Submitted to

Port of Oakland
530 Water Street
Oakland, California 94604-2064

Quarterly Groundwater Monitoring Report: First Quarter, 1997 Building C-401, 2277 Seventh Street, Oakland, California STID 3899

June 16, 1997

Prepared by

Uribe & Associates
Engineering and Environmental Consulting Services
2930 Lakeshore Avenue, Suite 200
Oakland, California 94610-3614

U&A Project No. 207-01-10

PORT OF OAKLAND

July 7, 1997

Ms. Jennifer Eberle
Hazardous Materials Specialist
Alameda County Environmental Protection Division
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502-6577

SUBJECT: FIRST QUARTER 1997
GROUNDWATER MONITORING AND SAMPLING REPORT
2277 7TH STREET, OAKLAND
STID # 3899

Dear Jennifer:

Please find enclosed a copy of the *Quarterly Groundwater Monitoring Report: First Quarter 1997, Building C-401, 2277 Seventh Street, Oakland, California, STID #3899,* prepared on the behalf of the Port of Oakland by Uribe and Associates (Uribe). The report, dated June 16, 1997, addresses groundwater monitoring and sampling and product recovery activities that were performed by Uribe at Building C-401, 2277 7th Street, Oakland, California.

If you have any questions, please feel free to contact me at 272-1373.

Sincerely,

John Prall, R.G.
Associate Environmental Scientist

Enclosure

cc (w/enclosure): Don Ringsby, Dongary Investments
(w/o enclosure): Neil Werner

530 Water Street ■ Jack London Square ■ P.O. Box 2064 ■ Oakland, California 94604-2064
Telephone (510) 272-1100 ■ Fax (510) 272-1172 ■ TDD (510) 763-5703 ■ Cable address, PORTOFOAK, Oakland

U&A | Uribe & Associates
2930 Lakeshore Avenue
Suite Two Hundred
Oakland, California 94610-3614
☎ 510-832-2233 Fax 510-832-2237

Engineering and Environmental Consulting Services

June 16, 1997

Mr. John Prall, R.G.
Associate Environmental Scientist
Environmental Health and Safety Compliance Department
Port of Oakland
530 Water Street
Oakland, California 94604-2064

Subject: **Quarterly Groundwater Monitoring Report: First Quarter, 1997**
Building C-401, 2277 Seventh Street, Oakland, California
STID 3899
U&A Project No. 207-01-10

Dear Mr. Prall:

Uribe & Associates (U&A) is pleased to provide the Port of Oakland (Port) this report documenting the results of quarterly groundwater monitoring conducted on March 28, 1997, at Building C-401, located at 2277 Seventh Street in Oakland, California (Figure 1). The monitoring included collecting depth-to-groundwater measurements and groundwater samples from on-site wells MW-2, MW-4, MW-5, and MW-7 (Figure 2). The monitoring also included removing floating liquid hydrocarbons ("product") from passive skimmer devices installed in wells MW-1 and MW-6. Well MW-8 was not sampled because of the presence of floating liquid hydrocarbons in the well. An active skimmer is installed in well MW-3. Included in this report is an estimate of the amount of product removed from wells MW-1 and MW-3 since November 15, 1996, the date the skimmers were installed in these wells, and December 1996, the date the passive skimmer was installed in MW-6.

This report is based, in part, on information obtained by U&A from the Port and is subject to modification as newly acquired information may warrant.

At the request of the Port, brief discussions of recent groundwater monitoring by others of wells on and off the 2277 Seventh Street site are included as appendices to this report. Appendix 1 includes information regarding monitoring of two wells installed on site, near the west edge of the 2277 Seventh Street site. Appendix 2 includes information regarding three wells located on property adjacent to the 2277 Seventh Street site to the south and southwest.

U&A Groundwater Monitoring

Groundwater Levels and Data

On March 28, 1997, U&A personnel measured the depth to groundwater in wells MW-2, MW-4, MW-5, and MW-7. The measurements were made to the nearest 0.01 foot, referenced to the surveyed top-of-casing (TOC) elevations, and conducted according to the U&A standard operating procedures (SOPs) included as Attachment 1.

Before purging, the depth to groundwater (DTW) in wells MW-2, MW-4, MW-5, and MW-7 ranged from 6.45 to 8.06 feet below TOC. The groundwater temperature averaged approximately 68 degrees Fahrenheit and the pH averaged 7.4. The DTW measurements collected on March 28, 1997, are entered on the U&A Well Purging & Sampling Logs included as Attachment 2. The DTW measurements collected to date are summarized in Table 1.

Figure 3 is a potentiometric surface map of the shallow water-bearing zone for March 28, 1997, based on data summarized in Table 1. The groundwater beneath the site is interpreted to flow toward the north with a hydraulic gradient of approximately 0.005 feet per foot (ft/ft).

Groundwater Sampling and Analysis

Groundwater samples were collected from the four wells by U&A personnel on March 28, 1997. The samples were collected according to the U&A SOPs included in Attachment 1 and were submitted under chain-of-custody to Pace Analytical Services, Inc., of Petaluma, California, a state-certified analytical laboratory. The samples were analyzed for the following constituents:

- Total petroleum hydrocarbons (TPH) as diesel (TPH-D) by modified EPA Method 8015, with "silica gel cleanup" procedure; "Pace reporting limit" (PRL) of 50 micrograms per liter (µg/l)
- TPH as motor oil (TPH-MO) by modified EPA Method 8015, with "silica gel cleanup" procedure; PRL of 250 µg/l
- TPH as gasoline (TPH-G) by modified EPA Method 8015/8020; PRL of 50 µg/l
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by modified EPA Method 8015/8020; PRLs of 0.5, 0.5, 0.5, and 1.0 µg/l, respectively

The analyses indicated that the concentrations of TPH-G were below the PRL of 50 µg/l in the samples collected from MW-2 and MW-5. The concentrations of TPH-G in the samples

collected from MW-4 and MW-7 were 440 and 65 µg/l, respectively. However, the laboratory indicated that the TPH-G detected in the sample from MW-4 did not match the profile of the laboratory standard and that high boiling point hydrocarbons were present in the sample from MW-7.

