	6	J	see comment sheet H1838
bis-(2-Ethylhexyl) phthalate	5	J	" " "

Tentatively Identified Compounds Detected: see page # 3-087

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
____ The spectra were examined and found to be of poor matching quality due to:

Remarks: See COMMENTS FROM SAMPLE H1838 ——

COMPOUNDS IDENTIFIED

Sample No. H 1842 Low / water.

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/l)	Qualifier (if needed)	Comments
Methylene chloride	22	J	see the comment for sample H1838
Acetone	1400	J	
2-Butanone	22	J	
di-n-butyl phthalate	4		
bis-(2-ethylhexyl) phthalate	4	J	

Tentatively Identified Compounds Detected: see page # 3-111

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: See the comments for sample H1838

COMPOUNDS IDENTIFIED

Sample No. H 1843 Low soil

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/kg)	Qualifier (if needed)	Comments
Methylene chloride	15	J	~~compound~~ see comments H 1838
acetone	22	J	"
2-butanone	6	J	"
di-n-butyl phthalate	700	uB	In the blank @ 420 ppb.
bis-(2-ethylhexyl) phthalate	1100	J	See comments H1838

Tentatively Identified Compounds Detected: see page 3-143

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality. ~~yes~~.
____ The spectra were examined and found to be of poor matching quality due to:

Remarks: See Comments H 1838 -

COMPOUNDS IDENTIFIED

Sample No. H 1844 Low soil

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/kg)	Qualifier (if needed)	Comments
Methylene Chloride	15	J	See Comments H1838
Acetone	3	J	
di-n-butyl phthalate	540	uB	see comments H 1843
bis-(2-ethylhexyl) phthalate	290	J	

Tentatively Identified Compounds Detected: see page # 3-190

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: See comments on sample H1838

COMPOUNDS IDENTIFIED

Sample No. H 1845

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/kg)	Qualifier (if needed)	Comments
Methylene chloride	40	J	See comments. H 1838
acetone.	33	J	
2-butanone	5	J	
di-n-butyl phthalate.	660	UB	
bis-(2-ethylhexyl) phthalate	840	J	

Tentatively Identified Compounds Detected: see page # 3-226.

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: see comments H 1838

COMPOUNDS IDENTIFIED

Sample No. H 1846

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/Kg)	Qualifier (if needed)	Comments
Methylene chloride	15	J	% D for Continuing Calibration.
Toluene.	37	B	found in the blank.

Tentatively Identified Compounds Detected: See page # 3-267

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.

____ The spectra were examined and found to be of poor matching quality due to:

Remarks: See comments on Sample H1838

COMPOUNDS IDENTIFIED

Sample No. H 1847

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/kg)	Qualifier (if needed)	Comments
Methylene chloride	10	J	
acetone	3	J	
toluene	7	UB	
di-n-butyl phthalate	450	UB	
bis-(2-ethylhexyl) phthalate	380	J	

Tentatively Identified Compounds Detected: See page # 3-291

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
___ The spectra were examined and found to be of poor matching quality due to:

Remarks: See comments from the "Compound Identified" Form of sample H1838

COMPOUNDS IDENTIFIED

Sample No. H 1849

Hazardous Substances List (HSL) Compounds Detected:

Compound Name	Amount (µg/kg)	Qualifier (if needed)	Comments
Methylene chloride	72	J	
Acetone	37	J	
Toluene	3	JB	

Tentatively Identified Compounds Detected: See page # 3-331.

Spectra Matching Quality

✓ The spectra were examined and found to be of good matching quality.
____ The spectra were examined and found to be of poor matching quality due to:

Remarks: Comments of Sample H1838.

Environmental Protection Agency. CLP Sample Management Office.
O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1838

TG
10/8/85

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CE-EMSI
Lab Sample ID No: 042685V08 (VOA) 051685C06 (BNA)
Sample Matrix: Water
Data Release Authorized By: Richard J Courtess

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

qualifiers next to compound name are the correct qualifiers.

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 26-APR-85
Conc/Dil Factor: 10.0 pH NA
Percent Moisture: NA
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	200U	79-34-5	1,1,2,2-Tetrachloroethane u J	30U
74-83-9	Bromomethane	20U	78-87-5	1,2-Dichloropropane u J	10 u J
75-01-4	Vinyl Chloride u J	200U	10061-02-6	Trans-1,3-Dichloropropene	10U
75-00-3	Chloroethane	20U	79-01-6	Trichloroethene	20U
75-09-2	Methylene Chloride J,	1600B	124-48-1	Dibromochloromethane	30U
67-64-1	Acetone J	82B	79-00-5	1,1,2-Trichloroethane	20U
75-15-0	Carbon Disulfide	40U	71-43-2	Benzene	10U
75-35-4	1,1-Dichloroethene	30U	10061-01-5	cis-1,3-Dichloropropene	10U
75-34-3	1,1-Dichloroethane	20U	110-75-8	2-Chloroethylvinylether R	50 R
156-60-5	Trans-1,2-Dichloroethene	20U	75-25-2	Bromoform	30U
67-66-3	Chloroform	10U	591-78-6	2-Hexanone u J	10U
107-06-2	1,2-Dichloroethane	10U	108-10-1	4-Methyl-2-Pentanone	10U
78-93-3	2-Butanone J	14 J	127-18-4	Tetrachloroethene	10U
71-55-6	1,1,1-Trichloroethane u J	30U	108-88-3	Toluene	30U
56-23-5	Carbon Tetrachloride	30U	108-90-7	Chlorobenzene	20U
108-05-4	Vinyl Acetate R	20 R	100-41-4	Ethylbenzene	20U
75-27-4	Bromodichloromethane	10U	100-42-5	Styrene	20U
				Total Xylenes	20U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Value If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

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Sample Number
H1638

TU 10/15

Organics Analysis Data Sheet
(Page 2)

Qualifiers next to compound are the correct qualifiers except when none is listed.

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 26-APR-85
Date Analyzed: 16-MAY-85
Conc/Dil Factor: 1.0

CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	20U
108-95-2	Phenol — UB (correct)	6U
2-53-3	Aniline UJ	10U
111-44-4	bis(2-Chloroethyl)Ether UJ	10U
95-57-8	2-Chlorophenol	6U
41-73-1	1,3-Dichlorobenzene	6U
06-46-7	1,4-Dichlorobenzene	6U
100-51-6	Benzyl Alcohol	20U
5-50-1	1,2-Dichlorobenzene	6U
5-48-7	2-Methylphenol	6U
39638-32-9	bis (2-Chloroisopropyl) Ether	6U
106-44-5	4-Methylphenol	30U
21-64-7	N-Nitroso-Di-n-Propylamine	20U
7-72-1	Hexachloroethane	8U
98-95-3	Nitrobenzene	20U
8-59-1	Isophorone	10U
8-75-5	2-Nitrophenol	8U
105-67-9	2,4-Dimethylphenol	4U
5-85-0	Benzoic Acid UJ	20U
11-91-1	bis (2-Chloroethoxy) Methane	10U
120-83-2	2,4-Dichlorophenol	4U
120-82-1	1,2,4-Trichlorobenzene	10U
1-20-3	Naphthalene	10U
106-47-8	4-Chloroaniline UJ	50U
87-68-3	Hexachlorobutadiene	10U
59-50-7	4-Chloro-3-Methylphenol	8U
91-57-6	2-Methylnaphthalene	4U
77-47-4	Hexachlorocyclopentadiene	30U
88-06-2	2,4,6-Trichlorophenol	4U
95-95-4	2,4,5-Trichlorophenol	4U
91-58-7	2-Chloronaphthalene	8U
88-74-4	2-Nitroaniline — R	40U
131-11-3	Dimethyl Phthalate	8U
208-96-8	Acenaphthylene UJ	4U
99-09-2	3-Nitroaniline UJ	40U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	10U
51-28-5	2,4-Dinitrophenol UJ	70U
100-02-7	4-Nitrophenol UJ	80U
132-64-9	Dibenzofuran	8U
121-14-2	2,4-Dinitrotoluene	20U
606-20-2	2,6-Dinitrotoluene	20U
84-66-2	Diethylphthalate	10U
7005-72-3	4-Chlorophenyl-phenylether	4U
86-73-7	Fluorene	6U
100-01-6	4-Nitroaniline UJ	20U
534-52-1	4,6-Dinitro-2-Methylphenol	50U
86-30-6	N-Nitrosodiphenylamine (1)	20U
101-55-3	4-Bromophenylphenylether UJ	10U
118-74-1	Hexachlorobenzene UJ	8U
87-86-5	Pentachlorophenol	8U
85-01-8	Phenanthrene	4U
120-12-7	Anthracene UJ	6U
84-74-2	Di-n-Butylphthalate	40U
206-44-0	Fluoranthene	10U
92-87-5	Benzidine — R	30U
129-00-0	Pyrene	20U
85-68-7	Butylbenzylphthalate	10U
91-94-1	3,3'-Dichlorobenzidine R	20U
56-55-3	Benzo(a)anthracene	6U
117-81-7	bis (2-Ethylhexyl) Phthalate J	7
218-01-9	Chrysene	6U
117-84-0	Di-n-octyl Phthalate	6U
205-99-2	Benzo(b)Fluoranthene	20U
207-08-9	Benzo(k)Fluoranthene UJ	8U
50-32-8	Benzo(a)Pyrene	6U
193-39-5	Indeno(1,2,3-cd)Pyrene	6U
53-70-3	Dibenzo(a,h)Anthracene	6U
191-24-2	Benzo(g,h,i)Perylene	8U

(1)- Cannot be separated from diphenylamine

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Sample Number

H1838

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

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Sample Number

H1838

Jb 10/8/87

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

No volatile compounds found.

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. --	x,y,z-Trichloro-1-propene	BNA	653	30JB
2. --	Unknown	BNA	876	10J
3. --	Unknown polyhalogenated compound	BNA	1163	6JB
4. --	Unknown amide	BNA	1752	20J
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Sample Number
H1839

TR
10/9/85

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CE-EMSI
Lab Sample ID No: 042685V09 (VOA) 052185C12 (BNA)
Sample Matrix: Water
Data Release Authorized By: Richard J Courtess

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 26-APR-85
Conc/Dil Factor: NA pH NA
Percent Moisture: NA
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
4-87-3	Chloromethane	20U	79-34-5	1,1,2,2-Tetrachloroethane UJ	3U
4-83-9	Bromomethane	2U	78-87-5	1,2-Dichloropropane UJ	1U
75-01-4	Vinyl Chloride UJ	20U	10061-02-6	Trans-1,3-Dichloropropene	1U
75-00-3	Chloroethane	2U	79-01-6	Trichloroethene	2U
5-09-2	Methylene Chloride J	300B	124-48-1	Dibromochloromethane	3U
67-64-1	Acetone J	38B	79-00-5	1,1,2-Trichloroethane	2U
75-15-0	Carbon Disulfide	4U	71-43-2	Benzene	1U
5-35-4	1,1-Dichloroethene	3U	10061-01-5	cis-1,3-Dichloropropene	1U
75-34-3	1,1-Dichloroethane	2U	110-75-8	2-Chloroethylvinylether R	3U
156-60-5	Trans-1,2-Dichloroethene	2U	75-25-2	Bromoform	3U
7-66-3	Chloroform	1U	591-78-6	2-Hexanone UJ	1U
07-06-2	1,2-Dichloroethane	1U	108-10-1	4-Methyl-2-Pentanone	1U
78-93-3	2-Butanone J	420B	127-18-4	Tetrachloroethene	1U
71-55-6	1,1,1-Trichloroethane UJ	3U	108-88-3	Toluene	57
6-23-5	Carbon Tetrachloride	3U	108-90-7	Chlorobenzene	2U
108-05-4	Vinyl Acetate R	2U	100-41-4	Ethylbenzene	2U
75-27-4	Bromodichloromethane	1U	100-42-5	Styrene	2U
				Total Xylenes	2U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Value If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

