Subsurface Consultants, Inc.

1 of 469

February 3, 2000
SCI 447.055

Mr. George Hill
305 Sheridan Avenue
Piedmont, California 94611

Mr. Gordon Linden
101 Gleneden Avenue
Oakland, California 94611

Groundwater Monitoring
4th Quarter 1999 Events
Connell Automobile Dealership (St ID# 469)
3093 Broadway
Oakland, California

Dear Messrs. Hill & Linden:

This letter presents the results of groundwater monitoring, conducted in September 1999 and free product removal events conducted in October and December 1999 at the above referenced site by Subsurface Consultants, Inc. (SCI). The site is situated on the southwest corner of the intersection of Hawthorne Street and Broadway, as shown on the Site Plan, Plate 1.

BACKGROUND

On December 18, 1989, three underground storage tanks (USTs), which previously contained gasoline, diesel, and waste oil, were removed from a sidewalk area located adjacent to the existing Connell facility. A dispenser island located within the existing building was also removed at that time. SCI understands that the pipelines connecting the fuel dispenser island with the USTs remained in-place.

Fourteen wells have been installed and periodically sampled since 1990 to evaluate impacts to groundwater due to previous UST releases at the site. Impacts documented to date include a free floating gasoline plume and a dissolved petroleum hydrocarbon plume. Since 1991, free product recovery has been conducted by hand-bailing product from site wells. In October 1996, an internal combustion engine was installed to remove product from well MW-6 using soil vapor extraction

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(SVE) technologies. Due to elevated groundwater levels at the site caused by high seasonal rains, the SVE system was taken off-line and removed from the site in March 1998.

MONITORING ACTIVITIES

Groundwater monitoring during this event was performed in accordance with the program outlined in the approved work plan dated April 15, 1999 as amended by the Alameda County Health Care Services Agency (ACHCSA) letter dated May 3, 1999. The program includes monthly free product level measurements and removal, and quarterly sampling (in the absence of free product) of wells MW-1, MW-4, MW-6, MW-7, MW-8, MW-9, MW-13, MW-14 and MW-15. Water level measurements are made for wells MW-2, MW-3, MW-5, MW-10 and MW-11, however sampling of these wells is no longer required. There is no well designated MW-12.

Monthly Free Product Removal

Measurements of free product thickness and depth-to-water are summarized in Table 1. During this quarter, free product was observed in wells MW-1 and MW-6 for the September, October and December monitoring events, yet only observed in wells MW-14 and MW-15 during the September event. The quantity of free product removed to date is summarized in Table 2.

Groundwater Monitoring

For this quarter wells MW-1, MW-6, MW-14 and MW-15 were not purged nor sampled due to the presence of free product. On September 20, 1999, wells MW-4, MW-7, MW-8, MW-9, and MW-13 were purged by removing water with new disposable bailers or a submersible pump. The wells were purged until measurements of pH, temperature, and conductivity had stabilized. After the wells recharged to within 80 percent of their initial level, they were sampled with new disposable bailers. Purged water was placed in 55-gallon drums and remained on-site pending later disposal.

Groundwater samples collected from the wells were submitted for chemical analyses. The samples were retained in pre-cleaned containers supplied by the analytical laboratory and were placed in ice-filled coolers and remained iced until delivery to the laboratory. Chain-of-custody records accompanied the samples to the laboratory.

ANALYTICAL TESTING

Curtis & Tompkins, Ltd., a state-certified chemical testing laboratory performed chemical analyses of samples from the wells. The samples were analyzed for the constituents listed below.

Analysis	Sample Preparation Method	Analysis Method
Total Volatile Hydrocarbons (TVH)	EPA 5030	EPA 8015 Mod.
Halogenated Volatile Organic Compounds (HVOC)	EPA 5030	EPA 8010
1,2 Dichloroethane (1,2-DCA)	EPA 5030	EPA 8260
Total Extractable Hydrocarbons (TEH) diesel and motor oil ranges	EPA 3520	EPA 8015 Mod.
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	EPA 5030	EPA 8021
Methyl Tertiary Butyl Ether (MtBE)	EPA 5030	EPA 8260A
Semi-volatile Organic Compounds (SVOC)	EPA 3520	EPA 8270B
Cadmium, Chromium, Lead, Nickel, and Zinc	EPA 6010	ICP

Summaries of analytical test results are summarized in Tables 3, 4 and 5. Field sampling forms, analytical test reports, and chain-of-custody documents are attached.

DISCUSSION AND CONCLUSIONS

Groundwater Flow Direction and Gradient

The groundwater flow direction trends across the site from the east to west. This flow pattern is typical of what has been observed throughout the study. For the September event, groundwater elevations varied approximately 12 feet across the site. A relatively flat area exists in the western portion of the site where the gradient is on the order of 0.04 ft/ft. A steeper gradient of 0.7 ft/ft exists on the eastern portion of the site. Groundwater surface contours for September 1999 are presented on Plate 2.

Free Product

Well MW-6 had the most free product removed during this quarter (a total of 0.4 gallons as shown in Table 2). A mild hydrocarbon odor was detected in well MW-4 in September, but no free product was detected. A strong hydrocarbon odor was noticeable in wells MW-14 and MW-15 with trace amounts of free product observed. To date approximately 370 gallons of free product have been recovered.

Analytical Test Results

Samples from wells MW-4, MW-8 and MW-9 had higher readings of dissolved petroleum hydrocarbon constituents than have previously been detected.

Relatively low concentrations of toluene and xylenes were detected in samples from well MW-7 for the second consecutive event.

Well MW-13 had 370 micrograms per liter (µg/L) of total volatile hydrocarbons, but showed a general decrease in BTEX and DCA concentrations.

The samples obtained during this event were analyzed for MtBE using EPA Method 8260 to evaluate whether MtBE was present. MtBE was not detected above the laboratory reporting limits in any sample using EPA Method 8260. During previous monitoring events MtBE was detected in several samples using EPA Method 8021. This suggests that EPA Method 8021 is detecting compounds other than MtBE, and as such, is not a reasonable analysis to be used at this site. Hence, previous detection of MtBE at the site using EPA Method 8021 represented "false positive" detection of MtBE.

Samples from wells MW-4, MW-7, MW-8, MW-9 and MW-13 were tested for dissolved cadmium, chromium, lead, nickel and zinc, using EPA Method 6010. The concentrations of these metals were all below the laboratory reporting limits, with the exception of lead (66 µg/l) and zinc (33 ug/l) in well MW-4 and nickel (25 µg/l) and zinc (37 µg/l) in well MW-9. Zinc concentrations were reported for the first time.

Samples from wells MW-4, MW-7, MW-8, MW-9 and MW-13 were also tested for semi-volatile organic compounds using EPA Method 8270. Concentrations of these compounds were all below the laboratory reporting limits, with the exception of 2-methyl naphthalene (360 µg/L) and naphthalene (820 µg/L) measured in the sample from well MW-4. 2-methyl naphthalene and naphthalene are soluble constituents of gasoline which have been detected in previous samples from wells MW-1 and MW-4.

Ongoing Monitoring

As required by the ACHCSA groundwater monitoring should continue on a quarterly basis with free product measurements and removal continuing monthly. The next monitoring event should occur in the first quarter of 2000.

At the time of this report, thirteen 55-gallon drums of purge water and free product is located on the site. These drums should be properly disposed.

If you have any questions, please call either of the undersigned at (925) 922-7960.

Yours very truly,

Subsurface Consultants, Inc.

Emily Silverman
Field Geologist

Jeriann N. Alexander, PE, REA
Civil Engineer 40469 (expires 3/31/03)
Registered Environmental Assessor 03130 (exp. 6/30/00)

ES: JNA: rm/447.055/qtr999.doc

Attachments: Plate 1 - Site Plan
Plate 2 - Groundwater Elevation Contours – September 1999

Table 1 - Groundwater and Free Product Elevation Data
Table 2 - Free Product Recovery
Table 3 - Summary of Petroleum Hydrocarbon and VOC Concentrations in Groundwater
Table 4 - Summary of Semi-Volatile Organic Compounds and Oil and Grease in Groundwater
Table 5 - Summary of Metals in Groundwater

Well Sampling Forms and Purge Water Manifests - September 1999
Field Forms – October 1999
Field Forms – December 1999
Analytical Test Reports
Chain-of-Custody Documents

cc: ✓ Ms. Susan Hugo
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Mr. Charles Headlee
Cal/EPA San Francisco Regional Water Quality
Control Board
1515 Clay Street, Suite 1400
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Mr. Paul Kibel, Esq.
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1221 Broadway, 12th Floor
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Mr. Robert Clark Riddell
Cambria Environmental Technology, Inc.
1144 65th Street, Suite B
Oakland, CA 94608

HAWTHORNE STREET

SIDEWALK

3093 BROADWAY

WEBSTER STREET

SIDEWALK

BROOK STREET

BROADWAY

SIDEWALK

SIDEWALK

11 1 14 15 6 13 9 8 10 4 2 7 3 5

N

APPROXIMATE SCALE IN FEET

0 60 120

EXPLANATION

6 SCI MONITORING WELL

FENCE

RETAINING WALL

FORMER TANK LOCATION

SITE PLAN
SEPTEMBER 1999

SCI Subsurface Consultants, Inc.
Geotechnical & Environmental Engineers

CONNELL OLDSMOBILE
OAKLAND, CALIFORNIA

JOB NUMBER	DATE	APPROVED
447.055	1/00	

PLATE 1

SITEPLAN.DWG

HAWTHORNE STREET

SIDEWALK

3093 BROADWAY

WEBSTER STREET

SIDEWALK

BROOK STREET

BROADWAY

SIDEWALK

SIDEWALK

11 (70.90)

(70.67) 1

(70.40) 14

(70.64) 15

64

62

60

(61.24) 6

66

(58.61) 8

(69.22) 9

68

70

10

4 (68.72)

(66.50) 7

2 (NA)

3 (69.63)

5 (58.29)

(62.15) 13

N

APPROXIMATE SCALE IN FEET

0 60 120

EXPLANATION

(61.24) GROUNDWATER ELEVATION

64 GROUNDWATER ELEVATION CONTOUR

6 SCI MONITORING WELL

FENCE

RETAINING WALL

FORMER TANK LOCATION

GROUNDWATER FLOW DIRECTION

GROUNDWATER ELEVATION CONTOURS - SEPTEMBER 1999

SCI Subsurface Consultants, Inc.
Geotechnical & Environmental Engineers

CONNELL OLDSMOBILE
OAKLAND, CALIFORNIA

JOB NUMBER	DATE	APPROVED
447.055	1/00	

PLATE 2

GW_ELEVATION999_2.DWG

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-1	94.48	10/3/90	26.40	68.08	NM	--
		3/5/91	27.46	67.02	NM	--
		3/18/91	26.88	67.60	NM	--
		4/12/91	25.49	68.99	NM	--
		12/23/91	26.86	67.62	1.15	68.77
		12/26/91	26.08	68.40	0.22	68.63
		1/13/92	26.53	67.95	0.66	68.61
		2/28/92	27.75	66.73	0.42	67.15
		5/18/92	24.75	69.73	NM	--
		6/29/92	25.09	69.39	0.04	69.43
		7/29/92	25.46	69.02	0.15	69.17
		8/28/92	25.56	68.92	0.29	69.21
		10/28/92	26.44	68.04	0.52	68.56
		11/24/92	26.63	67.85	NM	--
		12/22/92	26.37	68.11	NM	--
		4/5/93	23.77	70.71	0	--
		7/20/93	24.51	69.97	0.6	70.57
		11/9/93	26.06	68.42	1.17	69.59
		8/30/95	21.73	72.75	0.23	72.98
		9/15/95	21.88	72.61	0.15	72.75
		10/2/95	22.42	72.06	0.42	72.48
		11/3/95	23.10	72.74	0.76	73.50
		11/30/95	23.38	72.54	0.7	73.24
		1/3/96	23.30	72.62	0.78	73.40
		2/2/96	22.96	72.28	0.84	73.12
		3/1/96	21.69	72.79	0.14	72.65
		4/4/96	21.11	73.67	0	--
		5/2/96	20.96	73.83	0	--
		6/5/96	20.98	73.81	0.04	73.85
		7/9/96	21.64	72.84	0.2	73.04
		8/8/96	22.43	72.05	0.33	72.38
		9/10/96	23.25	71.23	0.6	71.83
		10/1/96	23.58	70.90	0.6	71.50
		11/4/96	24.29	70.19	0.78	70.97
		12/2/96	24.63	69.85	0.88	70.73
		1/3/97	24.08	70.40	0.81	71.21
		2/6/97	22.46	72.02	0.3	72.32
		3/5/97	23.00	71.48	0	--
		4/1/97	22.29	72.19	0.2	72.39
		5/8/97	22.79	71.69	0.33	72.02
		6/6/97	24.33	70.15	1.69	71.84

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3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-1 (cont)	94.48	7/8/97	24.00	70.48	0.96	71.44
		8/7/97	24.58	69.90	1.29	71.19
		9/10/97	24.93	69.55	1.21	70.76
		10/1/97	24.89	69.59	0.86	70.45
		11/4/97	25.06	69.42	0.77	70.19
		12/4/97	24.76	69.52	0.54	70.06
		1/8/98	23.66	70.82	0	--
		2/5/98	22.64	71.84	0	--
		3/6/98	20.80	73.68	0	--
		4/2/98	20.31	74.17	0	--
		4/29/98	19.95	74.53	0	--
		6/3/98	20.41	74.07	0	--
		7/9/98	20.97	73.51	0.07	73.58
		8/4/98	21.40	73.08	trace	--
		8/26/98	21.85	72.63	0.10	72.73
		11/2/98	22.92	71.56	0.39	71.95
		12/4/98	23.29	71.19	0.29	71.48
		1/5/99	23.51	70.97	0.42	71.39
		2/8/99	23.08	71.40	0.05	71.45
		3/29/99	21.90	72.58	0.01	72.59
		4/30/99	21.52	72.96	0	--
		7/1/99	22.70	71.78	0.025	71.81
		7/27/99	23.05	71.43	0	--
		8/19/99	24.55	69.93	0	--
		9/20/99	23.81	70.67	0.083	70.75
		10/20/99	23.90	70.58	0.1	70.68
		12/13/99	24.24	70.24	trace	--

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3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-2	94.81	3/5/91	27.86	66.95	0	--
		3/18/91	27.46	67.35	0	--
		4/12/91	26.98	67.83	0	--
		5/18/92	26.50	68.31	0	--
		6/29/92	26.80	68.01	0	--
		7/29/92	27.08	67.73	0	--
		8/28/92	27.33	67.48	0	--
		10/28/92	27.65	67.16	0	--
		11/24/92	27.91	66.90	0	--
		12/22/92	27.74	67.07	NM	--
		4/5/93	25.95	68.86	0	--
		7/20/93	25.59	69.22	0	--
		11/9/93	26.72	68.09	0	--
		8/30/95	25.75	69.06	0	--
		10/2/95	25.10	69.71	0	--
		11/3/95	25.73	69.02	0	--
		11/30/95	25.34	69.41	0	--
		1/3/96	25.32	69.43	0	--
		2/2/96	25.10	69.65	0	--
		3/1/96	24.05	70.76	0	--
		4/4/96	23.41	71.49	0	--
		5/2/96	23.37	71.53	0	--
		6/5/96	23.75	71.11	0	--
		7/9/96	23.79	71.02	0	--
		8/8/96	24.27	70.54	0	--
		9/10/96	24.87	69.94	0	--
		10/1/96	25.12	69.69	0	--
		11/4/96	25.54	69.27	0	--
		12/2/96	25.74	69.07	0	--
		1/3/97	25.51	69.30	0	--
		2/6/97	24.68	70.13	0	--
		3/5/97	24.14	70.67	0	--
		4/1/97	24.18	70.63	0	--
		5/8/97	24.58	70.23	0	--
		6/6/97	25.20	69.61	0	--
		7/8/97	25.38	69.43	0	--
		8/7/97	25.52	69.29	0	--
		9/10/97	25.77	69.04	0	--
		10/1/97	26.01	68.80	0	--
		11/4/97	26.23	68.58	0	--
		12/4/97	26.31	68.50	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-2 (cont.)	94.81	1/8/98	25.94	68.87	0	--
		2/5/98	25.10	69.71	0	--
		3/6/98	22.23	72.58	0	--
		4/2/98	22.35	72.46	0	--
		4/29/98	22.18	72.63	0	--
		6/3/98	22.69	72.12	0	--
		7/9/98	22.98	71.83	0	--
		8/4/98	23.32	71.49	0	--
		8/26/98	23.72	71.09	0	--
		11/2/98	24.70	70.11	0	--
		12/4/98	24.94	69.87	0	--
		1/5/99		well not accessible		
		2/8/99	25.00	69.81	0	--
		3/24/99		well not accessible		
		4/30/99	23.08	71.73	0	--
		7/1/99	not measured			
		7/27/99	21.05	73.76	0	--
		8/19/99	21.85	72.96	0	--
		9/20/99		well not accessible		
		10/20/99		well not accessible		
		12/13/99		well not accessible		--

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GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-3	90.08	3/6/91	23.17	66.91	NM	--
		3/18/91	22.76	67.32	NM	--
		4/12/91	22.51	67.57	NM	--
		5/12/92	23.17	66.91	NM	--
		6/29/92	22.90	67.18	NM	--
		7/29/92	22.17	67.91	NM	--
		8/28/92	22.28	67.80	NM	--
		10/28/92	22.67	67.41	0	--
		11/24/92	23.01	67.07	0	--
		12/22/92	22.91	67.17	NM	--
		4/5/93	22.11	67.97	0	--
		7/20/93	23.93	66.15	0	--
		11/9/93	23.14	66.94	0	--
		8/29/95	20.61	69.47	0	--
		10/2/95	21.18	68.90	0	--
		11/3/95	20.74	69.60	0	--
		11/30/95	20.68	69.66	0	--
		1/3/96	20.58	69.76	0	--
		2/2/96	20.43	69.91	0	--
		3/1/96	20.24	69.84	0	--
		4/4/96	18.50	71.58	0	--
		5/2/96	18.43	71.65	0	--
		6/5/96	18.51	71.57	0	--
		7/9/96	18.97	71.11	0	--
		8/8/96	19.51	70.57	0	--
		9/10/96	19.86	70.22	0	--
		10/1/96	20.04	70.04	0	--
		11/4/96	20.25	69.83	0	--
		12/2/96	20.40	69.68	0	--
		1/3/97	20.33	69.75	0	--
		2/6/97	19.98	70.10	0	--
		3/5/97	19.80	70.28	0	--
		4/1/97	19.76	70.32	0	--
		5/8/97	19.77	70.31	0	--
		6/6/97	20.18	69.90	0	--
		7/8/97	20.24	69.84	0	--
		8/7/97	20.38	69.70	0	--
		9/10/97	20.55	69.53	0	--
		10/1/97	20.73	69.35	0	--
		11/4/97	20.87	69.21	0	--
		12/4/97	20.89	69.19	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-3 (cont.)	90.08	1/8/98	20.70	69.38	0	--
		2/5/98	20.37	69.71	0	--
		3/6/98	19.68	70.40	0	--
		4/2/98	18.76	71.32	0	--
		4/29/98	17.92	72.16	0	--
		6/3/98	17.78	72.30	0	--
		7/9/98	18.31	71.77	0	--
		8/4/98	18.67	71.41	0	--
		8/26/98	18.91	71.17	0	--
		11/2/98	19.60	70.48	0	--
		12/4/98	19.91	70.17	0	--
		1/5/99	20.01	70.07	0	--
		2/8/99	20.05	70.03	0	--
		3/29/99	19.15	70.93	0	--
		4/30/99	18.12	71.96	0	--
		7/1/99	not measured			
		7/27/99	20.89	69.19	0	--
		8/19/99	19.25	70.83	0	--
		9/20/99	20.45	69.63	0	--
		10/20/99	20.60	69.48	0	--
		12/13/99	20.69	69.39	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-4	88.84	3/5/91	23.79	65.05	NM	--
		3/18/91	22.30	66.54	NM	--
		4/12/91	21.85	66.99	NM	--
		12/23/91	22.63	66.22	0.98	67.19
		12/26/91	22.52	66.32	0.96	67.28
		1/10/92	22.74	66.10	0.99	67.09
		2/28/92	22.00	66.84	0.67	67.51
		3/11/92	21.71	67.13	0.55	67.68
		3/13/92	21.56	67.28	0.49	67.77
		3/17/92	25.46	63.38	0.44	63.82
		3/18/92	21.38	67.47	0.44	67.90
		3/19/92	21.33	67.51	0.48	67.99
		3/23/92	21.29	67.55	0.42	67.97
		3/24/92	21.31	67.53	0.38	67.90
		3/25/92	21.17	67.67	0.36	68.04
		3/26/92	21.08	67.76	0.35	68.11
		3/27/92	20.92	67.92	0.26	68.18
		3/31/92	21.15	67.69	0.44	68.13
		4/1/92	20.90	67.94	0.24	68.18
		4/2/92	20.90	67.94	0.17	68.11
		4/10/92	20.91	67.93	0.33	68.26
		4/13/92	21.04	67.80	0.42	68.22
		4/20/92	20.74	68.10	0.19	68.29
		5/4/92	20.83	68.01	0.33	68.34
		5/18/92	21.33	67.51	0.23	67.74
		5/26/92	20.83	68.01	0.17	68.18
		6/1/92	20.85	67.99	0.19	68.17
		6/29/92	21.38	67.46	0.53	67.99
		7/29/92	21.69	67.15	0.56	67.71
		8/28/92	21.35	67.49	0.63	68.12
		10/28/92	22.48	66.36	0.84	67.20
		11/24/92	22.60	66.24	NM	--
		12/22/92	22.47	66.37	NM	--
		4/3/93	20.11	68.73	0.51	69.24
		7/20/93	20.48	68.36	0.52	68.88
		11/9/93	21.71	67.13	0.63	67.76
		8/30/95	19.90	68.94	2.2	71.14
		9/15/95	18.76	70.08	0.57	70.65
		10/2/95	19.17	69.67	0.65	70.32
		11/3/95	19.45	69.39	0.44	69.83