The concentrations of TPH-D were below the PRL of 50 µg/l in the samples collected from MW-4 and MW-5. The concentrations of TPH-D for the samples collected from MW-2 and MW-7 were 71 and 94 µg/l, respectively. However, the laboratory indicated that the TPH-D detected in the sample from MW-2 displayed a chromatograph pattern that matched known laboratory contamination and that the TPH-D in the sample from MW-7 did not match the profile of the laboratory standard.

The concentrations of TPH-MO were below the PRL of 250 µg/l in all four samples collected.

The concentrations of each of the BTEX compounds were below the respective PRLs in the samples collected from MW-2, MW-5, and MW-7. In the sample from MW-4, the respective concentrations of BTE were 190, 1.3, and 0.64 µg/l and the concentration of X was below the PRL of 1.0 µg/1.

The analytical results to date are summarized in Table 2. The laboratory analytical reports and chain-of-custody form are included as Attachment 3. Figure 4 summarized the groundwater analytical results for March 28, 1997, based on the data summarized in Table 2.

Floating Liquid Hydrocarbon Removal

Evidence of product was observed in well MW-6 during purging on December 3, 1996. As a result, MW-6 was removed from the well sampling program. In addition, the passive skimmer that had been installed in well MW-8 was removed, cleaned, and installed in MW-6 on January 10, 1997. The transfer of the passive skimmer from MW-8 to MW-6 was done because the high viscosity of the product in MW-8 prevented the skimmer from operating properly. The product in MW-6 appears diesel like, similar to that in MW-1 and MW-3.

On March 28, 1997, floating liquid hydrocarbons were removed from the passive skimmers installed in wells MW-1 and MW-6. The volume of product removed from each skimmer was estimated based on the capacity of the skimmer's cylindrical reservoir of 25 milliliters per inch. In addition, an estimated 100 to 150 gallons of product had been removed by the active skimmer installed in well MW-3 and pumped into the system's Baker tank. Based on

the amounts of product that have been emptied from the Baker tank and disposed of, including emptying on May 1, 1997, an estimated 1,538 gallons of product have been pumped from well MW-3 since the active skimmer system became operational on November 15, 1996. Product removal data are summarized in Table 2.

Laboratory Quality Control Data

U&A reviewed the quality control (QC) data reported by Pace (Attachment 3), for the analyses performed on the groundwater samples collected on March 28, 1997. The QC data includes surrogate recoveries, laboratory control sample (LCS) spike, LCS spike duplicate (LCSD), matrix spike (MS), and MS duplicate (MSD) recovery data and relative percent differences (RPDs). A comparison of the QC data with ranges of acceptable limits for surrogate, LCS and LCSD, and MS and MSD recoveries and RPDs, also provided by Pace, indicated that for the March 28, 1997, analyses:

- the results of MS and MSD recoveries and respective RPDs were within the acceptable limits
- the results of LCS and LCSD recoveries and respective RPDs were within the acceptable limits
- the results of surrogate recoveries were within the acceptable limits

Conclusions

1. For March 28, 1997, groundwater beneath the site is inferred to have flowed toward the north with a hydraulic gradient of approximately 0.005 ft/ft. The latest inferred direction of groundwater flow is consistent with the north-northwesterly direction reported by U&A for the monitoring conducted on December 3, 1996. The latest hydraulic gradient is less steep than the gradient of 0.03 ft/ft reported by U&A for the monitoring conducted on December 3, 1996.

2. The results of the laboratory analyses for the groundwater samples collected from the four wells on March 28, 1997, indicated that the concentrations of:

   - TPH-G have remained (since at least April 1996) below the PRL in wells MW-2 and MW-5, but were detected at 440 and 65 µg/1, respectively, in MW-4 and MW-7 - the concentrations of TPH-G in MW-4 and MW-7 appear reduced from previous monitoring results
   - TPH-D were below the PRL in MW-4 and MW-5, but were detected at 71 and 94 µg/1, respectively, in MW-2 and MW-7 - the concentrations of TPH-D in MW-2 and MW-7 appear reduced from previous monitoring results

- TPH-MO remained (since December 3, 1996) below the PRL in each of the four wells
- the BTEX compounds remained (since at least April 1996) below the respective PRLs in the samples collected from MW-2, MW-5, and MW-7
- BTEX were detected in MW-4 ranging from below the PRL of 1.0 µg/l (total xylenes) to 190 µg/l (benzene) - the concentrations of BTEX in MW-4 and MW-7 appear reduced from previous monitoring results

3. The active skimmer system installed in well MW-3 has recovered an estimated 1,538 gallons of "product" between November 15, 1996, and May 1, 1997.

4. The QC data reported by Pace are within acceptable limits for recoveries and RPDs.

Remarks and Signature

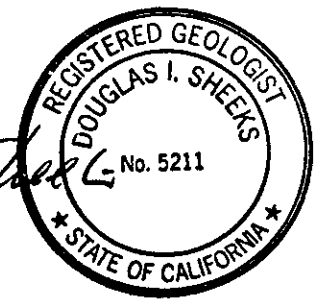
This report is based on available information and was prepared in accordance with currently accepted geologic, hydrogeologic, and engineering practices. No other warranty is implied or intended. This report has been prepared for the sole use of the Port of Oakland and applies to the subject site only. Use of this report by third parties shall be at their sole risk.