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Sample Number
H1839

TJo
10/9/85

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 17-MAY-85
Date Analyzed: 21-MAY-85 ← Holding time exceeded for extraction re-analysis
Conc/Dil Factor: 1.0

CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	20U
108-95-2	Phenol — UJ	6U
62-53-3	Aniline - UJ	10U
111-44-4	bis(2-Chloroethyl)Ether - UJ	10U
95-57-8	2-Chlorophenol	6U
541-73-1	1,3-Dichlorobenzene	6U
106-46-7	1,4-Dichlorobenzene	6U
100-51-6	Benzyl Alcohol	20U
95-50-1	1,2-Dichlorobenzene	6U
95-48-7	2-Methylphenol	6U
39638-32-9	bis (2-Chloroisopropyl) Ether	6U
106-44-5	4-Methylphenol	30U
621-64-7	N-Nitroso-Di-n-Propylamine	20U
67-72-1	Hexachloroethane	8U
98-95-3	Nitrobenzene	20U
78-59-1	Isophorone	10U
88-75-5	2-Nitrophenol	8U
105-67-9	2,4-Dimethylphenol	4U
65-85-0	Benzoic Acid - UJ	20U
111-91-1	bis (2-Chloroethoxy) Methane	10U
120-83-2	2,4-Dichlorophenol	4U
120-82-1	1,2,4-Trichlorobenzene	10U
91-20-3	Naphthalene	10U
106-47-8	4-Chloroaniline UJ	50U
87-68-3	Hexachlorobutadiene	10U
59-50-7	4-Chloro-3-Methylphenol	8U
91-57-6	2-Methylnaphthalene	4U
77-47-4	Hexachlorocyclopentadiene	30U
88-06-2	2,4,6-Trichlorophenol	4U
95-95-4	2,4,5-Trichlorophenol	4U
91-58-7	2-Chloronaphthalene	8U
88-74-4	2-Nitroaniline — R	40U
131-11-3	Dimethyl Phthalate	8U
208-96-8	Acenaphthylene - UJ	4U
99-09-2	3-Nitroaniline - UJ	40U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	10U
51-28-5	2,4-Dinitrophenol - UJ	70U
100-02-7	4-Nitrophenol - UJ	80U
132-64-9	Dibenzofuran	8U
121-14-2	2,4-Dinitrotoluene	20U
606-20-2	2,6-Dinitrotoluene	20U
84-66-2	Diethylphthalate	10U
7005-72-3	4-Chlorophenyl-phenylether	4U
86-73-7	Fluorene	6U
100-01-6	4-Nitroaniline - UJ	20U
534-52-1	4,6-Dinitro-2-Methylphenol	50U
86-30-6	N-Nitrosodiphenylamine (1)	20U
101-55-3	4-Bromophenylphenylether - UJ	10U
118-74-1	Hexachlorobenzene - UJ	8U
87-86-5	Pentachlorophenol	8U
85-01-8	Phenanthrene	4U
120-12-7	Anthracene - UJ	6U
84-74-2	Di-n-Butylphthalate	40U
206-44-0	Fluoranthene	10U
92-87-5	Benzidine - R	30U
129-00-0	Pyrene	20U
85-68-7	Butylbenzylphthalate	10U
91-94-1	3,3'-Dichlorobenzidine - R	20U
56-55-3	Benzo(a)anthracene	6U
117-81-7	bis (2-Ethylhexyl) Phthalate - J	2J
218-01-9	Chrysene	6U
117-84-0	Di-n-octyl Phthalate	6U
205-99-2	Benzo(b)Fluoranthene	20U
207-08-9	Benzo(k)Fluoranthene - UJ	8U
50-32-8	Benzo(a)Pyrene	6U
193-39-5	Indeno(1,2,3-cd)Pyrene	6U
53-70-3	Dibenzo(a,h)Anthracene	6U
191-24-2	Benzo(g,h,i)Perylene	8U

(1)- Cannot be separated from diphenylamine

Environmental Protection Agency, CLP Sample Management Office,
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Sample Number

H1839

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

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Sample Number

H1839

RB 10/9/85

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

No volatile compounds found.

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. --	x,y,z-Trichloro-1-propene	BNA	637	10JB
2. --	Unknown	BNA	852	4J
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Sample Number
H1840

Rg 10/4/85

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CE-EMSI
Lab Sample ID No: 042685V13 (VOA) 051685C11 (BNA)
Sample Matrix: Water
Data Release Authorized By: Richard J Counters

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 26-APR-85
Conc/Dil Factor: NA pH NA
Percent Moisture: NA
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
-87-3	Chloromethane	20U	79-34-5	1,1,2,2-Tetrachloroethane - UJ	3U
-83-9	Bromomethane	2U	78-87-5	1,2-Dichloropropane - UJ	1U
75-01-4	Vinyl Chloride - UJ	20U	10061-02-6	Trans-1,3-Dichloropropene	1U
-00-3	Chloroethane	2U	79-01-6	Trichloroethene	2U
-09-2	Methylene Chloride - J	12B	124-48-1	Dibromochloromethane	3U
67-64-1	Acetone - J	140B	79-00-5	1,1,2-Trichloroethane	2U
75-15-0	Carbon Disulfide	4U	71-43-2	Benzene	1U
-35-4	1,1-Dichloroethene	3U	10061-01-5	cis-1,3-Dichloropropene	1U
-34-3	1,1-Dichloroethane	2U	110-75-8	2-Chloroethylvinylether - R	5U
156-60-5	Trans-1,2-Dichloroethene	2U	75-25-2	Bromoform	3U
-66-3	Chloroform	1U	591-78-6	2-Hexanone - UJ	1U
07-06-2	1,2-Dichloroethane	1U	108-10-1	4-Methyl-2-Pentanone	1U
78-93-3	2-Butanone - J	200B	127-18-4	Tetrachloroethene	1U
-55-6	1,1,1-Trichloroethane - UJ	3U	108-88-3	Toluene	7
-23-5	Carbon Tetrachloride	3U	108-90-7	Chlorobenzene	2U
108-05-4	Vinyl Acetate - R	2U	100-41-4	Ethylbenzene	2U
75-27-4	Bromodichloromethane	1U	100-42-5	Styrene	2U
				Total Xylenes	2U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Value If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

notice, it is due to the quality of the document being filmed
SITE / SITE ASSESSMENT
SAS006
E046

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P.O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1840

Re
Ret

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 26-APR-85
Date Analyzed: 16-MAY-85
Conc/Dil Factor: 1.0

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	20U	83-32-9	Acenaphthene	10U
108-95-2	Phenol - U B	6U	51-28-5	2,4-Dinitrophenol - U J	70U
62-53-3	Aniline - U J	10U	100-02-7	4-Nitrophenol - U J	80U
111-44-4	bis(2-Chloroethyl)Ether - U J	10U	132-64-9	Dibenzofuran	8U
95-57-8	2-Chlorophenol	6U	121-14-2	2,4-Dinitrotoluene	20U
541-73-1	1,3-Dichlorobenzene	6U	606-20-2	2,6-Dinitrotoluene	20U
106-46-7	1,4-Dichlorobenzene	6U	84-66-2	Diethylphthalate	10U
100-51-6	Benzyl Alcohol	20U	7005-72-3	4-Chlorophenyl-phenylether	4U
95-50-1	1,2-Dichlorobenzene	6U	86-73-7	Fluorene	6U
95-48-7	2-Methylphenol	6U	100-01-6	4-Nitroaniline - U J	20U
39638-32-9	bis (2-Chloroisopropyl) Ether	6U	534-52-1	4,6-Dinitro-2-Methylphenol	50U
106-44-5	4-Methylphenol	30U	86-30-6	N-Nitrosodiphenylamine (1)	20U
621-64-7	N-Nitroso-Di-n-Propylamine	20U	101-55-3	4-Bromophenylphenylether - U J	10U
67-72-1	Hexachloroethane	8U	118-74-1	Hexachlorobenzene - U J	8U
98-95-3	Nitrobenzene	20U	87-86-5	Pentachlorophenol	8U
78-59-1	Isophorone	10U	85-01-8	Phenanthrene	4U
88-75-5	2-Nitrophenol	8U	120-12-7	Anthracene - U J	6U
105-67-9	2,4-Dimethylphenol	4U	84-74-2	Di-n-Butylphthalate	3J
65-85-0	Benzoic Acid - U J	20U	206-44-0	Fluoranthene	10U
111-91-1	bis (2-Chloroethoxy) Methane	10U	92-87-5	Benzidine - R	30U
120-83-2	2,4-Dichlorophenol	4U	129-00-0	Pyrene	20U
120-82-1	1,2,4-Trichlorobenzene	10U	85-68-7	Butylbenzylphthalate	10U
91-20-3	Naphthalene	10U	91-94-1	3,3'-Dichlorobenzidine - R	20U
106-47-8	4-Chloroaniline - U J	50U	56-55-3	Benzo(a)anthracene	6U
87-68-3	Hexachlorobutadiene	10U	117-81-7	bis (2-Ethylhexyl) Phthalate - J	5J
59-50-7	4-Chloro-3-Methylphenol	8U	218-01-9	Chrysene	6U
91-57-6	2-Methylnaphthalene	4U	117-84-0	Di-n-octyl Phthalate	6U
77-47-4	Hexachlorocyclopentadiene	30U	205-99-2	Benzo(b)Fluoranthene	20U
88-06-2	2,4,6-Trichlorophenol	4U	207-08-9	Benzo(k)Fluoranthene - U J	8U
95-95-4	2,4,5-Trichlorophenol	4U	50-32-8	Benzo(a)Pyrene	6U
91-58-7	2-Chloronaphthalene	8U	193-39-5	Indeno(1,2,3-cd)Pyrene	6U
88-74-4	2-Nitroaniline - R	40U	53-70-3	Dibenzo(a,h)Anthracene	6U
131-11-3	Dimethyl Phthalate	8U	191-24-2	Benzo(g,h,i)Perylene	8U
208-96-8	Acenaphthylene - U J	4U			
99-09-2	3-Nitroaniline - U J	40U			

(1)- Cannot be seperated from diphenylamine

SITE / SITE ASSESSMENT
BASOOO
E114
notice, it is due to the quality of the document being filmed

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number
H1840

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

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Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number

H1840

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

No volatile compounds found.