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-4	88.84	11/30/95	19.50	69.44	0.32	69.76
(cont.)		1/3/96	19.31	69.53	0.2	69.73
		2/2/96	18.91	69.93	0.2	70.13
		3/1/96	18.25	70.59	0.19	70.78
		4/4/96	17.53	71.31	0.18	71.49
		5/2/96	17.50	71.34	0.25	71.59
		6/5/96	17.67	71.17	0.39	71.56
		7/9/96	18.29	70.55	0.5	71.05
		8/8/96	18.84	70.00	0	--
		9/10/96	19.31	69.53	0.34	69.87
		10/1/96	19.51	69.33	0.29	69.62
		11/4/96	20.13	68.71	0.35	69.06
		12/2/96	20.23	68.61	0.33	68.94
		1/3/97	19.33	69.51	0.1	69.61
		2/6/97	18.13	70.72	0.01	70.73
		3/5/97	18.17	70.67	0.06	70.73
		4/1/97	18.38	70.46	0.05	70.51
		5/8/97	18.63	70.21	0.03	70.24
		6/6/97	18.78	70.06	0.19	70.25
		7/8/97	19.21	69.63	0.02	69.65
		8/7/97	19.50	69.34	0.07	69.41
		9/10/97	19.86	68.98	0.04	69.02
		10/1/97	20.09	68.75	0.37	69.12
		11/4/97	20.19	68.65	0.19	68.84
		12/4/97	20.05	68.79	0	--
		1/8/98	19.53	69.31	0	--
		2/5/98	18.28	70.56	0	--
		3/6/98	16.42	72.42	0	--
		4/2/98	16.54	72.30	0	--
		4/29/98	16.11	72.73	0	--
		6/3/98	16.55	72.29	0	--
		7/9/98	17.13	71.71	0	--
		8/4/98	17.54	71.30	0	--
		8/26/98	18.02	70.82	0	--
		11/2/98	19.03	69.81	0	--
		12/4/98	19.21	69.63	0	--
		1/5/99	19.33	69.51	0	--
		2/8/99	18.88	69.96	0	--
		3/29/99	17.51	71.33	0	--
		4/30/99	17.28	71.56	trace	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-4	88.84	7/1/99	18.80	70.04	0	--
(cont.)		7/27/99	19.25	69.59	0	--
		8/19/99	19.65	69.19	0	--
		9/20/99	19.85	68.99	0	--
		10/20/99	20.10	68.74	0	--
		12/13/99	20.12	68.72	0	--
MW-5	84.84	3/18/91	26.31	58.53	NM	--
		3/12/91	26.41	58.43	NM	--
		5/18/92	26.75	58.09	NM	--
		6/29/92	26.73	58.11	NM	--
		7/29/92	26.66	58.18	NM	--
		8/28/92	26.90	57.94	NM	--
		10/28/92	26.39	58.45	0	--
		11/24/92	26.83	58.01	0	--
		12/22/92	27.33	57.51	NM	--
		4/3/93	26.62	58.22	0	--
		7/20/93	26.60	58.24	0	--
		11/9/93	27.24	57.60	0	--
		8/30/95	27.46	57.38	0	--
		10/2/95	26.85	57.99	0	--
		11/3/95	26.67	58.87	0	--
		11/30/95	27.05	58.49	0	--
		1/3/96	26.60	59.04	0	--
		2/2/96	26.70	59.14	0	--
		3/1/96	26.00	58.84	0	--
		4/4/96	26.20	58.64	0	--
		5/2/96	26.02	58.82	0	--
		6/5/96	25.91	58.93	0	--
		7/9/96	26.20	58.64	0	--
		8/8/96	26.38	58.46	0	--
		9/10/96	26.42	58.42	0	--
		10/1/96	26.52	58.32	0	--
		11/4/96	26.69	58.15	0	--
		12/2/96	26.70	58.14	0	--
		1/3/97	25.84	59.00	0	--
		2/6/97	26.26	58.58	0	--
		3/5/97	26.20	58.64	0	--
		4/1/97	26.98	57.86	0	--
		5/8/97	26.76	58.08	0	--
		6/6/97	26.33	58.51	0	--
		7/8/97	26.84	58.00	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-5 (cont.)	84.84	8/7/97	26.89	57.95	0	--
		9/10/97	26.76	58.08	0	--
		10/1/97	26.97	57.87	0	--
		11/4/97	27.04	57.80	0	--
		12/4/97	26.34	58.50	0	--
		1/8/98	26.05	58.79	0	--
		2/5/98	25.31	59.53	0	--
		3/6/98	25.60	59.24	0	--
		4/2/98	25.80	59.04	0	--
		4/29/98	25.35	59.49	0	--
		6/3/98	25.28	59.56	0	--
		7/9/98	25.49	59.35	0	--
		8/4/98	25.77	59.07	0	--
		8/26/98	25.63	59.21	0	--
		11/2/98	26.29	58.55	0	--
		12/4/98	26.05	58.79	0	--
		1/5/99	25.69	59.15	0	--
		2/8/99	26.00	58.84	0	--
		3/29/99	25.73	59.11	0	--
		4/30/99	25.80	59.04	0	--
		7/27/99	18.65	66.19	0	--
		8/19/99	26.70	58.14	0	--
		9/20/99	26.55	58.29	0	--
		10/20/99	25.50	59.34	0	--
		12/13/99	26.75	58.09	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-6	85.62	3/18/91	25.82	59.80	NM	--
		4/12/91	27.23	58.39	NM	--
		12/23/91	28.40	57.22	3.21	60.43
		12/26/91	27.25	58.37	1.67	60.04
		1/10/92	27.23	58.39	0.9	59.29
		2/4/92	27.71	57.91	2.04	59.95
		2/28/92	27.92	57.70	3	60.70
		3/10/92	27.16	58.46	2.06	60.52
		3/12/92	25.96	59.66	0.52	60.18
		3/13/92	25.70	59.92	0.21	60.13
		3/23/92	26.34	59.28	1.09	60.37
		3/30/92	25.73	59.89	0.35	60.25
		4/10/92	25.29	60.33	0.05	60.38
		4/13/92	25.52	60.10	0.21	60.31
		4/20/92	25.38	60.25	0.1	60.35
		5/4/92	25.40	60.22	NM	--
		5/18/92	25.50	60.12	0.17	60.29
		5/26/92	25.46	60.16	0.13	60.29
		6/1/92	25.46	60.16	0.09	60.26
		6/29/92	25.59	60.03	0.14	60.17
		7/29/92	26.90	58.72	1.71	60.43
		8/28/92	25.09	60.53	2.62	63.15
		10/28/92	25.02	60.60	3.94	64.54
		11/24/92	28.87	56.75	NM	--
		4/3/93	26.96	58.66	2.86	61.52
		7/20/93	26.17	59.45	2.6	62.05
		11/9/93	27.51	58.11	3.06	61.17
		8/30/95	28.00	57.62	7.96	65.58
		9/15/95	28.24	57.38	6.14	63.52
		10/2/95	28.39	57.23	6.13	63.36
		11/3/95	26.91	58.71	3.44	62.15
		11/30/95	27.58	58.04	4.41	62.45
		1/3/96	27.58	58.04	4.37	62.41
		2/2/96	27.96	57.68	5.15	62.83
		3/1/96	27.96	57.68	5.41	63.09
		4/4/96	27.69	57.93	5.69	63.62
		5/2/96	26.83	58.79	4.66	63.45
		6/5/96	27.15	58.47	5.17	63.64
		7/9/96	27.08	58.54	4.86	63.40
		8/8/96	26.71	58.91	4.05	62.96

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-6	85.62	9/10/96	26.83	58.79	3.82	62.61
(cont.)		10/1/96	26.96	58.66	3.77	62.43
		11/4/96	NM	NM	NM	NM
MW-6*	86.94	12/2/96	NM	NM	NM	NM
		1/3/97	NM	NM	NM	NM
		2/6/97	25.08	61.86	0.2	62.06
		3/5/97	24.20	62.74	0	--
		4/1/97	24.04	62.90	0	--
		5/8/97	26.54	60.40	1.88	62.28
		6/6/97	25.33	61.61	0.21	61.82
		7/8/97	25.30	61.64	0.07	61.71
		8/7/97	25.52	61.42	0	--
		9/10/97	25.76	61.18	0	--
		10/1/97	25.12	61.82	0	--
		11/4/97	26.16	60.78	0.18	60.96
		12/4/97	26.08	60.86	0.16	61.02
		1/8/98	25.79	61.15	0.1	61.25
		2/5/98	25.31	61.63	0.89	62.52
		3/6/98	24.63	62.31	0.46	62.77
MW-6†	85.82	4/2/98	24.45	62.49	0.59	63.08
		4/29/98	22.96	62.86	0.55	63.41
		6/3/98	22.81	63.01	0.41	63.42
		7/9/98	23.04	62.78	0.35	63.13
		8/4/98	23.29	62.53	0.35	62.88
		8/26/98	23.50	62.32	0.31	62.63
		11/2/98	24.24	61.58	0.43	62.01
		12/4/98	24.35	61.47	0.32	61.79
		1/5/99	24.51	61.31	0.4	61.71
		2/8/99	24.00	61.82	0.03	61.85
		3/29/99	23.82	62.00	0.19	62.19
		4/30/99	23.60	62.22	1.13	63.35
		7/1/99	24.45	61.37	0.42	61.79
		7/27/99	25.35	60.47	0.24	60.71
		8/19/99	24.87	60.95	0.24	60.71
		9/20/99	24.58	61.24	0.1	61.34
		10/20/99	25.05	60.77	0.17	60.94
		12/13/99	25.08	60.74	0.1	60.85

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-7	85.41	3/18/91	21.63	63.78	NM	--
		4/12/91	22.13	63.28	NM	--
		5/18/92	21.67	63.74	NM	--
		6/29/92	20.75	64.66	NM	--
		7/29/92	21.07	64.34	NM	--
		8/28/92	21.35	64.06	NM	--
		10/28/92	21.81	63.60	0	--
		11/24/92	21.52	63.89	0	--
		12/22/92	obstructed	--	NM	--
		4/3/93	20.08	65.33	0	--
		7/20/93	19.59	65.82	0	--
		11/9/93	20.65	64.76	0	--
		8/30/95	18.78	66.63	0	--
		10/2/95	18.73	66.68	0	--
		11/3/95	19.23	66.18	0	--
		11/30/95	19.47	65.94	0	--
		1/3/96	18.52	66.89	0	--
		2/2/96	17.83	67.58	0	--
		3/1/96	17.61	67.80	0	--
		4/4/96	17.28	68.13	0	--
		5/2/96	17.15	68.26	0	--
		6/5/96	17.47	67.94	0	--
		7/9/96	18.06	67.35	0	--
		8/8/96	18.48	66.93	0	--
		9/10/96	18.79	66.62	0	--
		10/1/96	18.90	66.51	0	--
		11/4/96	18.69	66.72	0	--
		12/2/96	18.47	66.94	0	--
		1/3/97	17.98	67.43	0	--
		2/6/97	17.44	67.97	0	--
		3/5/97	16.73	68.68	0	--
		4/1/97	17.32	68.09	0	--
		5/8/97	17.72	67.69	0	--
		6/6/97	17.75	67.66	0	--
		7/8/97	17.94	67.47	0	--
		8/7/97	18.49	66.92	0	--
		9/10/97	18.48	66.93	0	--
		10/1/97	18.42	66.99	0	--
		11/4/97	18.86	66.55	0	--
		12/4/97	18.16	67.25	0	--
		1/8/98	17.87	67.54	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-7	85.41	2/5/98	17.56	67.85	0	--
(cont.)		3/6/98	16.84	68.57	0	--
		4/2/98	16.51	68.90	0	--
		4/29/98	16.23	69.18	0	--
		6/3/98	16.48	68.93	0	--
		7/9/98	16.90	68.51	0	--
		8/4/98	17.24	68.17	0	--
		8/26/98	17.59	67.82	0	--
		11/2/98	18.37	67.04	0	--
		12/4/98	17.91	67.50	0	--
		1/5/99	18.35	67.06	NM	--
		2/8/99	16.82	68.59	0	--
		3/29/99	16.42	68.99	0	--
		4/30/99	16.30	69.11	0	--
		7/1/99	17.90	67.51	0	--
		7/27/99	18.05	67.36	0	--
		8/19/99	18.59	66.82	0	--
		9/20/99	18.91	66.50	0	--
		10/20/99	19.20	66.21	0	--
		12/13/99	17.55	67.86	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-8	85.50	10/28/92	27.70	57.80	0	--
		11/24/92	27.62	57.88	0	--
		12/22/92	27.40	58.10	NM	--
		4/3/93	26.64	58.86	0	--
		7/20/93	26.60	58.90	0	--
		11/9/93	27.18	58.32	0	--
		8/30/95	26.35	59.15	0	--
		10/2/95	26.60	58.90	0	--
		11/3/95	26.62	58.88	0	--
		11/30/95	26.72	58.78	0	--
		1/3/96	26.64	58.86	0	--
		2/2/96	26.28	59.22	0	--
		3/1/96	25.81	59.69	0	--
		4/4/96	25.81	59.69	0	--
		5/2/96	26.15	60.03	0	--
		6/5/96	26.17	60.01	0	--
		7/9/96	26.32	59.18	0	--
		8/8/96	26.41	59.09	0	--
		9/10/96	26.66	58.84	0	--
		10/1/96	26.65	58.85	0	--
		11/4/96	26.77	58.73	0	--
		12/2/96	26.59	58.91	0	--
		1/3/97	25.98	59.52	0	--
		2/6/97	25.84	59.66	0	--
		3/5/97	25.94	59.56	0	--
		4/1/97	26.34	59.16	0	--
		5/8/97	26.39	59.11	0	--
		6/6/97	26.45	59.05	0	--
		7/8/97	26.65	58.85	0	--
		8/7/97	26.72	58.78	0	--
		9/10/97	26.89	58.61	0	--
		10/1/97	26.91	58.59	0	--
		11/4/97	26.82	58.68	0	--
		12/4/97	26.69	58.81	0	--
		1/8/98	26.39	59.11	0	--
		2/5/98	25.57	59.93	0	--
		3/6/98	25.29	60.21	0	--
		4/2/98	25.38	60.12	0	--
		4/29/98	25.64	59.86	0	--
		6/3/98	25.38	60.12	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-8 (cont.)	85.50	7/9/98	25.82	59.68	0	--
		8/4/98	25.96	59.54	0	--
		8/26/98	26.16	59.34	0	--
		11/2/98	26.23	59.27	0	--
		12/4/98	26.27	59.23	0	--
		1/5/99	26.31	59.19	0	--
		2/8/99	26.10	59.40	0	--
		3/29/99	20.93	64.57	0	--
		4/30/99	25.92	59.58	0	--
		7/1/99	26.59	58.91	0	--
		7/27/99	26.75	58.75	0	--
		8/19/99	26.89	58.61	0	--
		9/20/99	26.81	58.61	0	--
		10/20/99	26.70	58.80	0	--
		12/13/99	26.76	58.74	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-9	90.37	10/28/92	23.37	67.00	0	--
		11/24/92	23.51	66.86	0	--
		12/22/92	23.31	67.06	NM	--
		4/3/93	21.14	69.23	0	--
		7/20/93	21.54	68.83	0	--
		11/9/93	27.53	62.84	0	--
		8/30/95	19.59	70.78	0	--
		10/2/95	20.05	70.32	0	--
		11/3/95	20.40	69.97	0	--
		11/30/95	20.65	69.72	0	--
		1/3/96	20.73	69.64	0	--
		2/2/96	20.19	70.18	0	--
		3/1/96	19.53	70.84	0	--
		4/4/96	18.74	71.63	0	--
		5/2/96	18.63	71.74	0	--
		7/9/96	19.15	71.22	0	--
		8/8/96	19.89	70.48	0.35	70.83
		9/10/96	20.11	70.26	0	--
		10/1/96	20.37	70.00	0	--
		11/4/96	20.69	69.68	0	--
		12/2/96	21.43	68.94	0	--
		1/3/97	20.72	69.65	0	--
		2/6/97	19.72	70.65	0	--
		3/5/97	19.59	70.78	0	--
		4/1/97	19.73	70.64	0	--
		5/8/97	19.96	70.41	0	--
		6/6/97	20.13	70.24	0	--
		7/8/97	20.53	69.84	0	--
		8/7/97	20.84	69.53	0	--
		9/10/97	21.15	69.22	0	--
		10/1/97	21.42	68.95	0	--
		11/4/97	21.55	68.82	0	--
		12/4/97	21.62	68.75	0	--
		1/8/98	21.31	69.06	0	--
		2/5/98	20.21	70.16	0	--
		3/6/98	20.99	69.38	0	--
		4/2/98	20.19	70.18	0	--
		4/29/98	19.27	71.10	0	--
		6/3/98	19.86	70.51	0	--
		7/9/98	19.61	70.76	0	--
		8/4/98	19.35	71.02	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-9 (cont.)	90.37	8/26/98	19.18	71.19	0	--
		11/2/98	20.09	70.28	0	--
		12/4/98	20.43	69.94	0	--
		1/5/99	20.41	69.96	0	--
		2/8/99	20.41	69.96	0	--
		3/29/99	18.46	71.91	0	--
		4/30/99	19.54	70.83	0	--
		7/1/99	19.95	70.42	0	--
		7/27/99	20.05	70.32	0	--
		8/19/99	20.89	69.48	trace	--
		9/20/99	21.15	69.22	0	--
		10/20/99	21.40	68.97	0	--
		12/13/99	21.39	68.98	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-10	88.60	10/28/92	21.55	67.05	0	--
		11/24/92	21.86	66.74	0	--
		12/22/92	21.68	66.92	NM	--
		4/3/93	19.14	69.46	0	--
		7/20/93	19.79	68.81	0	--
		11/9/93	20.83	67.77	0	--
		8/30/95	17.99	70.61	0	--
		10/2/95	18.42	70.18	0	--
		11/3/95	18.82	69.78	0	--
		11/30/95	19.03	69.57	0	--
		1/3/96	18.96	69.64	0	--
		2/2/96	18.55	70.05	0	--
		3/1/96	17.81	70.79	0	--
		4/4/96	17.11	71.49	0	--
		5/2/96	17.04	71.56	0	--
		6/5/96	17.11	71.49	0	--
		7/9/96	17.64	70.96	0	--
		8/8/96	18.24	70.36	0	--
		9/10/96	18.82	69.78	0	--
		10/1/96	19.02	69.58	0	--
		11/4/96	19.59	69.01	0	--
		12/2/96	19.72	68.88	0	--
		1/3/97	18.86	69.74	0	--
		2/6/97	17.76	70.84	0	--
		3/5/97	17.84	70.76	0	--
		4/1/97	18.00	70.60	0	--
		5/8/97	18.36	70.24	0	--
		6/6/97	18.50	70.10	0	--
		7/8/97	18.98	69.62	0	--
		8/7/97	19.18	69.42	0	--
		9/10/97	19.58	69.02	0	--
		10/1/97	19.81	68.79	0	--
		11/4/97	19.95	68.65	0	--
		12/4/97	19.78	68.82	0	--
		1/8/98	19.26	69.34	0	--
		2/5/98	17.91	70.69	0	--
		3/6/98	16.07	72.53	0	--
		4/2/98	16.25	72.35	0	--
		4/29/98	15.84	72.76	0	--
		6/3/98	16.27	72.33	0	--
		7/9/98	16.79	71.81	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-10 (cont.)	88.60	8/4/98	17.25	71.35	0	--
		8/26/98	17.74	70.86	0	--
		11/2/98	18.75	69.85	0	--
		12/4/98	18.89	69.71	0	--
		1/5/99	19.04	69.56	0	--
		2/8/99	18.57	70.03	0	--
		3/29/99	17.23	71.37	0	--
		4/30/99	16.99	71.61	0	--
			Monitoring well discontinued from program as approved by ACHCSA. See well MW-4 for measurements.			