The work reported herein was conducted under the direct supervision of the California Registered Geologist whose signature appears below.

We appreciate the opportunity to provide the Port of Oakland with geologic, engineering, and environmental consulting services, and trust this report meets your needs. If you have any questions or concerns, please call us at (510) 832-2233.

Sincerely,

URIBE & ASSOCIATES



Douglas I. Sheeks, R.G.
Senior Geologist
CRG No. 5211

Attachments

List of Attachments

Figures:

1 Site Vicinity Map
2 Site Plan
3 Potentiometric Surface Map: March 28, 1997
4 Distribution Map of TPH (as Gasoline, Diesel, and Motor Oil) and BTEX in Groundwater: March 28, 1997

Tables:

1 Groundwater Elevations/Product Removal Data
2 Groundwater Analytical Results

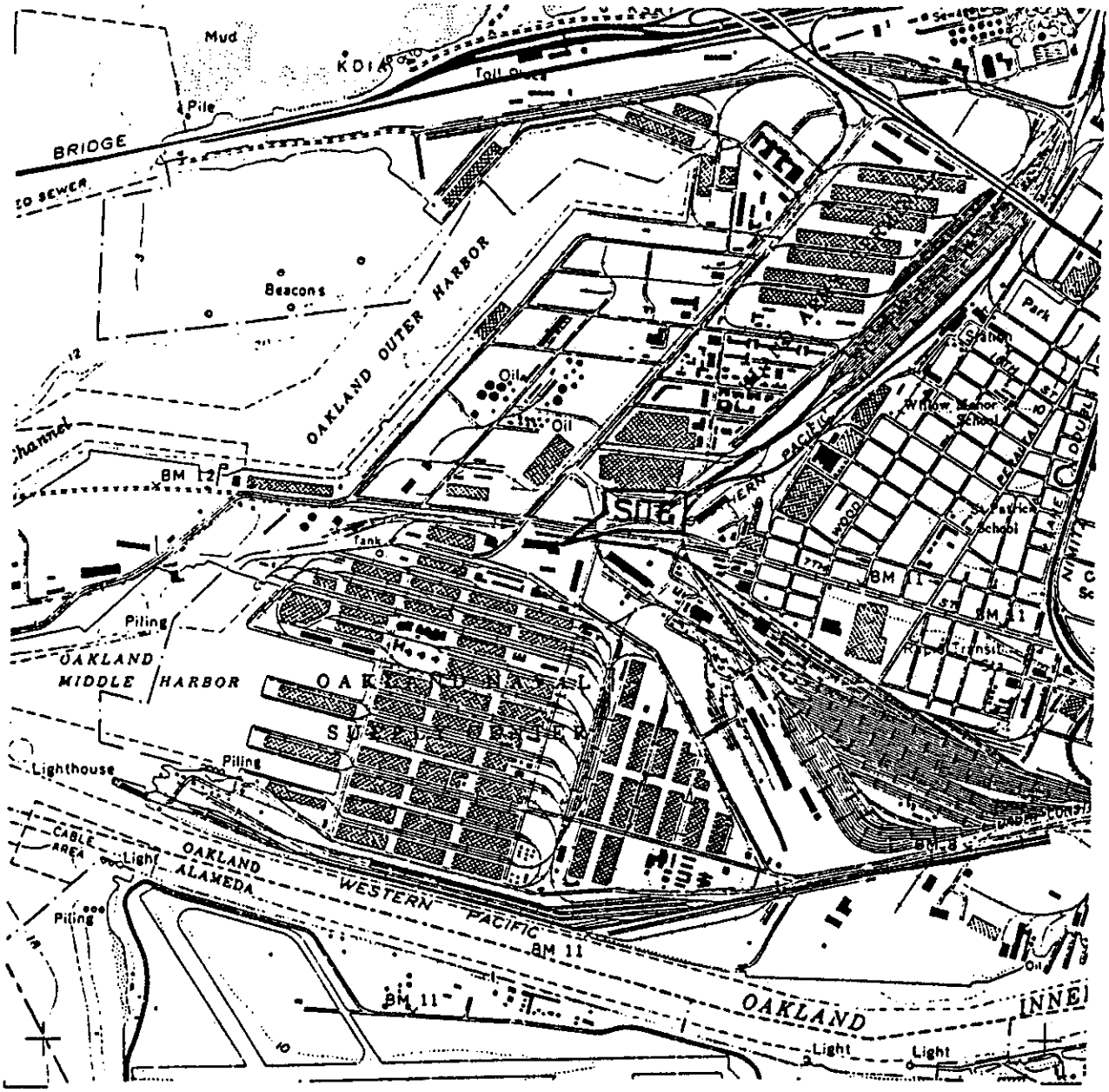
Attachments:

1 U&A Standard Operating Procedures
2 U&A Well Purging & Sampling Logs
3 Laboratory Analytical Reports and Chain-of-Custody Form

Appendices:

1 Groundwater Monitoring Wells Recently Installed On Site By Others
2 Off-Site Groundwater Monitoring Wells

Figures



SOURCE:
USGS MAP, OAKLAND WEST QUADRANGLE.
7.5 MINUTE SERIES. 1959.
PHOTOREVISED 1980.

