GW - 1

MONITORING REPORTS

DATE: 1994

GROUNDWATER TECHNOLOGY ®

Groundwater Technology, Inc.
2501 Yale Boulevard S.E., Suite 204, Albuquerque, NM 87106 USA

23 June 1994

Mr. Greg J. Lyssy
Project Coordinator
RCRA Technical Section - Enforcement Branch
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

RE: Bloomfield Refining Company
#50 County Road 4990
Bloomfield, New Mexico
EPA ID# NM089416416
Administrative Order on Consent - Docket No. VI-303-H
Results of the Phase III RFI - Well Installations/Groundwater Sampling (1st Event)

Dear Mr. Lyssy:

This letter provides the results of the Phase III RCRA Facility Investigation (RFI) conducted at the above-referenced facility. Groundwater Technology, Inc. (GTI) supervised the installation of seven monitoring wells from 11 to 18 May 1994. Drilling for the Phase IV RFI (aquifer testing and pilot studies) was also completed during this time, but will be reported with the results of that phase of investigation. Layne Environmental Services, Inc., the subcontracted driller, used an AP 1000 percussion hammer drill rig. Figure 1 indicates the well locations, which are consistent with the revised RFI Work Plan dated 1 October 1993, approved by the USEPA in correspondence dated 4 November 1993. Appendix A provides well logs.

WORK SCOPE

Well Installations

The purpose of the Phase III investigation was to complete delineation of the dissolved-phase and separate-phase hydrocarbon (SPH) plumes. Well MW-28 is in the northwestern portion of the facility, MW-29 is in the north-central portion of the facility, and wells MW-25, MW-26, MW-27, MW-30 and MW-31 are located along the southern end of the facility (Sullivan Road) including three on property owned by the Bureau of Land Management (BLM). BLM right-of-way permits were obtained for wells MW-25, MW-26 and MW-27.

The wells were installed to the top of the Nacimiento Formation, which appeared as a weathered limestone at each location. The surficial sediments consist of poorly graded silty sands to sands with occasional clay lenses and a cobble layer directly overlying the limestone.

Table 1 provides a summary of well construction specifications. Wells MW-25 and MW-26 are six-inches in diameter, in case SPH was detected. The remaining five wells are four-inches in diameter. All seven wells are constructed of fiberglass-reinforced epoxy (FRE) materials with 0.02-inch slot screen. Sand filter pack was installed in the annular space to two feet above the top of well screen, followed by a two-feet thick bentonite seal and cement/bentonite grout to the surface.

TABLE 1
Well Construction Specifications

Well #	Date Installed	Diameter/Material	Total Depth	Screened Interval	Silt Leg Interval
MW-25	05/11/94	6" FRE	38 feet	22-36 feet	36-38 feet
MW-26	05/12/94	6" FRE	23 feet	7-21 feet	21-23 feet
MW-27	05/18/94	4" FRE	22 feet	5-20 feet	20-22 feet
MW-28	05/13/94	4" FRE	35 feet	18-33 feet	33-35 feet
MW-29	05/12/94	4" FRE	26 feet	10-24 feet	24-26 feet
MW-30	05/13/94	4" FRE	38 feet	21-36 feet	36-38 feet
MW-31	05/12/94	4" FRE	37 feet	21-35 feet	35-37 feet

Soil cuttings were screened using a photo-ionization detector (PID) during drilling and the readings were recorded on the well logs (Appendix A). Readings over 100 ppm (relative to isobutylene gas calibration) were observed at all well locations except MW-26 and MW-29.

Wells were developed by purging following installation.

Groundwater Sampling

On 24 May 1994, all site wells were gauged using an Interface Probe for depth to water and the presence of SPH. Measurements are shown on Table 2: Liquid Level Gauging Chart. Liquid levels were used to construct a water table contour map (Figure 2) and SPH thicknesses were used to construct a SPH isopleth map (Figure 3). As shown on Figure 2, groundwater flows to the west of the site, toward Hammond Ditch. Figure 3 shows that SPH thicknesses in most of the active recovery wells were noted as a sheen. Well RW-2 and associated monitoring points contained measurable SPH during the gauging event. Two of the newly installed monitoring wells contained measurable SPH: 0.17 feet in MW-27 and 0.08 feet in MW-28.

TABLE 2
Liquid Level Gauging Chart

Well#	Well Elevation	Depth to Water	Depth to Product	Product Thickness	Water Elevation	Product Elevation	Corrected Water Elevation
MW-1	5515.78	15.64	----	----	5500.14	----	----
MW-3	5535.88	34.32	----	----	5501.56	----	----
MW-4	5524.46	25.72	25.14	0.58	5498.74	5499.32	5499.18
MW-5	5545.13	43.36	----	----	5501.77	----	----
MW-6	5551.20	dry	----	----	----	----	----
MW-7	5524.25	25.21	----	----	5499.04	----	----
MW-8	5531.17	29.80	----	----	5501.37	----	----
MW-9	5519.77	20.88	20.87	0.01	5498.89	5498.90	5498.90
RW-1	5526.01	27.33	----	----	5498.68	----	----
P-1	5524.49	26.00	----	----	5498.49	----	----
RW-2	5523.61	25.21	24.51	0.80	5498.40	5499.10	5499.00
P-2	5523.86	25.02	24.70	0.32	5498.84	5499.16	5499.08
RW-3	5516.96	18.68	----	----	5498.28	----	----
P-3	5507.31	9.21	----	----	5498.10	----	----
MW-11	5506.89	9.82	----	----	5497.07	----	----
MW-12	5498.42	8.92	----	----	5489.50	----	----
MW-13	5538.54	38.64	----	----	5499.90	----	----
RW-14	5534.13	33.23	sheen	----	5500.90	----	----
RW-15	5533.44	32.91	sheen	----	5500.53	----	----
RW-16	5532.09	32.00	sheen	----	5500.09	----	----
RW-17	5530.46	31.27	31.26	0.01	5499.19	5499.20	5499.20

Well#	Well Elevation	Depth to Water	Depth to Product	Product Thickness	Water Elevation	Product Elevation	Corrected Water Elevation
RW-18	5526.08	27.05	27.03	0.02	5499.03	5499.05	5499.05
RW-19	5527.27	27.80	----	----	5499.47	sheen	----
MW-20	5516.46	17.48	----	----	5498.98	----	----
MW-21	5518.62	19.30	----	----	5499.32	----	----
RW-22	5521.05	22.31	sheen	----	5498.74	----	----
RW-23	5517.74	19.28	sheen	----	5498.46	----	----
MW-24	5508.23	dry	----	----	----	----	----
MW-25	5530.45	31.03	----	----	5499.42	----	----
MW-26	5514.54	15.95	----	----	5498.59	----	----
MW-27	5515.26	17.69	17.52	0.17	5497.57	5497.74	5497.70
MW-28	5524.52	25.81	25.73	0.08	5498.71	5498.79	5498.77
MW-29	5521.55	21.01	----	----	5500.54	----	----
MW-30	5533.42	31.97	sheen	----	5501.45	----	----
MW-31	5532.17	32.37	----	----	5499.80	----	----

MEASUREMENTS ARE IN FEET.

Wells which contained SPH were not sampled. All other monitoring and recovery wells were first purged of three volumes of water (discharged to the facility's wastewater treatment plant) and sampled using disposable polyethylene bailers. Newly installed wells were sampled for volatile organic compounds (VOCs; USEPA Method 8240), semi-volatile organic compounds (SVOCs; USEPA Method 8270), total petroleum hydrocarbons (TPH; USEPA Method 418.1) and metals (USEPA Method 6010/7000 series). All other wells were sampled for VOCs and SVOCs only. Sampling was conducted on 24 and 25 May 1994.

Two groundwater samples (MW-20 and RW-3) were also collected for analysis of water quality parameters including the following:

- pH (field determined)
- temperature (field determined)
- dissolved oxygen
- total dissolved solids (TDS)
- total organic carbon (TOC)
- alkalinity
- hardness
- specific cations (iron, manganese, magnesium, calcium, ammonium, sodium and potassium)

One trip blank, one equipment rinsate blank and one duplicate sample were submitted for each of the two days of sampling.

Analyses were performed by Inter-Mountain Laboratories, Inc. Table 3 provides a summary of the analytical results. Laboratory reports are provided in Appendix B.

Results of Groundwater Sampling

Groundwater samples were collected from 16 wells for laboratory analysis, including five of the newly installed wells. All other monitoring and recovery wells contained SPH.

Targeted VOCs were non-detectable in seven samples, including MW-1, MW-3, MW-5, MW-8, MW-12, MW-13 and MW-29. The only targeted VOCs detected were benzene, toluene, ethylbenzene, m,p-xylene and o-xylene (BTEX). Benzene was the only targeted VOC detected in MW-20 at a concentration of 5.5 ug/L. MW-21 contained both benzene and ethylbenzene at 1,400 ug/L and 260 ug/L, respectively. Wells MW-11, MW-25, MW-26, RW-1 and RW-3 contained benzene, ethylbenzene and m,p-xylene. Wells MW-30 and MW-31 contained concentrations of all BTEX compounds.

Non-targeted VOCs, consisting of unknown hydrocarbons and unknown aromatics, were detected in 12 of 16 wells, ranging from approximately 10 ug/L (in MW-1) to 14,000 ug/L (in MW-30).

No targeted or non-targeted VOCs were detected in the trip or equipment blank samples collected for either of the two days of sampling.

Targeted SVOCs were non-detectable in the same seven samples that VOCs were not detected. Bis(2-ethylhexyl)phthalate was detected in one sample, RW-3, at a concentration of 16 ug/L. Chrysene was detected in one sample, RW-1, at a concentration of approximately 150 ug/L, below the method detection limit. Similarly, phenanthrene was detected in one sample, RW-1, at an approximate concentration of 130 ug/L. Two SVOCs, naphthalene and phenol, were found in MW-21, at concentrations of 17 ug/L and 13 ug/L, respectively. These compounds and one or more of the following SVOCs were found in wells MW-30, MW-31, MW-11, MW-25, MW-26, RW-1 and RW-3 at relatively low concentrations: 2,4-dimethylphenol, 2-methylnaphthalene, 2-methylphenol, 3-methylphenol.

Non-targeted SVOCs, consisting of indene, 1-methylnaphthalene, and unknown hydrocarbons, aromatics, alcohols, halogenated, were detected in all of the groundwater samples ranging from approximately 10 ug/L (MW-8) to 8,500 ug/L (MW-30).

Only groundwater samples from the newly installed wells (total of six samples from five wells) were analyzed for TPH and metals. TPH was detected in three of the five wells, at 17 mg/L in MW-26, 18 mg/L in MW-30 and 11 mg/L in MW-31. Metals were detected in three of the five wells: MW-26, MW-29 and MW-30. Lead and zinc were the only metals found in MW-26 and MW-29, both at concentrations within background ranges. MW-30 contained low concentrations of arsenic, chromium, copper, lead and zinc, all within background ranges. Metals concentrations were below corresponding maximum contaminant levels (MCLs), indicating that metals are not constituents of concern at the Bloomfield Refining Company site.

Duplicate samples were collected from MW-21 and MW-26. Results of the two samples were very similar for each duplicate.

The groundwater sample analytical results indicate that BTEX are the primary constituents of concern for the site. Delineation of the horizontal extent of dissolved hydrocarbons is complete except to the southwest, further downgradient of MW-11 (which contained BTEX at 14,900 ug/L) and MW-27 (which contained SPH). The second round of groundwater sampling to complete the Phase III RFI is scheduled for the week of 25 July 1994. Additional wells to complete delineation will be proposed following the July event.

Other RFI Work

Phase IV of the RFI consisting of aquifer testing and soil vapor extraction/air sparging pilot testing is being conducted during June 1994. The results will be submitted upon completion of data analysis in late July. Phase V of the RFI (stream and sediment sampling) will also be scheduled in July. Should you have any questions concerning the report, please do not hesitate to contact me at (505) 242-3113.

Sincerely,
Groundwater Technology, Inc.

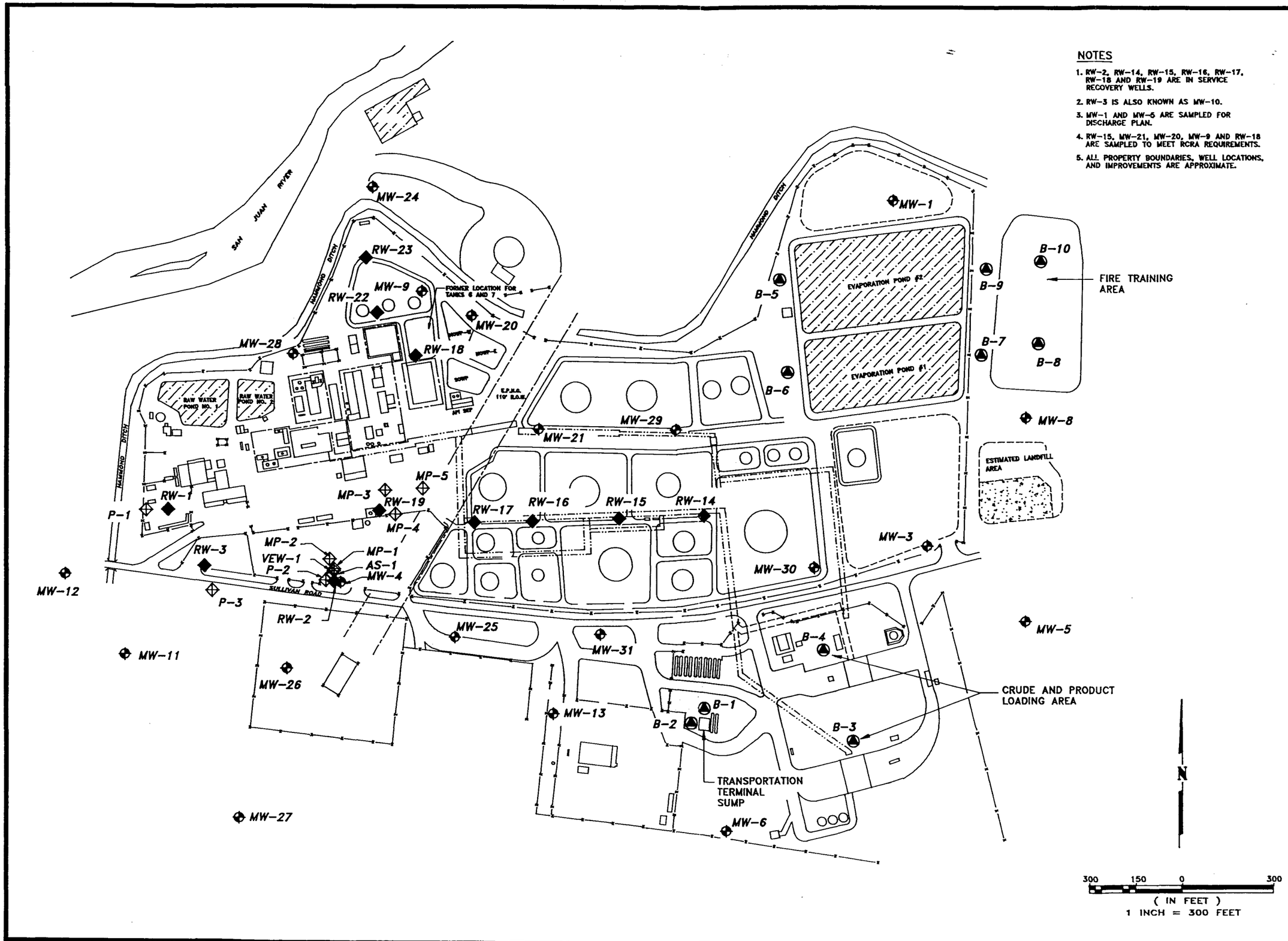
Cymantha Liakos

Cymantha Liakos
Project Manager

ATTACHMENTS

FIGURE 1	Soil Boring/Monitoring Well Locations
FIGURE 2	Water Table Contour Map (24 May 1994)
FIGURE 3	Separate Phase Hydrocarbon Isopleth (24 May 1994)
FIGURE 4	Total Targeted VOCs in Groundwater (24 and 25 May 1994)
FIGURE 5	Total Targeted SVOCs in Groundwater (24 and 25 May 1994)
TABLE 1	Well Construction Specifications
TABLE 2	Liquid Level Gauging Chart
TABLE 3	Groundwater Sample Analytical Results
APPENDIX A	Well Logs
APPENDIX B	Laboratory Reports of Groundwater Sample Analyses

cc: Ed Horst - NMED Hazardous Waste Bureau
Roger Anderson - NM Oil Conservation Division
Joe Warr - BRC
Chris Hawley - BRC
Dave Roderick - BRC



NOTES

1. RW-2, RW-14, RW-15, RW-16, RW-17, RW-18 AND RW-19 ARE IN SERVICE RECOVERY WELLS.
2. RW-3 IS ALSO KNOWN AS MW-10.
3. MW-1 AND MW-5 ARE SAMPLED FOR DISCHARGE PLAN.
4. RW-15, MW-21, MW-20, MW-9 AND RW-18 ARE SAMPLED TO MEET RCRA REQUIREMENTS.
5. ALL PROPERTY BOUNDARIES, WELL LOCATIONS, AND IMPROVEMENTS ARE APPROXIMATE.