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-11	102.06	11/24/92	33.65	68.41	0	--
		12/22/92	33.37	68.69	NM	--
		4/5/93	31.03	71.03	0	--
		7/20/93	31.90	70.16	0	--
		11/9/93	32.60	69.46	0	--
		8/29/95	28.92	73.14	0	
		10/2/95	29.48	72.58	0	--
		11/3/95	29.73	72.33	0	--
		11/30/95	30.26	71.80	0	--
		1/3/96	30.06	72.00	0	--
		2/2/96	29.67	72.39	0	--
		3/1/96	28.74	73.32	0	--
		4/4/96	28.13	73.93	0	--
		5/2/96	28.26	74.06	0	--
		6/5/96	28.30	74.02	0	--
		7/9/96	28.92	73.14	0	--
		8/8/96	29.64	72.42	0	--
		9/10/96	30.66	71.40	0	--
		10/1/96	30.58	71.48	0	--
		11/4/96	31.14	70.92	0	--
		12/2/96	31.36	70.70	0	--
		1/3/97	30.73	71.33	0	--
		2/6/97	29.38	72.68	0	--
		3/5/97	29.22	72.84	0	--
		4/1/97	29.46	72.60	0	--
		5/8/97	29.93	72.13	0	--
		6/6/97	30.17	71.89	0	--
		7/8/97	30.62	71.44	0	--
		8/7/97	30.95	71.11	0	--
		9/10/97	31.38	70.68	0	--
		10/1/97	31.61	70.45	0	--
		11/4/97	31.88	70.18	0	--
		12/4/97	31.68	70.38	0	--
		1/8/98	31.05	71.01	0	--
		2/5/98	29.78	72.28	0	--
		3/6/98	27.75	74.31	0	--
		4/2/98	27.47	74.59	0	--
		4/29/98	27.22	74.84	0	--
		6/3/98	27.74	74.32	0	--
		7/9/98	28.30	73.76	0	--
		8/4/98	28.72	73.34	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-11 (cont.)	102.06	8/26/98	29.19	72.87	0	--
		11/2/98	30.16	71.90	0	--
		12/4/98	30.43	71.63	0	--
		1/5/99	30.54	71.52	0	--
		2/8/99	32.34	69.72	0	--
		3/29/99	29.07	72.99	0	--
		4/30/99	28.82	73.24	0	--
		7/27/99	22.99	79.07	0	--
		8/19/99	30.91	71.15	0	--
		9/20/99	31.16	70.90	0	--
		10/20/99	31.30	70.76	0	--
		12/13/99	31.51	70.55	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-13	84.06	11/24/92	26.05	58.01	0	--
		12/22/92	25.08	58.98	NM	--
		4/5/93	24.64	59.42	0	--
		7/20/93	24.29	59.77	0	--
		11/9/93	24.23	59.83	0	--
		8/29/95	23.30	60.76	NM	--
		10/2/95	23.78	60.28	0	--
		11/3/95	23.73	60.33	0	--
		11/30/95	23.80	60.26	0	--
		1/3/96	23.95	60.11	0	--
		2/2/96	23.70	60.36	0	--
		3/1/96	23.36	60.70	0	--
		4/4/96	23.27	60.79	0	--
		5/2/96	23.35	60.87	0	--
		6/5/96	23.07	60.99	0	--
		7/9/96	23.31	60.75	0	--
		8/8/96	23.44	60.62	0	--
		9/10/96	23.66	60.40	0	--
		10/1/96	23.80	60.26	0	--
		11/4/96	24.04	60.02	0	--
		12/2/96	24.00	60.06	0	--
		1/3/97	23.30	60.76	0	--
		2/6/97	23.24	60.82	0	--
		3/5/97	23.24	60.82	0	--
		4/1/97	23.37	60.69	0	--
		5/8/97	23.46	60.60	0	--
		6/6/97	23.57	60.49	0	--
		7/8/97	23.80	60.26	0	--
		8/7/97	23.92	60.14	0	--
		9/10/97	24.07	59.99	0	--
		10/1/97	24.18	59.88	0	--
		11/4/97	24.27	59.79	0	--
		12/4/97	24.05	60.01	0	--
		1/8/98	23.83	60.23	0	--
		2/5/98	22.89	61.17	0	--
		3/6/98	22.51	61.55	0	--
		4/2/98	22.54	61.52	0	--
		4/29/98	22.27	61.79	0	--
		6/3/98	22.34	61.72	0	--
		7/9/98	22.55	61.51	0	--
		8/4/98	22.75	61.31	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-13 (cont.)	84.06	8/26/98	22.89	61.17	0	--
		11/2/98	23.20	60.86	0	--
		12/4/98	23.90	60.16	0	--
		1/5/99	23.65	60.41	NM	--
		2/8/99	23.35	60.71	0	--
		3/29/99	23.11	60.95	0	--
		4/30/99	23.31	60.75	0	--
		7/1/99	23.40	60.66	0	--
		7/27/99	24.01	60.05	0	--
		8/19/99	23.95	60.11	0	--
		9/20/99	21.91	62.15	0	--
		10/20/99	21.80	62.26	0	--
		12/13/99	25.74	58.32	0	--

TABLE 1
GROUNDWATER AND FREE PRODUCT ELEVATION DATA
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	TOC Elevation (feet)	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)	Product Thickness (feet)	Product Elevation (feet)
MW-14	94.66	6/3/98	20.73	73.93	0	--
		7/9/98	21.23	73.43	0	--
		8/4/98	21.63	73.03	0	--
		8/26/98	22.06	72.60	0	--
		11/2/98	23.19	71.47	0	--
		12/4/98	23.42	71.24	0.23	71.47
		1/5/99	23.36	71.30	0.12	71.42
		2/8/99	23.17	71.49	trace	--
		3/29/99	22.08	72.58	trace	--
		4/30/99	21.17	73.49	0.01	73.50
		7/1/99	22.95	71.71	0.04	71.75
		7/27/99	23.15	71.51	0	--
		8/19/99	23.99	70.67	0	
		9/20/99	24.26	70.40	trace	--
		10/20/99	24.10	70.56	0	--
		12/13/99	24.52	70.14	0	--
MW-15	94.76	6/3/98	21.13	73.63	0	--
		7/9/98	21.64	73.12	0	--
		8/4/98	22.03	72.73	0	--
		8/26/98	22.45	72.31	0	--
		11/2/98	23.37	71.39	0	--
		12/4/98	23.67	71.09	0	--
		1/5/99	23.73	71.03	0	--
		2/8/99	23.53	71.23	0	--
		3/29/99	22.46	72.30	0	--
		4/30/99	22.16	72.60	0	--
		7/1/99	22.25	72.51	0.01	72.52
		7/27/99	22.95	71.81	0	--
		8/19/99	24.29	70.47	0	--
		9/20/99	24.12	70.64	trace	--
		10/20/99	24.40	70.36	0	--
		12/13/99	24.61	70.15	0	--

Reference datum: arbitrary benchmark established by Levine Fricke.
TOC = Top of casing
Groundwater depths are measured below TOC.
NM = Not measured
* New TOC elevation due to connection to remediation system.
† New TOC elevation following disconnection of piping associated with the remediation system.

TABLE 2
FREE PRODUCT RECOVERY
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Date	Product Removed by Hand Bailing (gallons)	Cumulative Product Removed by Hand Bailing (gallons)
MW-1	12/23/91	2.00	2.00
	12/26/91	0.50	2.50
	1/13/92	1.00	3.50
	2/28/92	2.00	5.50
	11/9/93	0.50	6.00
	11/3/95	0.25	6.75
	11/30/95	0.25	7.00
	1/3/96	0.53	7.53
	2/2/96	0.75	8.28
	3/1/96	0.10	8.38
	4/4/96	0.00	8.38
	5/2/96	0.00	8.38
	6/5/96	0.10	8.48
	7/9/96	0.10	8.58
	8/8/96	0.05	8.63
	9/10/96	0.10	8.73
	10/1/96	0.25	8.98
	11/4/96	0.13	9.11
	12/2/96	0.26	9.37
	1/3/97	0.39	9.76
	2/6/97	0.01	9.77
	3/5/97	0.00	9.77
	4/1/97	0.01	9.78
	5/8/97	0.02	9.80
	6/6/97	0.26	10.06
	7/8/97	0.20	10.26
	8/7/97	1.00	11.26
	9/10/97	1.50	12.76
	10/1/97	0.26	13.02
	11/4/97	0.26	13.28
	12/4/97	0.19	13.47
	1/8/98	0.00	13.47
	2/5/98	0.00	13.47
	3/6/98	0.00	13.47
	4/2/98	0.00	13.47
	4/29/98	0.00	13.47
	6/3/98	0.00	13.47
	7/9/98	0.00	13.47
	8/4/98	trace	13.47
	8/26/98	trace	13.47
	11/2/98	trace	13.47
	12/4/98	0.01	13.48
	1/5/99	0.03	13.51
	2/8/99	0.25	13.76
	3/24/99	0.01	13.77
	4/30/99	0.00	13.77

TABLE 2
FREE PRODUCT RECOVERY
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Date	Product Removed by Hand Bailing (gallons)	Cumulative Product Removed by Hand Bailing (gallons)
MW-1 (cont)	7/1/99	0.01	13.78
	9/21/99	0.01	13.98
	10/20/99	0.01	13.99
	12/13/99	0.00	13.99
MW-4	12/23/91	2.50	2.50
	12/26/91	6.00	8.50
	1/10/92	5.00	13.50
	2/28/92	4.00	17.50
	3/11/92	3.50	21.00
	3/13/92	3.50	24.50
	3/17/92	2.25	26.75
	3/18/92	2.50	29.25
	3/19/92	1.50	30.75
	3/23/92	4.00	34.75
	3/24/92	1.50	36.25
	3/25/92	1.00	37.25
	3/26/92	1.00	38.25
	3/27/92	0.50	38.75
	3/31/92	0.50	39.25
	4/1/92	0.25	39.50
	4/2/92	0.13	39.63
	4/6/92	0.13	39.76
	4/10/92	0.25	40.01
	4/13/92	0.25	40.26
	4/20/92	0.13	40.39
	5/4/92	0.13	40.52
	5/18/92	0.13	40.65
	5/26/92	0.13	40.78
	6/1/92	0.06	40.84
	6/29/92	0.25	41.09
	7/29/92	1.11	42.20
	8/28/92	1.68	43.88
	4/3/93	0.13	44.01
	11/9/93	0.03	44.04
	8/30/95	1.75	45.79
	10/2/95	0.50	46.29
	11/3/95	0.25	46.54
	11/30/95	0.25	46.79
	1/3/96	0.05	46.84
	2/2/96	0.10	46.94
	3/1/96	0.20	47.14
	4/4/96	0.20	47.34
	5/2/96	0.20	47.54
	6/5/96	0.15	47.59
	7/9/96	0.16	47.75

TABLE 2
FREE PRODUCT RECOVERY
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Date	Product Removed by Hand Bailing (gallons)	Cumulative Product Removed by Hand Bailing (gallons)
MW-4	8/8/96	0.00	47.75
(cont)	9/10/96	0.05	47.80
	10/1/96	0.05	47.85
	11/4/96	0.02	47.87
	12/2/96	0.02	47.89
	1/3/97	0.02	47.91
	2/6/97	0.01	47.92
		none removed 2/97-4/99; checked on a monthly basis	
	4/30/99	trace	47.92
		none removed since 4/99	
MW-6	12/23/91	7.50	7.50
	12/26/91	2.00	9.50
	1/10/92	1.00	10.50
	2/4/92	2.00	12.50
	2/28/92	3.00	15.50
	3/10/92	2.75	18.25
	3/12/92	2.00	20.25
	3/23/92	1.00	21.25
	3/30/92	0.50	21.75
	4/10/92	0.25	22.00
	4/13/92	0.13	22.13
	4/20/92	0.13	22.26
	5/4/92	0.13	22.39
	5/8/92	0.06	22.45
	5/26/92	0.13	22.58
	6/1/92	0.06	22.64
	6/29/92	0.19	22.83
	7/29/92	0.60	23.43
	8/28/92	2.40	25.83
	12/2/92	(obstruction in well)	–
	4/3/93	1.75	27.58
	11/9/93	0.83	28.41
	8/30/95	4.50	32.91
	10/2/95	4.00	36.91
	11/3/95	3.00	39.91
	11/30/95	2.50	42.41
	1/3/96	2.50	44.91
	2/2/95	5.00	49.90
	3/1/96	4.00	53.90
	4/4/96	5.00	58.90
	5/2/96	4.50	63.40
	6/5/96	4.00	67.40
	7/9/96	4.50	71.90
	8/8/96	4.00	75.90
	9/10/96	3.50	79.40

TABLE 2
FREE PRODUCT RECOVERY
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Date	Product Removed by Hand Bailing (gallons)	Cumulative Product Removed by Hand Bailing (gallons)
MW-6	10/1/96	4.00	83.40
(cont.)	11/4/96	*NM	83.40
	12/2/96	*NM	83.40
	1/3/97	*NM	83.40
	2/6/97	*NM	83.40
	3/5/97	*NM	83.40
	4/1/97	*NM	83.40
	5/8/97	0.40	83.80
	6/6/97	0.03	83.83
	7/8/97	0.00	83.83
	8/7/97	0.00	83.83
	9/10/97	0.00	83.83
	10/1/97	0.00	83.83
	11/4/97	0.02	83.85
	12/4/97	0.05	83.90
	1/8/98	0.66	84.56
	2/5/98	*NM	84.56
	3/6/98	0.04	84.60
	4/2/98	0.10	84.70
	4/29/98	0.09	84.79
	6/3/98	0.03	84.82
	7/9/98	0.05	84.87
	8/4/98	0.04	84.91
	8/26/98	0.01	84.92
	11/2/98	0.02	84.94
	12/4/98	0.01	84.95
	1/5/99	0.03	84.98
	2/8/99	0.13	85.11
	3/24/99	0.03	85.14
	4/30/99	0.10	85.24
	7/1/99	0.06	85.30
	7/27/99	0.06	85.36
	8/19/99	0.06	85.42
	9/21/99	0.20	85.62
	10/20/99	0.20	85.82
	12/13/99	0.06	85.88

TABLE 2
FREE PRODUCT RECOVERY
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Date	Product Removed by Hand Bailing (gallons)	Cumulative Product Removed by Hand Bailing (gallons)
MW-9	8/8/96	0.10	0.10
		none removed since 8/96.	
MW-14	12/4/98	0.01	0.01
	1/5/99	0.01	0.02
	2/8/99	0.01	0.03
	3/24/99	trace	0.03
	4/30/99	trace	0.03
	7/1/99	trace	0.03
	9/21/99	trace	0.03
	10/20/99	0.00	0.03
MW-15	9/20/99	trace	0.00
	10/20/99	0.00	0.00
	12/13/99	0.00	0.00
	Total Product (gallons) removed by bailing		147.92
	Total Product (gallons) removed by Soil Vapor Extraction (as of 3/31/98)		223.0
	Cumulative Total of Product (gallons) Removed		370.92

*NM, product was being removed by vapor extraction at time of measurement.

TABLE 3
SUMMARY OF PETROLEUM HYDROCARBON AND VOC CONCENTRATIONS IN GROUNDWATER
FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Groundwater Elevation (feet)	TVH µg/l	TEH µg/l	B µg/l	T µg/l	E µg/l	X µg/l	1,2-DCA µg/l	MtBE µg/l	Other VOC's µg/l
MW-1	10/5/90	68.08	620,000	<500	33,000	50,000	7,900	41,000	2,900	--	ND
	3/1/91	67.02	FP	--	--	--	--	--	--	**	--
	10/12/92	68.04	490,000	--	51,000	59,000	5,000	27,000	1,300	--	--
	11/24/92	67.85	320,000	4,600	35,000	43,000	4,200	22,000	1,600	--	ND
	4/5/93	70.71	270,000	25,000	50,000	58,000	4,600	25,000	1,800	--	ND
	7/21/93	69.97	FP	--	--	--	--	--	--	--	--
	11/9/93	68.42	FP	--	--	--	--	--	--	--	--
	8/30/95	72.75	FP	--	--	--	--	--	--	--	--
	12/4/95	72.54	FP	--	--	--	--	--	--	<200	--
	5/2/96	73.83	340,000	32,000	57,000	73,000	7,200	38,000	1,200	--	--
	11/5/96	70.19	270,000	--	43,000	56,000	4,500	34,000	--	--	--
	5/9/97	71.69	240,000	28,000[1,2]	36,000	45,000	3,300	17,900	930	--	--
	11/5/97	69.42	240,000	28,000[1,2]	42,000	48,000	3,600	18,800	1,200	<1,000	--
	2/9/98	71.84	220,000	27,000[1,2]	47,000	60,000	5,200	29,800	1,500	<1,000	ND
	5/1/98	74.53	160,000	29,000[1,2]	35,000	42,000	2,800	16,000	1,100	<1,000	ND
	11/3/98	71.19	200,000	37,000[1,2]	39,000	49,000	4,400	26,000	1,200	<500	ND
	3/24/99	72.18	FP	--	--	--	--	--	--	--	--
	7/1/99	71.78	FP	--	--	--	--	--	--	--	--
	9/21/99	70.67	FP	--	--	--	--	--	--	--	--
MW-2	3/1/91	66.95	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	11/24/92	66.90	<50	<50	<0.5	1.1	<0.5	1.5	<1.0	--	ND
	4/5/93	68.86	<50	870	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	7/21/93	69.22	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	11/10/93	68.09	<50	240	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	8/30/95	69.06	<50	150*	<0.5	<0.5	<0.5	<0.5	<1.0	--	--
	5/3/96	71.53	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	5/8/97	70.23	<50	<50	<0.5	0.7	<0.5	<0.5	<1.0	--	--
	4/29/98	72.63	<50	<47	<0.5	<0.5	<0.5	<0.5	<1.0	<2	ND

TABLE 3
SUMMARY OF PETROLEUM HYDROCARBON AND VOC CONCENTRATIONS IN GROUNDWATER
FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Groundwater Elevation (feet)	TVH µg/l	TEH µg/l	B µg/l	T µg/l	E µg/l	X µg/l	1,2-DCA µg/l	MtBE µg/l	Other VOC's µg/l
MW-3	3/1/91	66.91	<50	<50	<50	0.6	<0.5	<0.5	<1.0	–	ND
	11/25/92	67.07	50	160	<0.5	0.9	<0.5	2	<1.0	–	ND
	4/5/93	67.97	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	7/21/93	66.15	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	11/10/93	66.94	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	8/30/95	69.47	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	–
	5/3/96	71.65	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	5/8/97	70.31	<50	<50	<0.5	0.7	<0.5	<0.5	<1.0	–	–
	4/29/98	72.16	<50	<47	<0.5	<0.5	<0.5	<0.5	<1.0	<2	ND
MW-4	3/1/91	65.05	150,000	<500	20,000	38,000	2,800	14,000	610	**	ND
	10/12/92	66.36	230,000	–	15,000	32,000	2,500	14,000	430	–	–
	11/24/92	66.24	210,000	1,600	14,000	31,000	2,500	14,000	500	–	ND
	4/2/93	68.73	FP	–	–	–	–	–	–	–	–
	7/21/93	68.36	FP	–	–	–	–	–	–	–	–
	11/9/93	67.13	FP	–	–	–	–	–	–	–	–
	8/30/95	68.94	FP	–	–	–	–	–	–	–	–
	12/1/95	69.44	FP	–	–	–	–	–	–	–	–
	5/2/96	71.34	140,000	9,200	24,000	50,000	3,000	15,100	420	–	ND
	11/4/96	68.71	160,000	4,700 [1,2]	16,000	38,000	2,700	14,000	380	–	ND
	5/8/97	70.21	170,000	5,100 [1,2]	16,000	37,000	2,400	15,900	290	–	–
	11/5/97	68.65	190,000	3,700 [1,2]	15,000	31,000	2,200	14,600	290	<400	–
	2/9/98	70.56	110,000	4,800 [1,2]	19,000	42,000	2,500	18,300	300	<500	–
	5/1/98	72.73	130,000	5,000 [1,2]	15,000	31,000	2,000	13,400	260	<1,000	ND
	8/4/98	71.30	130,000	3,500 [1,2]	16,000	34,000	2,400	15,700	240	<400	ND
	11/2/98	69.63	140,000	7,200 [1,2]	16,000	32,000	2,300	15,500	230	<400	ND
	3/26/99	71.33	110,000	14,000 [1,2]	15,000	30,000	1,600	15,000	210	450 [6]	[4]
	7/1/99	70.04	110,000	17,000 [1,2]	13,000	23,000	1,600	12,000	170	<83	[4]
	9/21/99	68.99	140,000	14,000 [1,2]	16,000	31,000	2,400	14,800	<1000	ND	[4]