FIGURE 1

SITE VICINITY MAP

PORT OF OAKLAND
BUILDING C-401
2277 SEVENTH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-270

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

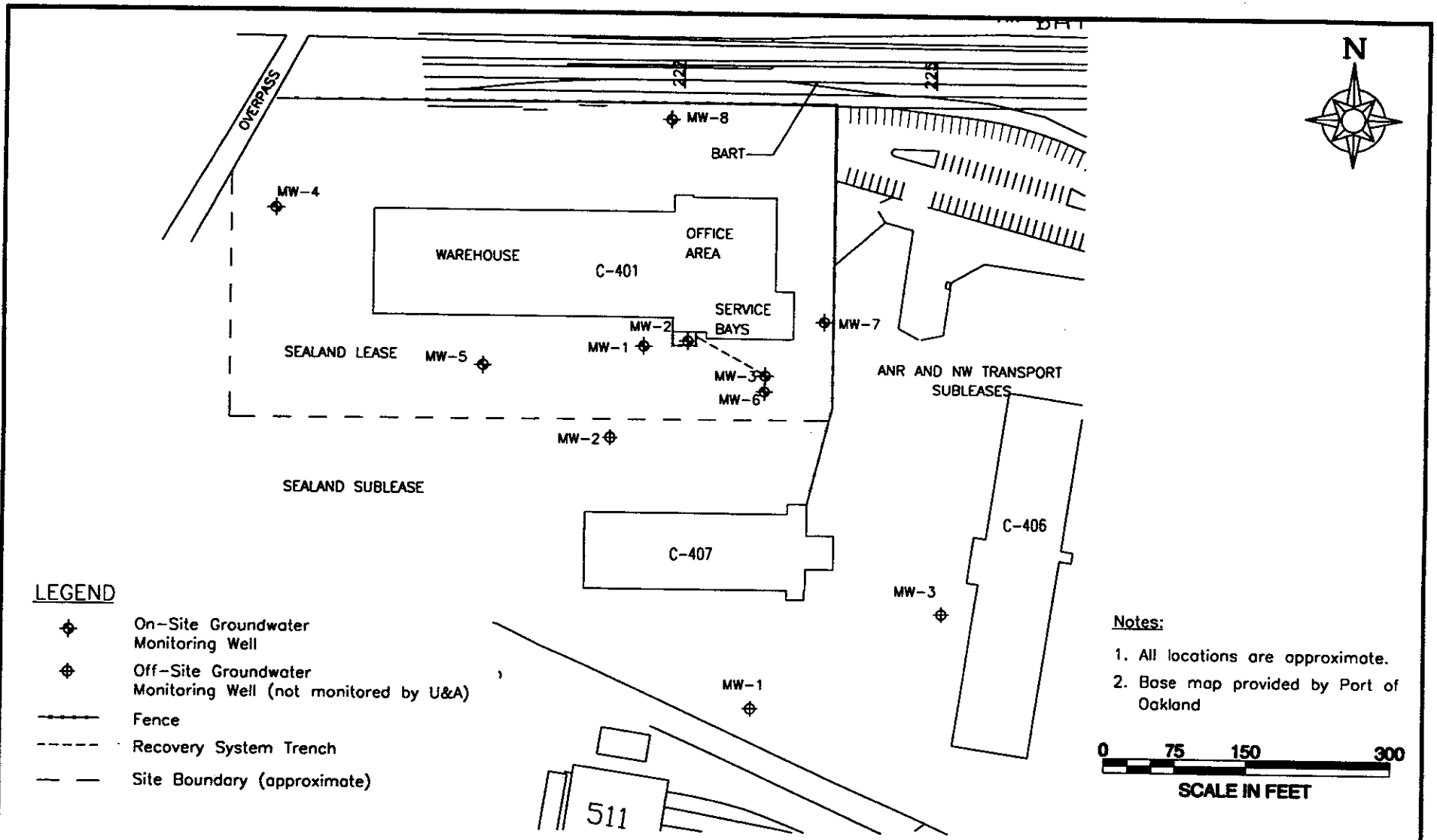


Figure 2

PORT OF OAKLAND — OAKLAND, CALIFORNIA

Site Plan