NO.	DATE	BY	REVISION

LEGEND

- PIPEWAY
- UNDERGROUND PIPEWAY
- FENCE
- MW-1 MONITORING WELL
- RW-1 RECOVERY WELL
- B-1 SOIL BORING
- P-1 PIEZOMETER

SIGNATURE	DATE
PROJECT GEO:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary
#50 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO

GROUNDWATER TECHNOLOGY
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NEW MEXICO 87106
(505) 242-3113

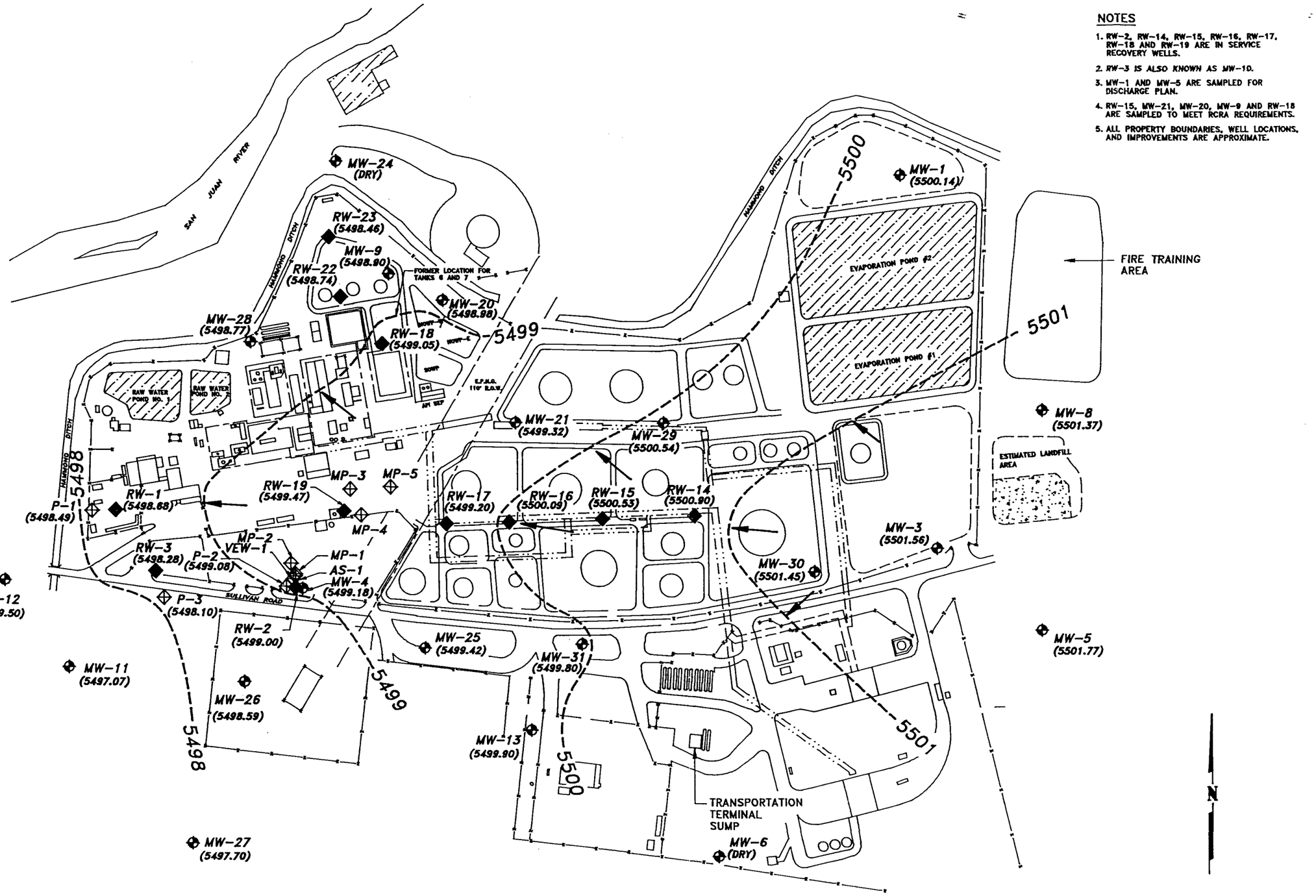
SOIL BORING/ MONITORING WELL LOCATIONS

PHASE 3 RFI

DESIGNED BY:	DRAFTED BY:	CHECKED BY:
	J. ML	

DATE:	FILE:
JUNE 10, 1994	MW-LOCA
PROJECT NO.:	CONTRACT:
023353014	
DRAWING:	REVISION:

FIGURE 1



NOTES

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5. ALL PROPERTY BOUNDARIES, WELL LOCATIONS, AND IMPROVEMENTS ARE APPROXIMATE.

NO.	DATE	BY	REVISION

LEGEND

- PIPEWAY
- UNDERGROUND PIPEWAY
- FENCE
- MW-1 MONITORING WELL
- RW-1 RECOVERY WELL
- PIEZOMETER
- P-1 (5501.37) WATER TABLE ELEVATION IN FEET ABOVE MSL
- INFERRED WATER TABLE ELEVATION CONTOUR
- INFERRED GROUND-WATER FLOW DIRECTION

ATTENTION

SIGNATURE	DATE
PROJECT GEO:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary
#50 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO

GROUNDWATER TECHNOLOGY
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NEW MEXICO 87106
(505) 242-3113

WATER TABLE CONTOUR MAP

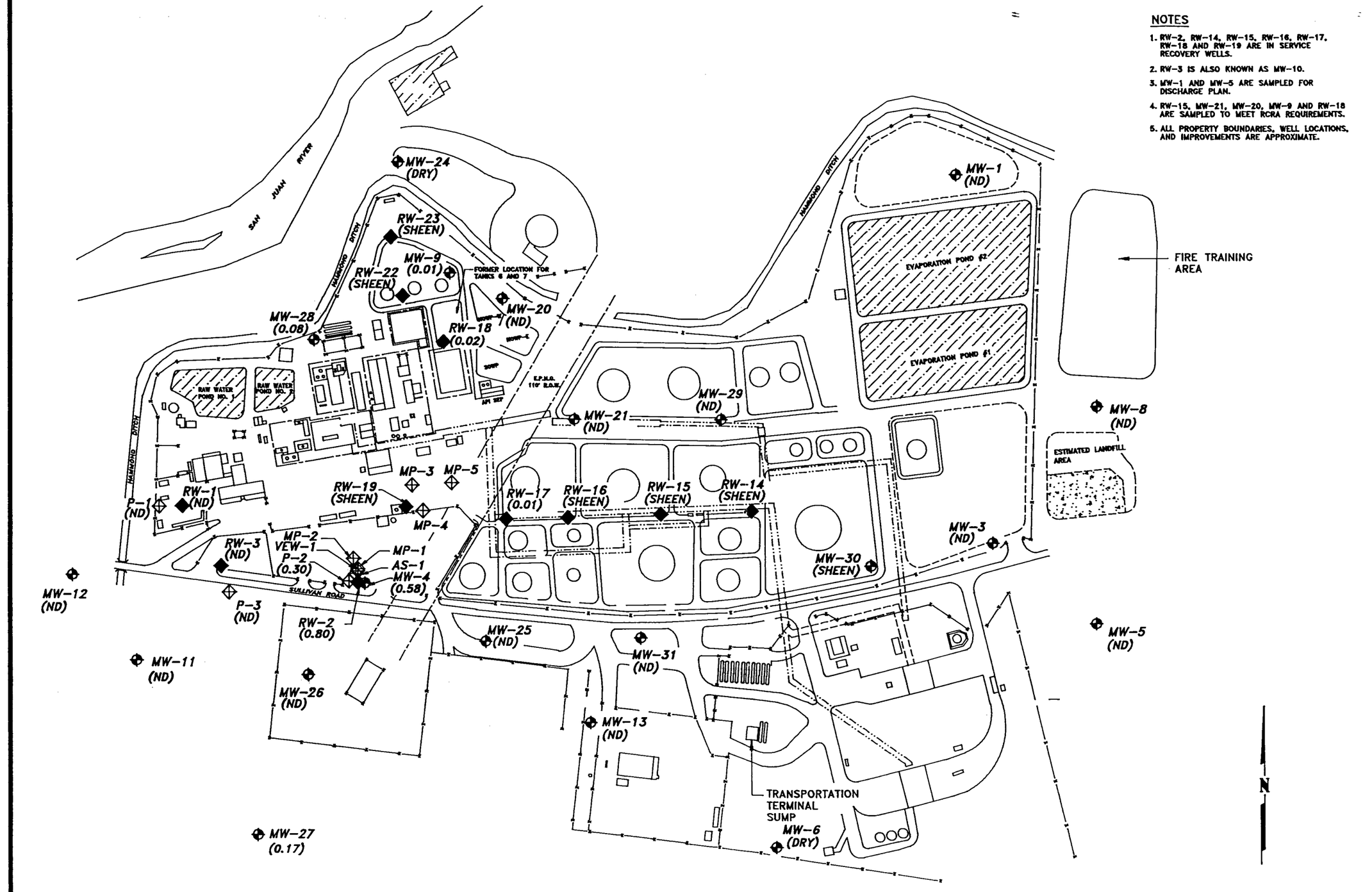
MAY 24, 1994

PHASE 3 RFI

DESIGNED BY:	DRAFTED BY:	CHECKED BY:
	J. ML	

DATE:	FILE:
JUNE 10, 1994	WTCM0594
PROJECT NO.: 023353014	CONTRACT:
DRAWING:	REVISION:

FIGURE 2



NOTES

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NO.	DATE	BY	REVISION

LEGEND

- PIPEWAY
- UNDERGROUND PIPEWAY
- FENCE
- MW-1 MONITORING WELL
- RW-1 RECOVERY WELL
- P-1 PIEZOMETER
- (ND)= NOT DETECTED
- (0.01)= SPH THICKNESS IN FEET

SIGNATURE	DATE
PROJECT GEO:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary
#50 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO

GROUNDWATER TECHNOLOGY
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NEW MEXICO 87106
(505) 242-3113

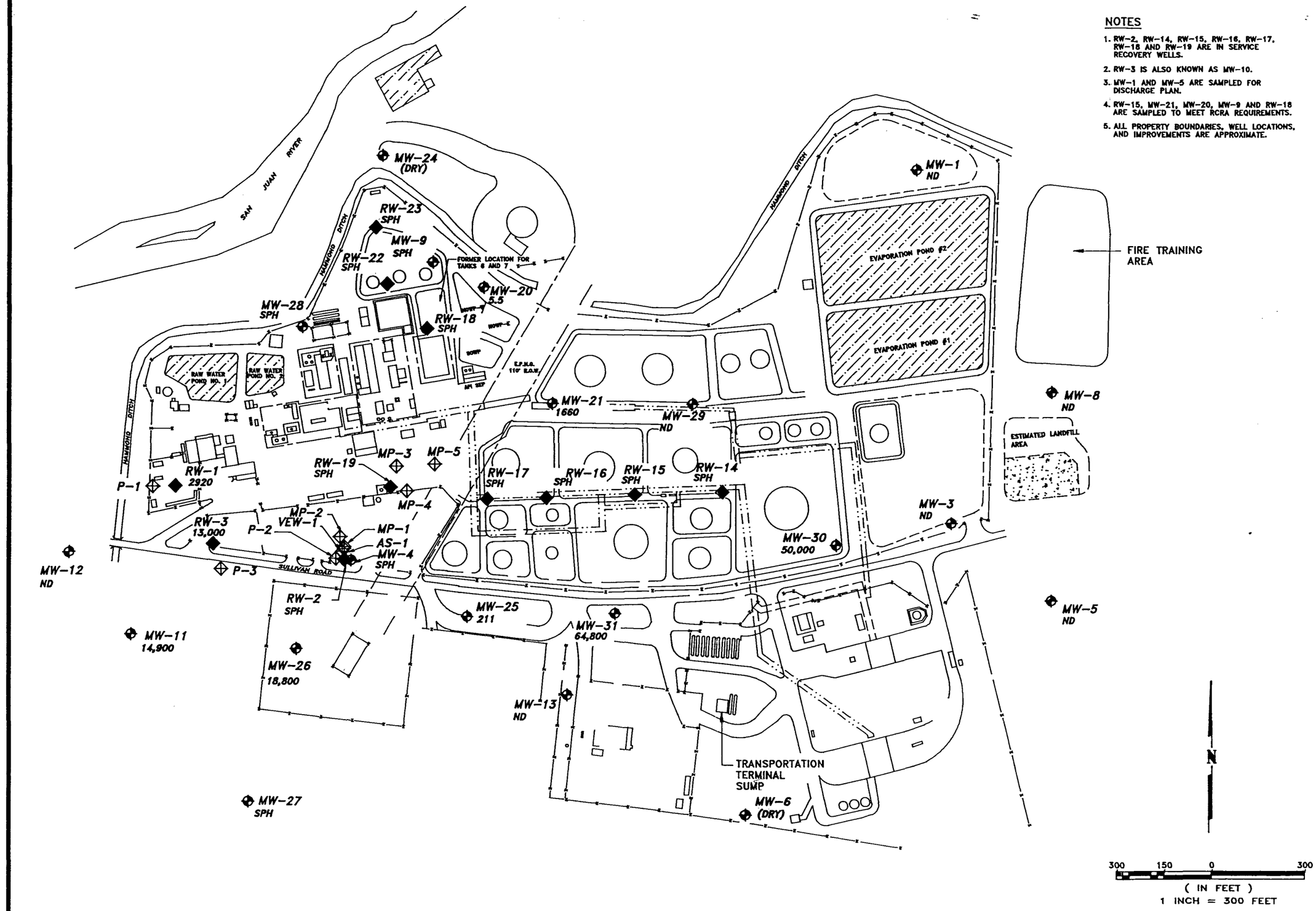
SEPARATE PHASE HYDROCARBON (SPH) THICKNESS

MAY 24, 1994
PHASE 3 RFI

DESIGNED BY:	DRAFTED BY:	CHECKED BY:
	J. ML	

DATE:	FILE:
JUNE 10, 1994	PSH-0594
PROJECT NO.: 023353014	CONTRACT:
DRAWING:	REVISION:

FIGURE 3



NOTES

1. RW-2, RW-14, RW-15, RW-16, RW-17, RW-18 AND RW-19 ARE IN SERVICE RECOVERY WELLS.
2. RW-3 IS ALSO KNOWN AS MW-10.
3. MW-1 AND MW-5 ARE SAMPLED FOR DISCHARGE PLAN.
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5. ALL PROPERTY BOUNDARIES, WELL LOCATIONS, AND IMPROVEMENTS ARE APPROXIMATE.

NO.	DATE	BY	REVISION

LEGEND

- PIPEWAY
- UNDERGROUND PIPEWAY
- FENCE
- MW-1 — MONITORING WELL
- RW-1 — RECOVERY WELL
- P-1 — PIEZOMETER
- ND — NOT DETECTED
- VOC — VOLITILE ORGANIC COMPOUNDS
- SPH — SEPARATE PHASE HYDROCARBON
- VOC CONCENTRATION IN µg/l

ATTENTION

SIGNATURE	DATE
PROJECT GEO:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary
#50 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO

GROUNDWATER TECHNOLOGY
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NEW MEXICO 87106
(505) 242-3113

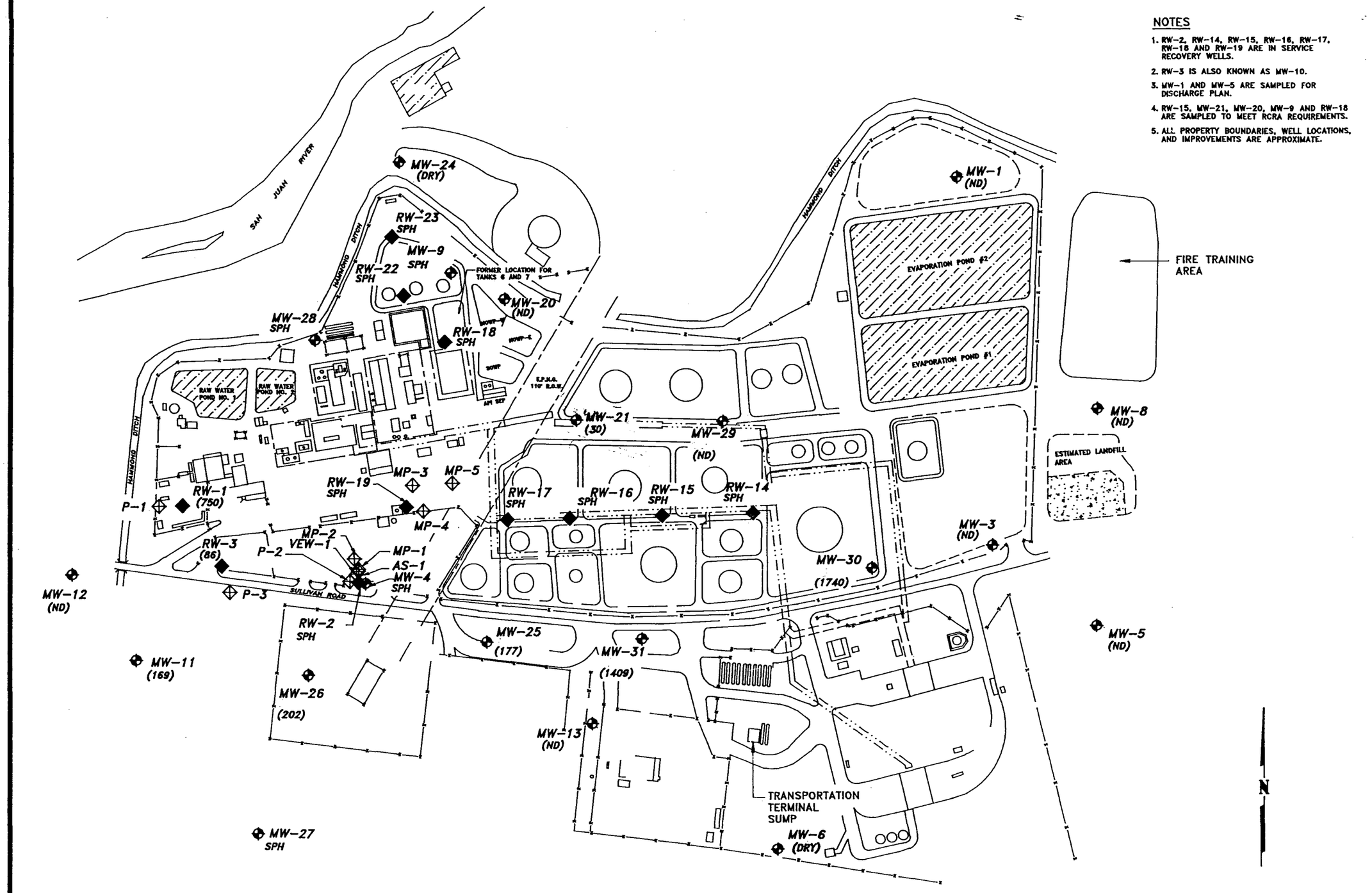
TOTAL TARGETED VOC's IN GROUNDWATER

MAY 24 & 25, 1994
PHASE 3 RFI

DESIGNED BY:	DRAFTED BY:	CHECKED BY:
	J. ML	

DATE:	FILE:
JUNE 22,1994	TVOC0594
PROJECT NO.: 023353014	CONTRACT:
DRAWING:	REVISION:

FIGURE 4



NOTES

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5. ALL PROPERTY BOUNDARIES, WELL LOCATIONS, AND IMPROVEMENTS ARE APPROXIMATE.