TABLE 3
SUMMARY OF PETROLEUM HYDROCARBON AND VOC CONCENTRATIONS IN GROUNDWATER
FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Groundwater Elevation (feet)	TVH µg/l	TEH µg/l	B µg/l	T µg/l	E µg/l	X µg/l	1,2-DCA µg/l	MtBE µg/l	Other VOC's µg/l
MW-5	3/15/91	58.53	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	11/10/92	58.01	<50	50	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	4/2/93	58.22	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	7/21/93	58.24	<50	190	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	11/9/93	57.60	<50	170	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	8/30/95	57.38	<50	180*	<0.5	<0.5	<0.5	<0.5	<1.0	--	--
	5/3/96	58.82	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	ND
	5/8/97	58.08	<50	<50	<0.5	0.5	<0.5	<0.5	<1.0	--	--
	4/29/98	58.29	<50	<47	<0.5	0.5	<0.5	<0.5	<1.0	<2	ND
MW-6	3/15/91	59.80	80,000	<50	12,000	13,000	1,100	5,400	1,400	--	Dibromochloromethane (160)
	10/12/92	60.60	19,000	--	3,200	1,400	200	560	840	--	--
	12/1/92	56.75	FP	--	--	--	--	--	--	--	--
	4/2/93	58.66	FP	--	--	--	--	--	--	--	--
	7/21/93	59.45	FP	--	--	--	--	--	--	--	--
	11/9/93	58.11	FP	--	--	--	--	--	--	--	--
	8/30/95	57.62	FP	--	--	--	--	--	--	--	--
	12/1/95	58.04	FP	--	--	--	--	--	71	<8,000,000	--
	5/3/96	58.79	130,000	9,000	37,000	50,000	3,200	14,200	2,400	--	ND
	5/9/97	60.40	1,700,000	53,000[1,2]	14,000	27,000	4,000	28,200	1,200	--	--
	11/5/97	60.78	160,000	65,000 [1,2]	13,000	19,000	1,900	14,300	790	<200	--
	5/1/98	62.86	130,000	25,000 [1,2]	15,000	23,000	1,700	13,200	1,100	<500	ND
	11/3/98	61.47	110,000	30,000 [1,2]	17,000	21,000	1,800	10,700	990	<200	ND
	3/26/99	62.00	FP	--	--	--	--	--	--	--	--
	7/1/99	61.37	FP	--	--	--	--	--	--	--	--
	9/21/99	61.24	FP	--	--	--	--	--	--	--	--

TABLE 3
SUMMARY OF PETROLEUM HYDROCARBON AND VOC CONCENTRATIONS IN GROUNDWATER
FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Groundwater Elevation (feet)	TVH µg/l	TEH µg/l	B µg/l	T µg/l	E µg/l	X µg/l	1,2-DCA µg/l	MtBE µg/l	Other VOC's µg/l
MW-7	3/15/91	63.78	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	11/24/92	63.89	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	4/2/93	65.33	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	7/21/93	65.82	<50	150	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	11/9/93	64.76	<50	200	<0.5	1	<0.5	1.7	<1.0	–	ND
	8/30/95	66.63	<50	170*	<0.5	<0.5	<0.5	<0.5	<1.0	–	–
	12/1/95	65.94	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	5/2/96	68.26	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	8/8/96	66.93	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	<2	ND
	11/4/96	66.72	<50	<50	<1	<1	<1	<1	<1.0	–	ND
	2/6/97	67.97	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	<2	ND
	5/8/97	67.69	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	–
	8/7/97	66.92	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	<2	ND
	11/5/97	66.55	<50	<50	<0.5	<0.5	<0.5	<0.5	1	<2	–
	2/9/98	67.85	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	<2	–
	4/29/98	69.18	<50	<47	<0.5	<0.5	<0.5	<0.5	<1.0	<2	ND
	8/4/98	68.17	<50	<50	<0.5	<0.5	<0.5	<0.5	1.1	<2	ND
	11/2/98	67.50	<50	<50	<0.5	<0.5	<0.5	<0.5	1.2	<2	ND
	3/26/99	68.99	<50	<50	<0.5	<0.5	<0.5	<0.5	ND	<2	ND
	7/1/99	67.51	85	<50	<0.5	1.1	0.55	2.5	1.0	<0.5	[4]
	9/21/99	66.50	<50	<48	0.7	1.8	<0.5	1.5	<5.0	<5.0	ND

TABLE 3
SUMMARY OF PETROLEUM HYDROCARBON AND VOC CONCENTRATIONS IN GROUNDWATER
FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Groundwater Elevation (feet)	TVH µg/l	TEH µg/l	B µg/l	T µg/l	E µg/l	X µg/l	1,2-DCA µg/l	MtBE µg/l	Other VOC's µg/l
MW-8	10/12/92	57.80	70	–	20	1	1	3	210	–	–
	11/25/92	57.88	<50	170	<0.5	<0.5	<0.5	<0.5	200	–	ND
	4/8/93	58.86	490	100	15	45	5.1	73	210	–	ND
	7/21/93	58.90	180	90	2.5	3	<0.5	1.9	350	–	ND
	11/11/93	58.32	310	170	23	<0.5	<0.5	<0.5	240	–	ND
	8/30/95	59.15	660	240*	360	6.8	13	2.8	130	–	–
	12/4/95	58.78	250	<50	46	0.9	4.9	<0.5	94	–	ND
	5/3/96	60.03	69	94	110	<0.5	<0.5	1.5	100	–	ND
	8/8/96	59.09	120	250 [1,2]	11	<0.5	<0.5	<0.5	93	<2	ND
	11/5/96	58.73	110	<50	20	<1	1	<1	98	–	ND
	2/6/97	59.66	67 [1,2]	130	51	<0.5	0.56	<0.5	81	<2	ND
	5/9/97	59.11	110 [1,2]	120 [1,2]	59	<0.5	<0.5	<0.5	76	–	–
	8/7/97	58.78	<50	150 [2]	12 [3]	<0.5	<0.5	<0.5	79	<2	ND
	11/5/97	58.68	<50	110 [1,2]	9.4	<0.5	<0.5	<0.5	84	<2	–
	2/9/98	59.93	<50	75 [1,2]	6	<0.5	<0.5	<0.5	85	<2	–
	5/1/98	59.86	430	210 [1,2]	490	7.1	27	26	85	<10	ND
	8/5/98	59.54	140	260 [1,2]	19	<0.5	5.2	5.3	69	<2	ND
	11/3/98	59.23	150	190 [1,2]	110	1.1	4.3	4.5	67	<2	ND
	3/31/99	64.57	54 [5]	200 [1,5]	170	1.5	4.1	1.9	5.9	4.4 [6]	1,1 DCA (0.7)
	7/1/99	58.91	140	170 [1,5]	58	0.9	3	2.3	55	<0.5	[4]
	9/21/99	58.61	670	420 [1,5]	170	2.6	11	7.9	41	<5	ND

TABLE 3
SUMMARY OF PETROLEUM HYDROCARBON AND VOC CONCENTRATIONS IN GROUNDWATER
FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Groundwater Elevation (feet)	TVH µg/l	TEH µg/l	B µg/l	T µg/l	E µg/l	X µg/l	1,2-DCA µg/l	MtBE µg/l	Other VOC's µg/l
MW-9	11/24/92	66.86	19,000	320	180	590	23	2000	340	–	Chloroform (15)
	4/5/93	69.23	2,300	920	48	4	0.6	13	600	–	Chloroform (2)
	7/21/93	68.83	2,300	450	170	8.1	15	<0.5	1100	–	ND
	11/10/93	62.84	4,400	450	69	7.3	21	9.7	900	–	ND
	8/30/95	70.78	3,200	680	3,900	49	80	22.8	960	–	–
	12/4/95	69.72	–	–	–	–	–	–	–	<2	–
	5/2/96	71.74	<1300	710	2,600	<13	200	<13	550	–	ND
	11/5/96	69.68	1,800	420	280	<5	65	<5	770	–	ND
	5/9/97	70.41	1,100	490 [1,2]	160	<0.5	42	<0.5	690	–	–
	8/8/97	69.53	570 [1,2]	480 [2]	<0.5	<0.5	<0.5	0.78 [3]	680	<2	ND
	11/5/97	68.82	490 [1]	370 [1,2]	<0.5	<0.5	6	<0.5	500	<2	–
	2/9/98	70.16	270 [1]	410 [1,2]	48	17	5.8	<0.5	520	<2	–
	5/1/98	71.10	550	450 [1,2]	70	<0.5	22	2.2	390	<2	ND
	8/5/98	71.02	550 [1]	630 [1,2]	88	<0.5	13	1.9 [3]	420	<2	ND
	11/2/98	69.94	580	500 [1,2]	<0.5	<0.5	7.5 [3]	1.6 [3]	430	<2	ND
	3/25/99	71.91	1,100	630 [1,2]	160	<0.5	21	2.1 [3]	550	5.7 [6]	ND
	7/1/99	70.42	540	570 [1,2]	100	7.4	26	16.9	400	<1.3	[4]
	9/21/99	69.22	2,700	770 [1,2]	320	98	88	47	540	<20	ND
MW-10	10/12/92	67.05	28,000	–	2,700	3,800	210	1,300	150	–	–
	11/24/92	66.74	130,000	1,300	9,700	19,000	1,400	8,400	370	–	ND
	4/5/93	69.46	63,000	5,000	6,300	14,000	1,100	7,500	70	–	ND
	7/21/93	68.81	140,000	20,000	16,000	31,000	2,200	13,000	700	–	ND
	8/30/95	70.61	92,000	5,900	13,000	24,000	1,800	9,100	300	–	–
	5/3/96	71.56	81,000	5,600	17,000	29,000	2,100	8,500	320	–	ND
	5/9/97	70.24	63,000	2,500 [1,2]	7,400	13,000	940	4,100	150	–	–
	5/1/98	72.76	60,000	2,000 [1,2]	7,100	14,000	1100	5,300	120	<250	ND

TABLE 3
SUMMARY OF PETROLEUM HYDROCARBON AND VOC CONCENTRATIONS IN GROUNDWATER
FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Groundwater Elevation (feet)	TVH µg/l	TEH µg/l	B µg/l	T µg/l	E µg/l	X µg/l	1,2-DCA µg/l	MtBE µg/l	Other VOC's µg/l
MW-11	11/24/92	68.41	<50	220	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	12/8/92***	68.69	<50	140	<0.1	<0.1	<0.1	<0.1	–	–	–
	12/8/92	68.69	<50	120	<0.5	<0.5	<0.5	<0.5	–	–	–
	4/5/93	71.03	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	7/21/93	70.16	160	150	<0.5	1.8	<0.5	<0.5	<1.0	–	ND
	11/9/93	69.46	80	60	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	8/30/95	73.14	<50	240*	<0.5	<0.5	<0.5	<0.5	<1.0	–	–
	5/3/96	74.06	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	5/8/97	72.13	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	–
	4/29/98	74.84	<50	<47	<0.5	<0.5	<0.5	<0.5	<1.0	<2	ND
MW-13	11/24/92	58.01	<50	3,600	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	12/8/92***	58.98	<50	210	<0.1	<0.1	<0.1	<0.1	–	–	–
	12/8/92	58.98	<50	100	<0.5	<0.5	<0.5	<0.5	–	–	–
	4/5/93	59.42	<50	<50	<0.5	0.9	<0.5	<0.5	<1.0	–	ND
	7/21/93	59.77	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	11/9/93	59.83	<50	160	<0.5	<0.5	<0.5	<0.5	<1.0	–	ND
	8/30/95	60.76	<50	<50	49	<0.5	<0.5	<0.5	3.6	–	–
	12/1/95	60.26	<50	<50	<0.5	<0.5	<0.5	<0.5	4.1	–	ND
	5/3/96	60.87	<50	<50	<0.5	<0.5	<0.5	<0.5	4	–	ND
	8/8/96	60.62	<50	<50	32	<0.5	<0.5	<0.5	6.4	<2	ND
	11/5/96	60.02	<50	<50	<1	<1	<1	<1	5.7	–	ND
	2/6/97	60.82	<50	<50	<0.5	<0.5	<0.5	<0.5	3.5	<2	ND
	5/8/97	60.60	<50	<50	81	<0.5	<0.5	<0.5	5.5	–	–
	8/8/97	60.14	<50	<50	<0.5	<0.5	<0.5	<0.5	6.8	<2	ND
	11/5/97	59.79	<50	<50	<0.5	<0.5	<0.5	<0.5	5.5	<2	–
	2/9/98	61.17	<50	<50	<0.5	<0.5	<0.5	<0.5	2.9	<2	–
	4/29/98	61.79	<50	<47	24	<0.5	<0.5	<0.5	5.7	<2	ND
	8/4/98	61.31	120	78 [1,2]	200	<1	<1	<1	6.2	<4	ND
	11/3/98	60.16	59 [1]	<50	33	<0.5	<0.5	<0.5	6.1	<2	ND
	3/31/99	60.95	130	<48	0.56	<0.5	<0.5	<0.5	1.4	<2	ND
	7/1/99	60.66	160	100 [1,2]	370	19	1.2	3.5	4.2	<1	[4]
	9/21/99	62.15	370	<48	150	1.0	0.8	0.8	<5.0	<5.0	ND

TABLE 3
SUMMARY OF PETROLEUM HYDROCARBON AND VOC CONCENTRATIONS IN GROUNDWATER
FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Groundwater Elevation (feet)	TVH µg/l	TEH µg/l	B µg/l	T µg/l	E µg/l	X µg/l	1,2-DCA µg/l	MtBE µg/l	Other VOC's µg/l
MW-14	5/26/98	72.99	41,000	7,700 [1,2]	7,100	11,000	720	3,900	440	<1000	ND
	7/1/99	71.71	FP	--	--	--	--	--	--	--	--
	9/21/99	70.40	FP	--	--	--	--	--	--	--	--
MW-15	5/26/98	72.89	130,000	1,700 [1,2]	30,000	38,000	2,500	12,600	1,200	<1000	ND
	7/1/99	72.51	FP	--	--	--	--	--	--	--	--
	9/21/99	70.64	FP	--	--	--	--	--	--	--	--

NOTES:
µg/l = micrograms per liter = parts per billion = ppb
TVH = Total Volatile Hydrocarbons
TEH = Total Extractable Hydrocarbons
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
1,2-DCA = 1,2-Dichloroethane
MtBE = Methyl tertiary butyl ether
* = Suspect laboratory contamination contributing to test result.
** = Fuel fingerprint analysis indicates MTBE is not present in the free product sample collected from this well.
*** = Duplicate sample sent to a different chemical laboratory.
ND = None detected, chemicals not present at concentrations above detection limits reported on laboratory test reports
MW-1 was initially referred to as Sample 5
-- = Test not requested
<0.5 = Chemical not present at a concentration in excess of detection limit shown
FP = Free product encountered in well
1 = Sample exhibits fuel pattern which does not resemble standard
2 = Lighter hydrocarbons than indicated standard
3 = Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor of two
4 = One or more of the following substances found: Acetone, 1,2-Dibromoethane, Ethylbenzene, Styrene, Isopropylbenzene, Propylbenzene, 1,3,5-Trimethylbenzene, 2-Chlorotoluene, 1,2,4-Trimethylbenzene, n-Butylbenzene, and Naphthalene. See laboratory results for details.
5 = sample exhibits unknown single peak or peaks
6 = detection may potentially be a false positive, to be checked during the next event.

TABLE 4
SUMMARY OF SEMI-VOLATILE ORGANIC COMPOUNDS AND OIL & GREASE
IN GROUNDWATER FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Oil & Grease (mg/l)	2,4-Dichloro-phenol (µg/l)	2,4-Dimethyl-phenol (µg/l)	2-methyl naphthalene (µg/l)	2-methyl-phenol (µg/l)	3,4-methyl phenol (µg/l)	Benzoic Acid (µg/l)	bis (2-ethyl hexyl) phthalate (µg/l)	Naphthalene (µg/l)	Phenol (µg/l)	Other SVOC's Compounds
MW-1	8/30/95	10	1,700	<240	630	<240	NI	<1,200	240	1,200	<240	ND
	5/2/96	<5	<47	<47	250	<47	NI	<240	<47	640	<47	ND
	11/5/96	9.8	–	–	–	–	–	–	–	–	–	–
	5/9/97	20	<47	<47	280	<47	NI	570	<47	650	93	ND
	11/5/97	<5	<190	<190	720	<190	<190	<940	<190	1,500	<190	ND
	2/9/98	<5	<47	<47	160	<47	52	700	<47	570	92	ND
	5/27/98	5.7	<200	110J	120J	210	200J	<1,000	<200	630	480	ND
	11/3/98	63	<94	<9.4	500	<94	59J	500	<94	1,100	130	ND
MW-4	7/1/99	–	<48	<48	370	<48	<48	<240	<48	860	<48	ND
	9/21/99	–	<48	<48	360	<48	<48	<240	<48	820	<48	ND
MW-7	7/1/99	–	<10	<10	<10	<10	<10	<51	<10	<10	<10	ND
	9/21/99	–	<9.5	<9.5	<9.5	<9.5	<9.5	<48	<9.5	<9.5	<9.5	ND
MW-8	7/1/99	–	<9.6	<9.6	<9.6	<9.6	<9.6	<48	<9.6	<9.6	<9.6	ND
	9/21/99	–	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	<9.4	<9.4	ND
MW-9	7/1/99	–	<9.5	<9.5	<9.5	<9.5	<9.5	<48	<9.5	<9.5	<9.5	ND
	9/21/99	–	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	<9.4	<9.4	ND
MW-13	7/1/99	–	<9.6	<9.6	<9.6	<9.6	<9.6	<48	<9.6	<9.6	<9.6	ND
	9/21/99	–	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	<9.4	<9.4	ND

NOTES:
<5 = Analyte not detected above laboratory reporting limit stated.
ND = Analytes not detected above their laboratory reporting limits.
NI = Not included in laboratory analyte list.
– = Test not requested.
J = Estimated value below the laboratory reporting list
SVOC = Semi-volatile Organic Compounds

TABLE 5
SUMMARY OF METALS
IN GROUNDWATER FROM MONITORING WELLS
3093 BROADWAY
OAKLAND, CALIFORNIA

Well	Sampling Date	Cadmium (ug/L)	Chromium (ug/L)	Lead (ug/L)	Nickel (ug/L)	Zinc (ug/L)
MW-4	7/1/99	<5	<10	**59**	<20	<20
	9/21/99	<5	<10	**66**	<20	**33**
MW-7	7/1/99	<5	<10	<3	<20	<20
	9/21/99	<5	<10	<3	<20	<20
MW-8	7/1/99	<5	<10	<3	<20	<20
	9/21/99	<5	<10	<3	<20	<20
MW-9	7/1/99	<5	<10	<3	**34**	<20
	9/21/99	<5	<10	<3	**25**	**37**
MW-13	7/1/99	<5	<10	<3	<20	<20
	9/21/99	<5	<10	<3	<20	<20

NOTES:
<5 = Analyte not detected above laboratory reporting limit stated.
ND = Analytes not detected above their laboratory reporting limits.