Building C-401
2277 Seventh Street
Oakland, California

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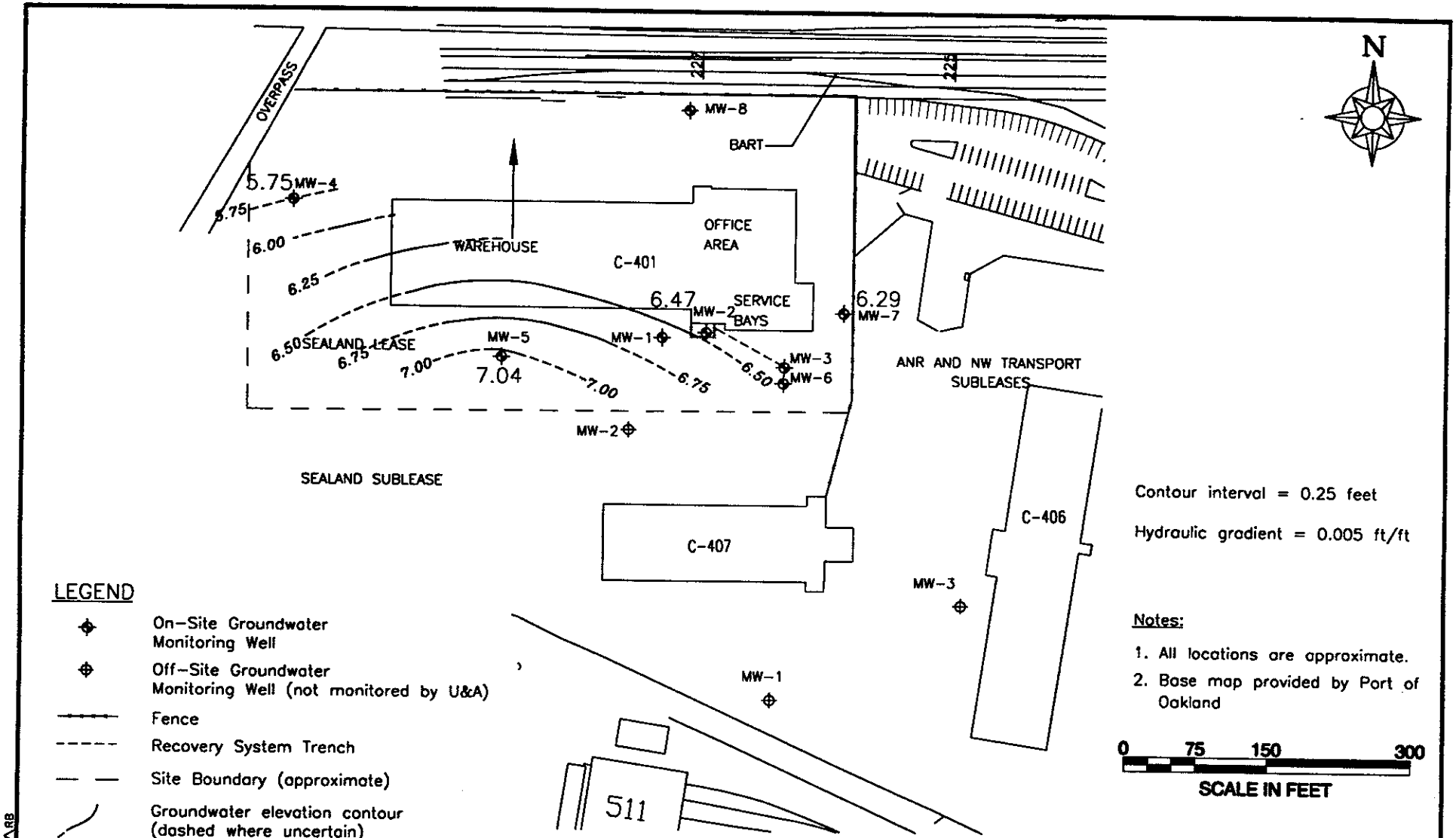

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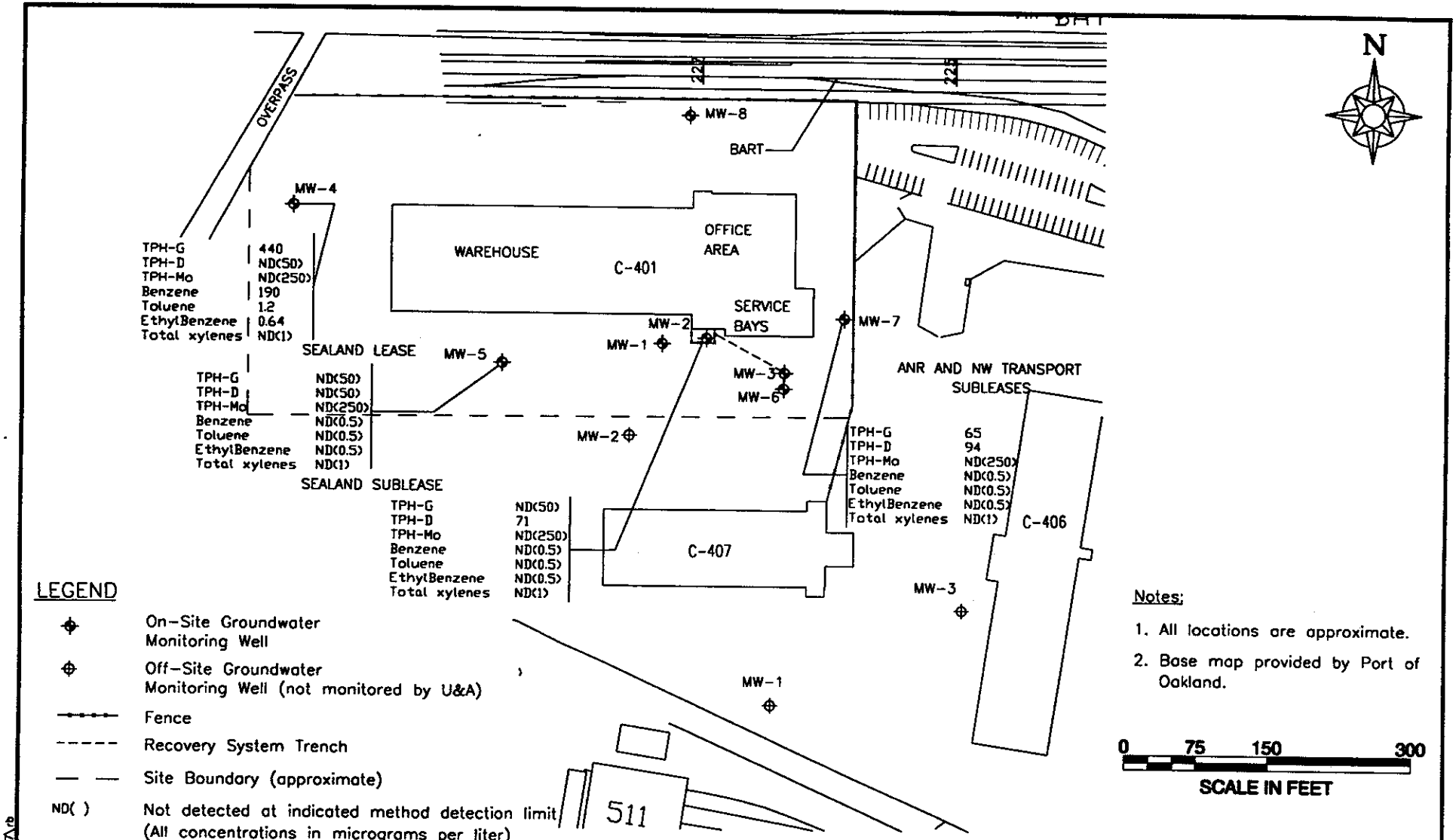
Environmental Consulting Services