NO.	DATE	BY	REVISION

LEGEND

——·——·——	PIPEWAY
— — — —	UNDERGROUND PIPEWAY
——x——	FENCE
MW-1	MONITORING WELL
RW-1	RECOVERY WELL
P-1	PIEZOMETER
ND	NOT DETECTED
SVOC	SEMI-VOLATILE ORGANIC COMPOUNDS
SPH	SEPARATE PHASE HYDROCARBON
(169)	SVOC CONCENTRATION IN µg/l

SIGNATURE	DATE
PROJECT GEO:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary
#50 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO

GROUNDWATER TECHNOLOGY
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NEW MEXICO 87106
(505) 242-3113

TOTAL TARGETED SVOC"s IN GROUNDWATER

MAY 24 & 25, 1994

PHASE 3 RFI

DESIGNED BY:	DRAFTED BY:	CHECKED BY:
	J. ML	

DATE:	FILE:
JUNE 22,1994	SVOC0594
PROJECT NO.: 023353014	CONTRACT:

DRAWING: REVISION:

FIGURE 5

TABLE 3
Summary of Groundwater Sample Analytical Results (May 24, 1994)
Bloomfield Refining Company
Phase III RFI

Targeted Volatile Organic Compounds	MW-1	MW-3	MW-5	MW-8	MW-12	MW-13	MW-21	MW-21 DUP	MW-29	MW-30	MW-31
Benzene	ND	ND	ND	ND	ND	ND	1,400	1,300	ND	7,800	13,000
Ethylbenzene	ND	ND	ND	ND	ND	ND	260	260	ND	3,500	2,500
m,p-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	14,000	17,000
o-Xylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	4,700	6,300
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	20,000	26,000
Non-targeted VOCs											
Unknown Hydrocarbon(s)	10	ND	ND	ND	ND	ND	ND	ND	100	9,000 (3)	ND
Unknown Aromatic(s)	ND	ND	ND	ND	ND	ND	330 (3)	320 (3)	ND	5,000 (2)	6,000 (2)
Targeted Semi-Volatile Organic Compounds											
2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	160	77
2-Methylnaphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	580	280
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	82
3-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	70 J	210
Naphthalene	ND	ND	ND	ND	ND	ND	17	18	ND	850	650
Phenol	ND	ND	ND	ND	ND	ND	13	12	ND	80 J	110
Non-targeted SVOCs											
Unknown Alcohol	ND	ND	ND	ND	ND	130 (3)	ND	ND	ND	ND	ND
Unknown Hydrocarbon(s)	20	30 (2)	40 (2)	10	20	70 (2)	ND	50	20	ND	ND
Unknown Halogenated	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indene	ND	ND	ND	ND	ND	ND	13	13	ND	1,000	65
1-Methylnaphthalene	ND	ND	ND	ND	ND	ND	17	18	ND	3,500	100
Unknown Aromatic(s)	ND	ND	ND	ND	ND	ND	180 (3)	120 (2)	ND	4,000 (3)	4,000 (3)
Total Petroleum Hydrocarbons (mg/L)	NA	NA	NA	NA	NA	NA	NA	NA	ND	18	11

Concentrations are shown in ug/L, except for TPH which is given in mg/L.
ND - Not Detected
NA - Not Analyzed
J - Meets identification criteria, below detection limit

GROUNDWATER TECHNOLOGY

TABLE 3

Summary of Groundwater Sample Analytical Results (May 25, 1994)
Bloomfield Refining Company
Phase III RFI

Targeted Volatile Organic Compounds	MW-11	MW-20	MW-25	MW-26	MW-26 DUP	RW-1	RW-3
Benzene	5,000	5.5	88	4,500	4,700	2,800	8,300
Ethylbenzene	500	ND	42	1,100	1,100	80	1,100
m,p-Xylene	9,400	ND	81	12,000	13,000	40 J	3,600
o-Xylene	ND	ND	ND	100 J	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
Non-targeted VOCs							
Unknown Hydrocarbon(s)	400	ND	ND	2,800 (2)	2,800 (2)	600 (2)	3,000 (2)
Unknown Aromatics(s)	3,900 (4)	54 (5)	770 (5)	4,000 (3)	2,900 (3)	1,100 (3)	1,600 (3)
Targeted Semi-Volatile Organic Compounds							
2,4-Dimethylphenol	59	ND	17	58	43	ND	ND
2-Methylnaphthalene	16	ND	63	41	21	300	8 J
Bis(2-ethylhexyl)phthalate	ND	ND	ND	ND	ND	ND	16
Chrysene	ND	ND	ND	ND	ND	150 J	ND
Naphthalene	62	ND	97	84	53	170 J	46
Phenanthrene	ND	ND	ND	ND	ND	130 J	ND
Phenol	32	ND	ND	19	10	ND	16
Non-targeted SVOCs							
Unknown Alcohol	ND	20	ND	ND	ND	ND	ND
1-Methylnaphthalene	ND	ND	59	39	19	460	ND
Unknown Aromatic(s)	3,800 (4)	ND	340 (3)	2,900 (4)	1,100 (2)	ND	3,200 (4)
Unknown Hydrocarbon(s)	900	ND	70	ND	1,500 (2)	7,000 (4)	600
Total Petroleum Hydrocarbons (mg/L)	NA	NA	ND	17	14	NA	NA

Concentrations are shown in ug/L, except for TPH which is given in mg/L.
ND - Not Detected
NA - Not Analyzed
J - Meets identification criteria, below detection limit

GROUNDWATER TECHNOLOGY

TABLE 3

Summary of Groundwater Sample Analytical Results (May 24 and 25, 1994)
Bloomfield Refining Company
Phase III RFI

Metals (mg/L)	MW-25	MW-26	MW-26 DUP	MW-29	MW-30	MW-31
Antimony	ND	ND	ND	ND	ND	ND
Arsenic	ND	ND	ND	ND	0.011	ND
Beryllium	ND	ND	ND	ND	ND	ND
Cadmium	ND	ND	ND	ND	ND	ND
Chromium	ND	ND	ND	ND	0.015	ND
Copper	ND	ND	ND	ND	0.034	ND
Lead	ND	0.0059	ND	0.0057	0.0087	ND
Mercury	ND	ND	ND	ND	ND	ND
Nickel	ND	ND	ND	ND	ND	ND
Selenium	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND
Thallium	ND	ND	ND	ND	ND	ND
Zinc	ND	0.035	ND	0.037	0.039	ND

Concentrations are shown in mg/L.
ND - Not Detected
J - Meets identification criteria, below detection limit

GROUNDWATER TECHNOLOGY

TABLE 3

Summary of QA/QC Sample Analytical Results (May 24 and 25, 1994)
Bloomfield Refining Company
Phase III RFI

Targeted Volatile Organic Compounds	TB-052494	EB-052494	TB-052594	EB-052594
Benzene	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND
m,p-Xylene	ND	ND	ND	ND
o-Xylene	ND	ND	ND	ND
Toluene	ND	ND	ND	ND
Non-targeted VOCs	ND	ND	ND	ND

Concentrations are shown in ug/L.
ND - Not Detected

APPENDIX A

Well Logs

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well **MW-25**

Project *BRC* Owner *Bloomfield Refining Co.*
Location *50 County Road 4990, Bloomfield, New Mexico* Proj. No. *023353014*
Surface Elev. ____ Total Hole Depth *38 ft.* Diameter *11 in.*
Top of Casing ____ Water Level Initial *28 ft.* Static ____
Screen: Dia *6 in.* Length *14 ft.* Type/Size *FRE 0.020 in.*
Casing: Dia *6 in.* Length *24/2 ft.* Type *FRE*
Fill Material *10/20 Co. Silica* Rig/Core *Drill Systems 180*
Drill Co. *Layne* Method *Air Percussion*
Driller *Gabby Rodriguez* Log By *Jerry May* Date *05/11/94* Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

Start @ 1000 hrs. 2 ft. silty leg installed from 36 feet to 38 feet.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Brown clayey SILT (dry-moist)
2					ML	
4		0				
6						Brown fine poorly-graded silty/clayey SAND (moist)
8					SM SC	
10		0				Tan fine poorly-graded SAND (moist)
12						
14		0				
16					SP	
18						
20		0				
22						
24						

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Well **MW-25**

Project *BRC* Owner *Bloomfield Refining Co.*

Location *50 County Road 4990, Bloomfield, New Mexico* Proj. No. *023353014*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24							
26		120				SP	
28						SP GM	Tan fine-coarse, poorly-graded SAND with gravel and cobbles (moist)
30		550					Dark gray-stained at 28 feet.
32						GP	*Groundwater encountered at 28 feet 5/11/94*
34							Dark gray-stained cobbles (little fines)
36						CL	Brown silty clay lens at 34 feet (moist)
38						SP	Tan very fine poorly-graded SAND (dry)
40							Encountered weathered limestone at 35 feet (dry)
42							End of boring at 38 feet (1110 hrs.). Installed well screened from 22 to 36 feet on 5/11/94.
44							
46							
48							
50							
52							
54							
56							

Drilling Log

GROUNDWATER TECHNOLOGY

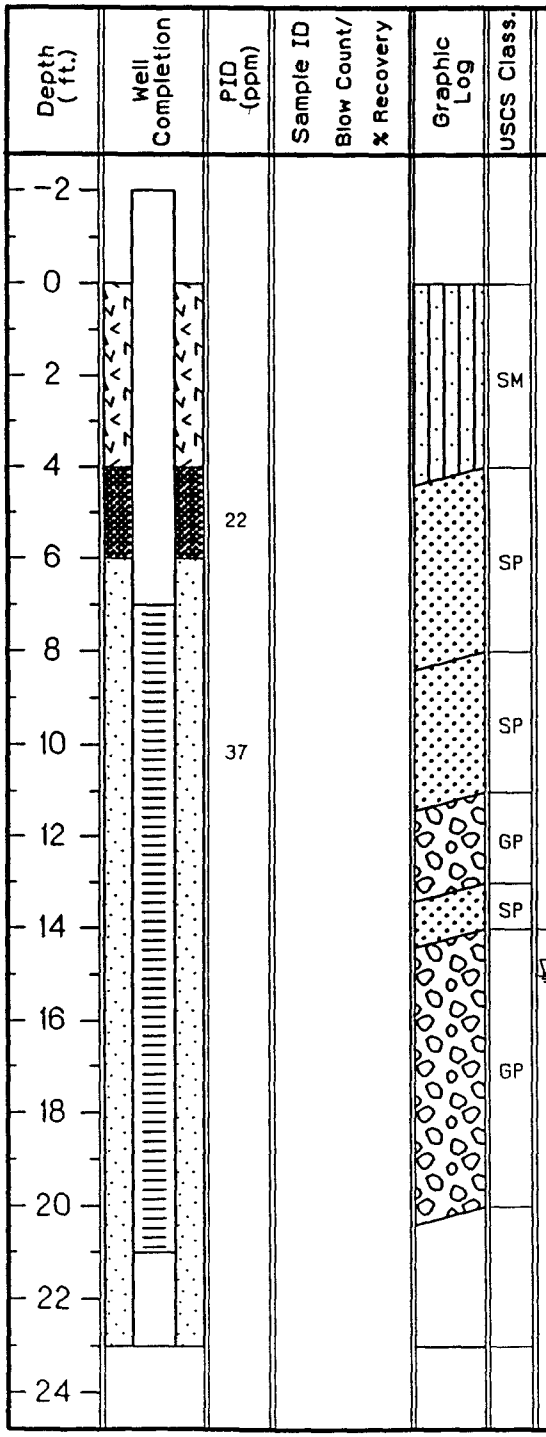
Monitoring Well MW-26

Project BRC — Owner Bloomfield Refining Co.
Location 50 County Road 4990, Bloomfield, New Mexico — Proj. No. 023353014
Surface Elev. ____ — Total Hole Depth 23 ft. — Diameter 15 in.
Top of Casing ____ — Water Level Initial 15 ft. — Static ____
Screen: Dia 6 in. — Length 14 ft. — Type/Size FRE 0.020 in.
Casing: Dia 6 in. — Length 9/2 ft. — Type FRE
Fill Material 10/20 Co. Silica — Rig/Core Drill Systems 180
Drill Co. Layne — Method Air Percussion
Driller Gabby Rodriguez — Log By Jerry May — Date 05/12/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

Start @ 0730 hrs. Silt leg installed from 21 feet to 23 feet.



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

Tan fine poorly-graded silty SAND (moist)

Tan fine poorly-graded SAND (moist)

Tan fine-coarse SAND with a little pea gravel and cobbles (dry)

Cobbles with some fines (dry)

Tan fine-coarse poorly-graded SAND (dry)
Gray-stained cobbles with some fines dry-wet
Groundwater encountered at 15 feet on 5/12/94

Dark gray-stained silty clay lens at 16 feet

Dark gray-stained silty clay lens at 19 feet

Encountered weathered limestone (moist)

Dry at 22 feet

End of boring at 23 feet (0820 hrs.). Installed well screened from 7 to 21 feet on 5/12/94.

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well **MW-27**

Project BRC Owner Bloomfield Refining Co.
Location 50 County Road 4990, Bloomfield, New Mexico Proj. No. 023353014
Surface Elev. ____ Total Hole Depth 22 ft. Diameter 10 in.
Top of Casing ____ Water Level Initial NE Static ____
Screen: Dia 4 in. Length 15 ft. Type/Size FRE 0.020 in.
Casing: Dia 4 in. Length 8 ft./2 ft. Type FRE
Fill Material 10/20 Co. Silica Rig/Core Drill Systems 180
Drill Co. Layne Method Air Percussion
Driller Gabby Rodriguez Log By Jerry May Date 05/18/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

Start @ 0810 hrs. Installed silt leg from 20 to 22 feet. Groundwater not encountered on 5/18/94.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Tan, fine-coarse, poorly-graded SAND (dry)
4						(Same as above, moist)
6		60				(Trace of gravel at 7 feet)
8					SP	
10		51				(Same as above with a trace of gravel)
14						(Gray-stained at 14 feet)
16		1363				Gray-stained, fine-coarse, poorly-graded SAND with trace of gravel (moist)
					ML	(Same with some cobbles at 16 feet)
18						Tan SILT (dry)
						Encountered weathered limestone (dry)
22						End of boring at 22 feet (0835 hrs). Groundwater not encountered. Installed well screened from 5 to 20 feet on 5/18/94.
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well MW-28

Project BRC Owner Bloomfield Refining Co.
Location 50 County Road 4990, Bloomfield, New Mexico Proj. No. 023353014
Surface Elev. _____ Total Hole Depth 33 ft. Diameter 10 in.
Top of Casing _____ Water Level Initial 25 ft. Static _____
Screen: Dia 4 in. Length 15 ft. Type/Size FRE 0.020 in.
Casing: Dia 4 in. Length 20/2 ft. Type FRE
Fill Material 10/20 Co. Silica Rig/Core Drill Systems 180
Drill Co. Layne Method Air Percussion
Driller Gabby Rodriguez Log By Jerry May Date 05/13/94 Permit # _____
Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS:

Start @ 1020 hrs. Installed silt leg from 33 to 35 feet.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0							Tan fine poorly-graded silty SAND (dry-moist)
2						SM	
4							
6		124				SM	Gray-stained/tan fine poorly-graded silty SAND (moist)
8							
10		452				CL	Black-stained silty CLAY (moist)
12							
14						SM	Tan fine poorly-graded silty SAND (moist)
16		365					Tan fine-coarse poorly-graded SAND with gravel and cobbles
18							
20		333				SP GM	
22							
24		2507					

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Well MW-28

Project *BRC* Owner *Bloomfield Refining Co.*

Location *50 County Road 4990, Bloomfield, New Mexico* Proj. No. *023353014*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		2507					(Dark gray-stained at 24 feet)
		3226					*Groundwater encountered at 25 feet on 5/13/94*
26							
28						SP GM	
30							
32							Encountered weathered limestone
		174					
34							End of boring at 35 feet (1100 hrs). Installed well screened from 18 to 33 feet on 5/13/94.
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well **MW-29**

Project *BRC* Owner *Bloomfield Refining Co.*
Location *50 County Road 4990, Bloomfield, New Mexico* Proj. No. *023353014*
Surface Elev. _____ Total Hole Depth *26 ft.* Diameter *10 in.*
Top of Casing _____ Water Level Initial *20 ft.* Static _____
Screen: Dia *4 in.* Length *14 ft.* Type/Size *FRE 0.020 in.*
Casing: Dia *4 in.* Length *12/2 ft.* Type *FRE*
Fill Material *10/20 Co. Silica* Rig/Core *Drill Systems 180*
Drill Co. *Layne* Method *Air Percussion*
Driller *Gabby Rodriguez* Log By *Jerry May* Date *05/12/94* Permit # _____
Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS:

Start @ 1445 hrs. Installed silt leg 24 to 26 feet.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0					SM	Tan fine poorly-graded silty SAND (moist)
2					CL	Tan silty CLAY (moist)
4		0				Tan fine poorly-graded SAND (moist)
6						
8					SP	
10		0				
12						Tan fine-coarse poorly-graded SAND with gravel and cobbles
14		9				
16					SP GM	
18						
20		38				*Groundwater encountered at 20 feet on 5/12/94*
22					GP	Cobbles with some fines (wet)
24						Encountered weathered limestone (dry)

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Well MW-29

Project BRC Owner Bloomfield Refining Co.