GROUNDWATER DEPTHS

Project Name: Connell Oldsmobile
Job No.: 447.055
Measured by: Stewart / Kenny

Well	Date	Time (am)	Groundwater Depth (feet)	Comments
MW-1	9/20/99	1:15	23.81	Very strong hydro-carbon odor, 1" of trace in bailer sample
MW-2	9/20/99	10:50	N/A	-covered by dumpster NO odor cannot get a reading
MW-3	9/20/99	11:05	20.45	-no lock on well. replaced lock. NO odor
MW-4	9/20/99	12:00	19.85	-slight hydrocarbon odor, NO product NO odor
MW-5	9/20/99	11:20	26.55	-missing 3 bolts (screws) on outer lid. missing lock too. Replaced lock.
9 MW-9	9/20/99	12:20	21.15	-moderate hydrocarbon odor
MW-7	9/20/99	11:35	18.91	-Replaced pad lock. No odor
MW-8	9/20/99	11:45	26.81	-moderate hydrocarbon product odor.
6 MW-6	9/20/99	12:05	24.58	tape and paste bailer test. no free product. 1.25" free phase product, strong odor. Turbid. grey water.
[redacted]	[redacted]			
MW-11	9/20/99	10:30am	31.16	-missing lock on well. replaced lock. NO odor
MW-13	9/20/99		21.91	-No oder
MW-14	9/20/99	12:31	24.26	-strong odor. missing pad lock. <.10" trace -very small trace of free product.
MW-15	9/20/99	1:00	24.12	-strong odor, <.10" of trace, bailer test. well was bailed dry.
MW-10	9/20/99	12:15	N/A	
	MW-10 > inaccessable			
	MW-2			
MW6				approx gal product = 2/10th gal
MW-14				" " " = 1/10th gal
MW-15				> beads/Trace

* = Note free phase in MW 1, 6, 14, 15

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WELL SAMPLING FORM

Project Name: Connell Olds
Well Number: MW-8
Job No.: 447.055
Well Casing Diameter: 6 inch
Sampled By: Stu/Kevin
Date: 9/21/99
TOC Elevation:
Weather: Cloudy Cool

Depth to Casing Bottom (below TOC) 39.53 feet
Depth to Groundwater (below TOC) 26.91 feet
Feet of Water in Well 12.59 feet
Depth to Groundwater When 80% Recovered 29.43 feet
Casing Volume (feet of water x Casing DIA ² x 0.0408) X3 55.4 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
(Free Product) N/A
Purge Method Grundfos Pump (Submersible)

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	ORP	DO mg/L	Comments
0 downhole	6.50	21.38	1,017.00	94.1	2.61	Clear, hydrocarbon odor Slight sheen
10	6.42	21.37	976.00	110.1	4.26	Same clear, odor, sheen
20	6.38	21.35	1025.00	92.3	3.69	- Cloudy, odor No Sheen
30	6.20	20.83	953.00	89.8	6.14	- cloudy same
40	6.21	21.05	953.00	92.9	5.17	- same
50	6.25	21.05	1,018.00	40.1	5.79	- Cleared up moderate odor

Total Gallons Purged 55 gallons No Sheen
Depth to Groundwater Before Sampling (below TOC) 29.10 feet 1/2 hr recharge
Sampling Method Submersible pump
Containers Used 9 VOA w/HCl (40 ml) 4 1LA (liter) 1 250 ml poly (pint)

Subsurface Consultants

JOB NUMBER 447.055 DATE 9/21/99 APPROVED

PLATE

WELL SAMPLING FORM

Project Name: Connell Olds
Well Number: MW-9
Job No.: 447.055
Well Casing Diameter: 2 inch
Sampled By: Stu / Kerry
Date: 9/21/99
TOC Elevation: —
Weather: Clear warm

Depth to Casing Bottom (below TOC) 30.0 feet
Depth to Groundwater (below TOC) ~~21.10~~ 21.10 feet
Feet of Water in Well 8.9 feet
Depth to Groundwater When 80% Recovered 22.88 feet
Casing Volume (feet of water x Casing DIA ² x 0.0408) 4.35 gallons
Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other
Free Product N/A
Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	ORP	DO mg/L	Comments
0 dewatered	6.24	20.64	756.00	8.6	5.86	Strong odor
1	6.17	20.67	836.00	5.7	6.35	Cloudy - very strong hydrocarbon odor no sheen
2	6.27	20.31	872.00	-6.4	4.89	same
3	6.20	20.37	455.00	27.3	6.15	Grey, turbid, strong hydrocarbon odor, no sheen
4	6.49	20.45	895.00	35.4	5.21	Grey turbid slightly less odor
5	6.52	20.43	464.00	38.9	8.34	Same

Total Gallons Purged 5 gallons
Depth to Groundwater Before Sampling (below TOC) 22.88 half hour recharge feet
Sampling Method disposable bailer
Containers Used 9 VOA w/HCl (40 ml) 4 1LA (liter) 1 250 ml poly (pint)

Subsurface Consultants

JOB NUMBER	DATE	APPROVED	PLATE
447.055	9/22/99		

WELL SAMPLING FORM

Project Name: Connell oldsmobile
Well Number: MW - 13
Job No.: 744.055
Well Casing Diameter: 2" inch
Sampled By: Kenny & Stu
Date: 9/21/99
TOC Elevation: —
Weather: clear, hot

Depth to Casing Bottom (below TOC) ~~41.00~~ 39.00 feet
Depth to Groundwater (below TOC) 23.90 feet
Feet of Water in Well 15.1 feet
Depth to Groundwater When 80% Recovered 26.92 feet
Casing Volume (feet of water x Casing DIA ² x 0.0408) x3 ~~7.37~~ 8 gallons
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Free Product N/A
Purge Method bailer (disposable)

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	ORP	DO Mg/L	Comments
Ø down hole	6.89	20.47	720.00	183	3.76	clear, no odor no sheen
2	6.90	20.96	749.00	274	5.98	cloudy, no odor no sheen
4	6.93	19.60	730.00	278	6.15	cloudy, no odor slightly turbid
6	6.94	19.37	733.00	298	6.13	cloudy, turbid bailing
8	6.86	20.24	721.00	317	7.28	cloudy, turbid

Total Gallons Purged 8 gallons
Depth to Groundwater Before Sampling (below TOC) 26.92 instant recharge feet
Sampling Method bailer.
Containers Used 9 VOA w/HCl (40 ml) 4 1LA (liter) 1 250ml poly (pint)

Subsurface Consultants

744.055 JOB NUMBER | 9/21/99 DATE | APPROVED | PLATE

WELL SAMPLING FORM

Project Name: Connell Olds
Well Number: MW-4
Job No.: 447.055
Well Casing Diameter: 2" inch
Sampled By: Kenny & Stewart
Date: 9-21-99
TOC Elevation: —
Weather: clear, cool

Depth to Casing Bottom (below TOC) 26.00 feet
Depth to Groundwater (below TOC) 19.89 feet
Feet of Water in Well 6.11 feet
Depth to Groundwater When 80% Recovered 21.12 feet
Ft of H_2O x .80 = ☒ Depth of casing − ☒ = 2.99 gallons
Casing Volume (feet of water x Casing DIA ² x 0.0408)
Depth Measurement Method Tape & Paste / Electronic Sounder / Other
Free Product N/A
Purge Method Disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	ORP	Salinity 3%	DO (Mg/L)	Comments
0 - Downhole	6.70	20.41	615.00	-93.5	3.27		grey, Moderate Hydrocarbon odor
1	6.91	20.50	602.00	-160.3	4.24		turbid cloudy grey, has odor turb.
2	6.89	20.43	624.00	-169.7	4.73		Slight turbid, Strong Visible Sheen odor.
3	6.87	20.56	622.00	-161.0	4.60		Some bleedthrough grey

Total Gallons Purged 3 gallons
Depth to Groundwater Before Sampling (below TOC) 21.12 1/2 hr recharge feet
Sampling Method Disposable bailer
Containers Used 9 VOA w/HCl (40 ml) 4 1LA (liter) 1 250ml poly (pint)

Subsurface Consultants	447.055 (JOB NUMBER)	9/21/99 (DATE)	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: Connell Olds. Well Number: MW-7

Job No.: 744.055 Well Casing Diameter: 2" inch

Sampled By: Kenny & Stu Date: 9/21/99

TOC Elevation: — Weather: sunny/hot

Depth to Casing Bottom (below TOC) 30.00 feet

Depth to Groundwater (below TOC) 19.00 feet

Feet of Water in Well 11.00 feet

Depth to Groundwater When 80% Recovered 21.20 feet

Casing Volume (feet of water x Casing DIA ² x 0.0408) x 3 5.4 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product N/A

Purge Method S. bailer. (disposable)

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	~~Salinity S%~~ ORP Mg/L DO		Comments
∅ downhole	7.20	21.43	439.00	320	4.32	cloudy, no odor
1	7.11	21.36	716.00	240	4.17	cloudy, no odor. turbid.
2	6.80	20.86	782.00	320	5.29	real cloudy
3	6.85	21.00	774.00	355	6.06	cloudy, no odor
4	7.00	20.75	835.00	365	5.77	cloudy, turbid, no odor.
5	7.01	21.07	861.00	280	6.17	cloudy, turbid

Total Gallons Purged 5.4 gallons

Depth to Groundwater Before Sampling (below TOC) 21.00' 15 min recharge feet

Sampling Method bailer

Containers Used 9 VOA w/HCl (40 ml) 4 1 LA (liter) 1 250ml poly (pint)

Subsurface Consultants

JOB NUMBER 744.055 DATE 9/21/99 APPROVED

PLATE

GROUNDWATER DEPTHS

Project Name: CONNELL OLDSMOBILE 10-20-99.

Job No.: 447.055

Measured by: KENNY HOPPER.

Well	Date	Time	Groundwater Depth (feet)	Comments
* MW-1	10/20/99	1:10p	23.90	- STRONG HYDROCARBON ODOR. - 1.25" FREE PRODUCT ~~REMOVED~~ REMOVED.
MW-2	10/20/99	9:40a	N/A.	- COVERED BY DUMPSTERS.
MW-3	10/20/99	9:50a	20.60	- NO ODOR.
MW-4	10/20/99	12:00	20.10	- NO ODOR. NO PRODUCT.
MW-5	10/20/99	10:10a	25.50	- NO ODOR. WELL LID IS MISSING BOLTS.
* MW-6	10/20/99	11:10a	25.05	STRONG ODOR, 2" FREE PRODUCT BAILED ~~2.5 GALLONS~~
MW-7	10/20/99	10:30	19.20	- NO ODOR. NO BOLTS ON WELL LID.
MW-8	10/20/99	10:30a	26.70	- VERY LIGHT HYDROCARBON SMELL. TAPE & PASTE - NO FREE PRODUCT
MW-9	10/20/99	12:10p	21.40	- NO ODOR
MW-10	10/20/99	12:20	N/A.	TRUCK PARKED ON WELL.
MW-11	10/20/99	9:20am	31.30	- VERY LIGHT HYDROCARBON ODOR. NO FREE PRODUCT.
MW-12	10/20/99	1:20p	21.80	NO ODOR.
MW-14	10/20/99	12:25p	24.10	- MODERATE HYDROCARBON SMELL. NO FREE PRODUCT TAPE & PASTE, ~~test~~
MW-15	10/20/99.	12:50p	24.40	- MODERATE HYDROCARBON SMELL NO FREE PRODUCT - TAPE & PASTE.

* .10 gal * free product removed

* .20 gal of free product removed

* WELLS MW — 1 & MW 6 CONTAINED FREE PRODUCT. PRODUCT WAS REMOVED

MW 1 → .10 gal removed

MW 6 → .20 gallons removed (free product)

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GROUNDWATER DEPTHS

Project Name: Cornell Olds.

Job No.: [redacted]

Measured by: Stu Daile

	Well	Date	Time	Groundwater Depth (feet)	Comments
1	MW-11	12/13/99	1:30	31.51	No oder
7	MW-2		1:45		No access! Dumpster on top
3	MW-3		2:00	20.69	no oder
4	MW-5		2:30	26.75	No oder under pressure
5	MW-7		2:45	17.55	No oder ; depth-/under pressure!
6	MW-8		3:00	26.76	Slight hydrocabon oder, No product
7	MW-4		3:15	20.12	[redacted] oder (hydrocabon oder) no product
8	MW-9		3:30	21.59	Slight oder, no product
9	MW-13		4:00	24.74	No oder
10	MW-15		4:15	24.61	~~Slight oder (hydrocabon) no product~~
11	MW-14		4:30	24.52	Strong hydrocabon oder, no product
12	MW-1		4:45	24.24	~~Strong hydrocabon oder, trace~~
13	MW-6	✓	5:00	25.08	~~very Strong hydrocabon oder, 1/16" Free Product~~ est 1/16" of a gallon purged.

f:\masterdoc\GWDPTHS.XLS

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900, Fax (510) 486-0532

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
3736 Mt. Diablo Blvd.
Suite 200
Lafayette, CA 94549

Date: 07-OCT-99
Lab Job Number: 141568
Project ID: 447.055
Location: Connell Olds

Reviewed by:

Reviewed by:

Curtis & Tompkins, Ltd.

Laboratory Number: **141568**
Client: **Subsurface Consultants, Inc.**
Project Name: **Connell Oldsmobile**

Receipt Date: **09/21/99**

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for five water samples received from the above referenced project. The samples were received cold and intact.

Total Volatile Hydrocarbons: The trifluorotoluene surrogate recovery for the water matrix spikes and the water matrix spike recoveries were outside acceptance limits. The associated laboratory control sample recovery and the bromofluorobenzene surrogate recoveries were acceptable. No other analytical problems were encountered.

TEH: No analytical problems were encountered.

Volatile Organic Compounds: The matrix spike duplicate relative percent difference (RPD) was outside acceptance limits. The matrix spike recoveries were acceptable. No other analytical problems were encountered.

Semi-Volatile Organic Compounds: The phenol-d5 surrogate recovery for sample MW-8 (141568-001) was outside acceptance limits due to matrix interference. No other analytical problems were encountered.

Metals: No analytical problems were encountered.

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8015M
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
141568-001	MW-8	50824	09/21/99	09/25/99	09/25/99	
141568-002	MW-4	50864	09/21/99	09/27/99	09/27/99	
141568-003	MW-9	50824	09/21/99	09/25/99	09/25/99	
141568-004	MW-7	50824	09/21/99	09/25/99	09/25/99	

Matrix: Water

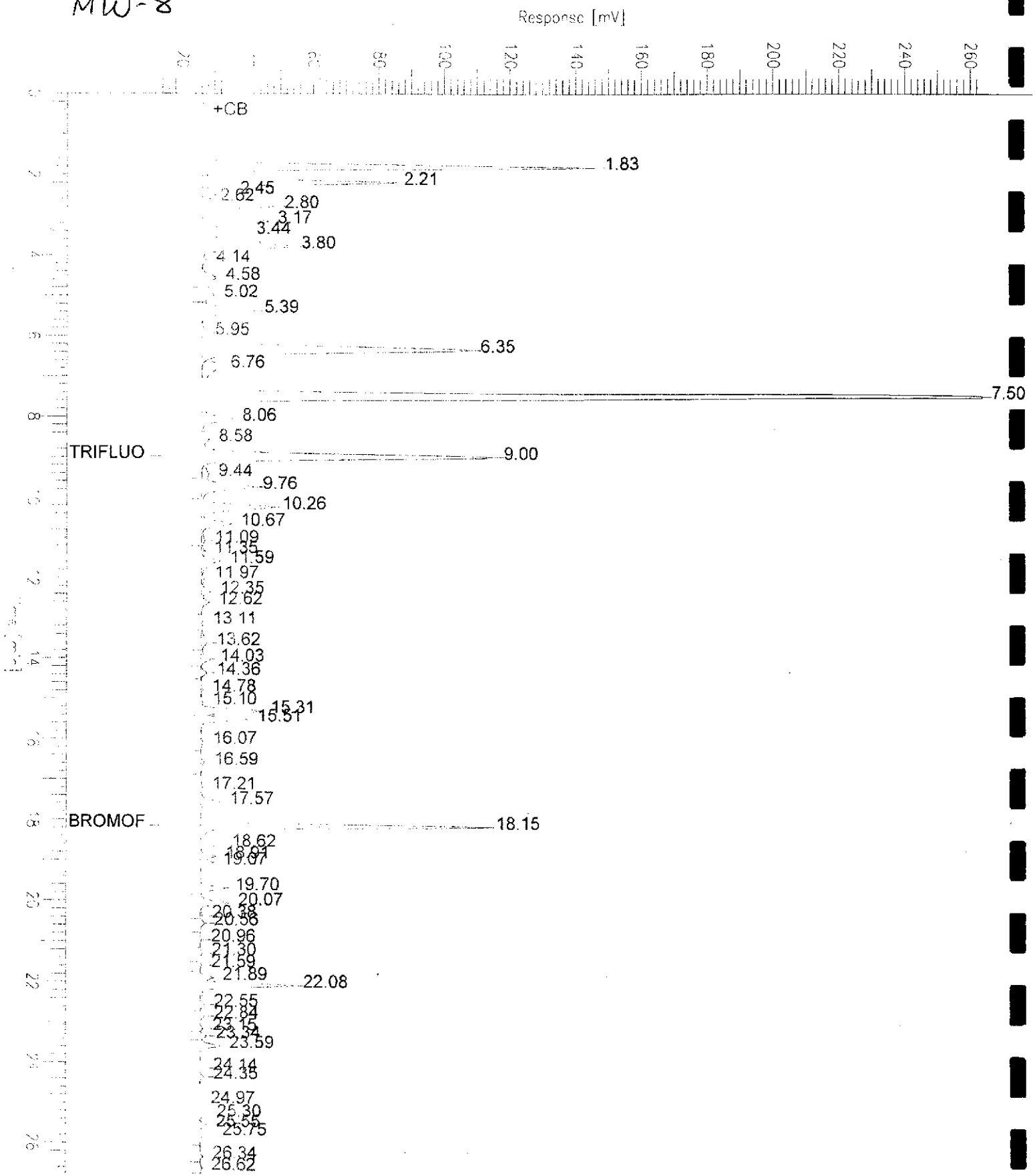
Analyte	Units	141568-001	141568-002	141568-003	141568-004
Diln Fac:		1	20	1	1
Gasoline C7-C12	ug/L	670	140000	2700	<50
Surrogate					
Trifluorotoluene	%REC	99	114	137	93
Bromofluorobenzene	%REC	99	105	106	98

Chromatogram

Sample Name : 141568-001,50824,TVH ONLY
FileName : G:\GC05\DATA\267G028.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 14 mV

Sample #: Page 1 of 1
Date : 9/25/99 06:29 AM
Time of Injection: 9/25/99 06:01 AM
Low Point : 13.79 mV High Point : 263.79 mV
Plot Scale: 250.0 mV

MW-8

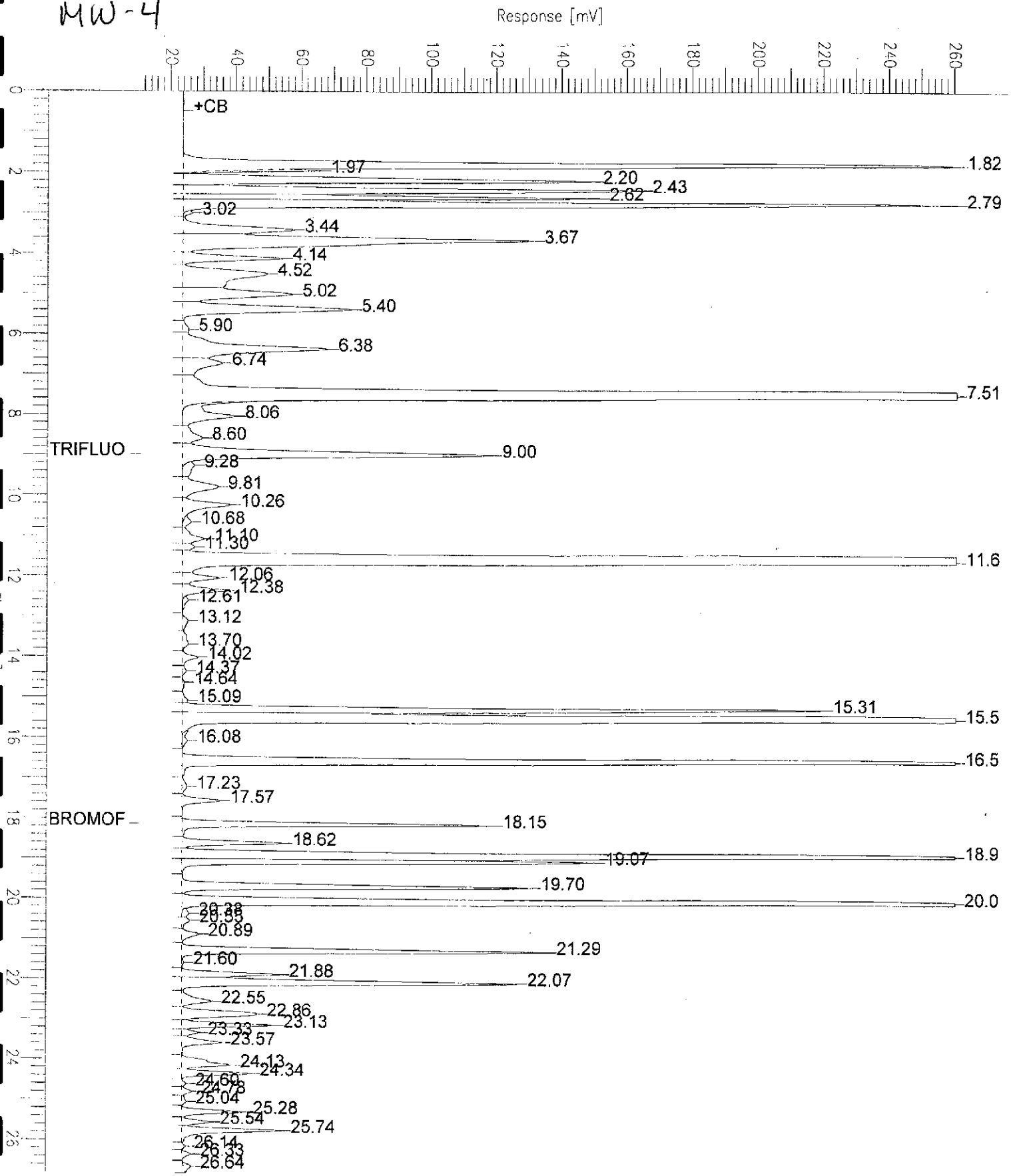


Chromatogram

Sample Name : 141568-002,50864,TVH ONLY
FileName : G:\GC05\DATA\270G013.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 11 mV

Sample #: Page 1 of 1
Date : 9/27/99 07:09 PM
Time of Injection: 9/27/99 06:42 PM
Low Point : 11.15 mV High Point : 261.15 mV
Plot Scale: 250.0 mV