Figure 3

PORT OF OAKLAND — OAKLAND, CALIFORNIA

Potentiometric Surface Map: March 28, 1997
Building C-401
2277 Seventh Street
Oakland, California



LEGEND

- On-Site Groundwater Monitoring Well
- Off-Site Groundwater Monitoring Well (not monitored by U&A)
- Fence
- Recovery System Trench
- Site Boundary (approximate)
- ND( ) Not detected at indicated method detection limit (All concentrations in micrograms per liter)
- TPH-G Total petroleum hydrocarbons as Gasoline
- TPH-D Total petroleum hydrocarbons as Diesel
- TPH-Mo Total petroleum hydrocarbons as Motor Oil

Notes:

1. All locations are approximate.
2. Base map provided by Port of Oakland.

Analytical details are included in U&A's quarterly groundwater monitoring report dated May 1997.

U&A

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Consulting Services

Figure 4

PORT OF OAKLAND — OAKLAND, CALIFORNIA

Distribution map of TPH (as Gasoline, Diesel, and Motor Oil) and BTEX in Groundwater: March 28, 1997
Building C-401
2277 Seventh Street
Oakland, California

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Tables

Table 1
Groundwater Elevations/Product Removal Data
Port of Oakland
2277 Seventh Street, Oakland, California
(Page 1 of 3)

Well	Date	Top of Casing Elevation[1] (feet)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation[2] (feet)	Estimated Product Removed (gallons)	Product Removal Method
MW-1	3/29/95	14.14	7.50	7.67	0.17	6.61		
	9/6/95		8.68	9.45	0.77	5.31		
	9/28/95		8.74	9.85	1.11	5.18		
	12/27/95		8.51	9.04	0.53	5.52		
	1/8/96		8.67	9.15	0.48	5.37		
	4/4/96		8.25	8.50	0.25	5.84		
	7/10/96		8.70	9.52	0.82	5.28		
	12/3/96		---	---	---	---	0.1	passive skimmer
	12/13/96		---	---	---	---	0.23	passive skimmer
	1/6/97		---	---	---	---	0.08	passive skimmer
	3/28/97		---	---	---	---	0.002	passive skimmer
MW-2	5/27/94	14.36		8.01		6.35		
	3/29/95			7.47		6.89		
	9/6/95			9.04		5.32		
	9/28/95			7.47		6.89		
	12/27/95			8.95		5.41		
	1/8/96			8.95		5.41		
	4/4/96			8.46		5.90		
	7/10/96			9.03		5.33		
	12/3/96			9.54		4.82		
	3/28/97			7.89		6.47		
MW-3	3/29/95	14.22	6.66	9.59	2.93	6.97		
	9/6/95		8.48	13.70	5.22	4.70		
	9/28/95		7.80	13.60	5.80	5.26		
	12/27/95		8.01	12.71	4.70	5.27		
	1/8/96		8.16	13.10	4.94	5.07		
	4/4/96		7.10	11.50	4.40	6.24		
	7/10/96		7.94	13.28	5.34	5.21		
	10/3/96		8.62	14.45	5.83	4.43	25	peristaltic pump
	10/10/96		8.77	14.46	5.69	4.31	25	peristaltic pump
	10/18/96		8.85	14.54	5.69	4.23	25	peristaltic pump
	10/25/96		8.74	14.43	5.69	4.34	20	peristaltic pump
	11/1/96		8.85	14.41	5.56	4.26	20	peristaltic pump
	11/8/96		8.82	14.50	5.68	4.26	25	peristaltic pump
	12/3/96		---	---	---	---	13	active skimmer
	12/13/96		---	---	---	---	---	active skimmer
	1/6/97		---	---	---	---	750	active skimmer
	2/19/97		---	---	---	---	425	active skimmer
	5/1/97		---	---	---	---	350	active skimmer

Table 1 Continued
Groundwater Elevations/Product Removal Data
Port of Oakland
2277 Seventh Street, Oakland, California
(Page 2 of 3)