Location 50 County Road 4990, Bloomfield, New Mexico Proj. No. 023353014

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24							
26							End of boring at 26 feet (1510 hrs). Installed well screened from 10 to 24 feet.
28							
30							
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

GROUNDWATER TECHNOLOGY

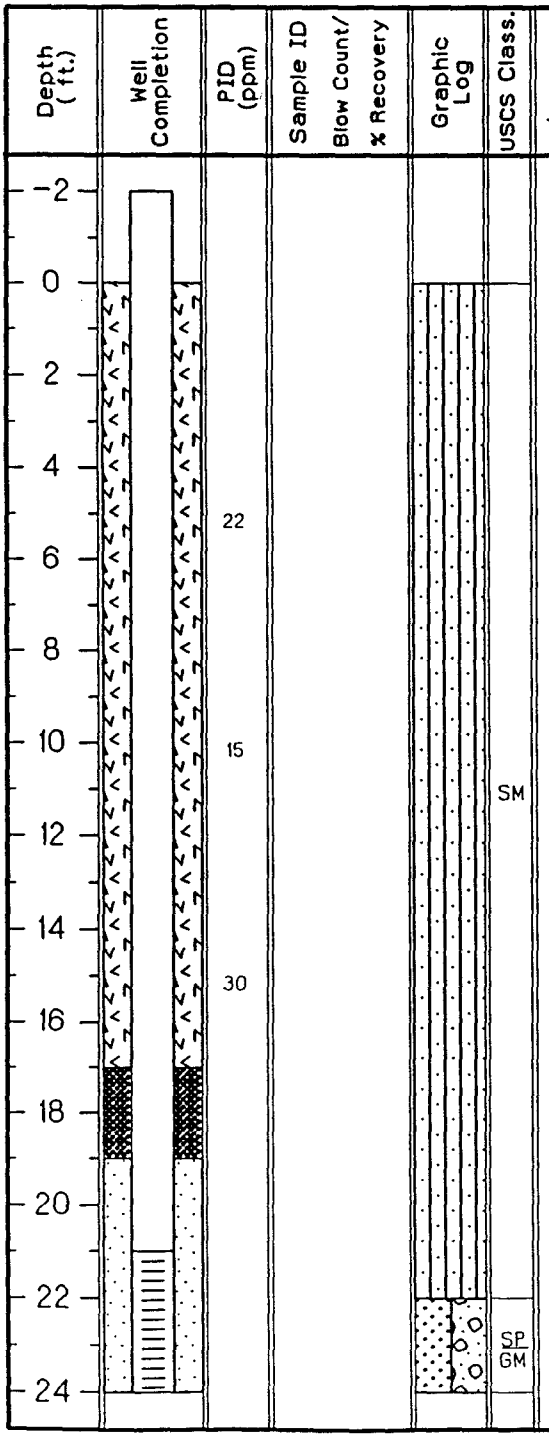
Monitoring Well MW-30

Project BRC — Owner Bloomfield Refining Co.
Location 50 County Road 4990, Bloomfield, New Mexico — Proj. No. 023353014
Surface Elev. ____ — Total Hole Depth 38 ft. — Diameter 10 in.
Top of Casing ____ — Water Level Initial 31 ft. — Static ____
Screen: Dia 4 in. — Length 15 ft. — Type/Size FRE 0.020 in.
Casing: Dia 4 in. — Length 23/2 ft. — Type FRE
Fill Material 10/20 Co. Silica — Rig/Core Drill Systems 180
Drill Co. Layne — Method Air Percussion
Driller Gabby Rodriguez — Log By Jerry May — Date 05/13/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

Start @ 0720 hrs. Installed silt leg from 36 to 38 feet.



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

Tan fine poorly-graded silty SAND (moist)

(Same as above)

(Same as above)

(Same as above)

Tan fine-coarse poorly-graded SAND with pea gravel and cobbles

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Well MW-30

Project BRC Owner Bloomfield Refining Co.

Location 50 County Road 4990, Bloomfield, New Mexico Proj. No. 023353014

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24		62			SP GM	(Same as above)
26						
28						
30		620				Dark gray-stained cobbles with some fines (moist-very moist)
						Assume groundwater encountered at 31 feet on 5/13/94
32					GP	
34						(Some clay and silt at 34 feet)
		203				Encountered weathered limestone (dry)
36						
38						End of boring at 38 feet (0800 hrs). Installed well screened from 21 to 36 feet.
40						
42						
44						
46						
48						
50						
52						
54						
56						

Drilling Log

GROUNDWATER TECHNOLOGY

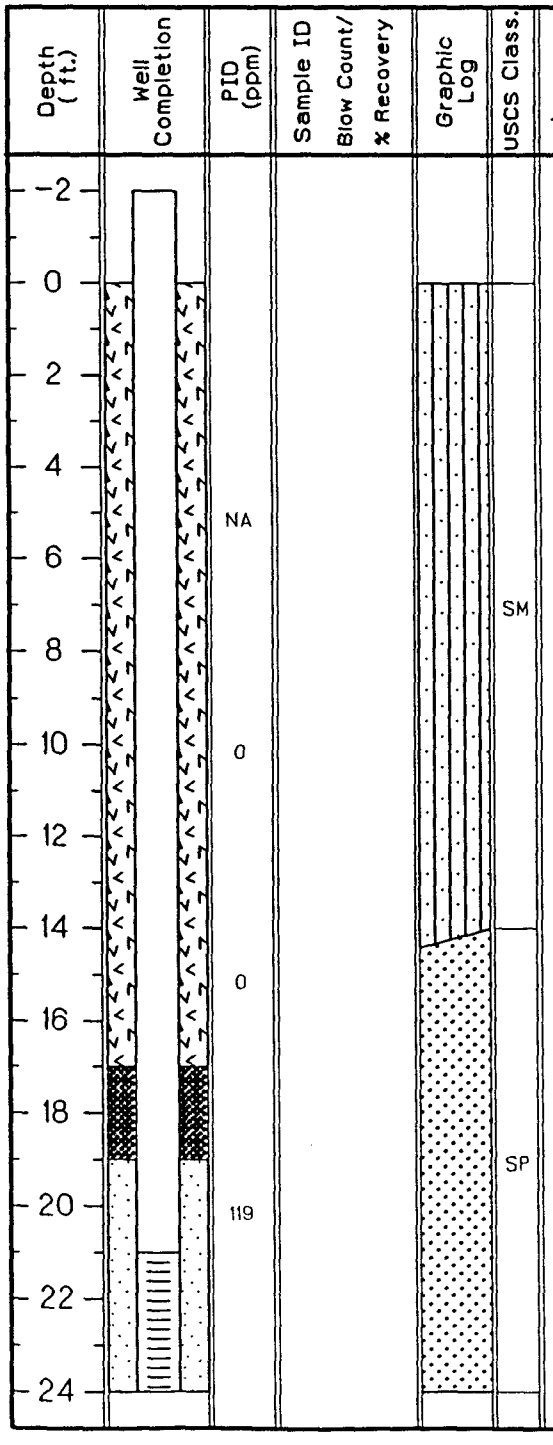
Monitoring Well **MW-31**

Project *BRC* Owner *Bloomfield Refining Co.*
Location *50 County Road 4990, Bloomfield, New Mexico* Proj. No. *023353014*
Surface Elev. _____ Total Hole Depth *37 ft.* Diameter *10 in.*
Top of Casing _____ Water Level Initial *30 ft.* Static _____
Screen: Dia *4 in.* Length *14 ft.* Type/Size *FRE 0.020 in.*
Casing: Dia *4 in.* Length *23/2 ft.* Type *FRE*
Fill Material *10/20 Co. Silica* Rig/Core *Drill Systems 180*
Drill Co. *Layne* Method *Air Percussion*
Driller *Gabby Rodriguez* Log By *Jerry May* Date *05/12/94* Permit # _____
Checked By _____ License No. _____

See Site Map For Boring Location

COMMENTS:

Start @ 1200 hrs.



Description

(Color, Texture, Structure)
Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%

Tan fine poorly-graded silty SAND (moist)

Tan fine poorly-graded SAND (moist)

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Well MW-31

Project BRC Owner Bloomfield Refining Co.

Location 50 County Road 4990, Bloomfield, New Mexico Proj. No. 023353014

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24						
26		85			SP	Fine-coarse poorly-graded SAND with gravel and cobbles (moist)
28					SP GM	
30		91				*Groundwater encountered at 30 feet on 5/12/94*
32		2026			GP	Gray-stained cobbles with a little fines (wet) (Dark gray-stained at 32 feet)
34						Encountered weathered limestone (moist-dry)
36		539				End of boring at 37 feet (1225 hrs). Installed well screened from 21 to 35 feet on 5/12/94.
38						
40						
42						
44						
46						
48						
50						
52						
54						
56						

APPENDIX B

Laboratory Reports of Groundwater Sample Analyses

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

CASE NARRATIVE

On May 26, 1994, twenty samples and two trip blanks were received for analysis at Inter-Mountain Laboratories, Bozeman, Montana. The chain of custody form requested analysis for volatile organic compounds by method 8240, semivolatile organic compounds by method 8270, metals by methods 6010/7000 and some general parameters. Client name/Project name was listed as Groundwater Technology / Bloomfield Refinery / Bloomfield, NM.

Detectable amounts of targeted compounds were present in some of the samples.

Limits of detection for each instrument/analysis are determined by sample matrix effects, instrument performance under standard conditions, and dilution requirements to maintain chromatography output within calibration ranges.

Wynn Sudtelgte
IML-Bozeman

0617GT

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-12	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945066	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-12	Date Reported:	06/16/94
Laboratory ID:	B945066	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-12	Date Reported:	06/16/94
Laboratory ID:	B945066	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	94	76 - 114
Toluene-d8	102	88 - 110
Bromofluorobenzene	98	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

Analyst

Reviewed

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-12	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945066	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/28/94
Preservation:	Cool	Date Analyzed:	06/01/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-12	Date Reported:	06/16/94
Laboratory ID:	B945066	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-12	Date Reported:	06/16/94
Laboratory ID:	B945066	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Unknown hydrocarbon	8.52	20	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	54	21 - 100
Phenol-d6	55	10 - 94
Nitrobenzene-d5	88	35 - 114
2-Fluorobiphenyl	98	43 - 116
2,4,6-Tribromophenol	94	10 - 123
Terphenyl-d14	85	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-5	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945067	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-5	Date Reported:	06/16/94
Laboratory ID:	B945067	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-5	Date Reported:	06/16/94
Laboratory ID:	B945067	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	93	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	99	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-5	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945067	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/28/94
Preservation:	Cool	Date Analyzed:	06/01/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-5	Date Reported:	06/16/94
Laboratory ID:	B945067	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-5	Date Reported:	06/16/94
Laboratory ID:	B945067	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Unknown hydrocarbon	15.80	10	ug/L
Unknown hydrocarbon	19.68	30	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	75	21 - 100
Phenol-d6	81	10 - 94
Nitrobenzene-d5	91	35 - 114
2-Fluorobiphenyl	98	43 - 116
2,4,6-Tribromophenol	105	10 - 123
Terphenyl-d14	78	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-8	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945068	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-8	Date Reported:	06/16/94
Laboratory ID:	B945068	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-8	Date Reported:	06/16/94
Laboratory ID:	B945068	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	92	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	100	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-8	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945068	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/28/94
Preservation:	Cool	Date Analyzed:	06/01/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-8	Date Reported:	06/16/94
Laboratory ID:	B945068	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-8	Date Reported:	06/16/94
Laboratory ID:	B945068	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Unknown hydrocarbon	19.64	10	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	72	21 - 100
Phenol-d6	75	10 - 94
Nitrobenzene-d5	91	35 - 114
2-Fluorobiphenyl	98	43 - 116
2,4,6-Tribromophenol	107	10 - 123
Terphenyl-d14	83	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	TB-052494	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945069	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	TB-052494	Date Reported:	06/16/94
Laboratory ID:	B945069	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	TB-052494	Date Reported:	06/16/94
Laboratory ID:	B945069	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	92	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	99	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-3	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945070	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-3	Date Reported:	06/16/94
Laboratory ID:	B945070	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-3	Date Reported:	06/16/94
Laboratory ID:	B945070	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	94	76 - 114
Toluene-d8	100	88 - 110
Bromofluorobenzene	98	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-3	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945070	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/28/94
Preservation:	Cool	Date Analyzed:	06/01/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-3	Date Reported:	06/16/94
Laboratory ID:	B945070	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-3	Date Reported:	06/16/94
Laboratory ID:	B945070	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Unknown hydrocarbon	15.80	10	ug/L
Unknown hydrocarbon	19.64	20	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	53	21 - 100
Phenol-d6	59	10 - 94
Nitrobenzene-d5	66	35 - 114
2-Fluorobiphenyl	82	43 - 116
2,4,6-Tribromophenol	98	10 - 123
Terphenyl-d14	72	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-1	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945071	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-1	Date Reported:	06/16/94
Laboratory ID:	B945071	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-1	Date Reported:	06/16/94
Laboratory ID:	B945071	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown hydrocarbon	6.52	10	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	93	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	97	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-1	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945071	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/28/94
Preservation:	Cool	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-1	Date Reported:	06/16/94
Laboratory ID:	B945071	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-1	Date Reported:	06/16/94
Laboratory ID:	B945071	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Unknown hydrocarbon	19.67	20	ug/L
Unknown halagonated	25.21	10	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	62	21 - 100
Phenol-d6	71	10 - 94
Nitrobenzene-d5	81	35 - 114
2-Fluorobiphenyl	92	43 - 116
2,4,6-Tribromophenol	102	10 - 123
Terphenyl-d14	84	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	EB-052494	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945072	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/01/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	EB-052494	Date Reported:	06/16/94
Laboratory ID:	B945072	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	EB-052494	Date Reported:	06/16/94
Laboratory ID:	B945072	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	88	76 - 114
Toluene-d8	102	88 - 110
Bromofluorobenzene	99	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-29	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945073	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/01/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-29	Date Reported:	06/16/94
Laboratory ID:	B945073	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	**GROUNDWATER TECHNOLOGY**		
Sample ID:	MW-29	Date Reported:	06/16/94
Laboratory ID:	B945073	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown hydrocarbon	6.49	100	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	90	76 - 114
Toluene-d8	102	88 - 110
Bromofluorobenzene	100	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-29	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945073	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/28/94
Preservation:	Cool	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-29	Date Reported:	06/16/94
Laboratory ID:	B945073	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-29	Date Reported:	06/16/94
Laboratory ID:	B945073	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Unknown hydrocarbon	19.66	20	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	55	21 - 100
Phenol-d6	63	10 - 94
Nitrobenzene-d5	69	35 - 114
2-Fluorobiphenyl	84	43 - 116
2,4,6-Tribromophenol	98	10 - 123
Terphenyl-d14	61	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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TOTAL METALS ANALYSIS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-29	Date Reported:	06/17/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945073	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/31/94
Preservation:	Cool; HNO3	Date Analyzed:	06/17/94
Condition:	Intact		

Parameter	Analytical Result	Detection Level	Units
Antimony	ND	0.06	mg/L
Arsenic	ND	0.01	mg/L
Beryllium	ND	0.005	mg/L
Cadmium	ND	0.005	mg/L
Chromium	ND	0.01	mg/L
Copper	ND	0.025	mg/L
Lead	0.0057	0.003	mg/L
Mercury	ND	0.0002	mg/L
Nickel	ND	0.04	mg/L
Selenium	ND	0.005	mg/L
Silver	ND	0.01	mg/L
Thallium	ND	0.01	mg/L
Zinc	0.037	0.02	mg/L

ND-Parameter not detected at stated detection level.

References:

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September 1986.

Method 7000: Atomic Absorption Spectroscopy SW-846, September 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September 1986.