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. --	x,y,z-Trichloro-1-propene	BNA	656	8JB
2. --	Unknown saturated aliphatic hydrocarbon	BNA	1327	5J
3. --	Unknown	BNA	1373	4J
4. --	Unknown	BNA	1468	8J
5. --	Unknown amide	BNA	1747	15J
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P.O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1841

RB 10/9/85

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CE-EMSI
Lab Sample ID No: 042785V11 (VOA) 051685C12 (BNA)
Sample Matrix: Water
Data Release Authorized By: Richard Kowtes

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 27-APR-85
Conc/Dil Factor: NA pH NA
Percent Moisture: NA
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
-87-3	Chloromethane	20U	79-34-5	1,1,2,2-Tetrachloroethane UJ	3U
-83-9	Bromomethane	2U	78-87-5	1,2-Dichloropropane UJ	1U
75-01-4	Vinyl Chloride UJ	20U	10061-02-6	Trans-1,3-Dichloropropene	1U
75-00-3	Chloroethane	2U	79-01-6	Trichloroethene	2U
-09-2	Methylene Chloride J	6B	124-48-1	Dibromochloromethane	3U
67-64-1	Acetone UJ	1U	79-00-5	1,1,2-Trichloroethane	2U
75-15-0	Carbon Disulfide	4U	71-43-2	Benzene	1U
-35-4	1,1-Dichloroethene	3U	10061-01-5	cis-1,3-Dichloropropene	1U
-34-3	1,1-Dichloroethane	2U	110-75-8	2-Chloroethylvinylether R	5U
156-60-5	Trans-1,2-Dichloroethene	2U	75-25-2	Bromoform	3U
-66-3	Chloroform	1U	591-78-6	2-Hexanone UJ	1U
07-06-2	1,2-Dichloroethane	1U	108-10-1	4-Methyl-2-Pentanone	1U
78-93-3	2-Butanone — R	1U	127-18-4	Tetrachloroethene	1U
71-55-6	1,1,1-Trichloroethane UJ	3U	108-88-3	Toluene	3U
-23-5	Carbon Tetrachloride	3U	108-90-7	Chlorobenzene	2U
108-05-4	Vinyl Acetate R	2U	100-41-4	Ethylbenzene	2U
75-27-4	Bromodichloromethane	1U	100-42-5	Styrene	2U
				Total Xylenes	2U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Value If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1841

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 26-APR-85
Date Analyzed: 16-MAY-85
Conc/Dil Factor: 1.0

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	20U	83-32-9	Acenaphthene	10U
08-95-2	Phenol — u B	6U	51-28-5	2,4-Dinitrophenol u J	70U
2-53-3	Aniline — u J	10U	100-02-7	4-Nitrophenol u J	80U
111-44-4	bis(2-Chloroethyl)Ether u J	10U	132-64-9	Dibenzofuran	8U
95-57-8	2-Chlorophenol	6U	121-14-2	2,4-Dinitrotoluene	20U
41-73-1	1,3-Dichlorobenzene	6U	606-20-2	2,6-Dinitrotoluene	20U
106-46-7	1,4-Dichlorobenzene	6U	84-66-2	Diethylphthalate	10U
100-51-6	Benzyl Alcohol	20U	7005-72-3	4-Chlorophenyl-phenylether	4U
5-50-1	1,2-Dichlorobenzene	6U	86-73-7	Fluorene	6U
95-48-7	2-Methylphenol	6U	100-01-6	4-Nitroaniline u J	20U
39638-32-9	bis (2-Chloroisopropyl) Ether	6U	534-52-1	4,6-Dinitro-2-Methylphenol	50U
06-44-5	4-Methylphenol	30U	86-30-6	N-Nitrosodiphenylamine (1)	20U
21-64-7	N-Nitroso-Di-n-Propylamine	20U	101-55-3	4-Bromophenylphenylether u J	10U
67-72-1	Hexachloroethane	8U	118-74-1	Hexachlorobenzene u J	8U
98-95-3	Nitrobenzene	20U	87-86-5	Pentachlorophenol	8U
8-59-1	Isophorone	10U	85-01-8	Phenanthrene	4U
88-75-5	2-Nitrophenol	8U	120-12-7	Anthracene u J	6U
105-67-9	2,4-Dimethylphenol	4U	84-74-2	Di-n-Butylphthalate	40U
65-85-0	Benzoic Acid u J	20U	206-44-0	Fluoranthene	10U
111-91-1	bis (2-Chloroethoxy) Methane	10U	92-87-5	Benzidine — R	30U
120-83-2	2,4-Dichlorophenol	4U	129-00-0	Pyrene	20U
120-82-1	1,2,4-Trichlorobenzene	10U	85-68-7	Butylbenzylphthalate	10U
91-20-3	Naphthalene	10U	91-94-1	3,3'-Dichlorobenzidine — R	20U
106-47-8	4-Chloroaniline u J	50U	56-55-3	Benzo(a)anthracene	6U
87-68-3	Hexachlorobutadiene	10U	117-81-7	bis (2-Ethylhexyl) Phthalate J	5J
59-50-7	4-Chloro-3-Methylphenol	8U	218-01-9	Chrysene	6U
91-57-6	2-Methylnaphthalene	4U	117-84-0	Di-n-octyl Phthalate	6U
77-47-4	Hexachlorocyclopentadiene	30U	205-99-2	Benzo(b)Fluoranthene	20U
88-06-2	2,4,6-Trichlorophenol	4U	207-08-9	Benzo(k)Fluoranthene u J	8U
95-95-4	2,4,5-Trichlorophenol	4U	50-32-8	Benzo(a)Pyrene	6U
91-58-7	2-Chloronaphthalene	8U	193-39-5	Indeno(1,2,3-cd)Pyrene	6U
88-74-4	2-Nitroaniline — R	40U	53-70-3	Dibenzo(a,h)Anthracene	6U
131-11-3	Dimethyl Phthalate	8U	191-24-2	Benzo(g,h,i)Perylene	8U
208-96-8	Acenaphthylene u J	4U			
99-09-2	3-Nitroaniline u J	40U			

(1)- Cannot be separated from diphenylamine

Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number

H1841

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

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Sample Number
H1841

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

No volatile compounds found.

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. --	x,y,z-Trichloro-1-propene	BNA	651	6JB
2. --	Unknown saturated aliphatic hydrocarbon	BNA	1326	7J
3. --	Unknown	BNA	1467	7J
4. --	Unknown amide	BNA	1745	10J
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I vironmental Protection Agency. CLP Sample Management Office.
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Sample Number
H1842

Organics Analysis Data Sheet
(Page 1)

I boratory Name: CE-EMSI
Lab Sample ID No: 042785V07 (VOA) 052185C03 (BNA)
Sample Matrix: Water
I ta Release Authorized By: Richard J Courtes

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 27-APR-85
Conc/Dil Factor: 2. pH NA
Percent Moisture: NA
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
74-87-3	Chloromethane	5OU	79-34-5	1,1,2,2-Tetrachloroethane UJ	6U
74-83-9	Bromomethane	4U	78-87-5	1,2-Dichloropropane UJ	2U
75-01-4	Vinyl Chloride UJ	5OU	10061-02-6	Trans-1,3-Dichloropropene	2U
75-00-3	Chloroethane	4U	79-01-6	Trichloroethene	4U
75-09-2	Methylene Chloride J	22B	124-48-1	Dibromochloromethane	6U
67-64-1	Acetone J	1400B	79-00-5	1,1,2-Trichloroethane	4U
75-15-0	Carbon Disulfide	8U	71-43-2	Benzene	2U
75-35-4	1,1-Dichloroethene	6U	10061-01-5	cis-1,3-Dichloropropene	2U
75-34-3	1,1-Dichloroethane	4U	110-75-8	2-Chloroethylvinylether R	10U
156-60-5	Trans-1,2-Dichloroethene	4U	75-25-2	Bromoform	6U
67-66-3	Chloroform	2U	591-78-6	2-Hexanone UJ	2U
107-06-2	1,2-Dichloroethane	2U	108-10-1	4-Methyl-2-Pentanone	2U
78-93-3	2-Butanone J	22	127-18-4	Tetrachloroethene	2U
71-55-6	1,1,1-Trichloroethane UJ	6U	108-88-3	Toluene	6U
56-23-5	Carbon Tetrachloride	6U	108-90-7	Chlorobenzene	4U
108-05-4	Vinyl Acetate R	4U	100-41-4	Ethylbenzene	4U
75-27-4	Bromodichloromethane	2U	100-42-5	Styrene	4U
				Total Xylenes	4U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

alue If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

Environmental Protection Agency. CLP Sample Management Office.
P Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1842

PL 10/9/85

being filmed

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 17-MAY-85 — holding time exceeded for extraction.
Date Analyzed: 21-MAY-85
Conc/Dil Factor: 1.5

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	30U	83-32-9	Acenaphthene	20U
108-95-2	Phenol - U B	9B	51-28-5	2,4-Dinitrophenol - U J	100U
62-53-3	Aniline - U J	20U	100-02-7	4-Nitrophenol - U J	100U
111-44-4	bis(2-Chloroethyl)Ether U J	20U	132-64-9	Dibenzofuran	10U
95-57-8	2-Chlorophenol	9U	121-14-2	2,4-Dinitrotoluene	40U
541-73-1	1,3-Dichlorobenzene	9U	606-20-2	2,6-Dinitrotoluene	30U
106-46-7	1,4-Dichlorobenzene	9U	84-66-2	Diethylphthalate	20U
100-51-6	Benzyl Alcohol	30U	7005-72-3	4-Chlorophenyl-phenylether	6U
95-50-1	1,2-Dichlorobenzene	9U	86-73-7	Fluorene	9U
95-48-7	2-Methylphenol	9U	100-01-6	4-Nitroaniline - U J	40U
39638-32-9	bis (2-Chloroisopropyl) Ether	9U	534-52-1	4,6-Dinitro-2-Methylphenol	70U
106-44-5	4-Methylphenol	40U	86-30-6	N-Nitrosodiphenylamine (1)	30U
621-64-7	N-Nitroso-Di-n-Propylamine	40U	101-55-3	4-Bromophenylphenylether - U J	20U
67-72-1	Hexachloroethane	10U	118-74-1	Hexachlorobenzene - U J	10U
98-95-3	Nitrobenzene	40U	87-86-5	Pentachlorophenol	10U
78-59-1	Isophorone	20U	85-01-8	Phenanthrene	6U
88-75-5	2-Nitrophenol	10U	120-12-7	Anthracene - U J	9U
105-67-9	2,4-Dimethylphenol	6U	84-74-2	Di-n-Butylphthalate	4J
65-85-0	Benzoic Acid U J	30U	206-44-0	Fluoranthene	20U
111-91-1	bis (2-Chloroethoxy) Methane	20U	92-87-5	Benzidine - R	40U
120-83-2	2,4-Dichlorophenol	6U	129-00-0	Pyrene	40U
120-82-1	1,2,4-Trichlorobenzene	20U	85-68-7	Butylbenzylphthalate	20U
91-20-3	Naphthalene	20U	91-94-1	3,3'-Dichlorobenzidine - R	30U
106-47-8	4-Chloroaniline U J	70U	56-55-3	Benzo(a)anthracene	9U
87-68-3	Hexachlorobutadiene	20U	117-81-7	bis (2-Ethylhexyl) Phthalate J	4J
59-50-7	4-Chloro-3-Methylphenol	10U	218-01-9	Chrysene	9U
91-57-6	2-Methylnaphthalene	6U	117-84-0	Di-n-octyl Phthalate	9U
77-47-4	Hexachlorocyclopentadiene	40U	205-99-2	Benzo(b)Fluoranthene	30U
88-06-2	2,4,6-Trichlorophenol	6U	207-08-9	Benzo(k)Fluoranthene U J	10U
95-95-4	2,4,5-Trichlorophenol	6U	50-32-8	Benzo(a)Pyrene	9U
91-58-7	2-Chloronaphthalene	10U	193-39-5	Indeno(1,2,3-cd)Pyrene	9U
88-74-4	2-Nitroaniline - R	60U	53-70-3	Dibenzo(a,h)Anthracene	9U
131-11-3	Dimethyl Phthalate	10U	191-24-2	Benzo(g,h,i)Perylene	10U
208-96-8	Acenaphthylene - U J	6U			
99-09-2	3-Nitroaniline - U J	60U			