Well	Date	Top of Casing Elevation[1] (feet)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation[2] (feet)	Estimated Product Removed (gallons)	Product Removal Method
MW-4	3/29/95	13.15		9.59		3.56		
	9/6/95			8.48		4.67		
	9/11/95			9.59		3.56		
	9/28/95			9.59		3.56		
	12/27/95			8.39		4.76		
	1/8/96			8.42		4.73		
	4/4/96			8.19		4.96		
	7/10/96			8.56		4.59		
	12/3/96			8.69		4.46		
	3/28/97			7.40		5.75		
MW-5	9/6/95	13.49		6.90		6.59		
	9/11/95			9.59		3.90		
	9/28/95			9.59		3.90		
	12/27/95			7.17		6.32		
	4/4/96			6.44		7.05		
	7/10/96			6.79		6.70		
	12/3/96			7.06		6.43		
	3/28/97			6.45		7.04		
MW-6	9/6/95	14.00	4.47	7.40	2.93	8.94		
	9/28/95		6.66	9.59	2.93	6.75		
	12/27/96			8.07		5.93		
	1/8/96			7.70		6.30		
	4/4/96			7.70		6.30		
	7/10/96			7.55		6.45		
	12/3/96		---	6.41	---	7.59		
	3/28/97		---	---	---	---	0.0005	passive skimmer
MW-7	9/6/95	14.35		9.10		5.25		
	9/28/95			9.74		4.61		
	12/27/96			9.06		5.29		
	1/8/96			9.06		5.29		
	4/4/96			8.57		5.78		
	7/10/96			9.11		5.24		
	12/3/96			9.62		4.73		
	3/28/97			8.06		6.29		

Table 1 Continued
Groundwater Elevations/Product Removal Data
Port of Oakland
2277 Seventh Street, Oakland, California
(Page 3 of 3)

Well	Date	Top of Casing Elevation[1] (feet)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation[2] (feet)	Estimated Product Removed (gallons)	Product Removal Method
MW-8	9/6/95	12.94		7.84		5.10		
	9/28/95		8.79	8.91	0.12	4.13		
	12/27/96		8.30	8.61	0.31	4.58		
	1/8/96		8.35	8.80	0.45	4.50		
	4/4/96		8.32	8.37	0.05	4.61		
	7/10/96		9.41	9.44	0.03	3.52		
	12/3/96		---	---	---	---	0.003	passive skimmer
	12/13/96		---	---	---	---	0.007	passive skimmer
	1/6/97		---	---	---	---	0.007	passive skimmer
	3/28/97		---	---	---	---	---	---

Notes:

[1] Top of Casing (TOC) Elevations from Groundwater Monitoring and Sampling Report by Alisto Engineering Group, dated September 12, 1996. TOC elevations surveyed to nearest 0.01 foot relative to mean lower low water (Port of Oakland Datum; 3.2 feet below mean sea level).

--- = not measured/not estimated

[2] Groundwater Elevation corrected for the presence of floating product according to the formula:
CDTW = DTW - (0.80 x PT), where CDTW is the corrected depth to groundwater, DTW is the measured depth to groundwater, 0.80 is the density correction factor for diesel, and PT is the measured thickness of floating product.

Measurements on and since 12/3/96 by U&A; all other measurements listed from Alisto Engineering Group (1996).

Table 2
Groundwater Analytical Results
Port of Oakland
2277 Seventh Street, Oakland, California
Page 1 of 2

Well	Date	Analyte (µg/l)							
		TPH-G	TPH-D	TPH-MO	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Lab
MW-2	5/27/94	87	470	na	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)	D&M
	3/29/95	ND(50)	110	1,400	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	9/6/95	ND(50)	na	na	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	1/8/96	ND(50)	ND(50)	1,200	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	4/4/96	ND(50)	160	320	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	Pace
	7/10/96	ND(50)	120	1,400	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	12/3/96	ND(50)	230[1,2]	ND(250)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	Pace
	3/28/97	ND(50)	71[4]	ND(250)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	Pace
MW-4	9/11/95	150	ND(200)	500	23	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	1/8/96	790	90	400	170	1.2	0.6	0.6	CEC
	4/4/96	1,100	180	300	320	1.6	1.1	1.2	Pace
	7/10/96	1,200	120	300	470	1.5	0.8	0.8	CEC
	12/3/96	990	220[1,2]	ND(250)	350	3.3	1.3	1.3	Pace
	3/28/97	440[2]	ND(50)	ND(250)	190	1.2	0.64	ND(1)	Pace
MW-5	9/11/95	90	ND(300)	2,500	3.3	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	4/4/96	ND(50)	180	520	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	Pace
	7/10/96	ND(50)	120	1,500	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	12/3/96	ND(50)	200[1,2]	ND(250)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	Pace
	3/28/97	ND(50)	ND(50)	ND(250)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	Pace
MW-6	1/8/96	480	11,000	6,100	15	1.9	9.7	5.2	CEC
	4/4/96	440	6,100	1,200	16	0.97	3.9	3	Pace
	7/10/96	550	8,300	5,500	16	0.9	3	2.7	CEC
	12/3/96	na	na	na	na	na	na	na	
	3/28/97	na	na	na	na	na	na	na	

Notes:
TPH = total petroleum hydrocarbons; as gasoline (G), diesel (D), and motor oil (MO)
µg/l = micrograms per liter
ND ( ) = not detected at indicated method detection limit
[1] Analyte found in the associated blank as well as in the sample
[2] Hydrocarbons present do not match profile of laboratory standard
[3] High boiling point hydrocarbons are present in sample
[4] Chromatographic pattern matches known laboratory contaminant
na = not analyzed
Samples collected on 12/3/96 and 3/28/97 by U&A; all other data from Groundwater Monitoring and Sampling Report by Alisto Engineering Group, dated September 12, 1996.
D&M = D&M Laboratories/CEC = Clayton Env. Consultants, Inc./Pace = Pace Analytical Services, Inc.