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TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-29	Date Reported:	06/17/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945073	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	06/13/94
Preservation:	Cool	Date Analyzed:	06/14/94
Condition:	Intact		

Parameter	Analytical Result	Detection Level	Units
Total Recoverable Petroleum Hydrocarbons	ND	1	mg/L

ND-Parameter not detected at stated detection level.

References: Method 418.1: Petroleum Hydrocarbons, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945074	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/03/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	50	ug/L
1,1,2,2-Tetrachloroethane	ND	50	ug/L
1,1,2-Trichloroethane	ND	50	ug/L
1,1-Dichloroethane	ND	50	ug/L
1,1-Dichloroethene	ND	50	ug/L
1,2-Dichloroethane	ND	50	ug/L
1,2-Dichloropropane	ND	50	ug/L
2-Butanone (MEK)	ND	200	ug/L
2-Hexanone	ND	50	ug/L
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L
Acetone	ND	200	ug/L
Benzene	1400	50	ug/L
Bromodichloromethane	ND	50	ug/L
Bromoform	ND	50	ug/L
Bromomethane	ND	50	ug/L
Carbon Disulfide	ND	50	ug/L
Carbon Tetrachloride	ND	50	ug/L
Chlorobenzene	ND	50	ug/L
Chloroethane	ND	50	ug/L
Chloroform	ND	50	ug/L
Chloromethane	ND	50	ug/L
cis-1,3-Dichloropropene	ND	50	ug/L
Dibromochloromethane	ND	50	ug/L
Ethylbenzene	260	50	ug/L
m,p-Xylene	ND	50	ug/L
Methylene chloride	ND	200	ug/L
o-Xylene	ND	50	ug/L
Styrene	ND	50	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21	Date Reported:	06/16/94
Laboratory ID:	B945074	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/03/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	50	ug/L
Toluene	ND	50	ug/L
trans-1,2-Dichloroethene	ND	50	ug/L
trans-1,3-Dichloropropene	ND	50	ug/L
Trichloroethene (TCE)	ND	50	ug/L
Vinyl Chloride	ND	50	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21	Date Reported:	06/16/94
Laboratory ID:	B945074	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/03/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown aromatic	21.03	70	ug/L
Unknown aromatic	21.54	200	ug/L
Unknown aromatic	22.02	60	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	94	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	100	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945074	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21	Date Reported:	06/16/94
Laboratory ID:	B945074	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	17	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	13	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21	Date Reported:	06/16/94
Laboratory ID:	B945074	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Hydrocarbon envelope	10-32		
Indene	11.32	13	ug/L
1-Methylnaphthalene	16.39	17	ug/L
Unknown aromatic	10.22	40	ug/L
Unknown aromatic	11.11	90	ug/L
Unknown aromatic	11.52	50	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	68	21 - 100
Phenol-d6	66	10 - 94
Nitrobenzene-d5	75	35 - 114
2-Fluorobiphenyl	95	43 - 116
2,4,6-Tribromophenol	105	10 - 123
Terphenyl-d14	86	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21Dup	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945075	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/03/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	50	ug/L
1,1,2,2-Tetrachloroethane	ND	50	ug/L
1,1,2-Trichloroethane	ND	50	ug/L
1,1-Dichloroethane	ND	50	ug/L
1,1-Dichloroethene	ND	50	ug/L
1,2-Dichloroethane	ND	50	ug/L
1,2-Dichloropropane	ND	50	ug/L
2-Butanone (MEK)	ND	200	ug/L
2-Hexanone	ND	50	ug/L
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L
Acetone	ND	200	ug/L
Benzene	1300	50	ug/L
Bromodichloromethane	ND	50	ug/L
Bromoform	ND	50	ug/L
Bromomethane	ND	50	ug/L
Carbon Disulfide	ND	50	ug/L
Carbon Tetrachloride	ND	50	ug/L
Chlorobenzene	ND	50	ug/L
Chloroethane	ND	50	ug/L
Chloroform	ND	50	ug/L
Chloromethane	ND	50	ug/L
cis-1,3-Dichloropropene	ND	50	ug/L
Dibromochloromethane	ND	50	ug/L
Ethylbenzene	260	50	ug/L
m,p-Xylene	ND	50	ug/L
Methylene chloride	ND	200	ug/L
o-Xylene	ND	50	ug/L
Styrene	ND	50	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21Dup	Date Reported:	06/16/94
Laboratory ID:	B945075	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/03/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	50	ug/L
Toluene	ND	50	ug/L
trans-1,2-Dichloroethene	ND	50	ug/L
trans-1,3-Dichloropropene	ND	50	ug/L
Trichloroethene (TCE)	ND	50	ug/L
Vinyl Chloride	ND	50	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21Dup	Date Reported:	06/16/94
Laboratory ID:	B945075	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/03/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown aromatic	21.03	70	ug/L
Unknown aromatic	21.55	200	ug/L
Unknown aromatic	22.02	50	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	95	76 - 114
Toluene-d8	102	88 - 110
Bromofluorobenzene	101	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21Dup	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945075	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21Dup	Date Reported:	06/16/94
Laboratory ID:	B945075	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	18	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	12	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-21Dup	Date Reported:	06/16/94
Laboratory ID:	B945075	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Hydrocarbon envelope	10-32		
Indene	11.32	13	ug/L
1-Methylnathalene	16.39	18	ug/L
Unknown aromatic	10.20	40	ug/L
Unknown aromatic	11.12	80	ug/L
Unknown hydrocarbon	11.52	50	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	64	21 - 100
Phenol-d6	65	10 - 94
Nitrobenzene-d5	73	35 - 114
2-Fluorobiphenyl	92	43 - 116
2,4,6-Tribromophenol	106	10 - 123
Terphenyl-d14	85	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-30	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945076	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/01/94
Condition:	Intact	2nd Analysis:	06/15/94

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	1000	ug/L
1,1,2,2-Tetrachloroethane	ND	1000	ug/L
1,1,2-Trichloroethane	ND	1000	ug/L
1,1-Dichloroethane	ND	1000	ug/L
1,1-Dichloroethene	ND	1000	ug/L
1,2-Dichloroethane	ND	1000	ug/L
1,2-Dichloropropane	ND	1000	ug/L
2-Butanone (MEK)	ND	5000	ug/L
2-Hexanone	ND	1000	ug/L
4-Methyl-2-pentanone (MIBK)	ND	1000	ug/L
Acetone	ND	5000	ug/L
Benzene	7800	1000	ug/L
Bromodichloromethane	ND	1000	ug/L
Bromoform	ND	1000	ug/L
Bromomethane	ND	1000	ug/L
Carbon Disulfide	ND	1000	ug/L
Carbon Tetrachloride	ND	1000	ug/L
Chlorobenzene	ND	1000	ug/L
Chloroethane	ND	1000	ug/L
Chloroform	ND	1000	ug/L
Chloromethane	ND	1000	ug/L
cis-1,3-Dichloropropene	ND	1000	ug/L
Dibromochloromethane	ND	1000	ug/L
Ethylbenzene	3500	1000	ug/L
m,p-Xylene	14000	1000	ug/L
Methylene chloride	ND	5000	ug/L
o-Xylene	4700	1000	ug/L
Styrene	ND	1000	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-30	Date Reported:	06/16/94
Laboratory ID:	B945076	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	1000	ug/L
Toluene	20000	1000	ug/L
trans-1,2-Dichloroethene	ND	1000	ug/L
trans-1,3-Dichloropropene	ND	1000	ug/L
Trichloroethene (TCE)	ND	1000	ug/L
Vinyl Chloride	ND	1000	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-30	Date Reported:	06/16/94
Laboratory ID:	B945076	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/01/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown hydrocarbon	15.00	3000	ug/L
Unknown hydrocarbon	18.72	4000	ug/L
Unknown aromatic	18.86	1000	ug/L
Unknown aromatic	19.44	4000	ug/L
Unknown hydrocarbon	25.45	2000	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	92	76 - 114
Toluene-d8	104	88 - 110
Bromofluorobenzene	101	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-30	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945076	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result		Detection Limit	Units
1,2,4-Trichlorobenzene	ND		100	ug/L
1,2-Dichlorobenzene	ND		100	ug/L
1,3-Dichlorobenzene	ND		100	ug/L
1,4-Dichlorobenzene	ND		100	ug/L
2,4,5-Trichlorophenol	ND		100	ug/L
2,4,6-Trichlorophenol	ND		100	ug/L
2,4-Dichlorophenol	ND		100	ug/L
2,4-Dimethylphenol	160		100	ug/L
2,4-Dinitrophenol	ND		500	ug/L
2,4-Dinitrotoluene	ND		100	ug/L
2,6-Dinitrotoluene	ND		100	ug/L
2-Chloronaphthalene	ND		100	ug/L
2-Chlorophenol	ND		100	ug/L
2-Methylnaphthalene	580		100	ug/L
2-Methylphenol	ND		100	ug/L
2-Nitroaniline	ND		500	ug/L
2-Nitrophenol	ND		100	ug/L
3,3'-Dichlorobenzidine	ND		200	ug/L
3-Methylphenol/4-Methylphenol **	70	J	100	ug/L
3-Nitroaniline	ND		500	ug/L
4,6-Dinitro-2-methylphenol	ND		500	ug/L
4-Bromophenyl-phenylether	ND		100	ug/L
4-Chloro-3-methylphenol	ND		200	ug/L
4-Chloroaniline	ND		200	ug/L
4-Chlorophenyl-phenylether	ND		100	ug/L
4-Nitroaniline	ND		200	ug/L
4-Nitrophenol	ND		500	ug/L
Acenaphthene	ND		100	ug/L
Acenaphthylene	ND		100	ug/L
Anthracene	ND		100	ug/L
Benzo(a)anthracene	ND		100	ug/L
Benzo(a)pyrene	ND		100	ug/L
Benzo(b)fluoranthene	ND		100	ug/L
Benzo(g,h,i)perylene	ND		100	ug/L
Benzo(k)fluoranthene	ND		100	ug/L
Benzoic Acid	ND		500	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-30	Date Reported:	06/16/94
Laboratory ID:	B945076	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result		Detection Limit	Units
Benzyl Alcohol	ND		200	ug/L
bis(2-Chloroethoxy)methane	ND		100	ug/L
bis(2-Chloroethyl)ether	ND		100	ug/L
bis(2-Chloroisopropyl)ether	ND		100	ug/L
bis(2-Ethylhexyl)phthalate	ND		500	ug/L
Butylbenzylphthalate	ND		100	ug/L
Chrysene	ND		100	ug/L
Di-n-Butylphthalate	ND		500	ug/L
Di-n-Octylphthalate	ND		100	ug/L
Dibenz(a,h)anthracene	ND		100	ug/L
Dibenzofuran	ND		100	ug/L
Diethylphthalate	ND		100	ug/L
Dimethylphthalate	ND		100	ug/L
Fluoranthene	ND		100	ug/L
Fluorene	ND		100	ug/L
Hexachlorobenzene	ND		100	ug/L
Hexachlorobutadiene	ND		200	ug/L
Hexachlorocyclopentadiene	ND		100	ug/L
Hexachloroethane	ND		200	ug/L
Indeno(1,2,3-cd)pyrene	ND		100	ug/L
Isophorone	ND		100	ug/L
N-Nitrosodi-n-propylamine	ND		100	ug/L
N-Nitrosodiphenylamine	ND		100	ug/L
Naphthalene	850		100	ug/L
Nitrobenzene	ND		100	ug/L
Pentachlorophenol	ND		500	ug/L
Phenanthrene	ND		100	ug/L
Phenol	80	J	100	ug/L
Pyrene	ND		100	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-30	Date Reported:	06/16/94
Laboratory ID:	B945076	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Hydrocarbon envelope	9-28		
Indene	11.28	1000	ug/L
1-Methylnaphthalene	16.36	3500	ug/L
Unknown aromatic	9.45	1000	ug/L
Unknown aromatic	9.63	1000	ug/L
Unknown aromatic	10.18	2000	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	29	21 - 100
Phenol-d6	82	10 - 94
Nitrobenzene-d5	112	35 - 114
2-Fluorobiphenyl	152 *	43 - 116
2,4,6-Tribromophenol	127 *	10 - 123
Terphenyl-d14	124	33 - 141

* - Out of limits due to a matrix effect.

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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TOTAL METALS ANALYSIS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-30	Date Reported:	06/17/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945076	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/31/94
Preservation:	Cool; HNO3	Date Analyzed:	06/17/94
Condition:	Intact		

Parameter	Analytical Result	Detection Level	Units
Antimony	ND	0.06	mg/L
Arsenic	0.011	0.01	mg/L
Beryllium	ND	0.005	mg/L
Cadmium	ND	0.005	mg/L
Chromium	0.015	0.01	mg/L
Copper	0.034	0.025	mg/L
Lead	0.0087	0.003	mg/L
Mercury	ND	0.0002	mg/L
Nickel	ND	0.04	mg/L
Selenium	ND	0.005	mg/L
Silver	ND	0.01	mg/L
Thallium	ND	0.01	mg/L
Zinc	0.039	0.02	mg/L

ND-Parameter not detected at stated detection level.

References:

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September 1986.

Method 7000: Atomic Absorption Spectroscopy SW-846, September 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September 1986.

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TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-30	Date Reported:	06/17/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945076	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	06/13/94
Preservation:	Cool	Date Analyzed:	06/14/94
Condition:	Intact		

Parameter	Analytical Result	Detection Level	Units
Total Recoverable Petroleum Hydrocarbons	18	1	mg/L

ND-Parameter not detected at stated detection level.

References: Method 418.1: Petroleum Hydrocarbons, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-13	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945077	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-13	Date Reported:	06/16/94
Laboratory ID:	B945077	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-13	Date Reported:	06/16/94
Laboratory ID:	B945077	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	93	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	98	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-13	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945077	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-13	Date Reported:	06/16/94
Laboratory ID:	B945077	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-13	Date Reported:	06/16/94
Laboratory ID:	B945077	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Unknown alcohol	4.13	50	ug/L
Unknown hydrocarbon	4.60	20	ug/L
Unknown alcohol	5.50	30	ug/L
Unknown hydrocarbon	6.74	50	ug/L
Unknown alcohol	8.06	50	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	57	21 - 100
Phenol-d6	58	10 - 94
Nitrobenzene-d5	78	35 - 114
2-Fluorobiphenyl	94	43 - 116
2,4,6-Tribromophenol	99	10 - 123
Terphenyl-d14	97	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-31	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945078	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	1000	ug/L
1,1,2,2-Tetrachloroethane	ND	1000	ug/L
1,1,2-Trichloroethane	ND	1000	ug/L
1,1-Dichloroethane	ND	1000	ug/L
1,1-Dichloroethene	ND	1000	ug/L
1,2-Dichloroethane	ND	1000	ug/L
1,2-Dichloropropane	ND	1000	ug/L
2-Butanone (MEK)	ND	5000	ug/L
2-Hexanone	ND	1000	ug/L
4-Methyl-2-pentanone (MIBK)	ND	1000	ug/L
Acetone	ND	5000	ug/L
Benzene	13000	1000	ug/L
Bromodichloromethane	ND	1000	ug/L
Bromoform	ND	1000	ug/L
Bromomethane	ND	1000	ug/L
Carbon Disulfide	ND	1000	ug/L
Carbon Tetrachloride	ND	1000	ug/L
Chlorobenzene	ND	1000	ug/L
Chloroethane	ND	1000	ug/L
Chloroform	ND	1000	ug/L
Chloromethane	ND	1000	ug/L
cis-1,3-Dichloropropene	ND	1000	ug/L
Dibromochloromethane	ND	1000	ug/L
Ethylbenzene	2500	1000	ug/L
m,p-Xylene	17000	1000	ug/L
Methylene chloride	ND	5000	ug/L
o-Xylene	6300	1000	ug/L
Styrene	ND	1000	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-31	Date Reported:	06/16/94
Laboratory ID:	B945078	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	1000	ug/L
Toluene	26000	1000	ug/L
trans-1,2-Dichloroethene	ND	1000	ug/L
trans-1,3-Dichloropropene	ND	1000	ug/L
Trichloroethene (TCE)	ND	1000	ug/L
Vinyl Chloride	ND	1000	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-31	Date Reported:	06/16/94
Laboratory ID:	B945078	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown aromatic	20.63	2000	ug/L
Unknown aromatic	21.03	4000	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	92	76 - 114
Toluene-d8	100	88 - 110
Bromofluorobenzene	97	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-31	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945078	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	05/31/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	77	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	280	100	ug/L
2-Methylphenol	82	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	210	100	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-31	Date Reported:	06/16/94
Laboratory ID:	B945078	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	650	100	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	110	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-31	Date Reported:	06/16/94
Laboratory ID:	B945078	Date Sampled:	05/24/94
Sample Matrix:	Water	Date Analyzed:	05/31/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Hydrocarbon envelope	5-23		
Indene	11.32	65	ug/L
1-Methylnaphthalene	16.42	100	ug/L
Unknown aromatic	6.46	1000	ug/L
Unknown aromatic	9.66	1000	ug/L
Unknown aromatic	10.21	2000	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	23	21 - 100
Phenol-d6	37	10 - 94
Nitrobenzene-d5	69	35 - 114
2-Fluorobiphenyl	91	43 - 116
2,4,6-Tribromophenol	107	10 - 123
Terphenyl-d14	84	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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TOTAL METALS ANALYSIS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-31	Date Reported:	06/17/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945078	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/31/94
Preservation:	Cool; HNO3	Date Analyzed:	06/17/94
Condition:	Intact		

Parameter	Analytical Result	Detection Level	Units
Antimony	ND	0.06	mg/L
Arsenic	ND	0.01	mg/L
Beryllium	ND	0.005	mg/L
Cadmium	ND	0.005	mg/L
Chromium	ND	0.01	mg/L
Copper	ND	0.025	mg/L
Lead	ND	0.003	mg/L
Mercury	ND	0.0002	mg/L
Nickel	ND	0.04	mg/L
Selenium	ND	0.005	mg/L
Silver	ND	0.01	mg/L
Thallium	ND	0.01	mg/L
Zinc	ND	0.02	mg/L

ND-Parameter not detected at stated detection level.