MW-4

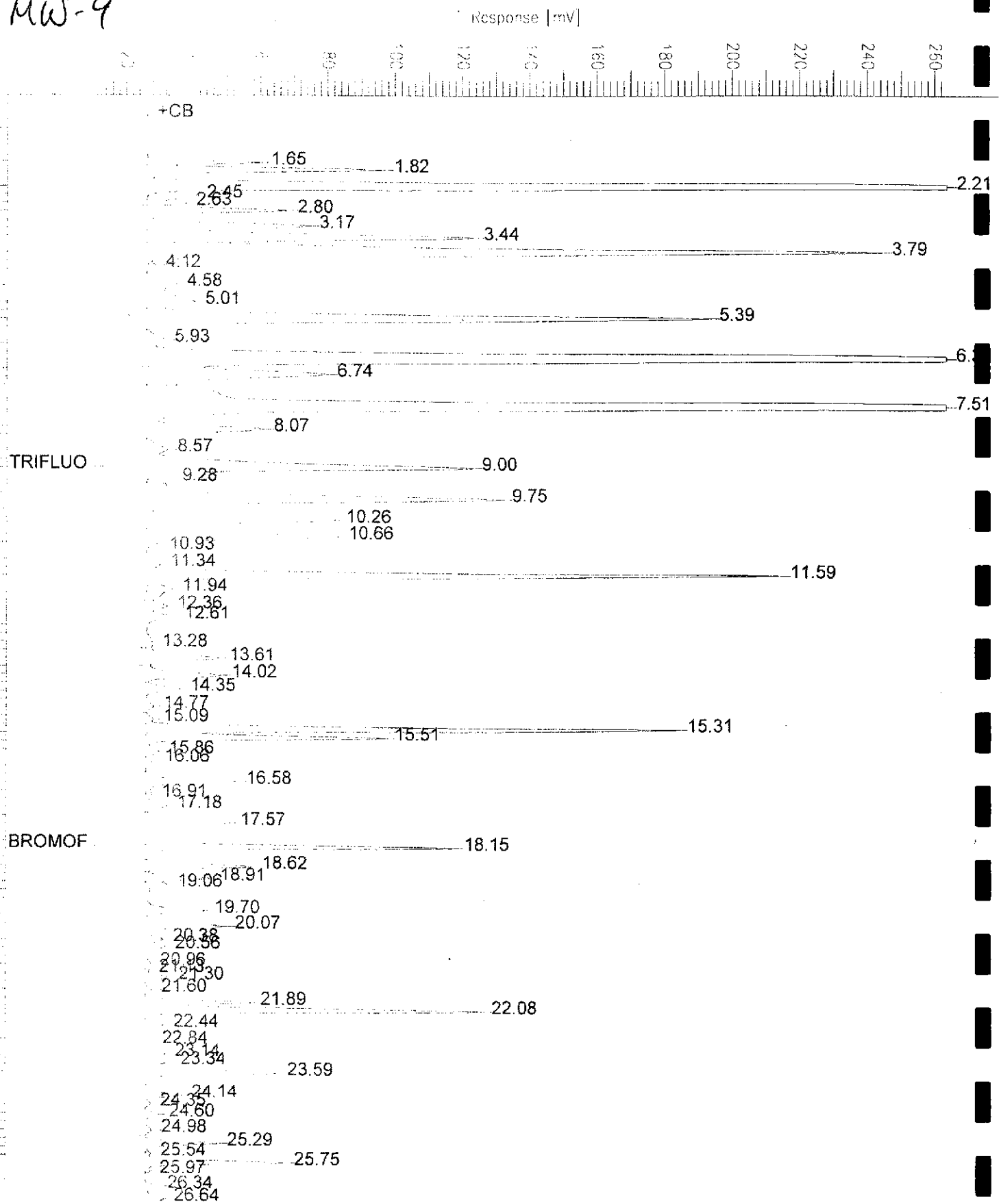


Chromatogram

Sample Name : 141568-003,50824,TVH ONLY
FileName : G:\GC05\DATA\267G029.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 14 mV

Sample #: Page 1 of 1
Date : 9/25/99 07:09 AM
Time of Injection: 9/25/99 06:41 AM
Low Point : 13.70 mV High Point : 263.70 mV
Plot Scale: 250.0 mV

MW-9



TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8015M
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
141568-005	MW-13	50824	09/21/99	09/25/99	09/25/99	

Matrix: Water

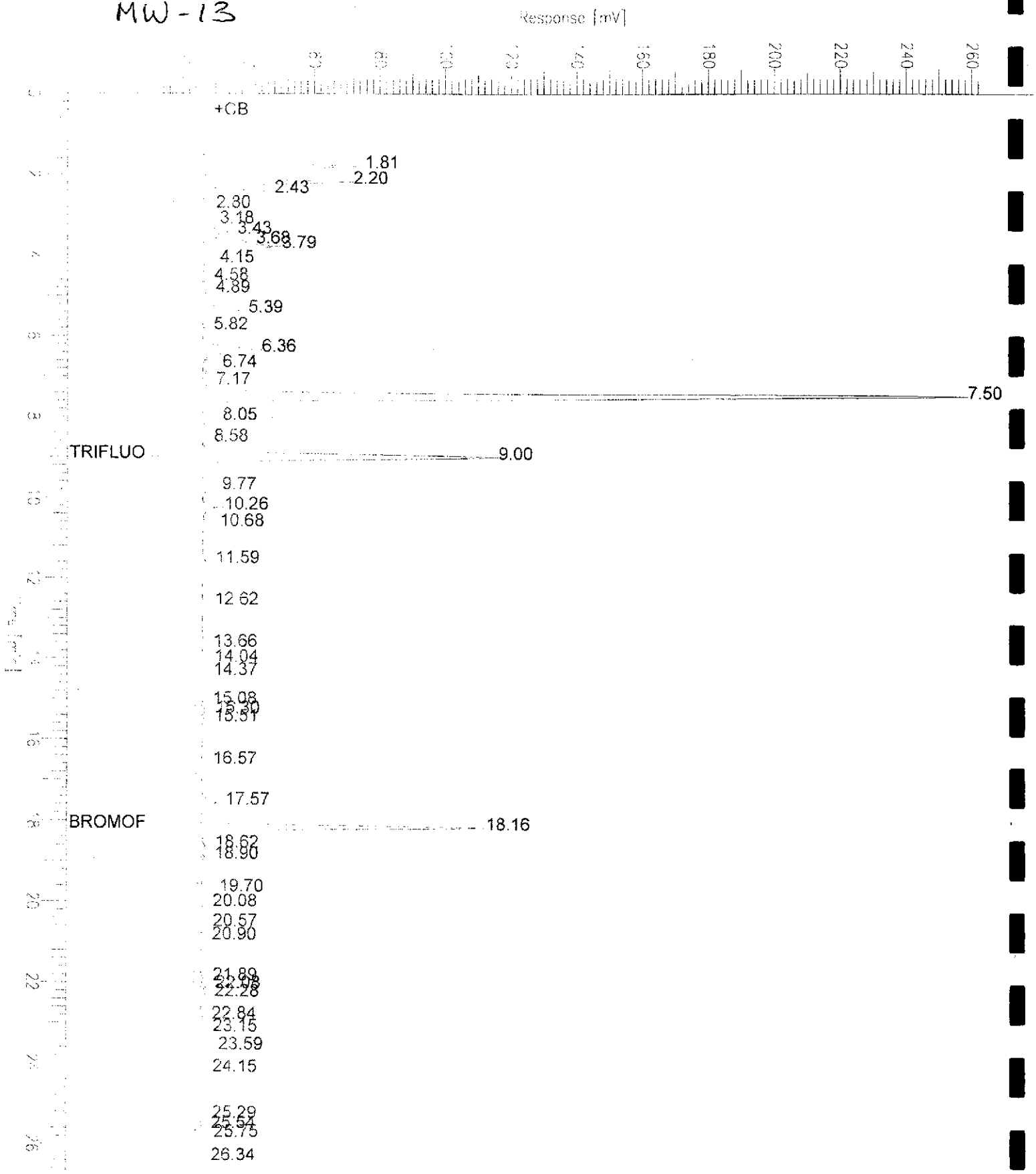
Analyte	Units	141568-005
Diln Fac:		1
Gasoline C7-C12	ug/L	370
Surrogate		
Trifluorotoluene	%REC	96
Bromofluorobenzene	%REC	98

Chromatogram

Sample Name : 141568-005,50824,TVH ONLY
FileName : G:\GC05\DATA\367G031.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 14 mV

Sample #: Page 1 of 1
Date : 9/25/99 08:29 AM
Time of Injection: 9/25/99 08:02 AM
Low Point : 13.70 mV High Point : 263.70 mV
Plot Scale: 250.0 mV

MW-13

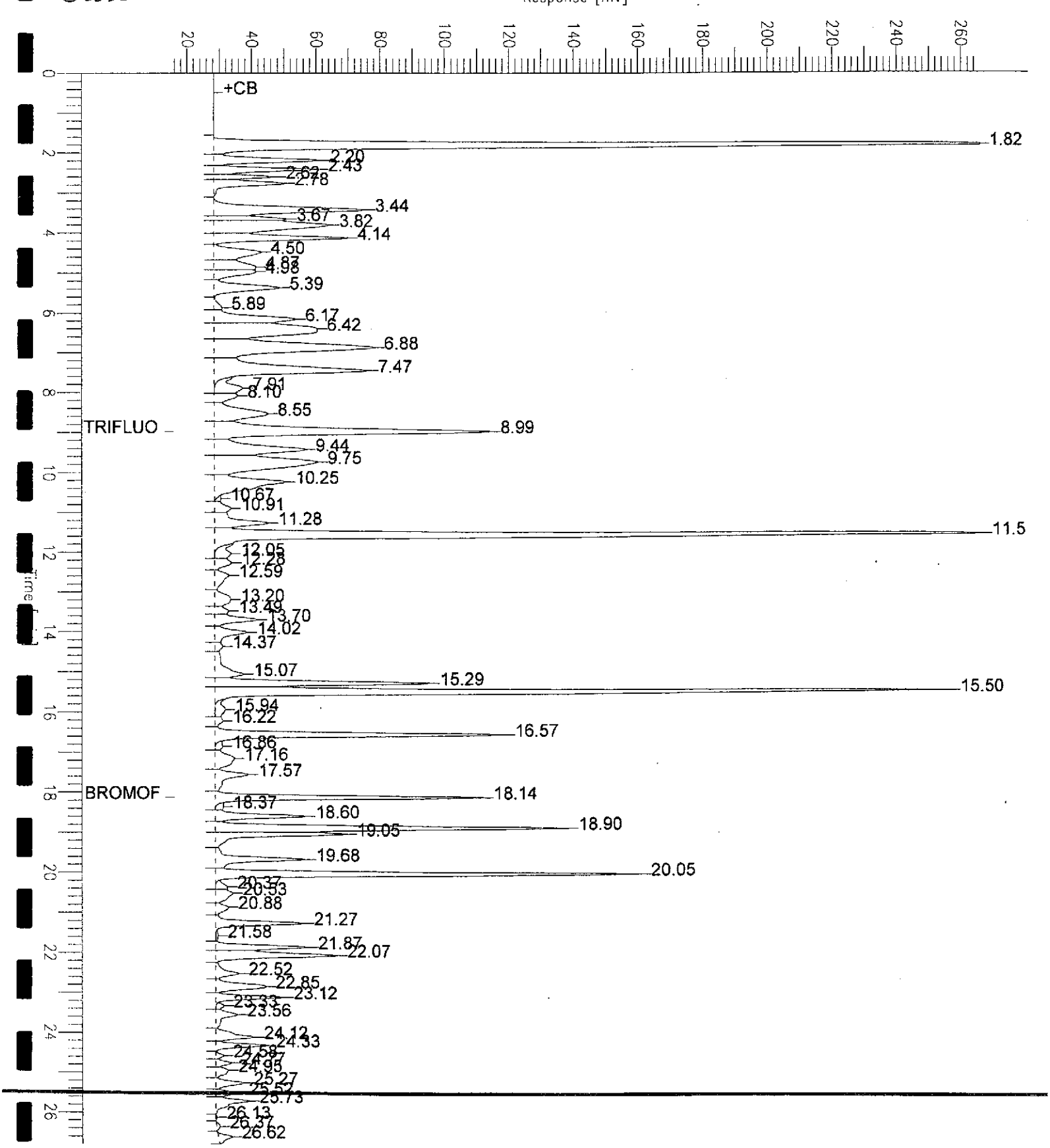


Chromatogram

Sample Name : CCV/LCS,QC08672,99WS8047,50864
FileName : G:\GC05\DATA\270G001.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: -1.0 Plot Offset: 16 mV

Sample #: GAS Page 1 of 1
Date : 9/27/99 10:59 AM
Time of Injection: 9/27/99 10:32 AM
Low Point : 15.75 mV High Point : 265.75 mV
Plot Scale: 250.0 mV

Gasoline Standard



TVH-Total Volatile Hydrocarbons

Client:	Subsurface Consultants	Analysis Method:	EPA 8015M
Project#:	447.055	Prep Method:	EPA 5030
Location:	Connell Olds		

METHOD BLANK

Matrix:	Water	Prep Date:	09/24/99
Batch#:	50824	Analysis Date:	09/24/99
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC08510

Analyte	Result
Gasoline C7-C12	<50

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	91	53-150
Bromofluorobenzene	100	53-149

BATCH QC REPORT

Curtis & Tompkins, Ltd.

TVH-Total Volatile Hydrocarbons

Client:	Subsurface Consultants	Analysis Method:	EPA 8015M
Project#:	447.055	Prep Method:	EPA 5030
Location:	Connell Olds		

METHOD BLANK

Matrix:	Water	Prep Date:	09/27/99
Batch#:	50864	Analysis Date:	09/27/99
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC08675

Analyte	Result
Gasoline C7-C12	<50

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	97	53-150
Bromofluorobenzene	94	53-149

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8015M
Prep Method: EPA 5030

LABORATORY CONTROL SAMPLE

Matrix: Water
Batch#: 50824
Units: ug/L
Diln Fac: 1

Prep Date: 09/24/99
Analysis Date: 09/24/99

LCS Lab ID: QC08508

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	2011	2000	101	77-117

Surrogate	%Rec	Limits
Trifluorotoluene	107	53-150
Bromofluorobenzene	89	53-149

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 1 outside limits

Lab #: 141568

BATCH QC REPORT

Curtis & Tompkins, Ltd.

TVH-Total Volatile Hydrocarbons

Client:	Subsurface Consultants	Analysis Method:	EPA 8015M
Project#:	447.055	Prep Method:	EPA 5030
Location:	Connell Olds		

LABORATORY CONTROL SAMPLE

Matrix:	Water	Prep Date:	09/27/99
Batch#:	50864	Analysis Date:	09/27/99
Units:	ug/L		
Diln Fac:	1		

LCS Lab ID: QC08672

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline C7-C12	2058	2000	103	77-117

Surrogate	%Rec	Limits
Trifluorotoluene	108	53-150
Bromofluorobenzene	95	53-149

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 1 outside limits

TVH-Total Volatile Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8015M
Prep Method: EPA 5030

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID: ZZZZZZ
Lab ID: 141590-008
Matrix: Water
Batch#: 50824
Units: ug/L
Diln Fac: 1

Sample Date: 09/21/99
Received Date: 09/22/99
Prep Date: 09/24/99
Analysis Date: 09/24/99

MS Lab ID: QC08511

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	2000	25270	25520	12 *	69-131

Surrogate	%Rec	Limits
Trifluorotoluene	479*	53-150
Bromofluorobenzene	109	53-149

MSD Lab ID: QC08512

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	25450	9 *	69-131	0	13

Surrogate	%Rec	Limits
Trifluorotoluene	476*	53-150
Bromofluorobenzene	112	53-149

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 2 out of 2 outside limits

TVH-Total Volatile Hydrocarbons

Client:	Subsurface Consultants	Analysis Method:	EPA 8015M
Project#:	447.055	Prep Method:	EPA 5030
Location:	Connell Olds		

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID:	ZZZZZZ	Sample Date:	09/15/99
Lab ID:	141575-002	Received Date:	09/16/99
Matrix:	Water	Prep Date:	09/28/99
Batch#:	50864	Analysis Date:	09/28/99
Units:	ug/L		
Diln Fac:	1		

MS Lab ID: QC08676

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Gasoline C7-C12	2000	<50	1918	96	69-131

Surrogate	%Rec	Limits
Trifluorotoluene	119	53-150
Bromofluorobenzene	109	53-149

MSD Lab ID: QC08677

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Gasoline C7-C12	2000	1928	96	69-131	1	13

Surrogate	%Rec	Limits
Trifluorotoluene	119	53-150
Bromofluorobenzene	109	53-149

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8015M
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
141568-001	MW-8	50781	09/21/99	09/22/99	09/24/99	
141568-002	MW-4	50781	09/21/99	09/22/99	09/25/99	
141568-003	MW-9	50781	09/21/99	09/22/99	09/24/99	
141568-004	MW-7	50781	09/21/99	09/22/99	09/24/99	

Matrix: Water

Analyte	Units	141568-001	141568-002	141568-003	141568-004
Diln Fac:		1	5	1	1
Diesel C10-C24	ug/L	420 YL	14000 YL	770 YL	<48
Motor Oil C24-C36	ug/L	<290	<1400	<280	<290
Surrogate					
Hexacosane	%REC	80	62	79	86

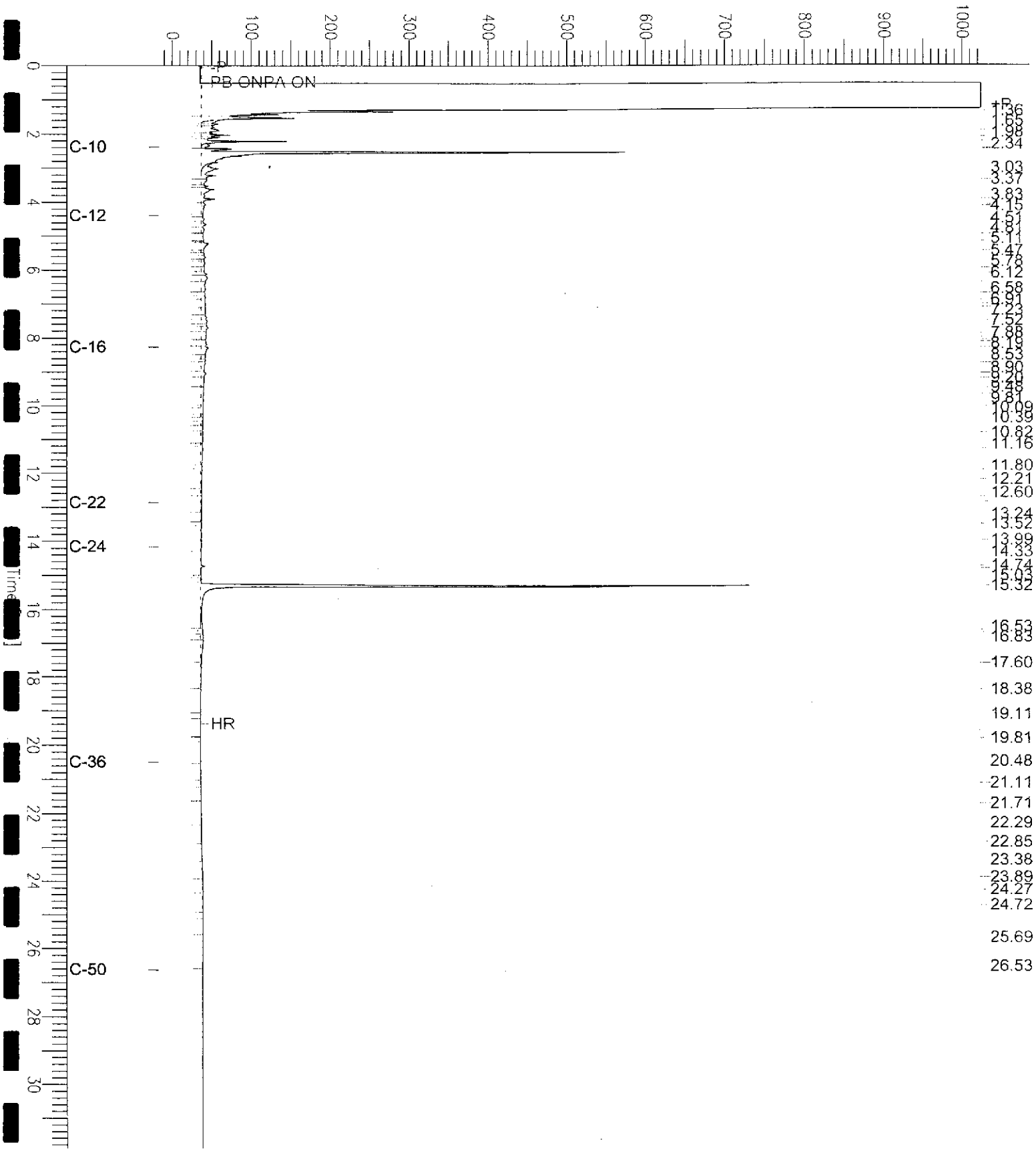
Y: Sample exhibits fuel pattern which does not resemble standard
L: Lighter hydrocarbons than indicated standard

Chromatogram

Sample Name : 141568-001,50781
leName : C:\GC15\CHB\265B052.RAW
thod : BTEH244.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -17 mV

Sample #: 50781 Page 1 of 1
Date : 09/24/1999 12:02 PM
Time of Injection: 09/24/1999 04:51 AM
Low Point : -16.76 mV High Point : 1024.00 mV
Plot Scale: 1040.8 mV