(1) - Cannot be separated from diphenylamine

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1842

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

Environmental Protection Agency. CLP Sample Management Office
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number

H1842

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 109-99-9	Furan,tetrahydro	VOA	93	20J
2. 110-54-3	Hexane	VOA	239	10JB
3. --	x,y,z-Trichloro-1-propene	BNA	637	90JB
4. --	Unknown	BNA	851	40J
5. 1541-20-4	Bi-2-cyclohexen-1-yl	BNA	1028	7J
6. --	Unknown polyhalogenated compound	BNA	1132	10JB
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Sample Number
H1843

PL 10/9/85

Organics Analysis Data Sheet
(Page 1)

L[illegible]oratory Name: CE-EMSI
Lab Sample ID No: 043085V12 (VOA) 052285C14 (BNA)
Sample Matrix: Soil
D[illegible]a Release Authorized By: Richard J Courtois

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 30-APR-85
Conc/Dil Factor: NA pH 7.45
Percent Moisture: 34.58
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
[illegible]-87-3	Chloromethane	40U	79-34-5	1,1,2,2-Tetrachloroethane UJ	5U
74-83-9	Bromomethane	3U	78-87-5	1,2-Dichloropropane UJ	2U
75-01-4	Vinyl Chloride UJ	40U	10061-02-6	Trans-1,3-Dichloropropene	2U
[illegible]-00-3	Chloroethane	3U	79-01-6	Trichloroethene	3U
[illegible]-09-2	Methylene Chloride J	15B	124-48-1	Dibromochloromethane	5U
67-64-1	Acetone J	22B	79-00-5	1,1,2-Trichloroethane	3U
[illegible]-15-0	Carbon Disulfide	6U	71-43-2	Benzene	2U
[illegible]-35-4	1,1-Dichloroethene	5U	10061-01-5	cis-1,3-Dichloropropene	2U
75-34-3	1,1-Dichloroethane	3U	110-75-8	2-Chloroethylvinylether R	8U
156-60-5	Trans-1,2-Dichloroethene	3U	75-25-2	Bromoform	5U
[illegible]-66-3	Chloroform	2U	591-78-6	2-Hexanone UJ	2U
107-06-2	1,2-Dichloroethane	2U	108-10-1	4-Methyl-2-Pentanone	2U
78-93-3	2-Butanone J	6B	127-18-4	Tetrachloroethene	2U
[illegible]-55-6	1,1,1-Trichloroethane UJ	5U	108-88-3	Toluene JB	5U
[illegible]-23-5	Carbon Tetrachloride	5U	108-90-7	Chlorobenzene	3U
108-05-4	Vinyl Acetate R	3U	100-41-4	Ethylbenzene	3U
75-27-4	Bromodichloromethane	2U	100-42-5	Styrene	3U
				Total Xylenes	3U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

[illegible]alue If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

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SITE / SITE ASSESSMENT
SAS008

Environmental Protection Agency. CLP Sample Management Office.
P.O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1843

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 30-APR-85
Date Analyzed: 22-MAY-85
Conc/Dil Factor: 2.0

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	1000U	83-32-9	Acenaphthene	600U
8-95-2	Phenol J B	400U	51-28-5	2,4-Dinitrophenol - UJ	4000U
-53-3	Aniline - UJ	800U	100-02-7	4-Nitrophenol - UJ	5000U
111-44-4	bis(2-Chloroethyl)Ether UJ	800U	132-64-9	Dibenzofuran	500U
-57-8	2-Chlorophenol	400U	121-14-2	2,4-Dinitrotoluene	2000U
1-73-1	1,3-Dichlorobenzene	400U	606-20-2	2,6-Dinitrotoluene	1000U
106-46-7	1,4-Dichlorobenzene	400U	84-66-2	Diethylphthalate	600U
100-51-6	Benzyl Alcohol	1000U	7005-72-3	4-Chlorophenyl-phenylether	300U
-50-1	1,2-Dichlorobenzene	400U	86-73-7	Fluorene	400U
95-48-7	2-Methylphenol	400U	100-01-6	4-Nitroaniline - UJ	2000U
39638-32-9	bis (2-Chloroisopropyl) Ether	400U	534-52-1	4,6-Dinitro-2-Methylphenol	3000U
6-44-5	4-Methylphenol	2000U	86-30-6	N-Nitrosodiphenylamine (1)	1000U
1-64-7	N-Nitroso-Di-n-Propylamine	2000U	101-55-3	4-Bromophenylphenylether - UJ	900U
67-72-1	Hexachloroethane	500U	118-74-1	Hexachlorobenzene - UJ	500U
-95-3	Nitrobenzene	2000U	87-86-5	Pentachlorophenol	500U
-59-1	Isophorone	800U	85-01-8	Phenanthrene	300U
88-75-5	2-Nitrophenol	500U	120-12-7	Anthracene - UJ	400U
105-67-9	2,4-Dimethylphenol	300U	84-74-2	Di-n-Butylphthalate - - J B	700JB
-85-0	Benzoic Acid UJ	1000U	206-44-0	Fluoranthene	600U
1-91-1	bis (2-Chloroethoxy) Methane	900U	92-87-5	Benzidine - R	2000U
120-83-2	2,4-Dichlorophenol	300U	129-00-0	Pyrene	2000U
0-82-1	1,2,4-Trichlorobenzene	600U	85-68-7	Butylbenzylphthalate	800U
-20-3	Naphthalene	600U	91-94-1	3,3'-Dichlorobenzidine - R	1000U
106-47-8	4-Chloroaniline UJ	3000U	56-55-3	Benzo(a)anthracene	400U
-68-3	Hexachlorobutadiene	800U	117-81-7	bis (2-Ethylhexyl) Phthalate J	1100B
-50-7	4-Chloro-3-Methylphenol	500U	218-01-9	Chrysene	400U
91-57-6	2-Methylnaphthalene	300U	117-84-0	Di-n-octyl Phthalate	400U
77-47-4	Hexachlorocyclopentadiene	2000U	205-99-2	Benzo(b)Fluoranthene	1000U
-06-2	2,4,6-Trichlorophenol	300U	207-08-9	Benzo(k)Fluoranthene UJ	500U
-95-4	2,4,5-Trichlorophenol	300U	50-32-8	Benzo(a)Pyrene	400U
91-58-7	2-Chloronaphthalene	500U	193-39-5	Indeno(1,2,3-cd)Pyrene	400U
-74-4	2-Nitroaniline - R	2000U	53-70-3	Dibenzo(a,h)Anthracene	400U
1-11-3	Dimethyl Phthalate	500U	191-24-2	Benzo(g,h,i)Perylene	500U
208-96-8	Acenaphthylene - UJ	300U			
99-09-2	3-Nitroaniline - UJ	2000U			

(1)- Cannot be separated from diphenylamine

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number

H1843

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1843

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

No volatile compounds found.

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 96-48-0	2(3H)-Furanone,dihydro-	BNA	599	100JB
2. 628-68-2	Ethanol,2,2'-oxybis-,diacetate	BNA	704	1000JB
3. --	Unknown alcohol	BNA	723	90J
4. --	Unknown	BNA	729	300J
5. --	Unknown	BNA	1010	200J
6. --	Unknown	BNA	1093	700J
7. --	Unknown	BNA	1287	1000J
8. --	Unknown fatty acid	BNA	1471	100J
9. 10544-50-0	Sulfur,mol.(S8)	BNA	1519	100000J
10. --	Unknown amide	BNA	1712	700J
11. --	Unknown	BNA	1773	200J
12. --	Unknown	BNA	1860	300J
13. --	Unknown saturated aliphatic hydrocarbon	BNA	1871	200J
14. --	Unknown saturated aliphatic hydrocarbon	BNA	1976	600J
15. --	Unknown	BNA	2062	500J
16. --	Unknown saturated aliphatic hydrocarbon	BNA	2116	300J
17. --	Unknown	BNA	2127	200J
18. 57-88-5	Cholesterol	BNA	2205	1000J
19. 83-47-6	Stigmast-5-en-3-ol,(3,beta.,24S)-	BNA	2427	500J
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Sample Number
H1844

Organics Analysis Data Sheet
(Page 1)

I boratory Name: CE-EMSI
Lab Sample ID No: 043085V13 (VOA) 052285C12 (BNA)
Sample Matrix: Soil
Data Release Authorized By: Richard J Courtes

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 30-APR-85
Conc/Dil Factor: NA pH 8.3
Percent Moisture: 14.53
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
-87-3	Chloromethane	30U	79-34-5	1,1,2,2-Tetrachloroethane UJ	3U
74-83-9	Bromomethane	2U	78-87-5	1,2-Dichloropropane UJ	1U
75-01-4	Vinyl Chloride UJ	30U	10061-02-6	Trans-1,3-Dichloropropene	1U
-00-3	Chloroethane	2U	79-01-6	Trichloroethene	2U
-09-2	Methylene Chloride J	15B	124-48-1	Dibromochloromethane	3U
67-64-1	Acetone J	3B	79-00-5	1,1,2-Trichloroethane	2U
75-15-0	Carbon Disulfide	5U	71-43-2	Benzene	1U
-35-4	1,1-Dichloroethene	3U	10061-01-5	cis-1,3-Dichloropropene	1U
75-34-3	1,1-Dichloroethane	2U	110-75-8	2-Chloroethylvinylether R	6U
156-60-5	Trans-1,2-Dichloroethene	2U	75-25-2	Bromoform	3U
-66-3	Chloroform	1U	591-78-6	2-Hexanone UJ	1U
107-06-2	1,2-Dichloroethane	1U	108-10-1	4-Methyl-2-Pentanone	1U
78-93-3	2-Butanone J	1U	127-18-4	Tetrachloroethene	1U
-55-6	1,1,1-Trichloroethane UJ	3U	108-88-3	Toluene — JB	3U
-23-5	Carbon Tetrachloride	3U	108-90-7	Chlorobenzene	2U
108-05-4	Vinyl Acetate R	2U	100-41-4	Ethylbenzene	2U
75-27-4	Bromodichloromethane	1U	100-42-5	Styrene	2U
				Total Xylenes	2U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Value If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

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Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1844

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 30-APR-85
Date Analyzed: 22-MAY-85
Conc/Dil Factor: 1.0

CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	500U
108-95-2	Phenol J B	200U
62-53-3	Aniline U J	300U
111-44-4	bis(2-Chloroethyl)Ether U J	300U
95-57-8	2-Chlorophenol	200U
541-73-1	1,3-Dichlorobenzene	200U
106-46-7	1,4-Dichlorobenzene	200U
100-51-6	Benzyl Alcohol	500U
95-50-1	1,2-Dichlorobenzene	200U
95-48-7	2-Methylphenol	200U
39638-32-9	bis (2-Chloroisopropyl) Ether	200U
106-44-5	4-Methylphenol	800U
621-64-7	N-Nitroso-Di-n-Propylamine	600U
67-72-1	Hexachloroethane	200U
98-95-3	Nitrobenzene	600U
78-59-1	Isophorone	300U
88-75-5	2-Nitrophenol	200U
105-67-9	2,4-Dimethylphenol	100U
65-85-0	Benzoic Acid U J	500U
111-91-1	bis (2-Chloroethoxy) Methane	400U
120-83-2	2,4-Dichlorophenol	100U
120-82-1	1,2,4-Trichlorobenzene	300U
91-20-3	Naphthalene	300U
106-47-8	4-Chloroaniline U J	1000U
87-68-3	Hexachlorobutadiene	300U
59-50-7	4-Chloro-3-Methylphenol	200U
91-57-6	2-Methylnaphthalene	100U
77-47-4	Hexachlorocyclopentadiene	800U
88-06-2	2,4,6-Trichlorophenol	100U
95-95-4	2,4,5-Trichlorophenol	100U
91-58-7	2-Chloronaphthalene	200U
88-74-4	2-Nitroaniline ~ R	1000U
131-11-3	Dimethyl Phthalate	200U
208-96-8	Acenaphthylene ~ U J	100U
99-09-2	3-Nitroaniline ~ U J	1000U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	300U
51-28-5	2,4-Dinitrophenol ~ U J	2000U
100-02-7	4-Nitrophenol ~ U J	2000U
132-64-9	Dibenzofuran	200U
121-14-2	2,4-Dinitrotoluene	600U
606-20-2	2,6-Dinitrotoluene	500U
84-66-2	Diethylphthalate	300U
7005-72-3	4-Chlorophenyl-phenylether	100U
86-73-7	Fluorene	200U
100-01-6	4-Nitroaniline ~ U J	600U
534-52-1	4,6-Dinitro-2-Methylphenol	1000U
86-30-6	N-Nitrosodiphenylamine (1)	500U
101-55-3	4-Bromophenylphenylether ~ U J	400U
118-74-1	Hexachlorobenzene ~ U J	200U
87-86-5	Pentachlorophenol	200U
85-01-8	Phenanthrene	100U
120-12-7	Anthracene ~ U J	200U
84-74-2	Di-n-Butylphthalate ~ J B	540J B
206-44-0	Fluoranthene	300U
92-87-5	Benzidine ~ R	800U
129-00-0	Pyrene	600U
85-68-7	Butylbenzylphthalate	300U
91-94-1	3,3'-Dichlorobenzidine ~ R	500U
56-55-3	Benzo(a)anthracene	200U
117-81-7	bis (2-Ethylhexyl) Phthalate ~ J	290 B
218-01-9	Chrysene	200U
117-84-0	Di-n-octyl Phthalate	200U
205-99-2	Benzo(b)Fluoranthene	600U
207-08-9	Benzo(k)Fluoranthene U J	200U
50-32-8	Benzo(a)Pyrene	200U
193-39-5	Indeno(1,2,3-cd)Pyrene	200U
53-70-3	Dibenzo(a,h)Anthracene	200U
191-24-2	Benzo(g,h,i)Perylene	200U

(1)- Cannot be separated from diphenylamine

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number

H1844

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1844

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

No volatile compounds found.

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 96-48-0	2(3H)-Furanone,dihydro-	BNA	586	200JB
2. --	Unknown	BNA	589	200J
3. 628-68-2	Ethanol,2,2'-oxybis-,diacetate	BNA	701	1000JB
4. 104-76-7	1-Hexanol,2-ethyl-	BNA	719	200J
5. 57-10-3	Palmitic acid	BNA	1477	200J
6. --	Unknown amide	BNA	1719	700J
7. 103-23-1	Hexanedioicacid,bis(2-ethylhexyl)ester	BNA	1732	300JB
8. --	Unknown	BNA	1780	200J
9. --	Unknown saturated aliphatic hydrocarbon	BNA	1877	400J
10. --	Unknown saturated aliphatic hydrocarbon	BNA	1982	1000J
11. --	Unknown	BNA	2083	300J
12. --	Unknown saturated aliphatic hydrocarbon	BNA	2122	900J
13. --	Unknown	BNA	2132	400J
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Sample Number
H1845

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CE-EMSI
Lab Sample ID No: 050185V09 (VOA) 052285C15 (BNA)
Sample Matrix: Soil
Data Release Authorized By: Richard J Courtes

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 01-MAY-85
Conc/Dil Factor: NA pH 7.7
Percent Moisture: 28.32
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/Kg (Circle one)	CAS Number		ug/l or ug/Kg (Circle one)
74-87-3	Chloromethane	30U	79-34-5	1,1,2,2-Tetrachloroethane UJ	4U
74-83-9	Bromomethane	3U	78-87-5	1,2-Dichloropropane UJ	1U
75-01-4	Vinyl Chloride UJ	30U	10061-02-6	Trans-1,3-Dichloropropene	1U
75-00-3	Chloroethane	3U	79-01-6	Trichloroethene	3U
75-09-2	Methylene Chloride J	40B	124-48-1	Dibromochloromethane	4U
67-64-1	Acetone J	33B	79-00-5	1,1,2-Trichloroethane	3U
75-15-0	Carbon Disulfide	6U	71-43-2	Benzene	1U
75-35-4	1,1-Dichloroethene	4U	10061-01-5	cis-1,3-Dichloropropene	1U
75-34-3	1,1-Dichloroethane	3U	110-75-8	2-Chloroethylvinylether R	7U
156-60-5	Trans-1,2-Dichloroethene	3U	75-25-2	Bromoform	4U
67-66-3	Chloroform	1U	591-78-6	2-Hexanone UJ	1U
107-06-2	1,2-Dichloroethane	1U	108-10-1	4-Methyl-2-Pentanone	1U
78-93-3	2-Butanone J	5B	127-18-4	Tetrachloroethene	1U
71-55-6	1,1,1-Trichloroethane UJ	4U	108-88-3	Toluene JB	4U
56-23-5	Carbon Tetrachloride	4U	108-90-7	Chlorobenzene	3U
108-05-4	Vinyl Acetate R	3U	100-41-4	Ethylbenzene	3U
75-27-4	Bromodichloromethane	1U	100-42-5	Styrene	3U
				Total Xylenes	3U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Value If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

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Sample Number
H1845

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 30-APR-85
Date Analyzed: 22-MAY-85
Conc/Dil Factor: 2.0

CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	1000U
108-95-2	Phenol JB	300U
[illegible]-53-3	Aniline UJ	600U
111-44-4	bis(2-Chloroethyl)Ether UJ	600U
95-57-8	2-Chlorophenol	300U
[illegible]1-73-1	1,3-Dichlorobenzene	300U
[illegible]06-46-7	1,4-Dichlorobenzene	300U
100-51-6	Benzyl Alcohol	1000U
[illegible]-50-1	1,2-Dichlorobenzene	300U
[illegible]-48-7	2-Methylphenol	300U
39638-32-9	bis (2-Chloroisopropyl) Ether	300U
106-44-5	4-Methylphenol	2000U
[illegible]1-64-7	N-Nitroso-Di-n-Propylamine	1000U
67-72-1	Hexachloroethane	400U
98-95-3	Nitrobenzene	1000U
[illegible]3-59-1	Isophorone	600U
[illegible]3-75-5	2-Nitrophenol	400U
105-67-9	2,4-Dimethylphenol	200U
[illegible]5-85-0	Benzoic Acid UJ	1000U
[illegible]11-91-1	bis (2-Chloroethoxy) Methane	700U
120-83-2	2,4-Dichlorophenol	200U
120-82-1	1,2,4-Trichlorobenzene	500U
[illegible]1-20-3	Naphthalene	500U
106-47-8	4-Chloroaniline UJ	3000U
87-68-3	Hexachlorobutadiene	600U
[illegible]9-50-7	4-Chloro-3-Methylphenol	400U
[illegible]1-57-6	2-Methylnaphthalene	200U
77-47-4	Hexachlorocyclopentadiene	2000U
[illegible]8-06-2	2,4,6-Trichlorophenol	200U
[illegible]5-95-4	2,4,5-Trichlorophenol	200U
91-58-7	2-Chloronaphthalene	400U
88-74-4	2-Nitroaniline - R	2000U
[illegible]31-11-3	Dimethyl Phthalate	400U
208-96-8	Acenaphthylene - UJ	200U
99-09-2	3-Nitroaniline - UJ	2000U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	500U
51-28-5	2,4-Dinitrophenol - UJ	4000U
100-02-7	4-Nitrophenol - UJ	4000U
132-64-9	Dibenzofuran	400U
121-14-2	2,4-Dinitrotoluene	1000U
606-20-2	2,6-Dinitrotoluene	1000U
84-66-2	Diethylphthalate	500U
7005-72-3	4-Chlorophenyl-phenylether	200U
86-73-7	Fluorene	300U
100-01-6	4-Nitroaniline - UJ	1000U
534-52-1	4,6-Dinitro-2-Methylphenol	3000U
86-30-6	N-Nitrosodiphenylamine (1)	1000U
101-55-3	4-Bromophenylphenylether - UJ	700U
118-74-1	Hexachlorobenzene - UJ	400U
87-86-5	Pentachlorophenol	400U
85-01-8	Phenanthrene	200U
120-12-7	Anthracene - UJ	300U
84-74-2	Di-n-Butylphthalate - JB	660JB
206-44-0	Fluoranthene	500U
92-87-5	Benzidine - R	2000U
129-00-0	Pyrene	1000U
85-68-7	Butylbenzylphthalate	600U
91-94-1	3,3'-Dichlorobenzidine - R	1000U
56-55-3	Benzo(a)anthracene	300U
117-81-7	bis (2-Ethylhexyl) Phthalate J	840B
218-01-9	Chrysene	300U
117-84-0	Di-n-octyl Phthalate	300U
205-99-2	Benzo(b)Fluoranthene	1000U
207-08-9	Benzo(k)Fluoranthene UJ	400U
50-32-8	Benzo(a)Pyrene	300U
193-39-5	Indeno(1,2,3-cd)Pyrene	300U
53-70-3	Dibenzo(a,h)Anthracene	300U
191-24-2	Benzo(g,h,i)Perylene	400U

(1)- Cannot be separated from diphenylamine

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Sample Number
H1845

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1845

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

No volatile compounds found.

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 96-48-0	2(3H)-Furanone,dihydro-	BNA	581	200JB
2. 628-68-2	Ethanol,2,2'-oxybis-,diacetate	BNA	694	2000JB
3. 104-76-7	1-Hexanol,2-ethyl-	BNA	714	300J
4. --	Unknown	BNA	720	500J
5. --	Unknown	BNA	1009	700J
6. --	Unknown	BNA	1092	2000J
7. --	Unknown	BNA	1286	1000J
8. 17233-71-5	Hexathiepane	BNA	1352	500J
9. 10544-50-0	Sulfur,mol.(S8)	BNA	1512	100000J
10. --	Unknown amide	BNA	1712	1000J
11. 103-23-1	Hexanedioicacid,bis(2-ethylhexyl)ester	BNA	1725	300JB
12. --	Unknown saturated aliphatic hydrocarbon	BNA	1975	800J
13. 57-88-5	Cholesterol	BNA	2205	1000J
14. --	Unknown sterol	BNA	2426	700J
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Sample Number
H1846

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CE-EMSL
Lab Sample ID No: 043085V15 (VOA) 052385C10 (BNA)
Sample Matrix: Soil
Data Release Authorized By: Richard J Counter