References:

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September 1986.

Method 7000: Atomic Absorption Spectroscopy SW-846, September 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September 1986.

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TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-31	Date Reported:	06/17/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945078	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	06/13/94
Preservation:	Cool	Date Analyzed:	06/14/94
Condition:	Intact		

Parameter	Analytical Result	Detection Level	Units
Total Recoverable Petroleum Hydrocarbons	11	1	mg/L

ND-Parameter not detected at stated detection level.

References: Method 418.1: Petroleum Hydrocarbons, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945079	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result		Detection Limit	Units
1,1,1-Trichloroethane	ND		200	ug/L
1,1,2,2-Tetrachloroethane	ND		200	ug/L
1,1,2-Trichloroethane	ND		200	ug/L
1,1-Dichloroethane	ND		200	ug/L
1,1-Dichloroethene	ND		200	ug/L
1,2-Dichloroethane	ND		200	ug/L
1,2-Dichloropropane	ND		200	ug/L
2-Butanone (MEK)	ND		1000	ug/L
2-Hexanone	ND		200	ug/L
4-Methyl-2-pentanone (MIBK)	ND		200	ug/L
Acetone	ND		1000	ug/L
Benzene	4500		200	ug/L
Bromodichloromethane	ND		200	ug/L
Bromoform	ND		200	ug/L
Bromomethane	ND		200	ug/L
Carbon Disulfide	ND		200	ug/L
Carbon Tetrachloride	ND		200	ug/L
Chlorobenzene	ND		200	ug/L
Chloroethane	ND		200	ug/L
Chloroform	ND		200	ug/L
Chloromethane	ND		200	ug/L
cis-1,3-Dichloropropene	ND		200	ug/L
Dibromochloromethane	ND		200	ug/L
Ethylbenzene	1100		200	ug/L
m,p-Xylene	12000		200	ug/L
Methylene chloride	ND		1000	ug/L
o-Xylene	100	J	200	ug/L
Styrene	ND		200	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26	Date Reported:	06/16/94
Laboratory ID:	B945079	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	200	ug/L
Toluene	ND	200	ug/L
trans-1,2-Dichloroethene	ND	200	ug/L
trans-1,3-Dichloropropene	ND	200	ug/L
Trichloroethene (TCE)	ND	200	ug/L
Vinyl Chloride	ND	200	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26	Date Reported:	06/16/94
Laboratory ID:	B945079	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown hydrocarbon	11.38	800	ug/L
Unknown hydrocarbon	14.37	2000	ug/L
Unknown aromatic	20.62	1000	ug/L
Unknown aromatic	20.71	1000	ug/L
Unknown aromatic	21.03	2000	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	92	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	97	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945079	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/28/94
Preservation:	Cool	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	58	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	41	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26	Date Reported:	06/16/94
Laboratory ID:	B945079	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	84	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	19	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26	Date Reported:	06/16/94
Laboratory ID:	B945079	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Hydrocarbon envelope	4-24		
1-Methylnaphthalene	16.38	39	ug/L
Unknown aromatic	9.31	800	ug/L
Unknown aromatic	10.04	700	ug/L
Unknown aromatic	10.12	600	ug/L
Unknown aromatic	16.64	800	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	47	21 - 100
Phenol-d6	78	10 - 94
Nitrobenzene-d5	71	35 - 114
2-Fluorobiphenyl	80	43 - 116
2,4,6-Tribromophenol	69	10 - 123
Terphenyl-d14	67	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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TOTAL METALS ANALYSIS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26	Date Reported:	06/17/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945079	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/31/94
Preservation:	Cool; HNO3	Date Analyzed:	06/17/94
Condition:	Intact		

Parameter	Analytical Result	Detection Level	Units
Antimony	ND	0.06	mg/L
Arsenic	ND	0.01	mg/L
Beryllium	ND	0.005	mg/L
Cadmium	ND	0.005	mg/L
Chromium	ND	0.01	mg/L
Copper	ND	0.025	mg/L
Lead	0.0059	0.003	mg/L
Mercury	ND	0.0002	mg/L
Nickel	ND	0.04	mg/L
Selenium	ND	0.005	mg/L
Silver	ND	0.01	mg/L
Thallium	ND	0.01	mg/L
Zinc	0.035	0.02	mg/L

ND-Parameter not detected at stated detection level.

References:

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September 1986.

Method 7000: Atomic Absorption Spectroscopy SW-846, September 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September 1986.

DRZ
Analyst

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1160 Research Drive
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TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26	Date Reported:	06/17/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/24/94
Laboratory ID:	B945079	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	06/13/94
Preservation:	Cool	Date Analyzed:	06/14/94
Condition:	Intact		

Parameter	Analytical Result	Detection Level	Units
Total Recoverable Petroleum Hydrocarbons	17	1	mg/L

ND-Parameter not detected at stated detection level.

References: Method 418.1: Petroleum Hydrocarbons, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26Dup	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945080	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	200	ug/L
1,1,2,2-Tetrachloroethane	ND	200	ug/L
1,1,2-Trichloroethane	ND	200	ug/L
1,1-Dichloroethane	ND	200	ug/L
1,1-Dichloroethene	ND	200	ug/L
1,2-Dichloroethane	ND	200	ug/L
1,2-Dichloropropane	ND	200	ug/L
2-Butanone (MEK)	ND	1000	ug/L
2-Hexanone	ND	200	ug/L
4-Methyl-2-pentanone (MIBK)	ND	200	ug/L
Acetone	ND	1000	ug/L
Benzene	4700	200	ug/L
Bromodichloromethane	ND	200	ug/L
Bromoform	ND	200	ug/L
Bromomethane	ND	200	ug/L
Carbon Disulfide	ND	200	ug/L
Carbon Tetrachloride	ND	200	ug/L
Chlorobenzene	ND	200	ug/L
Chloroethane	ND	200	ug/L
Chloroform	ND	200	ug/L
Chloromethane	ND	200	ug/L
cis-1,3-Dichloropropene	ND	200	ug/L
Dibromochloromethane	ND	200	ug/L
Ethylbenzene	1100	200	ug/L
m,p-Xylene	13000	200	ug/L
Methylene chloride	ND	1000	ug/L
o-Xylene	ND	200	ug/L
Styrene	ND	200	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26Dup	Date Reported:	06/16/94
Laboratory ID:	B945080	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	200	ug/L
Toluene	ND	200	ug/L
trans-1,2-Dichloroethene	ND	200	ug/L
trans-1,3-Dichloropropene	ND	200	ug/L
Trichloroethene (TCE)	ND	200	ug/L
Vinyl Chloride	ND	200	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26Dup	Date Reported:	06/16/94
Laboratory ID:	B945080	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown hydrocarbon	11.79	2000	ug/L
Unknown hydrocarbon	14.98	800	ug/L
Unknown aromatic	18.73	1000	ug/L
Unknown aromatic	18.87	900	ug/L
Unknown aromatic	19.44	1000	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	93	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	96	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26Dup	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945080	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	43	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	21	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26Dup	Date Reported:	06/16/94
Laboratory ID:	B945080	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	53	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	10	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-26Dup	Date Reported:	06/16/94
Laboratory ID:	B945080	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Hydrocarbon envelope	4-22		
1-Methylnaphthalene	16.37	19	ug/L
Unknown aromatic	10.00	400	ug/L
Unknown hydrocarbon	15.60	700	ug/L
Unknown hydrocarbon	16.63	800	ug/L
Unknown aromatic	16.74	700	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	49	21 - 100
Phenol-d6	52	10 - 94
Nitrobenzene-d5	45	35 - 114
2-Fluorobiphenyl	38 *	43 - 116
2,4,6-Tribromophenol	44	10 - 123
Terphenyl-d14	44	33 - 141

* - Out of limits due to a matrix effect.

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	EB-052594	Date Reported:	06/16/94
Laboratory ID:	B945083	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	91	76 - 114
Toluene-d8	100	88 - 110
Bromofluorobenzene	98	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-11	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945084	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/02/94
Condition:	Intact	2nd Analysis:	06/15/94

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	50	ug/L
1,1,2,2-Tetrachloroethane	ND	50	ug/L
1,1,2-Trichloroethane	ND	50	ug/L
1,1-Dichloroethane	ND	50	ug/L
1,1-Dichloroethene	ND	50	ug/L
1,2-Dichloroethane	ND	50	ug/L
1,2-Dichloropropane	ND	50	ug/L
2-Butanone (MEK)	ND	200	ug/L
2-Hexanone	ND	50	ug/L
4-Methyl-2-pentanone (MIBK)	ND	50	ug/L
Acetone	ND	200	ug/L
Benzene	5000	200	ug/L
Bromodichloromethane	ND	50	ug/L
Bromoform	ND	50	ug/L
Bromomethane	ND	50	ug/L
Carbon Disulfide	ND	50	ug/L
Carbon Tetrachloride	ND	50	ug/L
Chlorobenzene	ND	50	ug/L
Chloroethane	ND	50	ug/L
Chloroform	ND	50	ug/L
Chloromethane	ND	50	ug/L
cis-1,3-Dichloropropene	ND	50	ug/L
Dibromochloromethane	ND	50	ug/L
Ethylbenzene	500	50	ug/L
m,p-Xylene	9400	200	ug/L
Methylene chloride	ND	200	ug/L
o-Xylene	ND	50	ug/L
Styrene	ND	50	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-11	Date Reported:	06/16/94
Laboratory ID:	B945084	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	50	ug/L
Toluene	ND	50	ug/L
trans-1,2-Dichloroethene	ND	50	ug/L
trans-1,3-Dichloropropene	ND	50	ug/L
Trichloroethene (TCE)	ND	50	ug/L
Vinyl Chloride	ND	50	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-11	Date Reported:	06/16/94
Laboratory ID:	B945084	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown hydrocarbon	14.38	400	ug/L
Unknown aromatic	20.62	800	ug/L
Unknown aromatic	20.70	700	ug/L
Unknown aromatic	21.03	2000	ug/L
Unknown aromatic	21.38	400	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	92	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	97	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-11	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945084	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	59	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	16	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-11	Date Reported:	06/16/94
Laboratory ID:	B945084	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	62	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	32	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-11	Date Reported:	06/16/94
Laboratory ID:	B945084	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Hydrocarbon envelope	10-28		
Unknown aromatic	9.49	400	ug/L
Unknown aromatic	10.04	700	ug/L
Unknown hydrocarbon	15.67	900	ug/L
Unknown aromatic	16.85	2000	ug/L
Unknown aromatic	18.14	700	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	48	21 - 100
Phenol-d6	76	10 - 94
Nitrobenzene-d5	90	35 - 114
2-Fluorobiphenyl	120 *	43 - 116
2,4,6-Tribromophenol	123	10 - 123
Terphenyl-d14	110	33 - 141

* - Out of limits due to a matrix effect.

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-20	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945085	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
2-Butanone (MEK)	ND	20	ug/L
2-Hexanone	ND	5	ug/L
4-Methyl-2-pentanone (MIBK)	ND	5	ug/L
Acetone	ND	20	ug/L
Benzene	5.5	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	5	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
Methylene chloride	ND	20	ug/L
o-Xylene	ND	5	ug/L
Styrene	ND	5	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-20	Date Reported:	06/16/94
Laboratory ID:	B945085	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	5	ug/L
Toluene	ND	5	ug/L
trans-1,2-Dichloroethene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene (TCE)	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-20	Date Reported:	06/16/94
Laboratory ID:	B945085	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown aromatic	21.55	20	ug/L
Unknown aromatic	22.03	10	ug/L
Unknown aromatic	22.72	9	ug/L
Unknown aromatic	23.17	10	ug/L
Unknown aromatic	24.50	5	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	92	76 - 114
Toluene-d8	99	88 - 110
Bromofluorobenzene	100	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-20	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945085	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol **	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-20	Date Reported:	06/16/94
Laboratory ID:	B945085	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-20	Date Reported:	06/16/94
Laboratory ID:	B945085	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Low level hydrocarbon envelope	14-33		
Unknown alcohol	6.71	20	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	55	21 - 100
Phenol-d6	65	10 - 94
Nitrobenzene-d5	58	35 - 114
2-Fluorobiphenyl	75	43 - 116
2,4,6-Tribromophenol	83	10 - 123
Terphenyl-d14	64	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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GENERAL PARAMETERS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	MW-20	Date Reported:	06/17/94
Program ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945085	Date Received:	05/26/94
Sample Matrix:	Water		
Preservation:	Cool		
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
Alkalinity, Total	1060	5	mg/L
Ammonia as N	45	0.07	mg/L
Calcium	140	0.5	mg/L
Hardness, Total as CaCO3	600	1	mg/L
Iron	1.1	0.5	mg/L
Magnesium	57	0.5	mg/L
Manganese	5.7	0.5	mg/L
Oxygen, Dissolved	7.3	1	mg/L
Potassium	17	0.5	mg/L
Sodium	540	0.5	mg/L
Solids, Total Dissolved (TDS)	2200	10	mg/L
Total Organic Carbon (TOC)	19	0.5	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes",1983. Standard Methods for Examination of Water and Wastewater, 18th Edition, 1992, SW-846, United States Environmental Protection Agency, Nov. 1986

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-1	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945086	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result		Detection Limit	Units
1,1,1-Trichloroethane	ND		50	ug/L
1,1,2,2-Tetrachloroethane	ND		50	ug/L
1,1,2-Trichloroethane	ND		50	ug/L
1,1-Dichloroethane	ND		50	ug/L
1,1-Dichloroethene	ND		50	ug/L
1,2-Dichloroethane	ND		50	ug/L
1,2-Dichloropropane	ND		50	ug/L
2-Butanone (MEK)	ND		200	ug/L
2-Hexanone	ND		50	ug/L
4-Methyl-2-pentanone (MIBK)	ND		50	ug/L
Acetone	ND		200	ug/L
Benzene	2800		200	ug/L
Bromodichloromethane	ND		50	ug/L
Bromoform	ND		50	ug/L
Bromomethane	ND		50	ug/L
Carbon Disulfide	ND		50	ug/L
Carbon Tetrachloride	ND		50	ug/L
Chlorobenzene	ND		50	ug/L
Chloroethane	ND		50	ug/L
Chloroform	ND		50	ug/L
Chloromethane	ND		50	ug/L
cis-1,3-Dichloropropene	ND		50	ug/L
Dibromochloromethane	ND		50	ug/L
Ethylbenzene	80		50	ug/L
m,p-Xylene	40	J	50	ug/L
Methylene chloride	ND		200	ug/L
o-Xylene	ND		50	ug/L
Styrene	ND		50	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-1	Date Reported:	06/16/94
Laboratory ID:	B945086	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	50	ug/L
Toluene	ND	50	ug/L
trans-1,2-Dichloroethene	ND	50	ug/L
trans-1,3-Dichloropropene	ND	50	ug/L
Trichloroethene (TCE)	ND	50	ug/L
Vinyl Chloride	ND	50	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-1	Date Reported:	06/16/94
Laboratory ID:	B945086	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown hydrocarbon	11.39	200	ug/L
Unknown hydrocarbon	14.38	400	ug/L
Unknown aromatic	20.70	200	ug/L
Unknown aromatic	21.03	600	ug/L
Unknown aromatic	21.38	300	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	92	76 - 114
Toluene-d8	102	88 - 110
Bromofluorobenzene	100	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-1	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945086	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	200	ug/L
1,2-Dichlorobenzene	ND	200	ug/L
1,3-Dichlorobenzene	ND	200	ug/L
1,4-Dichlorobenzene	ND	200	ug/L
2,4,5-Trichlorophenol	ND	200	ug/L
2,4,6-Trichlorophenol	ND	200	ug/L
2,4-Dichlorophenol	ND	200	ug/L
2,4-Dimethylphenol	ND	200	ug/L
2,4-Dinitrophenol	ND	1000	ug/L
2,4-Dinitrotoluene	ND	200	ug/L
2,6-Dinitrotoluene	ND	200	ug/L
2-Chloronaphthalene	ND	200	ug/L
2-Chlorophenol	ND	200	ug/L
2-Methylnaphthalene	300	200	ug/L
2-Methylphenol	ND	200	ug/L
2-Nitroaniline	ND	1000	ug/L
2-Nitrophenol	ND	200	ug/L
3,3'-Dichlorobenzidine	ND	400	ug/L
3-Methylphenol/4-Methylphenol **	ND	200	ug/L
3-Nitroaniline	ND	1000	ug/L
4,6-Dinitro-2-methylphenol	ND	1000	ug/L
4-Bromophenyl-phenylether	ND	200	ug/L
4-Chloro-3-methylphenol	ND	400	ug/L
4-Chloroaniline	ND	400	ug/L
4-Chlorophenyl-phenylether	ND	200	ug/L
4-Nitroaniline	ND	400	ug/L
4-Nitrophenol	ND	1000	ug/L
Acenaphthene	ND	200	ug/L
Acenaphthylene	ND	200	ug/L
Anthracene	ND	200	ug/L
Benzo(a)anthracene	ND	200	ug/L
Benzo(a)pyrene	ND	200	ug/L
Benzo(b)fluoranthene	ND	200	ug/L
Benzo(g,h,i)perylene	ND	200	ug/L
Benzo(k)fluoranthene	ND	200	ug/L
Benzoic Acid	ND	1000	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-1	Date Reported:	06/16/94
Laboratory ID:	B945086	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result		Detection Limit	Units
Benzyl Alcohol	ND		400	ug/L
bis(2-Chloroethoxy)methane	ND		200	ug/L
bis(2-Chloroethyl)ether	ND		200	ug/L
bis(2-Chloroisopropyl)ether	ND		200	ug/L
bis(2-Ethylhexyl)phthalate	ND		1000	ug/L
Butylbenzylphthalate	ND		200	ug/L
Chrysene	150	J	200	ug/L
Di-n-Butylphthalate	ND		1000	ug/L
Di-n-Octylphthalate	ND		200	ug/L
Dibenz(a,h)anthracene	ND		200	ug/L
Dibenzofuran	ND		200	ug/L
Diethylphthalate	ND		200	ug/L
Dimethylphthalate	ND		200	ug/L
Fluoranthene	ND		200	ug/L
Fluorene	ND		200	ug/L
Hexachlorobenzene	ND		200	ug/L
Hexachlorobutadiene	ND		400	ug/L
Hexachlorocyclopentadiene	ND		200	ug/L
Hexachloroethane	ND		400	ug/L
Indeno(1,2,3-cd)pyrene	ND		200	ug/L
Isophorone	ND		200	ug/L
N-Nitrosodi-n-propylamine	ND		200	ug/L
N-Nitrosodiphenylamine	ND		200	ug/L
Naphthalene	170	J	200	ug/L
Nitrobenzene	ND		200	ug/L
Pentachlorophenol	ND		1000	ug/L
Phenanthrene	130	J	200	ug/L
Phenol	ND		200	ug/L
Pyrene	ND		200	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	**GROUNDWATER TECHNOLOGY**		
Sample ID:	RW-1	Date Reported:	06/16/94
Laboratory ID:	B945086	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Hydrocarbon envelope	8-38		
1-Methylnaphthalene	16.40	460	ug/L
Unknown hydrocarbon	14.41	1000	ug/L
Unknown hydrocarbon	15.45	2000	ug/L
Unknown hydrocarbon	18.48	2000	ug/L
Unknown hydrocarbon	21.94	2000	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	52	21 - 100
Phenol-d6	66	10 - 94
Nitrobenzene-d5	218 *	35 - 114
2-Fluorobiphenyl	88	43 - 116
2,4,6-Tribromophenol	78	10 - 123
Terphenyl-d14	78	33 - 141