MW-8

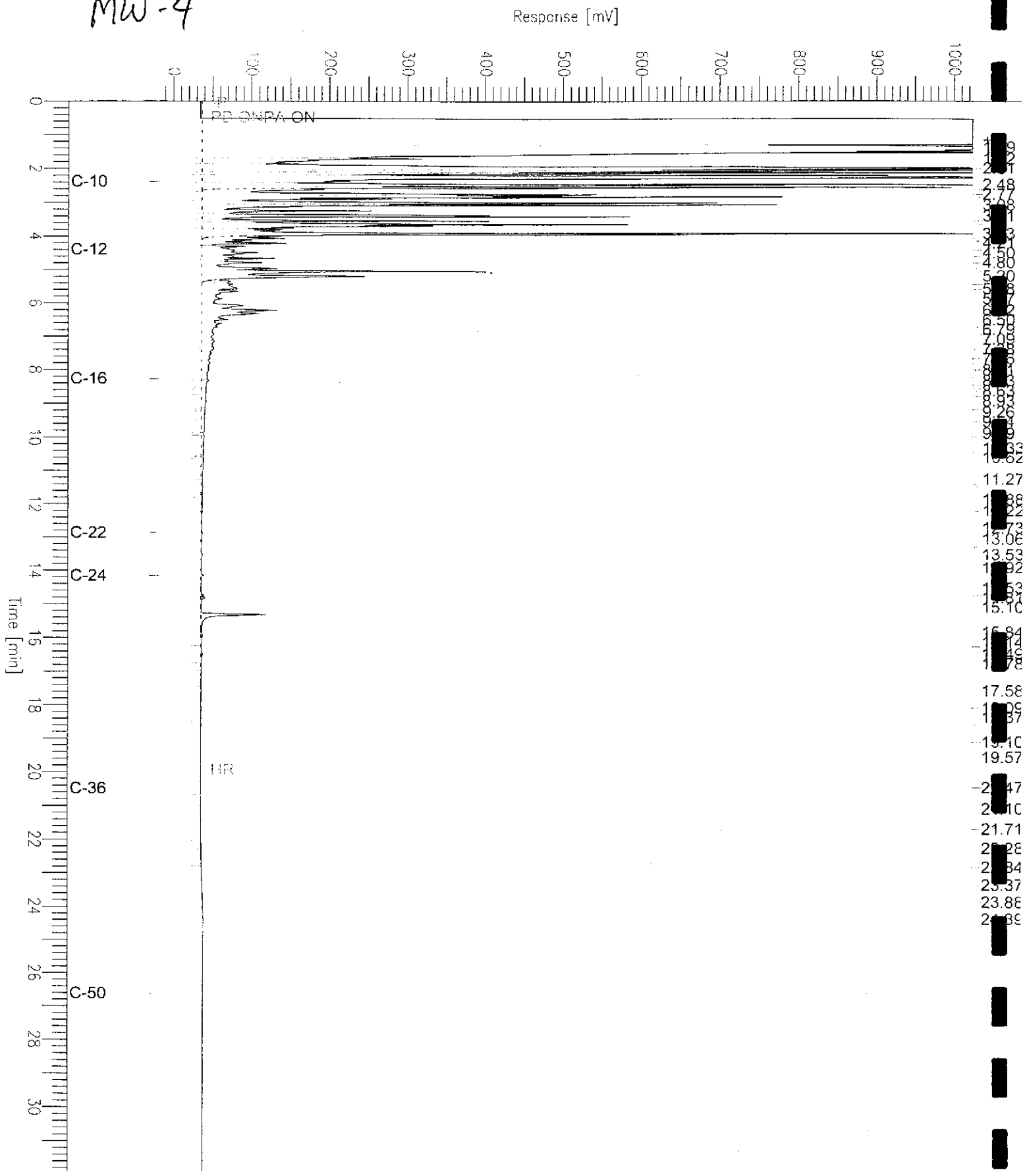


Chromatogram

Sample Name : 141568-002,50781
FileName : C:\GC15\CHB\265B079.RAW
Method : BTEH244.MTH
Start Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -18 mV

Sample #: 50781 Page 1 of 1
Date : 09/27/1999 12:24 PM
Time of Injection: 09/25/1999 12:20 AM
Low Point : -17.58 mV High Point : 1024.00 mV
Plot Scale: 1041.6 mV

MW-4

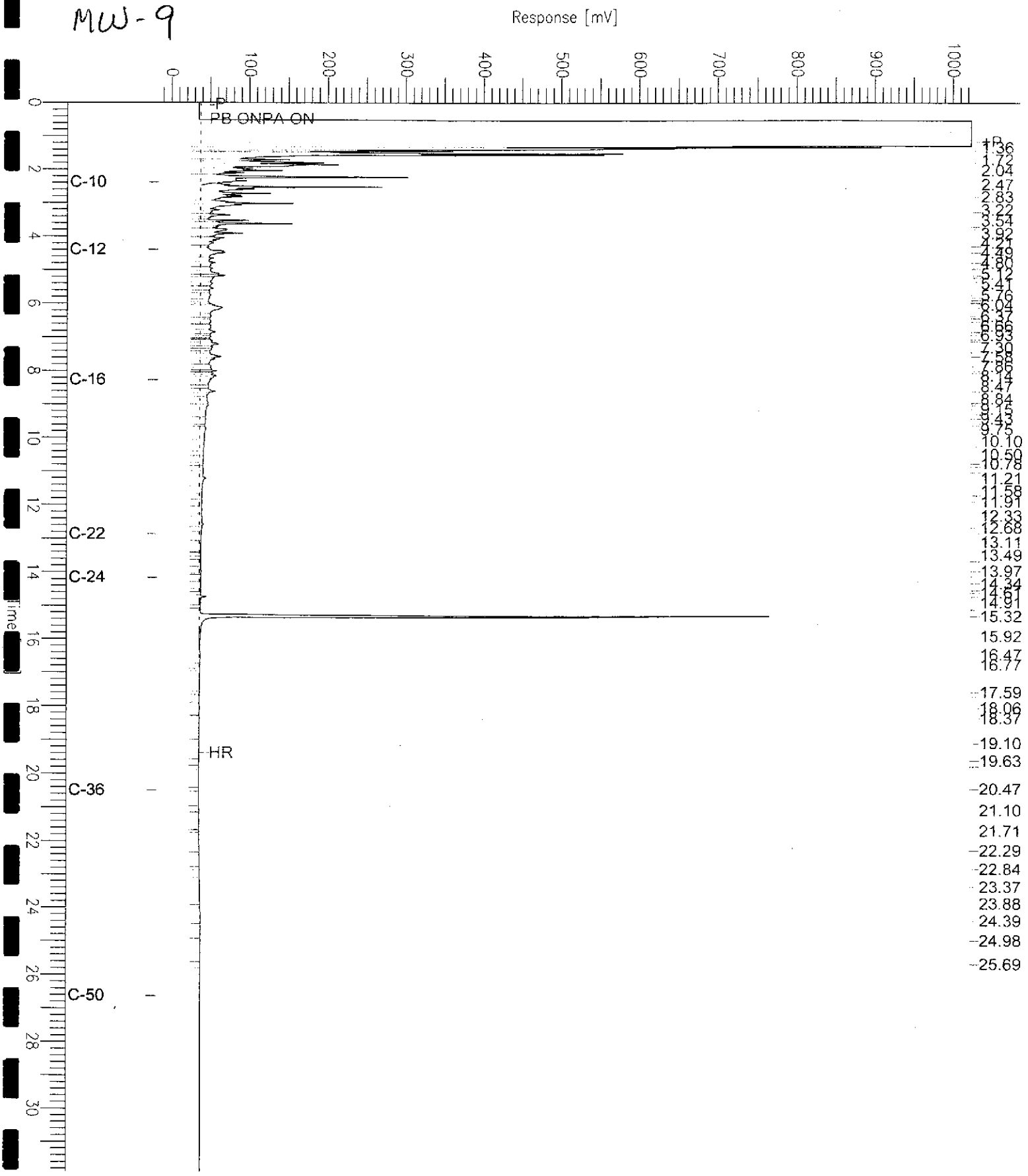


Chromatogram

Sample Name : 141568-003,50781
leName : C:\GC15\CHB\265B054.RAW
thod : BTEH244.MTH
art Time : 0.00 min End Time : 31.90 min
Scale Factor: 0.0 Plot Offset: -17 mV

Sample #: 50781 Page 1 of 1
Date : 09/24/1999 12:03 PM
Time of Injection: 09/24/1999 06:17 AM
Low Point : -16.82 mV High Point : 1024.00 mV
Plot Scale: 1040.8 mV

MW-9



TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8015M
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
141568-005	MW-13	50781	09/21/99	09/22/99	09/24/99	

Matrix: Water

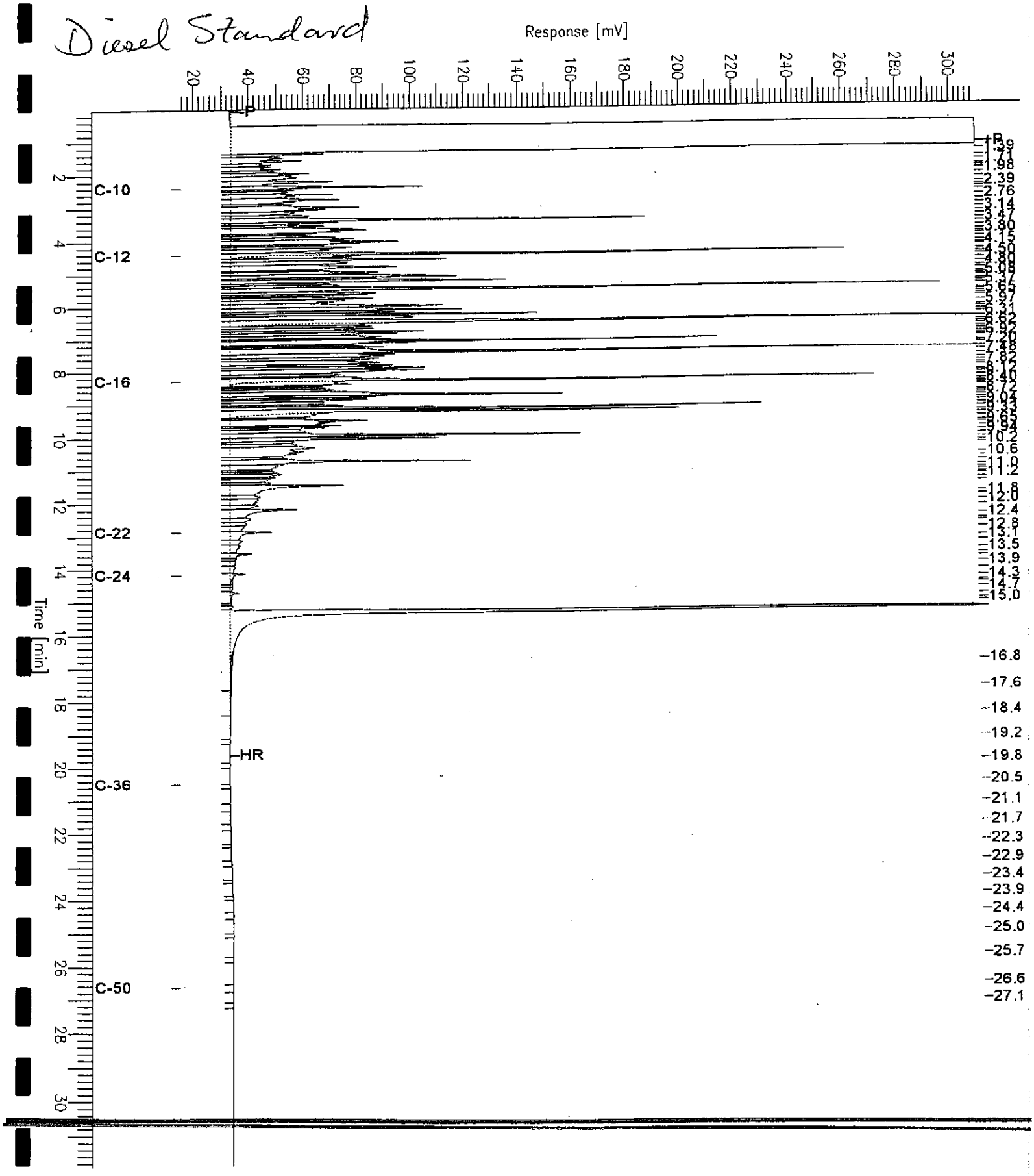
Analyte	Units	141568-005
Diln Fac:		1
Diesel C10-C24	ug/L	<48
Motor Oil C24-C36	ug/L	<290
Surrogate		
Hexacosane	%REC	76

Chromatogram

Sample Name : ccv,99ws8004,dsl
FileName : C:\GC15\CHB\265B002.RAW
Method : BTEH244.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 16 mV

Sample #: 500mg/l
Date : 09/22/1999 05:21 PM
Time of Injection: 09/22/1999 01:28 PM
Low Point : 15.64 mV High Point : 309.65 mV
Plot Scale: 294.0 mV

Diesel Standard

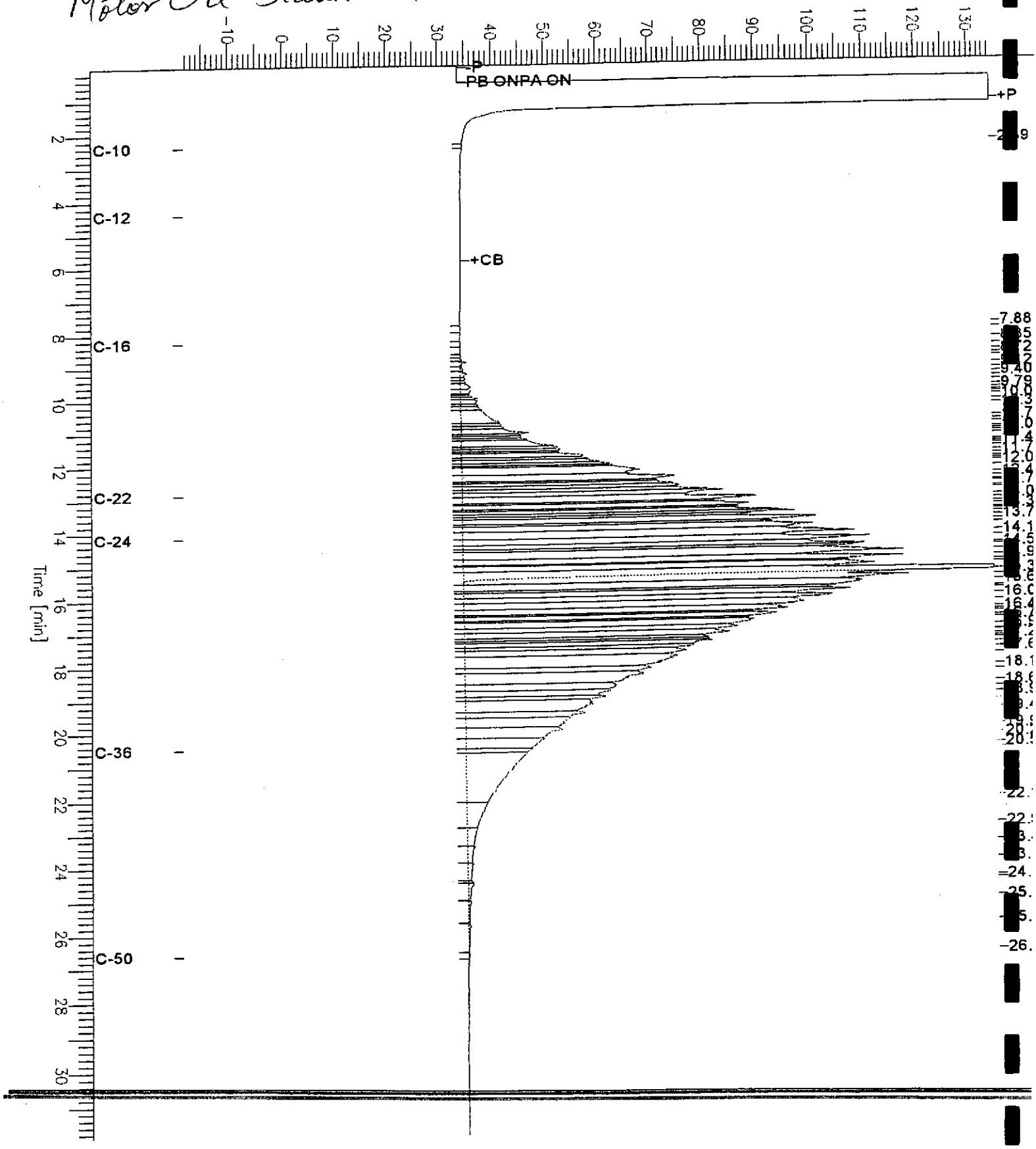


Chromatogram

Sample Name : ccv,99ws7880,mo
FileName : C:\GC15\CHB\265B003.RAW
Method : BTEH244.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: -18 mV

Sample #: 500mg/l
Date : 09/22/1999 05:21 PM
Time of Injection: 09/22/1999 03:18 PM
Low Point : -18.44 mV
High Point : 134.38 mV
Plot Scale: 152.8 mV

Motor Oil Standard



Lab #: 141568

BATCH QC REPORT

Curtis & Tompkins, Ltd.

TEH-Tot Ext Hydrocarbons

Client:	Subsurface Consultants	Analysis Method:	EPA 8015M
Project#:	447.055	Prep Method:	EPA 3520
Location:	Connell Olds		

METHOD BLANK

Matrix:	Water	Prep Date:	09/22/99
Batch#:	50781	Analysis Date:	09/24/99
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC08355

Analyte	Result
Diesel C10-C24	<50
Motor Oil C24-C36	<300

Surrogate	%Rec	Recovery Limits
Hexacosane	84	58-128

BATCH QC REPORT

Curtis & Tompkins, Ltd.