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 30-APR-85
Conc/Dil Factor: NA pH 7.95
Percent Moisture: 6.78
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
-87-3	Chloromethane	30U	79-34-5	1,1,2,2-Tetrachloroethane UJ	3U
-83-9	Bromomethane	2U	78-87-5	1,2-Dichloropropane UJ	1U
75-01-4	Vinyl Chloride UJ	30U	10061-02-6	Trans-1,3-Dichloropropene	1U
-00-3	Chloroethane	2U	79-01-6	Trichloroethene	2U
-09-2	Methylene Chloride J	15B	124-48-1	Dibromochloromethane	3U
67-64-1	Acetone J	1U	79-00-5	1,1,2-Trichloroethane	2U
75-15-0	Carbon Disulfide	4U	71-43-2	Benzene	1U
-35-4	1,1-Dichloroethene	3U	10061-01-5	cis-1,3-Dichloropropene	1U
-34-3	1,1-Dichloroethane	2U	110-75-8	2-Chloroethylvinylether R	5U
156-60-5	Trans-1,2-Dichloroethene	2U	75-25-2	Bromoform	3U
-66-3	Chloroform	1U	591-78-6	2-Hexanone RJ	1U
07-06-2	1,2-Dichloroethane	1U	108-10-1	4-Methyl-2-Pentanone	1U
78-93-3	2-Butanone R	1U	127-18-4	Tetrachloroethene	1U
71-55-6	1,1,1-Trichloroethane UJ	3U	108-88-3	Toluene	37B
-23-5	Carbon Tetrachloride	3U	108-90-7	Chlorobenzene	2U
108-05-4	Vinyl Acetate R	2U	100-41-4	Ethylbenzene	2U
75-27-4	Bromodichloromethane	1U	100-42-5	Styrene	2U
				Total Xylenes	2U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Value If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

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Sample Number
E1846

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 30-APR-85
Date Analyzed: 23-MAY-85
Conc/Dil Factor: 10.0

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
62-75-9	N-Nitrosodimethylamine	5000U	83-32-9	Acenaphthene	3000U
108-95-2	Phenol J B	2000U	51-28-5	2,4-Dinitrophenol - UJ	20000U
62-53-3	Aniline UJ	3000U	100-02-7	4-Nitrophenol - UJ	20000U
111-44-4	bis(2-Chloroethyl)Ether UJ	3000U	132-64-9	Dibenzofuran	2000U
95-57-8	2-Chlorophenol	2000U	121-14-2	2,4-Dinitrotoluene	6000U
541-73-1	1,3-Dichlorobenzene	2000U	606-20-2	2,6-Dinitrotoluene	5000U
106-46-7	1,4-Dichlorobenzene	2000U	84-66-2	Diethylphthalate	3000U
100-51-6	Benzyl Alcohol	5000U	7005-72-3	4-Chlorophenyl-phenylether	1000U
95-50-1	1,2-Dichlorobenzene	2000U	86-73-7	Fluorene	2000U
95-48-7	2-Methylphenol	2000U	100-01-6	4-Nitroaniline - UJ	6000U
39638-32-9	bis (2-Chloroisopropyl) Ether	2000U	534-52-1	4,6-Dinitro-2-Methylphenol	10000U
106-44-5	4-Methylphenol	8000U	86-30-6	N-Nitrosodiphenylamine (1)	5000U
621-64-7	N-Nitroso-Di-n-Propylamine	6000U	101-55-3	4-Bromophenylphenylether - UJ	4000U
67-72-1	Hexachloroethane	2000U	118-74-1	Hexachlorobenzene - UJ	2000U
98-95-3	Nitrobenzene	6000U	87-86-5	Pentachlorophenol	2000U
78-59-1	Isophorone	3000U	85-01-8	Phenanthrene	1000U
88-75-5	2-Nitrophenol	2000U	120-12-7	Anthracene - UJ	2000U
105-67-9	2,4-Dimethylphenol	1000U	84-74-2	Di-n-Butylphthalate J B	10000U
65-85-0	Benzoic Acid UJ	5000U	206-44-0	Fluoranthene	3000U
111-91-1	bis (2-Chloroethoxy) Methane	4000U	92-87-5	Benzidine - R	8000U
120-83-2	2,4-Dichlorophenol	1000U	129-00-0	Pyrene	6000U
120-82-1	1,2,4-Trichlorobenzene	3000U	85-68-7	Butylbenzylphthalate	3000U
91-20-3	Naphthalene	3000U	91-94-1	3,3'-Dichlorobenzidine - R	5000U
106-47-8	4-Chloroaniline - UJ	10000U	56-55-3	Benzo(a)anthracene	2000U
87-68-3	Hexachlorobutadiene	3000U	117-81-7	bis (2-Ethylhexyl) Phthalate R	2000U
59-50-7	4-Chloro-3-Methylphenol	2000U	218-01-9	Chrysene	2000U
91-57-6	2-Methylnaphthalene	1000U	117-84-0	Di-n-octyl Phthalate	2000U
77-47-4	Hexachlorocyclopentadiene	8000U	205-99-2	Benzo(b)Fluoranthene	6000U
88-06-2	2,4,6-Trichlorophenol	1000U	207-08-9	Benzo(k)Fluoranthene UJ	2000U
95-95-4	2,4,5-Trichlorophenol	1000U	50-32-8	Benzo(a)Pyrene	2000U
91-58-7	2-Chloronaphthalene	2000U	193-39-5	Indeno(1,2,3-cd)Pyrene	2000U
88-74-4	2-Nitroaniline - R	10000U	53-70-3	Dibenzo(a,h)Anthracene	2000U
131-11-3	Dimethyl Phthalate	2000U	191-24-2	Benzo(g,h,i)Perylene	2000U
208-96-8	Acenaphthylene - UJ	1000U			
99-09-2	3-Nitroaniline - UJ	10000U			

(1)- Cannot be separated from diphenylamine

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Sample Number
H1846

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

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P O Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number

H1846

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

No volatile compounds found.

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 96-48-0	2(3H)-Furanone,dihydro-	BNA	578	700JB
2. 542-10-9	1,1-Ethanediol,diacetate	BNA	688	1000J
3. --	Unknown	BNA	1443	2000J
4. --	Unknown	BNA	1691	3000J
5. --	Unknown	BNA	2144	3000J
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P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1847

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CE-EMSI
Lab Sample ID No: 043085V14 (VOA) 052285C13 (BNA)
Sample Matrix: Soil
Data Release Authorized By: Richard J Courtess

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 30-APR-85
Conc/Dil Factor: NA pH 8.3
Percent Moisture: 4.15
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
[illegible]-87-3	Chloromethane	20U	79-34-5	1,1,2,2-Tetrachloroethane UJ	3U
[illegible]-83-9	Bromomethane	2U	78-87-5	1,2-Dichloropropane UJ	1U
75-01-4	Vinyl Chloride UJ	20U	10061-02-6	Trans-1,3-Dichloropropene	1U
[illegible]5-00-3	Chloroethane	2U	79-01-6	Trichloroethene	2U
[illegible]-09-2	Methylene Chloride J	10B	124-48-1	Dibromochloromethane	3U
67-64-1	Acetone J	3B	79-00-5	1,1,2-Trichloroethane	2U
75-15-0	Carbon Disulfide	4U	71-43-2	Benzene	1U
[illegible]-35-4	1,1-Dichloroethene	3U	10061-01-5	cis-1,3-Dichloropropene	1U
[illegible]-34-3	1,1-Dichloroethane	2U	110-75-8	2-Chloroethylvinylether R	5U
156-60-5	Trans-1,2-Dichloroethene	2U	75-25-2	Bromoform	3U
[illegible]-66-3	Chloroform	1U	591-78-6	2-Hexanone UJ	1U
[illegible]7-06-2	1,2-Dichloroethane	1U	108-10-1	4-Methyl-2-Pentanone	1U
78-93-3	2-Butanone J	1U	127-18-4	Tetrachloroethene	1U
[illegible]-55-6	1,1,1-Trichloroethane UJ	3U	108-88-3	Toluene UB	7B
[illegible]-23-5	Carbon Tetrachloride	3U	108-90-7	Chlorobenzene	2U
108-05-4	Vinyl Acetate R	2U	100-41-4	Ethylbenzene	2U
75-27-4	Bromodichloromethane	1U	100-42-5	Styrene	2U
				Total Xylenes	2U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Value If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
E1847

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Low
Date Extracted/Prepared: 30-APR-85
Date Analyzed: 22-MAY-85
Conc/Dil Factor: 1.0

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
62-75-9	N-Nitrosodimethylamine	500U	83-32-9	Acenaphthene	300U
108-95-2	Phenol — J B	200U	51-28-5	2,4-Dinitrophenol — UJ	2000U
62-53-3	Aniline — UJ	300U	100-02-7	4-Nitrophenol — UJ	2000U
111-44-4	bis(2-Chloroethyl)Ether UJ	300U	132-64-9	Dibenzofuran	200U
95-57-8	2-Chlorophenol	200U	121-14-2	2,4-Dinitrotoluene	700U
541-73-1	1,3-Dichlorobenzene	200U	606-20-2	2,6-Dinitrotoluene	500U
106-46-7	1,4-Dichlorobenzene	200U	84-66-2	Diethylphthalate	300U
100-51-6	Benzyl Alcohol	500U	7005-72-3	4-Chlorophenyl-phenylether	100U
95-50-1	1,2-Dichlorobenzene	200U	86-73-7	Fluorene	200U
95-48-7	2-Methylphenol	200U	100-01-6	4-Nitroaniline — UJ	700U
39638-32-9	bis (2-Chloroisopropyl) Ether	200U	534-52-1	4,6-Dinitro-2-Methylphenol	1000U
106-44-5	4-Methylphenol	800U	86-30-6	N-Nitrosodiphenylamine (1)	500U
621-64-7	N-Nitroso-Di-n-Propylamine	700U	101-55-3	4-Bromophenylphenylether — UJ	400U
67-72-1	Hexachloroethane	200U	118-74-1	Hexachlorobenzene — UJ	200U
98-95-3	Nitrobenzene	700U	87-86-5	Pentachlorophenol	200U
78-59-1	Isophorone	300U	85-01-8	Phenanthrene	100U
88-75-5	2-Nitrophenol	200U	120-12-7	Anthracene — UJ	200U
105-67-9	2,4-Dimethylphenol	100U	84-74-2	Di-n-Butylphthalate — J B	450JB
65-85-0	Benzoic Acid UJ	500U	206-44-0	Fluoranthene	300U
111-91-1	bis (2-Chloroethoxy) Methane	400U	92-87-5	Benzidine — R	800U
120-83-2	2,4-Dichlorophenol	100U	129-00-0	Pyrene	700U
120-82-1	1,2,4-Trichlorobenzene	300U	85-68-7	Butylbenzylphthalate	300U
91-20-3	Naphthalene	300U	91-94-1	3,3'-Dichlorobenzidine — R	500U
106-47-8	4-Chloroaniline UJ	1000U	56-55-3	Benzo(a)anthracene	200U
87-68-3	Hexachlorobutadiene	300U	117-81-7	bis (2-Ethylhexyl) Phthalate J	380B
59-50-7	4-Chloro-3-Methylphenol	200U	218-01-9	Chrysene	200U
91-57-6	2-Methylnaphthalene	100U	117-84-0	Di-n-octyl Phthalate	200U
77-47-4	Hexachlorocyclopentadiene	800U	205-99-2	Benzo(b)Fluoranthene	600U
88-06-2	2,4,6-Trichlorophenol	100U	207-08-9	Benzo(k)Fluoranthene UJ	200U
95-95-4	2,4,5-Trichlorophenol	100U	50-32-8	Benzo(a)Pyrene	200U
91-58-7	2-Chloronaphthalene	200U	193-39-5	Indeno(1,2,3-cd)Pyrene	200U
88-74-4	2-Nitroaniline — R	1000U	53-70-3	Dibenzo(a,h)Anthracene	200U
131-11-3	Dimethyl Phthalate	200U	191-24-2	Benzo(g,h,i)Perylene	200U
208-96-8	Acenaphthylene — UJ	100U			
99-09-2	3-Nitroaniline — UJ	1000U			

(1)- Cannot be separated from diphenylamine

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria. Virginia 22313 703/557-2490

Sample Number
H1847

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

3 290

Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number

H1847

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

No volatile compounds found.