* - Out of limits due to a matrix effect.

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-3	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945087	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	NA
Preservation:	Cool; HCl	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
1,1,1-Trichloroethane	ND	200	ug/L
1,1,2,2-Tetrachloroethane	ND	200	ug/L
1,1,2-Trichloroethane	ND	200	ug/L
1,1-Dichloroethane	ND	200	ug/L
1,1-Dichloroethene	ND	200	ug/L
1,2-Dichloroethane	ND	200	ug/L
1,2-Dichloropropane	ND	200	ug/L
2-Butanone (MEK)	ND	1000	ug/L
2-Hexanone	ND	200	ug/L
4-Methyl-2-pentanone (MIBK)	ND	200	ug/L
Acetone	ND	1000	ug/L
Benzene	8300	200	ug/L
Bromodichloromethane	ND	200	ug/L
Bromoform	ND	200	ug/L
Bromomethane	ND	200	ug/L
Carbon Disulfide	ND	200	ug/L
Carbon Tetrachloride	ND	200	ug/L
Chlorobenzene	ND	200	ug/L
Chloroethane	ND	200	ug/L
Chloroform	ND	200	ug/L
Chloromethane	ND	200	ug/L
cis-1,3-Dichloropropene	ND	200	ug/L
Dibromochloromethane	ND	200	ug/L
Ethylbenzene	1100	200	ug/L
m,p-Xylene	3600	200	ug/L
Methylene chloride	ND	1000	ug/L
o-Xylene	ND	200	ug/L
Styrene	ND	200	ug/L

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EPA METHOD 8240
HSL VOLATILE COMPOUNDS

Client:	**GROUNDWATER TECHNOLOGY**		
Sample ID:	RW-3	Date Reported:	06/16/94
Laboratory ID:	B945087	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Tetrachloroethene (PCE)	ND	200	ug/L
Toluene	ND	200	ug/L
trans-1,2-Dichloroethene	ND	200	ug/L
trans-1,3-Dichloropropene	ND	200	ug/L
Trichloroethene (TCE)	ND	200	ug/L
Vinyl Chloride	ND	200	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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EPA METHOD 8240
TENTATIVELY IDENTIFIED COMPOUNDS

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-3	Date Reported:	06/16/94
Laboratory ID:	B945087	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (min)	Concentration	Units
Unknown hydrocarbon	11.39	1000	ug/L
Unknown hydrocarbon	14.38	2000	ug/L
Unknown aromatic	20.70	300	ug/L
Unknown aromatic	21.03	1000	ug/L
Unknown aromatic	21.38	300	ug/L

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	90	76 - 114
Toluene-d8	101	88 - 110
Bromofluorobenzene	98	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-3	Date Reported:	06/16/94
Project ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945087	Date Received:	05/26/94
Sample Matrix:	Water	Date Extracted:	05/27/94
Preservation:	Cool	Date Analyzed:	06/02/94
Condition:	Intact		

Parameter	Analytical Result		Detection Limit	Units
1,2,4-Trichlorobenzene	ND		10	ug/L
1,2-Dichlorobenzene	ND		10	ug/L
1,3-Dichlorobenzene	ND		10	ug/L
1,4-Dichlorobenzene	ND		10	ug/L
2,4,5-Trichlorophenol	ND		10	ug/L
2,4,6-Trichlorophenol	ND		10	ug/L
2,4-Dichlorophenol	ND		10	ug/L
2,4-Dimethylphenol	ND		10	ug/L
2,4-Dinitrophenol	ND		50	ug/L
2,4-Dinitrotoluene	ND		10	ug/L
2,6-Dinitrotoluene	ND		10	ug/L
2-Chloronaphthalene	ND		10	ug/L
2-Chlorophenol	ND		10	ug/L
2-Methylnaphthalene	8	J	10	ug/L
2-Methylphenol	ND		10	ug/L
2-Nitroaniline	ND		50	ug/L
2-Nitrophenol	ND		10	ug/L
3,3'-Dichlorobenzidine	ND		20	ug/L
3-Methylphenol/4-Methylphenol **	ND		10	ug/L
3-Nitroaniline	ND		50	ug/L
4,6-Dinitro-2-methylphenol	ND		50	ug/L
4-Bromophenyl-phenylether	ND		10	ug/L
4-Chloro-3-methylphenol	ND		20	ug/L
4-Chloroaniline	ND		20	ug/L
4-Chlorophenyl-phenylether	ND		10	ug/L
4-Nitroaniline	ND		20	ug/L
4-Nitrophenol	ND		50	ug/L
Acenaphthene	ND		10	ug/L
Acenaphthylene	ND		10	ug/L
Anthracene	ND		10	ug/L
Benzo(a)anthracene	ND		10	ug/L
Benzo(a)pyrene	ND		10	ug/L
Benzo(b)fluoranthene	ND		10	ug/L
Benzo(g,h,i)perylene	ND		10	ug/L
Benzo(k)fluoranthene	ND		10	ug/L
Benzoic Acid	ND		50	ug/L

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-3	Date Reported:	06/16/94
Laboratory ID:	B945087	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Parameter	Analytical Result	Detection Limit	Units
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	16	50	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
Di-n-Butylphthalate	ND	50	ug/L
Di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	46	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	16	10	ug/L
Pyrene	ND	10	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
** - Compounds coelute by GCMS.
B - Compound detected in Method Blank.

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EPA METHOD 8270
TENTATIVELY IDENTIFIED COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GROUNDWATER TECHNOLOGY		
Sample ID:	RW-3	Date Reported:	06/16/94
Laboratory ID:	B945087	Date Sampled:	05/25/94
Sample Matrix:	Water	Date Analyzed:	06/02/94

Tentative Identification	Retention Time (minutes)	Concentration	Units
Hydrocarbon envelope	5-30		
Unknown aromatic	10.03	600	ug/L
Unknown aromatic	10.62	200	ug/L
Unknown hydrocarbon	15.61	600	ug/L
Unknown aromatic	16.75	2000	ug/L
Unknown aromatic	18.07	400	ug/L

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	33	21 - 100
Phenol-d6	44	10 - 94
Nitrobenzene-d5	49	35 - 114
2-Fluorobiphenyl	64	43 - 116
2,4,6-Tribromophenol	65	10 - 123
Terphenyl-d14	62	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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GENERAL PARAMETERS

Client:	**GROUNDWATER TECHNOLOGY**		
Sample ID:	RW-3	Date Reported:	06/17/94
Program ID:	Bloomfield Refinery, New Mexico	Date Sampled:	05/25/94
Laboratory ID:	B945087	Date Received:	05/26/94
Sample Matrix:	Water		
Preservation:	Cool		
Condition:	Intact		

Parameter	Analytical Result	Detection Limit	Units
Alkalinity, Total	1900	5	mg/L
Ammonia as N	0.13	0.07	mg/L
Calcium	170	0.5	mg/L
Hardness, Total as CaCO3	640	1	mg/L
Iron	9.1	0.5	mg/L
Magnesium	50	0.5	mg/L
Manganese	3.8	0.5	mg/L
Oxygen, Dissolved	7.3	1	mg/L
Potassium	5.2	0.5	mg/L
Sodium	900	0.5	mg/L
Solids, Total Dissolved (TDS)	3200	10	mg/L
Total Organic Carbon (TOC)	58	0.5	mg/L

Reference: U.S.E.P.A. 600/4-79-020, "Methods for Chemical Analysis of Water and Wastes",1983. Standard Methods for Examination of Water and Wastewater, 18th Edition, 1992, SW-846, United States Environmental Protection Agency, Nov. 1986

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QUALITY ASSURANCE / QUALITY CONTROL

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LAB QA/QC
VOLATILE COMPOUNDS BY GC/MS
METHOD BLANK

Date Analyzed: **05/31/94**
Laboratory ID: 3MB-151A
Sample Matrix: Water

Parameter	Analytical Result	Detection Limit	Units
Chloromethane	ND	5	ug/L
Bromomethane	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L
Chloroethane	ND	5	ug/L
Methylene Chloride	ND	20	ug/L
Acetone	ND	20	ug/L
Carbon Disulfide	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethene	ND	5	ug/L
Chloroform	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
2-Butanone	ND	20	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
Cyclohexane	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
1,4-Dioxane	ND	500	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Benzene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Bromoform	ND	5	ug/L
4-Methyl-2-pentanone	ND	5	ug/L
2-Hexanone	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L

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VOLATILE COMPOUNDS BY GC/MS

Date Analyzed: **05/31/94**
Laboratory ID: 3MB-151A
Sample Matrix: Water

Parameter	Analytical Result	Detection Limit	Units
Toluene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Styrene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
o-Xylene	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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TENTATIVELY IDENTIFIED COMPOUNDS
METHOD BLANK ANALYSIS

Date Analyzed: **05/31/94**
Laboratory ID: 3MB-151A
Sample Matrix: Water

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	93	76 - 114
Toluene-d8	102	88 - 110
Bromofluorobenzene	98	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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LAB QA/QC
VOLATILE COMPOUNDS BY GC/MS
METHOD BLANK

Date Analyzed: 06/01/94
Laboratory ID: 3MB-152B
Sample Matrix: Water

Parameter	Analytical Result	Detection Limit	Units
Chloromethane	ND	5	ug/L
Bromomethane	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L
Chloroethane	ND	5	ug/L
Methylene Chloride	ND	20	ug/L
Acetone	ND	20	ug/L
Carbon Disulfide	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethene	ND	5	ug/L
Chloroform	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
2-Butanone	ND	20	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
Cyclohexane	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
1,4-Dioxane	ND	500	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Benzene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Bromoform	ND	5	ug/L
4-Methyl-2-pentanone	ND	5	ug/L
2-Hexanone	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L

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VOLATILE COMPOUNDS BY GC/MS

Date Analyzed: 06/01/94
Laboratory ID: 3MB-152B
Sample Matrix: Water

Parameter	Analytical Result	Detection Limit	Units
Toluene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Styrene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
o-Xylene	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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TENTATIVELY IDENTIFIED COMPOUNDS
METHOD BLANK ANALYSIS

Date Analyzed: 06/01/94
Laboratory ID: 3MB-152B
Sample Matrix: Water

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	88	76 - 114
Toluene-d8	102	88 - 110
Bromofluorobenzene	98	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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LAB QA/QC
VOLATILE COMPOUNDS BY GC/MS
METHOD BLANK

Date Analyzed: 06/02/94
Laboratory ID: 3MB-152A
Sample Matrix: Water

Parameter	Analytical Result	Detection Limit	Units
Chloromethane	ND	5	ug/L
Bromomethane	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L
Chloroethane	ND	5	ug/L
Methylene Chloride	ND	20	ug/L
Acetone	ND	20	ug/L
Carbon Disulfide	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethene	ND	5	ug/L
Chloroform	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
2-Butanone	ND	20	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
Cyclohexane	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
1,4-Dioxane	ND	500	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Benzene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Bromoform	ND	5	ug/L
4-Methyl-2-pentanone	ND	5	ug/L
2-Hexanone	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L

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VOLATILE COMPOUNDS BY GC/MS

Date Analyzed: 06/02/94
Laboratory ID: 3MB-152A
Sample Matrix: Water

Parameter	Analytical Result	Detection Limit	Units
Toluene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Styrene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
o-Xylene	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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TENTATIVELY IDENTIFIED COMPOUNDS
METHOD BLANK ANALYSIS

Date Analyzed: 06/02/94
Laboratory ID: 3MB-152A
Sample Matrix: Water

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	92	76 - 114
Toluene-d8	100	88 - 110
Bromofluorobenzene	98	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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LAB QA/QC
VOLATILE COMPOUNDS BY GC/MS
METHOD BLANK

Date Analyzed: 06/03/94
Laboratory ID: 3MB-153A
Sample Matrix: Water

Parameter	Analytical Result	Detection Limit	Units
Chloromethane	ND	5	ug/L
Bromomethane	ND	5	ug/L
Vinyl Chloride	ND	5	ug/L
Chloroethane	ND	5	ug/L
Methylene Chloride	ND	20	ug/L
Acetone	ND	20	ug/L
Carbon Disulfide	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethene	ND	5	ug/L
Chloroform	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
2-Butanone	ND	20	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
Cyclohexane	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
1,4-Dioxane	ND	500	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Dibromochloromethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Benzene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
1,2-Dibromoethane	ND	5	ug/L
Bromoform	ND	5	ug/L
4-Methyl-2-pentanone	ND	5	ug/L
2-Hexanone	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L

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VOLATILE COMPOUNDS BY GC/MS

Date Analyzed: 06/03/94
Laboratory ID: 3MB-153A
Sample Matrix: Water

Parameter	Analytical Result	Detection Limit	Units
Toluene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Styrene	ND	5	ug/L
m,p-Xylene	ND	5	ug/L
o-Xylene	ND	5	ug/L

ND - Compound not detected at stated Detection Limit.
J - Meets identification criteria, below Detection Limit.
B - Compound detected in method blank.

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TENTATIVELY IDENTIFIED COMPOUNDS
METHOD BLANK ANALYSIS

Date Analyzed: 06/03/94
Laboratory ID: 3MB-153A
Sample Matrix: Water

Tentative Identification	Retention Time (min)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentrations calculated assuming a Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	91	76 - 114
Toluene-d8	99	88 - 110
Bromofluorobenzene	98	86 - 115

References:

Method 8240, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Third Edition, November 1986.

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LAB QA/QC
SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
METHOD BLANK

Date Analyzed: **05/31/94**
Laboratory ID: MB - 147
Sample Matrix: Water
Date Extracted: 05/27/94

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1-Methylnaphthalene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol *	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
6-Methyl chrysene	ND	10	ug/L
7,12-Dimethylbenz(a)anthracene	ND	10	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzenethiol	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L

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LAB QA/QC
SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
METHOD BLANK

Date Analyzed: 05/31/94
Laboratory ID: MB - 147
Sample Matrix: Water
Date Extracted: 05/27/94

Parameter	Analytical Result	Detection Limit	Units
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	10	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
di-n-Butylphthalate	ND	10	ug/L
di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)acridine	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L
Pyridine	ND	10	ug/L
Quinoline	ND	10	ug/L

ND - Compound not detected at stated Detection Limits.
* - Compounds Coelute by GC/MS.

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LAB QA/QC
SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
METHOD BLANK
TENTATIVELY IDENTIFIED COMPOUNDS

Date Analyzed: **05/31/94**
Laboratory ID: MB - 147
Sample Matrix: Water
Date Extracted: 05/27/94

Tentitively Identification	Retention Time (min.)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	76	21 - 100
Phenol-d6	68	10 - 94
Nitrobenzene-d5	93	35 - 114
2-Fluorobiphenyl	103	43 - 116
2,4,6-Tribromophenol	100	10 - 123
Terphenyl-d14	102	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW846, USEPA, Third Edition, November 1986.

USEPA Contract Lab Program, Statement of Work for Organic Analysis, Multi-Media, Multi-Concentration, OLM01.0, December 1990.