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8015M
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 50781
Units: ug/L
Diln Fac: 1

Prep Date: 09/22/99
Analysis Date: 09/24/99

BS Lab ID: QC08356

Analyte	Spike Added	BS	%Rec	#	Limits
Diesel C10-C24	2475	1830	74		50-114

Surrogate	%Rec	Limits
Hexacosane	92	58-128

BSD Lab ID: QC08357

Analyte	Spike Added	BSD	%Rec	#	Limits	RPD	#	Limit
Diesel C10-C24	2475	2014	81		50-114	10		25

Surrogate	%Rec	Limits
Hexacosane	100	58-128

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260
Prep Method: EPA 5030

Field ID: MW-8
Lab ID: 141568-001
Matrix: Water
Batch#: 50791
Units: ug/L
Diln Fac: 1

Sampled: 09/21/99
Received: 09/21/99
Extracted: 09/23/99
Analyzed: 09/23/99

Analyte	Result	Reporting Limit
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	41	5.0
Benzene	170	0.5
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	2.6	0.5
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

Volatile Organics by GC/MS

Field ID:	MW-8	Sampled:	09/21/99
Lab ID:	141568-001	Received:	09/21/99
Matrix:	Water	Extracted:	09/23/99
Batch#:	50791	Analyzed:	09/23/99
Units:	ug/L		
Diln Fac:	1		

Analyte	Result	Reporting Limit
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	11	0.5
m,p-Xylenes	7.9	0.5
o-Xylene	ND	0.5
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	102	81-121
1,2-Dichloroethane-d4	101	76-127
Toluene-d8	99	90-109
Bromofluorobenzene	99	82-118

Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260
Prep Method: EPA 5030

Field ID: MW-4
Lab ID: 141568-002
Matrix: Water
Batch#: 50862
Units: ug/L
Diln Fac: 200

Sampled: 09/21/99
Received: 09/21/99
Extracted: 09/26/99
Analyzed: 09/26/99

Analyte	Result	Reporting Limit
Freon 12	ND	2000
Chloromethane	ND	2000
Vinyl Chloride	ND	2000
Bromomethane	ND	2000
Chloroethane	ND	2000
Trichlorofluoromethane	ND	1000
Acetone	ND	4000
Freon 113	ND	1000
1,1-Dichloroethene	ND	1000
Methylene Chloride	ND	4000
Carbon Disulfide	ND	1000
MTBE	ND	1000
trans-1,2-Dichloroethene	ND	1000
Vinyl Acetate	ND	10000
1,1-Dichloroethane	ND	1000
2-Butanone	ND	2000
cis-1,2-Dichloroethene	ND	1000
2,2-Dichloropropane	ND	1000
Chloroform	ND	1000
Bromochloromethane	ND	2000
1,1,1-Trichloroethane	ND	1000
1,1-Dichloropropene	ND	1000
Carbon Tetrachloride	ND	1000
1,2-Dichloroethane	ND	1000
Benzene	16000	100
Trichloroethene	ND	1000
1,2-Dichloropropane	ND	1000
Bromodichloromethane	ND	1000
Dibromomethane	ND	1000
4-Methyl-2-Pentanone	ND	2000
cis-1,3-Dichloropropene	ND	1000
Toluene	31000	100
trans-1,3-Dichloropropene	ND	1000
1,1,2-Trichloroethane	ND	1000
2-Hexanone	ND	2000
1,3-Dichloropropane	ND	1000
Tetrachloroethene	ND	1000
Dibromochloromethane	ND	1000

Volatile Organics by GC/MS

Field ID:	MW-4	Sampled:	09/21/99
Lab ID:	141568-002	Received:	09/21/99
Matrix:	Water	Extracted:	09/26/99
Batch#:	50862	Analyzed:	09/26/99
Units:	ug/L		
Diln Fac:	200		

Analyte	Result	Reporting Limit
1,2-Dibromoethane	ND	1000
Chlorobenzene	ND	1000
1,1,1,2-Tetrachloroethane	ND	1000
Ethylbenzene	2400	100
m,p-Xylenes	11000	100
o-Xylene	3800	100
Styrene	ND	1000
Bromoform	ND	1000
Isopropylbenzene	ND	1000
1,1,2,2-Tetrachloroethane	ND	1000
1,2,3-Trichloropropane	ND	1000
Propylbenzene	ND	1000
Bromobenzene	ND	1000
1,3,5-Trimethylbenzene	1100	1000
2-Chlorotoluene	ND	1000
4-Chlorotoluene	ND	1000
tert-Butylbenzene	ND	1000
1,2,4-Trimethylbenzene	4100	1000
sec-Butylbenzene	ND	1000
para-Isopropyl Toluene	ND	1000
1,3-Dichlorobenzene	ND	1000
1,4-Dichlorobenzene	ND	1000
n-Butylbenzene	ND	1000
1,2-Dichlorobenzene	ND	1000
1,2-Dibromo-3-Chloropropane	ND	1000
1,2,4-Trichlorobenzene	ND	1000
Hexachlorobutadiene	ND	1000
Naphthalene	ND	1000
1,2,3-Trichlorobenzene	ND	1000

Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	102	81-121
1,2-Dichloroethane-d4	101	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	99	82-118

Volatile Organics by GC/MS

Client:	Subsurface Consultants	Analysis Method:	EPA 8260
Project#:	447.055	Prep Method:	EPA 5030
Location:	Connell Olds		

Field ID:	MW-9	Sampled:	09/21/99
Lab ID:	141568-003	Received:	09/21/99
Matrix:	Water	Extracted:	09/24/99
Batch#:	50826	Analyzed:	09/24/99
Units:	ug/L		
Diln Fac:	4		

Analyte	Result	Reporting Limit
Freon 12	ND	40
Chloromethane	ND	40
Vinyl Chloride	ND	40
Bromomethane	ND	40
Chloroethane	ND	40
Trichlorofluoromethane	ND	20
Acetone	ND	80
Freon 113	ND	20
1,1-Dichloroethene	ND	20
Methylene Chloride	ND	80
Carbon Disulfide	ND	20
MTBE	ND	20
trans-1,2-Dichloroethene	ND	20
Vinyl Acetate	ND	200
1,1-Dichloroethane	ND	20
2-Butanone	ND	40
cis-1,2-Dichloroethene	ND	20
2,2-Dichloropropane	ND	20
Chloroform	ND	20
Bromochloromethane	ND	40
1,1,1-Trichloroethane	ND	20
1,1-Dichloropropene	ND	20
Carbon Tetrachloride	ND	20
1,2-Dichloroethane	540	20
Benzene	320	2.0
Trichloroethene	ND	20
1,2-Dichloropropane	ND	20
Bromodichloromethane	ND	20
Dibromomethane	ND	20
4-Methyl-2-Pentanone	ND	40
cis-1,3-Dichloropropene	ND	20
Toluene	98	2.0
trans-1,3-Dichloropropene	ND	20
1,1,2-Trichloroethane	ND	20
2-Hexanone	ND	40
1,3-Dichloropropane	ND	20
Tetrachloroethene	ND	20
Dibromochloromethane	ND	20

Volatile Organics by GC/MS

Field ID:	MW-9	Sampled:	09/21/99
Lab ID:	141568-003	Received:	09/21/99
Matrix:	Water	Extracted:	09/24/99
Batch#:	50826	Analyzed:	09/24/99
Units:	ug/L		
Diln Fac:	4		

Analyte	Result	Reporting Limit
1,2-Dibromoethane	ND	20
Chlorobenzene	ND	20
1,1,1,2-Tetrachloroethane	ND	20
Ethylbenzene	88	2.0
m,p-Xylenes	35	2.0
o-Xylene	12	2.0
Styrene	ND	20
Bromoform	ND	20
Isopropylbenzene	ND	20
1,1,2,2-Tetrachloroethane	ND	20
1,2,3-Trichloropropane	ND	20
Propylbenzene	ND	20
Bromobenzene	ND	20
1,3,5-Trimethylbenzene	ND	20
2-Chlorotoluene	ND	20
4-Chlorotoluene	ND	20
tert-Butylbenzene	ND	20
1,2,4-Trimethylbenzene	ND	20
sec-Butylbenzene	ND	20
para-Isopropyl Toluene	ND	20
1,3-Dichlorobenzene	ND	20
1,4-Dichlorobenzene	ND	20
n-Butylbenzene	ND	20
1,2-Dichlorobenzene	ND	20
1,2-Dibromo-3-Chloropropane	ND	20
1,2,4-Trichlorobenzene	ND	20
Hexachlorobutadiene	ND	20
Naphthalene	ND	20
1,2,3-Trichlorobenzene	ND	20

Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	103	81-121
1,2-Dichloroethane-d4	100	76-127
Toluene-d8	98	90-109
Bromofluorobenzene	101	82-118

Volatile Organics by GC/MS

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260
Prep Method: EPA 5030

Field ID: MW-7
Lab ID: 141568-004
Matrix: Water
Batch#: 50791
Units: ug/L
Diln Fac: 1

Sampled: 09/21/99
Received: 09/21/99
Extracted: 09/23/99
Analyzed: 09/23/99

Analyte	Result	Reporting Limit
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	0.7	0.5
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	1.8	0.5
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

Volatile Organics by GC/MS

Field ID:	MW-7	Sampled:	09/21/99
Lab ID:	141568-004	Received:	09/21/99
Matrix:	Water	Extracted:	09/23/99
Batch#:	50791	Analyzed:	09/23/99
Units:	ug/L		
Diln Fac:	1		

Analyte	Result	Reporting Limit
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	0.5
m,p-Xylenes	1.5	0.5
o-Xylene	ND	0.5
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	100	81-121
1,2-Dichloroethane-d4	101	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	101	82-118

Volatile Organics by GC/MS

Client:	Subsurface Consultants	Analysis Method:	EPA 8260
Project#:	447.055	Prep Method:	EPA 5030
Location:	Connell Olds		

Field ID:	MW-13	Sampled:	09/21/99
Lab ID:	141568-005	Received:	09/21/99
Matrix:	Water	Extracted:	09/23/99
Batch#:	50791	Analyzed:	09/23/99
Units:	ug/L		
Diln Fac:	1		

Analyte	Result	Reporting Limit
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	150	0.5
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	1.0	0.5
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

Volatile Organics by GC/MS

Field ID:	MW-13	Sampled:	09/21/99
Lab ID:	141568-005	Received:	09/21/99
Matrix:	Water	Extracted:	09/23/99
Batch#:	50791	Analyzed:	09/23/99
Units:	ug/L		
Diln Fac:	1		

Analyte	Result	Reporting Limit
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	0.8	0.5
m,p-Xylenes	0.8	0.5
o-Xylene	ND	0.5
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%Recovery	Recovery Limits
Dibromofluoromethane	104	81-121
1,2-Dichloroethane-d4	102	76-127
Toluene-d8	99	90-109
Bromofluorobenzene	100	82-118

EPA 8260 Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 50791
Units: ug/L
Diln Fac: 1

Prep Date: 09/23/99
Analysis Date: 09/23/99

MB Lab ID: QC08390

Analyte	Result	Reporting Limit
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	0.5
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

EPA 8260 Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 50791
Units: ug/L
Diln Fac: 1

Prep Date: 09/23/99
Analysis Date: 09/23/99

MB Lab ID: QC08390

Analyte	Result	Reporting Limit
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%Rec	Recovery Limits
Dibromofluoromethane	102	81-121
1,2-Dichloroethane-d4	102	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	100	82-118

EPA 8260 Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 50791
Units: ug/L
Diln Fac: 1

Prep Date: 09/23/99
Analysis Date: 09/23/99

MB Lab ID: QC08391

Analyte	Result	Reporting Limit
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	0.5
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

EPA 8260 Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 50791
Units: ug/L
Diln Fac: 1

Prep Date: 09/23/99
Analysis Date: 09/23/99

MB Lab ID: QC08391

Analyte	Result	Reporting Limit
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%Rec	Recovery Limits
Dibromofluoromethane	102	81-121
1,2-Dichloroethane-d4	103	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	100	82-118

Lab #: 141568

BATCH QC REPORT

Curtis & Tompkins, Ltd.

EPA 8260 Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 50826
Units: ug/L
Diln Fac: 1

Prep Date: 09/24/99
Analysis Date: 09/24/99

MB Lab ID: QC08519

Analyte	Result	Reporting Limit
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	0.5
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

EPA 8260 Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 50826
Units: ug/L
Diln Fac: 1

Prep Date: 09/24/99
Analysis Date: 09/24/99

MB Lab ID: QC08519

Analyte	Result	Reporting Limit
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%Rec	Recovery Limits
Dibromofluoromethane	102	81-121
1,2-Dichloroethane-d4	100	76-127
Toluene-d8	98	90-109
Bromofluorobenzene	101	82-118

EPA 8260 Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 50862
Units: ug/L
Diln Fac: 1

Prep Date: 09/26/99
Analysis Date: 09/26/99

MB Lab ID: QC08668

Analyte	Result	Reporting Limit
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	10
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	0.5
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0
Dibromochloromethane	ND	5.0

EPA 8260 Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8260A
Prep Method: EPA 5030

METHOD BLANK

Matrix: Water
Batch#: 50862
Units: ug/L
Diln Fac: 1

Prep Date: 09/26/99
Analysis Date: 09/26/99

MB Lab ID: QC08668

Analyte	Result	Reporting Limit
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%Rec	Recovery Limits
Dibromofluoromethane	102	81-121
1,2-Dichloroethane-d4	101	76-127
Toluene-d8	100	90-109
Bromofluorobenzene	100	82-118

Lab #: 141568

BATCH QC REPORT

Curtis & Tompkins, Ltd.

EPA 8270 Semi-Volatile Organics

Client: Subsurface Consultants
Project#: 447.055
Location: Connell Olds

Analysis Method: EPA 8270B
Prep Method: EPA 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 50811
Units: ug/L
Diln Fac: 1

Prep Date: 09/23/99
Analysis Date: 09/27/99

BS Lab ID: QC08464

Analyte	Spike Added	BS	%Rec #	Limits
Phenol	100	49.09	49	41-110
2-Chlorophenol	100	58.01	58	38-110
1,4-Dichlorobenzene	50	24.71	49	36-110
N-Nitroso-di-n-propylamine	50	36.98	74	22-112
1,2,4-Trichlorobenzene	50	29.84	60	36-110
4-Chloro-3-methylphenol	100	60.2	60	44-110
Acenaphthene	50	35.88	72	43-110
4-Nitrophenol	100	56.69	57	25-110
2,4-Dinitrotoluene	50	37.49	75	40-110
Pentachlorophenol	100	69.83	70	17-137
Pyrene	50	36.5	73	35-107

Surrogate	%Rec	Limits
2-Fluorophenol	48	30-136
Phenol-d5	52	33-140
2,4,6-Tribromophenol	83	31-140
Nitrobenzene-d5	69	24-128
2-Fluorobiphenyl	71	35-116
Terphenyl-d14	69	16-139

BSD Lab ID: QC08465

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Phenol	100	54.2	54	41-110	10	26
2-Chlorophenol	100	64.56	65	38-110	11	27
1,4-Dichlorobenzene	50	29.57	59	36-110	18	24
N-Nitroso-di-n-propylamine	50	38.33	77	22-112	4	27
1,2,4-Trichlorobenzene	50	32.89	66	36-110	10	26
4-Chloro-3-methylphenol	100	62.03	62	44-110	3	27
Acenaphthene	50	38.22	76	43-110	6	26
4-Nitrophenol	100	58.08	58	25-110	2	37
2,4-Dinitrotoluene	50	38.36	77	40-110	2	25
Pentachlorophenol	100	71.38	71	17-137	2	43
Pyrene	50	37.98	76	35-107	4	27

Surrogate	%Rec	Limits
2-Fluorophenol	55	30-136
Phenol-d5	58	33-140
2,4,6-Tribromophenol	88	31-140
Nitrobenzene-d5	73	24-128
2-Fluorobiphenyl	75	35-116
Terphenyl-d14	72	16-139

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-8
LAB ID: 141568-001
CLIENT: Subsurface Consultants
PROJECT ID: 447.055
LOCATION: Connell Olds
MATRIX: Filtrate

DATE SAMPLED: 09/21/99
DATE RECEIVED: 09/21/99
DATE REPORTED: 10/04/99

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Cadmium	ND	5.0	1	50823	EPA 6010B	09/24/99
Chromium (total)	ND	10	1	50823	EPA 6010B	09/24/99
Lead	ND	3.0	1	50823	EPA 6010B	09/24/99
Nickel	ND	20	1	50823	EPA 6010B	09/24/99
Zinc	ND	20	1	50823	EPA 6010B	09/24/99

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-4
LAB ID: 141568-002
CLIENT: Subsurface Consultants
PROJECT ID: 447.055
LOCATION: Connell Olds
MATRIX: Filtrate

DATE SAMPLED: 09/21/99
DATE RECEIVED: 09/21/99
DATE REPORTED: 10/04/99

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Cadmium	ND	5.0	1	50823	EPA 6010B	09/24/99
Chromium (total)	ND	10	1	50823	EPA 6010B	09/24/99
Lead	66	3.0	1	50823	EPA 6010B	09/24/99
Nickel	ND	20	1	50823	EPA 6010B	09/24/99
Zinc	33	20	1	50823	EPA 6010B	09/24/99

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-9
LAB ID: 141568-003
CLIENT: Subsurface Consultants
PROJECT ID: 447.055
LOCATION: Connell Olds
MATRIX: Filtrate

DATE SAMPLED: 09/21/99
DATE RECEIVED: 09/21/99
DATE REPORTED: 10/04/99

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Cadmium	ND	5.0	1	50823	EPA 6010B	09/24/99
Chromium (total)	ND	10	1	50823	EPA 6010B	09/24/99
Lead	ND	3.0	1	50823	EPA 6010B	09/24/9
Nickel	25	20	1	50823	EPA 6010B	09/24/9
Zinc	37	20	1	50823	EPA 6010B	09/24/99

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-7
LAB ID: 141568-004
CLIENT: Subsurface Consultants
PROJECT ID: 447.055
LOCATION: Connell Olds
MATRIX: Filtrate

DATE SAMPLED: 09/21/99
DATE RECEIVED: 09/21/99
DATE REPORTED: 10/04/99

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Cadmium	ND	5.0	1	50823	EPA 6010B	09/24/99
Chromium (total)	ND	10	1	50823	EPA 6010B	09/24/99
Lead	ND	3.0	1	50823	EPA 6010B	09/24/99
Nickel	ND	20	1	50823	EPA 6010B	09/24/99
Zinc	ND	20	1	50823	EPA 6010B	09/24/99

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

SAMPLE ID: MW-13
LAB ID: 141568-005
CLIENT: Subsurface Consultants
PROJECT ID: 447.055
LOCATION: Connell Olds
MATRIX: Filtrate

DATE SAMPLED: 09/21/99
DATE RECEIVED: 09/21/99
DATE REPORTED: 10/04/99

Metals Analytical Report

Compound	Result (ug/L)	Reporting Limit (ug/L)	IDF	QC Batch	Method	Analysis Date
Cadmium	ND	5.0	1	50823	EPA 6010B	09/24/99
Chromium (total)	ND	10	1	50823	EPA 6010B	09/24/99
Lead	ND	3.0	1	50823	EPA 6010B	09/24/99
Nickel	ND	20	1	50823	EPA 6010B	09/24/99
Zinc	ND	20	1	50823	EPA 6010B	09/24/99

ND = Not detected at or above reporting limit

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 141568

DATE REPORTED: 10/04/99

BATCH QC REPORT
PREP BLANK

Compound	Result	Reporting Limit	Units	IDF	QC Batch	Method	Analysis Date
Cadmium	ND	5	ug/L	1	50823	EPA 6010B	09/24/99
Chromium (total)	ND	10	ug/L	1	50823	EPA 6010B	09/24/99
Lead	ND	3	ug/L	1	50823	EPA 6010B	09/24/99
Nickel	ND	20	ug/L	1	50823	EPA 6010B	09/24/99
Zinc	ND	20	ug/L	1	50823	EPA 6010B	09/24/99

ND = Not Detected at or above reporting limit

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 141568

DATE REPORTED: 10/04/99

BATCH QC REPORT
BLANK SPIKE / BLANK SPIKE DUPLICATE

Compound	Spike Amount	BS Result	BSD Result	Units	BS% Rec.	BSD% Rec.	Rec. Limits	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Cadmium	50	53.3	55.3	ug/L	107	111	80-120	4	20	50823	EPA 6010B	09/24/99
Chromium (total)	200	215	219	ug/L	108	110	80-120	2	20	50823	EPA 6010B	09/24/99
Lead	500	534	549	ug/L	107	110	80-120	3	20	50823	EPA 6010B	09/24/99
Nickel	500	536	551	ug/L	107	110	80-120	3	20	50823	EPA 6010B	09/24/99
Zinc	500	507	518	ug/L	101	104	80-120	2	20	50823	EPA 6010B	09/24/99

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 141568

DATE REPORTED: 10/04/99

BATCH QC REPORT
SAMPLE DUPLICATE

Compound	Sample	Sample Result	Duplicate Result	Units	RPD %	RPD Limit	QC Batch	Method	Analysis Date
Cadmium	141568-001	<5.000	<5.000	ug/L	NC	20	50823	EPA 6010B	09/24/99
Chromium (total)	141568-001	<10.000	<10.000	ug/L	NC	20	50823	EPA 6010B	09/24/99
Lead	141568-001	<3.000	<3.000	ug/L	NC	20	50823	EPA 6010B	09/24/99
Nickel	141568-001	<20.000	<20.000	ug/L	NC	20	50823	EPA 6010B	09/24/99
Zinc	141568-001	<20.000	<20.000	ug/L	NC	20	50823	EPA 6010B	09/24/99

NC = Not Calculable

Curtis & Tompkins, Ltd.

CLIENT: Subsurface Consultants
JOB NUMBER: 141568

DATE REPORTED: 10/04/99

BATCH QC REPORT
SAMPLE SPIKE

Compound	Spike Amount	Sample	Sample Result	Spike Result	Units	Percent Rec.	Rec. Limit	QC Batch	Method	Analysis Date
Cadmium	50	141568-001	<5.000	51.1	ug/L	102	65-135	50823	EPA 6010B	09/24/99
Chromium (total)	200	141568-001	<10.000	200	ug/L	100	65-135	50823	EPA 6010B	09/24/99
Lead	500	141568-001	<3.000	506	ug/L	101	65-135	50823	EPA 6010B	09/24/99
Nickel	500	141568-001	<20.000	505	ug/L	101	65-135	50823	EPA 6010B	09/24/99
Zinc	500	141568-001	<20.000	504	ug/L	101	65-135	50823	EPA 6010B	09/24/99

CHAIN OF CUSTODY FORM

14156P

PAGE (OF)

PROJECT NAME: Cowell Alameda

JOB NUMBER: 447.055 LAB: C&T

PROJECT CONTACT: Jeri Alexander TURNAROUND: Standard

SAMPLED BY: Kenny / STV REQUESTED BY: Kenny / STV

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR			CONTAINERS: VOA	LITER	PINT	TUBE	2nd Poly		METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: 8015 m TVH	8010 HVOC	TEPH mo 8015m	BTEX 8021	8270 SVOC	8260 gc/ms MTBE	8260 gc/ms 1,2-DCA	Cadmium chromium lead Dickte Zinc 6010/ICP
1	MW-8	X						9	4			1		X			X	X	09	21	99	1030		X	X	X	X	X	X	X	X
2	MW-4	X						9	4			1		X			X	X	09	21	99	1200		X	X	X	X	X	X	X	X
3	MW-9	X						9	4			1		X			X	X	09	21	99	1245		X	X	X	X	X	X	X	X
4	MW-7	X						9	4			1		X			X	X	09	21	99	0230		X	X	X	X	X	X	X	X
5	MW-13	X						9	4			1		X			X	X	09	21	99	0330		X	X	X	X	X	X	X	X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
[signature]	9/21/99		
[signature]	9/21/99	[signature]	9/21/99 1600
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME

COMMENTS & NOTES:

Please fix & filter Metals (dissolved)

gc/ms = gas chromatogram & mass spectrometry

m = modified

Please Archive any extra samples

Subsurface Consultants, Inc.

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