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	96-48-0	2(3H)-Furanone,dihydro-	BNA	580	200JB
2.	628-68-2	Ethanol,2,2'-oxybis-,diacetate	BNA	695	2000JB
3.	--	Unknown fatty acid	BNA	1468	100J
4.	--	Unknown amide	BNA	1709	600J
5.	103-23-1	Hexanedioicacid,bis(2-ethylhexyl)ester	BNA	1723	300JB
6.	--	Unknown	BNA	1770	200J
7.	--	Unknown	BNA	1864	400J
8.	--	Unknown saturated aliphatic hydrocarbon	BNA	1867	400J
9.	--	Unknown	BNA	1959	800J
10.	--	Unknown saturated aliphatic hydrocarbon	BNA	1972	2000J
11.	--	Unknown aldehyde	BNA	1977	2000J
12.	--	Unknown saturated aliphatic hydrocarbon	BNA	2112	800J
13.	--	Unknown	BNA	2121	1000J
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SITE / SITE ASSESSMENT
SAS006

Environmental Protection Agency. CLP Sample Management Office.
P.O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
M1849

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CE-EMSI
Lab Sample ID No: 050185V10 (VOA) 051885C09 (BNA)
Sample Matrix: Soil
Data Release Authorized By: Richard J Coenters

Case No: 4242
QC Report No: 4242
Contract No: 68-01-6783
Date Sample Received: 24-APR-85

Volatile Compounds

Concentration: Low
Date Extracted/Prepared: NA
Date Analyzed: 01-MAY-85
Conc/Dil Factor: NA pH 8.0
Percent Moisture: 65.84
Percent Moisture (Decanted): NA

CAS Number		ug/l or ug/Kg (Circle One)	CAS Number		ug/l or ug/Kg (Circle One)
-87-3	Chloromethane	70U	79-34-5	1,1,2,2-Tetrachloroethane UJ	9U
-83-9	Bromomethane	6U	78-87-5	1,2-Dichloropropane UJ	3U
75-01-4	Vinyl Chloride UJ	70U	10061-02-6	Trans-1,3-Dichloropropene	3U
-00-3	Chloroethane	6U	79-01-6	Trichloroethene	6U
-09-2	Methylene Chloride J	72B	124-48-1	Dibromochloromethane	9U
67-64-1	Acetone	37B	79-00-5	1,1,2-Trichloroethane	6U
75-15-0	Carbon Disulfide	10U	71-43-2	Benzene	3U
-35-4	1,1-Dichloroethene	9U	10061-01-5	cis-1,3-Dichloropropene	3U
-34-3	1,1-Dichloroethane	6U	110-75-8	2-Chloroethylvinylether R	20U
156-60-5	Trans-1,2-Dichloroethene	6U	75-25-2	Bromoform	9U
-66-3	Chloroform	3U	591-78-6	2-Hexanone UJ	3U
7-06-2	1,2-Dichloroethane	3U	108-10-1	4-Methyl-2-Pentanone	3U
78-93-3	2-Butanone R	3U	127-18-4	Tetrachloroethene	3U
-55-6	1,1,1-Trichloroethane UJ	9U	108-88-3	Toluene JB	3U
-23-5	Carbon Tetrachloride	9U	108-90-7	Chlorobenzene	6U
108-05-4	Vinyl Acetate R	6U	100-41-4	Ethylbenzene	6U
75-27-4	Bromodichloromethane	3U	100-42-5	Styrene	6U
				Total Xylenes	6U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used.

Value If the result is a value greater than or equal to the detection limit, report the value

U Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Indicates compound was spiked into the sample for the matrix recovery study. The amounts that were spiked into and recovered from the sample are reported on Form III.

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P.O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
H1849

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10/9/85

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SITE/SITE ASSESSMENT SAS006

Organics Analysis Data Sheet
(Page 2)

Semivolatile Compounds

Concentration: Medium
Date Extracted/Prepared: 29-APR-85
Date Analyzed: 18-MAY-85
(Conc/Dil Factor: 5.0)

CAS Number		ug/l or ug/Kg (Circle one)	CAS Number		ug/l or ug/Kg (Circle one)
[illegible]-75-9	N-Nitrosodimethylamine	100000U	83-32-9	Acenaphthene	50000U
108-95-2	Phenol — JB	30000U	51-28-5	2,4-Dinitrophenol - UJ	300000U
[illegible]-53-3	Aniline UJ	60000U	100-02-7	4-Nitrophenol - UJ	400000U
[illegible]1-44-4	bis(2-Chloroethyl)Ether UJ	60000U	132-64-9	Dibenzofuran	40000U
95-57-8	2-Chlorophenol	30000U	121-14-2	2,4-Dinitrotoluene	100000U
[illegible]1-73-1	1,3-Dichlorobenzene	30000U	606-20-2	2,6-Dinitrotoluene	100000U
[illegible]6-46-7	1,4-Dichlorobenzene	30000U	84-66-2	Diethylphthalate	50000U
100-51-6	Benzyl Alcohol	100000U	7005-72-3	4-Chlorophenyl-phenylether	20000U
95-50-1	1,2-Dichlorobenzene	30000U	86-73-7	Fluorene	30000U
[illegible]-48-7	2-Methylphenol	30000U	100-01-6	4-Nitroaniline - UJ	100000U
[illegible]538-32-9	bis (2-Chloroisopropyl) Ether	30000U	534-52-1	4,6-Dinitro-2-Methylphenol	300000U
106-44-5	4-Methylphenol	200000U	86-30-6	N-Nitrosodiphenylamine (1)	100000U
[illegible]1-64-7	N-Nitroso-Di-n-Propylamine	100000U	101-55-3	4-Bromophenylphenylether - UJ	70000U
[illegible]-72-1	Hexachloroethane	40000U	118-74-1	Hexachlorobenzene - UJ	40000U
98-95-3	Nitrobenzene	100000U	87-86-5	Pentachlorophenol	40000U
[illegible]8-59-1	Isophorone	60000U	85-01-8	Phenanthrene	20000U
[illegible]-75-5	2-Nitrophenol	40000U	120-12-7	Anthracene - UJ	30000U
105-67-9	2,4-Dimethylphenol	20000U	84-74-2	Di-n-Butylphthalate - JB	200000U
65-85-0	Benzoic Acid UJ	100000U	206-44-0	Fluoranthene	50000U
[illegible]1-91-1	bis (2-Chloroethoxy) Methane	70000U	92-87-5	Benzidine - R	200000U
[illegible]0-83-2	2,4-Dichlorophenol	20000U	129-00-0	Pyrene	100000U
120-82-1	1,2,4-Trichlorobenzene	50000U	85-68-7	Butylbenzylphthalate	60000U
[illegible]-20-3	Naphthalene	50000U	91-94-1	3,3'-Dichlorobenzidine - R	100000U
[illegible]6-47-8	4-Chloroaniline UJ	300000U	56-55-3	Benzo(a)anthracene	30000U
87-68-3	Hexachlorobutadiene	60000U	117-81-7	bis (2-Ethylhexyl) Phthalate R	30000U
[illegible]8-50-7	4-Chloro-3-Methylphenol	40000U	218-01-9	Chrysene	30000U
[illegible]-57-6	2-Methylnaphthalene	20000U	117-84-0	Di-n-octyl Phthalate	30000U
77-47-4	Hexachlorocyclopentadiene	200000U	205-99-2	Benzo(b)Fluoranthene	100000U
88-06-2	2,4,6-Trichlorophenol	20000U	207-08-9	Benzo(k)Fluoranthene UJ	40000U
[illegible]-95-4	2,4,5-Trichlorophenol	20000U	50-32-8	Benzo(a)Pyrene	30000U
[illegible]-58-7	2-Chloronaphthalene	40000U	193-39-5	Indeno(1,2,3-cd)Pyrene	30000U
88-74-4	2-Nitroaniline - R	200000U	53-70-3	Dibenzo(a,h)Anthracene	30000U
[illegible]1-11-3	Dimethyl Phthalate	40000U	191-24-2	Benzo(g,h,i)Perylene	40000U
[illegible]8-96-8	Acenaphthylene UJ	20000U			
[illegible]-09-2	3-Nitroaniline UJ	200000U			

(1)- Cannot be separated from diphenylamine

Environmental Protection Agency. CLP Sample Management Office.
P O Box 818. Alexandria. Virginia 22313 703/557-2490

Sample Number

H1849

ANALYSIS NOT REQUIRED

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: Low Medium (Circle One)

Date Extracted/Prepared: _____

Date Analyzed: _____

Conc/Dil Factor: _____

CAS Number		ug/l or ug/Kg (Circle One)
319-84-6	Alpha-BHC	
319-85-7	Beta-BHC	
319-86-8	Delta-BHC	
58-89-9	Gamma-BHC (Lindane)	
76-44-8	Heptachlor	
309-00-2	Aldrin	
1024-57-3	Heptachlor Epoxide	
959-98-8	Endosulfan I	
60-57-1	Dieldrin	
72-55-9	4, 4'-DDE	
72-20-8	Endrin	
33213-65-9	Endosulfan II	
72-54-8	4, 4'-DDD	
7421-93-4	Endrin Aldehyde	
1031-07-8	Endosulfan Sulfate	
50-29-3	4, 4'-DDT	
72-43-5	Methoxychlor	
53494-70-5	Endrin Ketone	
57-74-9	Chlordane	
8001-35-2	Toxaphene	
12674-11-2	Aroclor-1016	
11104-28-2	Aroclor-1221	
11141-16-5	Aroclor-1232	
53469-21-9	Aroclor-1242	
12672-29-6	Aroclor-1248	
11097-69-1	Aroclor-1254	
11096-82-5	Aroclor-1260	

V_i = Volume of extract injected (ul)

V_s = Volume of water extracted (ml)

W_s = Weight of sample extracted (g)

V_t = Volume of total extract (ul)

V_s _____ or W_s _____ V_t _____ V_i _____

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Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818, Alexandria, Virginia 22313 703/557-2490

Sample Number

H1849

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. --	x,y,z-Trimethylcyclohexane	VOA	380	9J
2 --	C10 H18 Cyclic hydrocarbon	VOA	419	8J
3. --	C10 H18 Cyclic hydrocarbon & Unknown	VOA	445	10J
4. --	Trap artifact	VOA	457	
5. --	C10 H18 Cyclic hydrocarbon	VOA	490	10J
6. --	Unknown	VOA	516	10J
7. --	Unknown	VOA	525	10J
8. --	C10 H20 Cyclic hydrocarbon	VOA	554	60J
9. 54676-39-0	Cyclohexane,2-butyl-1,1,3-trimethyl-	BNA	941	8000J
10. --	Unknown saturated aliphatic hydrocarbon	BNA	974	8000J
11. --	C14 H28 Hydrocarbon	BNA	993	6000J
12. --	Unknown saturated aliphatic hydrocarbon	BNA	1015	5000J
13. --	Unknown saturated aliphatic hydrocarbon	BNA	1066	30000J
14. --	C15 H30 Hydrocarbon	BNA	1088	20000J
15. --	Unknown saturated aliphatic hydrocarbon	BNA	1137	30000J
16. --	Unknown saturated aliphatic hydrocarbon	BNA	1153	10000J
17. --	Unknown hydrocarbon (MW-224)	BNA	1161	8000J
18. --	Unknown saturated aliphatic hydrocarbon	BNA	1219	8000J
19. --	Unknown saturated aliphatic hydrocarbon	BNA	1281	5000J
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APPENDIX B