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LAB QA/QC
SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
METHOD BLANK

Date Analyzed: **06/01/94**
Laboratory ID: MB - 148
Sample Matrix: Water
Date Extracted: 05/28/94

Parameter	Analytical Result	Detection Limit	Units
1,2,4-Trichlorobenzene	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1-Methylnaphthalene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
2,4-Dinitrophenol	ND	50	ug/L
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
2-Nitroaniline	ND	50	ug/L
2-Nitrophenol	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	20	ug/L
3-Methylphenol/4-Methylphenol *	ND	10	ug/L
3-Nitroaniline	ND	50	ug/L
4,6-Dinitro-2-methylphenol	ND	50	ug/L
4-Bromophenyl-phenylether	ND	10	ug/L
4-Chloro-3-methylphenol	ND	20	ug/L
4-Chloroaniline	ND	20	ug/L
4-Chlorophenyl-phenylether	ND	10	ug/L
4-Nitroaniline	ND	20	ug/L
4-Nitrophenol	ND	50	ug/L
6-Methyl chrysene	ND	10	ug/L
7,12-Dimethylbenz(a)anthracene	ND	10	ug/L
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzenethiol	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L

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LAB QA/QC
SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
METHOD BLANK

Date Analyzed: **06/01/94**
Laboratory ID: MB - 148
Sample Matrix: Water
Date Extracted: 05/28/94

Parameter	Analytical Result	Detection Limit	Units
Benzo(g,h,i)perylene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzoic Acid	ND	50	ug/L
Benzyl Alcohol	ND	20	ug/L
bis(2-Chloroethoxy)methane	ND	10	ug/L
bis(2-Chloroethyl)ether	ND	10	ug/L
bis(2-Chloroisopropyl)ether	ND	10	ug/L
bis(2-Ethylhexyl)phthalate	ND	10	ug/L
Butylbenzylphthalate	ND	10	ug/L
Chrysene	ND	10	ug/L
di-n-Butylphthalate	ND	10	ug/L
di-n-Octylphthalate	ND	10	ug/L
Dibenz(a,h)acridine	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Diethylphthalate	ND	10	ug/L
Dimethylphthalate	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	20	ug/L
Hexachlorocyclopentadiene	ND	10	ug/L
Hexachloroethane	ND	20	ug/L
Indene	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
N-Nitrosodi-n-propylamine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Naphthalene	ND	10	ug/L
Nitrobenzene	ND	10	ug/L
Pentachlorophenol	ND	50	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L
Pyridine	ND	10	ug/L
Quinoline	ND	10	ug/L

ND - Compound not detected at stated Detection Limits.
* - Compounds Coelute by GC/MS.

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LAB QA/QC
SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
METHOD BLANK
TENTATIVELY IDENTIFIED COMPOUNDS

Date Analyzed: **06/01/94**
Laboratory ID: MB - 148
Sample Matrix: Water
Date Extracted: 05/28/94

Tentitively Identification	Retention Time (min.)	Concentration	Units

No additional compounds found at reportable levels.

Unknown concentration calculated assuming Relative Response Factor = 1.

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	79	21 - 100
Phenol-d6	84	10 - 94
Nitrobenzene-d5	95	35 - 114
2-Fluorobiphenyl	100	43 - 116
2,4,6-Tribromophenol	107	10 - 123
Terphenyl-d14	93	33 - 141

Reference:

Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW846, USEPA, Third Edition, November 1986.

USEPA Contract Lab Program, Statement of Work for Organic Analysis, Multi-Media, Multi-Concentration, OLM01.0, December 1990.

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LAB QA/QC
PURGEABLE ORGANIC COMPOUNDS
MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY

Date Analyzed: 06/03/94
Laboratory ID: 3MSD5200
Sample Matrix: Water

ORIGINAL SAMPLE PARAMETERS

Parameter	Spike Added (ug/L)	Sample Conc. (ug/L)	MS Conc. (ug/L)	MS Recovery (%)	QC Limits (% Rec.)
1,1-Dichloroethene	100	0	114	114	61-145
Trichloroethene	100	0	110	110	71-120
Benzene	100	0	114	114	76-127
Toluene	100	0	116	116	71-127
Chlorobenzene	100	0	115	115	75-130

DUPLICATE SAMPLE PARAMETERS

Parameter	Spike Added (ug/L)	MSD Conc. (ug/L)	MSD Recovery (%)	RPD (%)	QC Limits RPD	QC Limits Rec.
1,1-Dichloroethene	100	113	113	1	14	61-145
Trichloroethene	100	110	110	0	14	71-120
Benzene	100	113	113	1	11	76-127
Toluene	100	115	115	1	13	71-127
Chlorobenzene	100	115	115	0	13	75-130

Spike Recovery: 0 out of 10 outside QC limits.
RPD: 0 out of 5 outside QC limits.

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LAB QA/QC
PURGEABLE ORGANIC COMPOUNDS
MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY

Date Analyzed: 05/31/94
Laboratory ID: 3MSD5102
Sample Matrix: Water

ORIGINAL SAMPLE PARAMETERS

Parameter	Spike Added (ug/L)	Sample Conc. (ug/L)	MS Conc. (ug/L)	MS Recovery (%)	QC Limits (% Rec.)
1,1-Dichloroethene	20	0	18	90	80-120
Trichloroethene	20	0	20	100	80-120
Benzene	20	0	21	105	80-120
Toluene	20	0	20	100	80-120
Chlorobenzene	20	0	20	100	80-120

DUPLICATE SAMPLE PARAMETERS

Parameter	Spike Added (ug/L)	MSD Conc. (ug/L)	MSD Recovery (%)	RPD (%)	QC Limits RPD	QC Limits Rec.
1,1-Dichloroethene	20	20	100	11	22	80-120
Trichloroethene	20	19	95	5	24	80-120
Benzene	20	21	105	0	21	80-120
Toluene	20	19	95	5	21	80-120
Chlorobenzene	20	19	95	5	21	80-120

Spike Recovery: 0 out of 10 outside QC limits.
RPD: 0 out of 5 outside QC limits.

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LAB QA/QC
PURGEABLE ORGANIC COMPOUNDS
MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY

Date Analyzed: 05/31/94
Laboratory ID: 3MSD5102
Sample Matrix: Water

ORIGINAL SAMPLE PARAMETERS

Parameter	Spike Added (ug/L)	Sample Conc. (ug/L)	MS Conc. (ug/L)	MS Recovery (%)	QC Limits (% Rec.)
1,1-Dichloroethene	20	0	18	90	80-120
Trichloroethene	20	0	20	100	80-120
Benzene	20	0	21	105	80-120
Toluene	20	0	20	100	80-120
Chlorobenzene	20	0	20	100	80-120

DUPLICATE SAMPLE PARAMETERS

Parameter	Spike Added (ug/L)	MSD Conc. (ug/L)	MSD Recovery (%)	RPD (%)	QC Limits RPD	QC Limits Rec.
1,1-Dichloroethene	20	20	100	11	22	80-120
Trichloroethene	20	19	95	5	24	80-120
Benzene	20	21	105	0	21	80-120
Toluene	20	19	95	5	21	80-120
Chlorobenzene	20	19	95	5	21	80-120

Spike Recovery: 0 out of 10 outside QC limits.
RPD: 0 out of 5 outside QC limits.

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LAB QA/QC
PURGEABLE ORGANIC COMPOUNDS BY GC/MS
MATRIX SPIKE SUMMARY

Date Analyzed: 06/02/94
Laboratory ID: 3MS-5083
Sample Matrix: Water

ORIGINAL SAMPLE PARAMETERS

Parameter	Spike Added (ug/L)	Sample Conc. (ug/L)	MS Conc. (ug/L)	MS Recovery (%)	QC Limits (% Rec.)
1,1-Dichloroethene	100	0	92	92	61-145
Trichloroethene	100	0	85	85	71-120
Benzene	100	0	99	99	76-127
Toluene	100	0	88	88	71-127
Chlorobenzene	100	0	89	89	75-130

Spike Recovery: 0 out of 5 outside QC limits.

QUALITY CONTROL:

Surrogate Recovery	%	Water QC Limits
1,2-Dichloroethane-d4	90	76 - 114
Toluene-d8	102	88 - 110
Bromofluorobenzene	97	86 - 115

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LAB QA/QC
SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
BLANK SPIKE

Date Analyzed: **05/31/94**
Laboratory ID: BS - 147
Sample Matrix: Water
Date Extracted: 05/27/94

Parameter	Spike Added (ug/L)	Sample Conc. (ug/L)	MS Conc. (ug/L)	MS Recovery (%)		QC Limits (% Rec.)
Phenol	200	0	129	65		12 - 89
2-Chlorophenol	200	0	140	70		27-123
1,4-Dichlorobenzene	100	0	72	72		36 - 97
n-Nitroso-di-n-propylamine	100	0	106	106		41-116
1,2,4-Trichlorobenzene	100	0	75	75		39 - 98
4-Chloro-3-methylphenol	200	0	139	70		23 -97
Acenaphthene	100	0	89	89		46 - 118
4-Nitrophenol	200	0	99	50		10 - 80
2,4-Dinitrotoluene	100	0	126	126	*	24 - 96
Pentachlorophenol	200	0	138	69		9 - 103
Pyrene	100	0	88	88		26 - 127

QUALITY CONTROL:

Surrogate Recoveries	%	Water QC Limits
2-Fluorophenol	87	21 - 100
Phenol-d5	73	10 - 94
Nitrobenzene-d5	95	35 - 114
2-Fluorobiphenyl	104	43 - 116
2,4,6-Tribromophenol	106	10 - 123
p-Terphenyl	99	33 - 141

Spike Recovery: 1 out of 11 outside QC limits.

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LAB QA/QC
SEMI-VOLATILE ORGANIC COMPOUNDS BY GC/MS
MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY

Date Analyzed: **06/02/94**
Laboratory ID: BSD-148
Sample Matrix: Water
Date Extracted: 05/28/94

ORIGINAL SAMPLE PARAMETERS

Parameter	Spike Added (ug)	Sample Conc. (ug)	MS Conc. (ug)	MS Recovery (%)		QC Limits (% Rec.)
Phenol	200	0	120	60		12 - 89
2-Chlorophenol	200	0	144	72		27-123
1,4-Dichlorobenzene	100	0	82	82		36 - 97
n-Nitroso-di-n-propylamine	100	0	110	110		41-116
1,2,4-Trichlorobenzene	100	0	80	80		39 - 98
4-Chloro-3-methylphenol	200	0	140	70		23 -97
Acenaphthene	100	0	84	84		46 - 118
4-Nitrophenol	200	0	88	44		10 - 80
2,4-Dinitrotoluene	100	0	120	120	*	24 - 96
Pentachlorophenol	200	0	130	65		9 - 103
Pyrene	100	0	83	83		26 - 127

DUPLICATE SAMPLE PARAMETERS

Parameter	Spike Added (ug)	MSD Conc. (ug)		MSD Recovery (%)	RPD (%)	QC Limits RPD	QC Limits Rec.
Phenol	200	116		58	3	42	12 - 89
2-Chlorophenol	200	138		69	4	40	27-123
1,4-Dichlorobenzene	100	82		82	0	28	36 - 97
n-Nitroso-di-n-propylamine	100	98		98	12	38	41-116
1,2,4-Trichlorobenzene	100	82		82	2	28	39 - 98
4-Chloro-3-methylphenol	200	132		66	6	42	23 -97
Acenaphthene	100	80		80	5	31	46 - 118
4-Nitrophenol	200	73		37	19	50	10 - 80
2,4-Dinitrotoluene	100	110	*	110	9	38	24 - 96
Pentachlorophenol	200	118		59	10	50	9 - 103
Pyrene	100	81		81	2	31	26 - 127

Spike Recovery: 2 out of 22 outside QC limits.
RPD: 0 out of 11 outside QC limits.

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LAB QA/QC
TOTAL METALS ANALYSIS
MATRIX SPIKE

Date Analyzed: **06/17/94**
Laboratory ID: B945076-S
Sample Matrix: Water

Parameter	Spike Added (mg/L)	Sample Conc. (mg/L)	MS Conc. (mg/L)	MS Recovery (%)	QC Limits (% Rec.)
Antimony	0.025	ND	0.021	86	80 - 120
Arsenic	0.025	0.0055	0.027	86	80 - 120
Beryllium	0.10	ND	0.1	97	80 - 120
Cadmium	0.0025	ND	0.0027	108	80 - 120
Chromium	0.50	0.015	0.48	93	80 - 120
Copper	0.50	0.034	0.50	94	80 - 120
Lead	0.025	0.0044	0.03	107	80 - 120
Mercury	0.004	ND	0.0035	88	80 - 120
Nickel	0.5	ND	0.46	91	80 - 120
Selenium	0.01	ND	0.01	116	80 - 120
Silver	0.01	ND	0.01	95	80 - 120
Thallium	0.01	ND	0.01	110	80 - 120
Zinc	0.50	0.039	0.47	86	80 - 120

ND-Parameter not detected at stated detection level.

References:

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September 1986.

Method 7000: Atomic Absorption Spectroscopy SW-846, September 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September 1986.

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LAB QA/QC
TOTAL METALS ANALYSIS
MATRIX SPIKE

Date Analyzed: **06/14/94**
Laboratory ID: B945087
Sample Matrix: Water

Parameter	Spike Added (mg/L)	Sample Conc. (mg/L)	MS Conc. (mg/L)	MS Recovery (%)	QC Limits (% Rec.)
Iron	5.0	9.1	13.6	90	80 - 120
Manganese	0.50	3.8	4.3	98	80 - 120

ND-Parameter not detected at stated detection level.

References:

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September 1986.

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LAB QA/QC
TOTAL METALS ANALYSIS
DUPLICATE ANALYSIS

Date Analyzed: **06/17/94**
Laboratory ID: B945073-D
Sample Matrix: Water

Parameter	Analytical Result (mg/L)	Duplicate Result (mg/L)	Percent RSD (%)	QC Limits (%)
Antimony	ND	ND		20
Arsenic	ND	ND		20
Beryllium	ND	ND		20
Cadmium	ND	ND		20
Chromium	ND	ND		20
Copper	ND	ND		20
Lead	0.0057	0.0054	5	20
Mercury	ND	ND		20
Nickel	ND	ND		20
Selenium	ND	ND		20
Silver	ND	ND		20
Thallium	ND	ND		20
Zinc	0.037	0.035	6	20

ND-Parameter not detected at stated detection level.

References:

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September 1986.

Method 7000: Atomic Absorption Spectroscopy SW-846, September 1986.

Method 7470: Mercury in Liquid Waste (Manual Cold-Vapor Technique), SW-846, September 1986.

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LAB QA/QC
TOTAL METALS ANALYSIS
DUPLICATE ANALYSIS

Date Analyzed: **06/14/94**
Laboratory ID: B945085
Sample Matrix: Water

Parameter	Analytical Result (mg/L)	Duplicate Result (mg/L)	Percent RSD (%)	QC Limits (%)
Iron	1.1	1.3	17	20
Manganese	5.7	5.7		20

ND-Parameter not detected at stated detection level.

References:

Method 3010: Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, September 1986.

Method 6010: Inductively Coupled Plasma-Atomic Emission Spectroscopy, SW-846, September 1986.

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CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
023353014 BLOOMFIELD REFINERY	BLOOMFIELD, NM
Sampler: (Signature)	**Chain of Custody Tape No.**
Jerry A May	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	8240	8270	418.1	METALS 6010/7000	Remarks
MW-12	5/24/94	0945		WATER	3	X	X			need ✓
MW-5		1030		"	3	X	X			
MW-8		1110		"	3	X	X			
TB-052494		1145		"	1	X				
MW-3		1140		"	3	X	X			
MW-1		1210		"	3	X	X			
EB-052494		1205		"	2	X				
MW-29		1350		" JM	5	X	X	X	X	
MW-21		1345		"	3	X	X			
MW-21 DUP		1350		"	3	X	X			
MW-30		1420		"	5	X	X	X	X	SHEEN
MW-13		1520		"	3	X	X			
MW-31		1540		"	5	X	X	X	X	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Jerry A May	5/24/94	1655		5/24	16:55
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

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☐ 1714 Phillips Circle, Gillette, Wyoming 82716, Telephone (307) 682-8945
☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737
☒ 1160 Research Dr., Bozeman, Montana 59715, Telephone (406) 586-8450
☐ 11183 SH 30, College Station, TX 77845, Telephone (409) 776-8945
☐ 3304 Longmire Drive, College Station, TX 77845, Telephone (409) 774-4999

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CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
023353014 BLOOMFIELD REFINERY	BLOOMFIELD NM

Sampler: (Signature)	Chain of Custody Tape No.
Jerry A Mray - Groundwater Tech.	

ANALYSES / PARAMETERS

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	8240	8270	418.1	METALS 6010/7000	DISS, O2 TDS, TOC, ALKALINITY HARDNESS, Fe, Mg, Mn, Ca, NH3 Na, K,	Remarks
MW-26	5/25/94	1100		WATER	5	X	X	X	X		SHOEN
MW-26DUP		1100		"	5	X	X	X	X		SHOEN
MW-25		1215		"	6	X	X	X	X		SHOEN
TB-052594		1220		"	1	X					
EB-052594		1445		"	2	X					
MW-11		1315		"	3	X	X				SHOEN
MW-20		1350		"	6	X	X			X	
RW-1		1435		"	3	X	X				SHOEN
RW-3		1530		"	6	X	X			X	SHOEN

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Jerry A Mray	5/25/94	1640	Austin Wolf	5/25	16:40
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

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