FINAL SITE INSPECTION FORM

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Empire State Oil Company	242 Amoretti Street

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Thermopolis	WY	82443	Hot Springs	017	00

09 COORDINATES — LATITUDE 43 38 21.__ | LONGITUDE 108 12 25.__

10 TYPE OF OWNERSHIP (Check one): ☒ A. PRIVATE ☐ B. FEDERAL ____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 6 / 25 / 84 (MONTH DAY YEAR)

02 SITE STATUS: ☐ ACTIVE ☒ INACTIVE

03 YEARS OF OPERATION: 1938 (BEGINNING YEAR) / 1969 (ENDING YEAR) ____ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply): ☐ A. EPA ☒ B. EPA CONTRACTOR Ecology & Environment, Inc. (E&E) (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ____ (Name of firm) ☐ E. STATE ☐ F. STATE CONTRACTOR ____ (Name of firm) ☐ G. OTHER ____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO
Mark Mullis	FIT Environmental Scientist	E&E	(303) 757-4984

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
Ben Genes	FIT Environmental Engineer	E&E	(303) 757-4984
Teresa Sherman	FIT Environmental Engineer	E&E	(303) 757-4984
Chris Renda	FIT Hydrogeologist	E&E	(303) 757-4984
Susan Kennedy	FIT Environmental Scientist	E&E	(303) 757-4984
Ken Moll	FIT Geologist	E&E	303 757-4984
Steve Yarbrough	FIT Environmental Scientist	E&E	(303) 757-4984

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Doug Wornock	Administrator	Gottsche Foundation P.O. Box 790 Thermopolis, WY 82443	(307) 864-3532
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	0830	mostly clear skies, 70°F, light breeze

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Doug Warnock	Gottsche Foundation	(307) 864-3532

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Mark Mullis	EPA Contractor	Ecology & Environment	(303)757-4984	7 / 12 / 84 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☒ A SOLID
- ☐ B POWDER, FINES
- ☐ C SLUDGE
- ☐ E SLURRY
- ☒ F LIQUID
- ☐ G GAS
- ☐ D. OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS unknown
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A TOXIC
- ☐ B CORROSIVE
- ☐ C RADIOACTIVE
- ☐ D PERSISTENT
- ☐ E SOLUBLE
- ☐ F INFECTIOUS
- ☒ G FLAMMABLE
- ☐ H IGNITABLE
- ☒ I HIGHLY VOLATILE
- ☒ J EXPLOSIVE
- ☐ K REACTIVE
- ☐ L INCOMPATIBLE
- ☐ M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE	unknown		waste spilled on ground and disposed of in pits
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OLW			SI TK		
OLW	See Attached Tables 1-4		SI TK		
OLW			SI TK		
OLW			SI TK		

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS	None		FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Preliminary Assessment, 5/18/84, State of Wyoming, Dept. of Environmental Quality, Solid Waste, TDD R8-8405-31
Site Visit 6/25/84, Ecology and Environment, Inc., TDD R8-8412-07
Sampling Activities Report 4/20/85, Ecology and Environment, Inc., TDD R8-8503-20

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: WY | 02 SITE NUMBER: D980807762

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: approx. 5000
02 ☐ OBSERVED (DATE _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Spills which may have occurred during the life time of the refinery and possible leakage from disposal pits may have contaminated the underlying alluvial aquifer. See Section IV under Part 3.

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: approx. 5000
02 ☒ OBSERVED (DATE 4/21/85) ☐ POTENTIAL ☒ ALLEGED
04 NARRATIVE DESCRIPTION

Toluene detected at 57 ug/l in Bighorn River. Mercury detected at 1.7 ug/l in pond on site. Aluminum and manganese detected in pond. These concentrations are above the concentration in the background sample.

01 ☐ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: approx. 5000 within 1 mile
02 ☐ OBSERVED (DATE _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Petroleum derivatives, including asphalt, lie on the surface of the ground in certain areas. Site is accessible to humans and animals. See Section IV under Part 3.

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: 40 (Acres)
02 ☒ OBSERVED (DATE 6/25/84) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Spills from above ground tanks and in refining area were evident during FIT visit. During 31 years of operation, the possibility existed for significant soil contamination. The soil sample collected near the refining area contained elevated cadmium, lead, ethylbenzene, methylene chloride, xylenes, and di-n-butylphthalate.*

01 ☐ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: approx. 5000
02 ☐ OBSERVED (DATE _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Well field from which Thermopolis and vicinity draws much of its drinking water is 1600 feet WSW of the refinery property across the Big Horn River. The wells are only 30 feet deep. See Section IV under Part 3.

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

01 ☐ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

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* Elevated means sample was above or near one standard deviation greater than the mean for soils in the western USA or above the background sample.

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: WY | 02 SITE NUMBER: D980807762

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☒ OBSERVED (DATE 6/25/84) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Indication of vegetation stress observed by FIT. Vegetation is largely absent from soil now covering former disposal pits.

01 ☒ K. DAMAGE TO FAUNA Dead fish — 02 ☒ OBSERVED (DATE 3/30/84) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

Observed by WDEQ
Not observed by FIT on 6/25/84

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED approx. 5000 — 04 NARRATIVE DESCRIPTION

Site dismantled and unlined pits covered with soil. See Section IV.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None

III. TOTAL POPULATION POTENTIALLY AFFECTED: Approx. 5000

IV. COMMENTS

For A,B,E,G, and M, above, the population potentially affected is shown, but the location of the wells and surface water intake make the possibility for a significant health hazard moderate.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Preliminary Assessment, 5/18/84, State of Wyoming, Department of Environmental Quality, Division of Solid Waste, TDD R8-8405-31
Site Visit, 6/25/84, Ecology and Environment, Inc.
Report of Sampling Activities, 4/20/85, TDD R8-8503-20

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☒ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☒ A. SURFACE IMPOUNDMENT	unknown	
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☒ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER
- ☒ A. BUILDINGS ON SITE

06 AREA OF SITE
(Acres)

07 COMMENTS
The facility is no longer active. Tanks have been removed and waste pits covered.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Disposal pits contain no liners, leakage observed around removed above ground tanks

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☒ YES ☐ NO

02 COMMENTS

Fence about perimeter, but gate was unlocked and unattended.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Preliminary Assessment, 5/18/84, State of Wyoming, Dept. of Environmental Quality.
Site Visit, 6/25/84, FIT, Ecology and Environment, Inc.

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. X	B. X
NON-COMMUNITY	C. ☐	D. X

02 STATUS — For hardness & TDS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. X
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. 0.2 (mi)
B. _____ (mi)

GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A ONLY SOURCE FOR DRINKING — X B DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) — ☐ C COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) — ☐ D NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 5000 (approx.)

03 DISTANCE TO NEAREST DRINKING WATER WELL 0.2 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
15 (ft)	SE toward river	13 (ft)	1.4 million (gpd)	X YES ☐ NO

09 DESCRIPTION OF WELLS (Including storage, depth, and location relative to population and buildings)

3 municipal wells, 30 feet deep, supply 1000 gpm to city system. The wells are on the floodplain across the river and directly south of the town of Thermopolis.

10 RECHARGE AREA: X YES ☐ NO — COMMENTS: In spring, river recharges alluvial aquifer

11 DISCHARGE AREA: X YES ☐ NO — COMMENTS: In fall, aquifer recharges river.

SURFACE WATER

01 SURFACE WATER USE (Check one)

X A RESERVOIR, RECREATION DRINKING WATER SOURCE — ☐ B IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES — ☐ C COMMERCIAL, INDUSTRIAL — ☐ D NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
Big Horn River	☐	0 (mi)
	☐	(mi)
	☐	(mi)

DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 4500 NO. OF PERSONS	B. < 5000 NO. OF PERSONS	C. 5000 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION: Across the street (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: Entire town of Thermopolis

04 DISTANCE TO NEAREST OFF-SITE BUILDING: Across the street (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g. rural village, densely populated urban area)

Approximately 5000 people live in the vicinity of Thermopolis.

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☒ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
Approx. 40 (ft)	unknown (ft)	unknown

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
-31 (in)	Approx. 1.25 (in)	<1 %	SE	1 %

09 FLOOD POTENTIAL
Dam immed. upstream
SITE IS IN _____ YEAR FLOODPLAIN

10 ☒ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE A. N/A (mi) OTHER B. _____ (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

– (mi)

ENDANGERED SPECIES _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A <1/4 (mi)	B 1 (mi)	C unknown (mi)	D unknown (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Refinery is on the Bighorn River floodplain. Site has an average slope of 1% to the southeast.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

U.S.G.S. supplied some information on the geology of the Thermopolis area (307) 772-2716.
U.S.G.S. 7.5' topographic map, Thermopolis Quad, 1:24,000 (307)772-2716
Steve Krysiak, Water and Sewer Superintendent, Town of Thermopolis (307) 864-2658

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER			
SURFACE WATER	3	Organic - Combustion Eng., Ventura Cty, CA Inorganic - Chemtech Cons. Group LTD., NY,NY	
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	4	Organic - Combustion Eng., Ventura Cty, CA Inorganic - Chemtech Cons. Group LTD., NY,NY	
VEGETATION		Met Hazard - Rocky Mtn Analytical Lab, Denver, CO	
OTHER Sediment	3	Organic - Combustion Eng., Ventura Cty, CA Inorganic - Chemtech Cons. Group LTD., NY,NY	

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Organic Vapor Detection (HNU)	Downgradient surface water 0.8 ppm above background Downgradient sediment 0.8 ppm above background
	Disposal pit 0.4 - 0.8 ppm above background Refining area 4.0 ppm above background

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Ecology and Environment, Inc. (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Ecology and Environment, Inc.

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

Temperature, pH, and specific conductance was taken of all surface water samples.
Temperature was between 6 and 10°C
pH was between 5.31 and 9.33
Conductivity was between 4 and 1800 umhos/cm

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Sampling effort of 4/20/85

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Gottsche Foundation		P.O. Box 790		Thermopolis	WY	82443

PARENT COMPANY (if applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Ashland Oil Company		Ashland Drive	29111	Ashland		
Empire State Oil Company		unknown (out of business)				

IV. REALTY OWNER(S) (if applicable; list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Preliminary Assessment, completed 5/18/84 by Wyoming Department of Environmental Quality

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
None	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
Ashland Oil Company	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Ashland Drive	

05 CITY	06 STATE	07 ZIP CODE
Ashland	KY	

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
<1	Ashland Oil

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER
Empire State Oil Company	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
unknown (out of buisness)	

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
31	Empire State Oil Company

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Preliminary Assessment, completed 5/18/84 by Wyoming Department of Environmental Quality
Site visit, conducted by Region VIII FIT 6/25/84

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
None	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
None			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
None			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Preliminary Assessment, completed 5/18/84, by Wyoming Department of Environmental Quality
Site Visit, conducted by Region VIII FIT

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
WY	D980807762

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ S. CAPPING/COVERING — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ V. BOTTOM SEALED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ W. GAS CONTROL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ X. FIRE CONTROL — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ Z. AREA EVACUATED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Wyoming Department of Environmental Quality files

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POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
WY	D980807762

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Wyoming Department of Environmental Quality

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SITE/SITE ASSESSMENT