Table 2
Groundwater Analytical Results
Port of Oakland
2277 Seventh Street, Oakland, California

Well	Date	Analyte (µg/l)							
		TPH-G	TPH-D	TPH-MO	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Lab
MW-7	9/6/95	ND(50)	ND(300)	800	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	1/8/96	ND(50)	410	110	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	4/4/96	ND(50)	530	340	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	Pace
	7/10/96	80	840	1,700	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	CEC
	12/3/96	ND(50)	280 [1,2]	ND(250)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	Pace
	3/28/97	65 [3]	94 [2]	ND(250)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	Pace

Notes:
TPH = total petroleum hydrocarbons; as gasoline (G), diesel (D), and motor oil (MO)
µg/l = micrograms per liter
ND ( ) = not detected at indicated method detection limit
[1] Analyte found in the associated blank as well as in the sample
[2] Hydrocarbons present do not match profile of laboratory standard
[3] High boiling point hydrocarbons are present in sample
[4] Chromatographic pattern matches known laboratory contaminant
na = not analyzed
Samples collected on 12/3/96 and 3/28/97 by U&A; all other data from Groundwater Monitoring and Sampling Report by Alisto Engineering Group, dated September 12, 1996.
D&M = D&M Laboratories/CEC = Clayton Env. Consultants, Inc./Pace = Pace Analytical Services, Inc.

4/97

Attachment 1

U&A Standard Operating Procedures

CHAIN-OF-CUSTODY PROCEDURES

Sample Handling

All soil and water samples will be labeled with the sample number, date, company name, preservative used, and sampler's initials. A chain-of-custody form will then be filled out including the time and date of the sample, the sample number, the number of containers for each sample, the analysis required, and any distinguishing comments or laboratory notifications. The chain-of-custody form will remain with the samples at all times during transportation and storage.

Transfer of Custody to Laboratory

The chain-of-custody will be signed and dated by the sampler when relinquished to the laboratory. The laboratory courier or sample receiver will also sign and date the chain-of-custody.

GROUNDWATER SAMPLING FROM WELLS

Groundwater samples for chemical analysis will be collected according to the following procedure:

All purging and sampling equipment will be decontaminated prior to use.

Upon arrival at the site, the wells will be located and opened up, to allow for equilibration with the atmosphere. The monitoring well is first checked for floating product with a dual interface probe. Water or liquid-level measurements will be collected, to the nearest one hundredth of a foot (0.01 foot). If a probe is not available, a clear plastic bailer may be used to check for product. The volume of water in the well casing will be calculated and three to five casing volumes of water will be evacuated. The well will be bailed or pumped to remove the correct volume of water. Stabilization parameters, temperature, conductivity and pH, will be monitored. For wells with extremely low flow rates, i.e., less than 0.01 gallon per minute (gpm), the well will be bailed dry and allowed to recover overnight, and then sampled.

Once the well has been purged, samples will be collected with a bailer and transferred to appropriate sampling vials or bottles. Samples will be labeled and placed in a cooler, cooled to 4°C and transported to the analytical laboratory under chain-of-custody. Purge water will be stored on-site pending analytical results, and then property disposed of.

Attachment 2

U&A Well Purging & Sampling Logs

U&A | URIBE & ASSOCIATES ENVIRONMENTAL AND ENGINEERING CONSULTING SERVICES

PROJECT NO.:

Well Purging & Sampling Log

PAGE 1 OF 1

SITE LOCATION: Port of Oakland	WELL NUMBER: MW 02
DATE(S): 3/28/97	WELL TYPE, (MONITORING, EXTRACTION, ETC.): Monitoring
PURGING EQUIPMENT: disposable bailer	MEASUREMENT REFERENCE DATUM:

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT:

Depth to water measured from TOC (ft): Before Purging: 7.89 (Total depth: 15.0) { After Purging: 13.50 / After sampling: _____

Total purging time (min): _____

Depth to sediment in well (ft) Before purging: _____ After purging: _____

	Time Since Purging Started (min)	Time	Cumulative Volume Removed	PARAMETERS				Other
				Temp (°F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	
Initial		1235	0	69.6	7.85	2,450		Water is cloudy,
During		1240	1.25	68.3	7.41	2,360		gray, with no
During		1247	2.50	68.4	7.40	2,400		odor or sheen
During		1246	3.75	68.4	7.40	2,390		
During								
During								
During								
After								

*CL = clear CO = cloudy TU = turbid

Well Sampling

Sample #: MW 2397	Lab:
Container Type:	Filtered?–Y/N:
Preservatives:	Analysis Requested:

Comments Related to Sample:

well bailed down considerably by end of third purge volume. Had to wait 10 minutes for recharge prior to sampling. NO measureable recharge after 15 minutes.

Quality Control Samples:

Duplicated Sample Info:
Blank Sample Info:
Other Sample Info:

Formulas/Conversions

r = well radius in feet
h = ht. of water col. in feet
vol. of col. = $\pi r^2 h$
7.48 gal./ft.^{3}
V_2" casing = 0.163 gal./ft.
V_3" casing = 0.367 gal./ft.
V_4" casing = 0.653 gal./ft.
$V_{4.5}$" casing = 0.826 gal./ft.
V_6" casing = 1.47 gal./ft.
V_8" casing = 2.61 gal./ft.

Frank WP: Well P&S 102396 OX KH

U&A | URIBE & ASSOCIATES ENVIRONMENTAL AND ENGINEERING CONSULTING SERVICES

PROJECT NO.:

Well Purging & Sampling Log

PAGE 1 OF 1

SITE LOCATION: Port of Oakland	WELL NUMBER: MW04
DATE(S): 3/28/97	WELL TYPE, (MONITORING, EXTRACTION, ETC.): Monitoring
PURGING EQUIPMENT: disposable bailer	MEASUREMENT REFERENCE DATUM:

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT:

Depth to water measured from TOC (ft): Before Purging: 7.40 (Total depth = 18.7 ft) { After Purging: 8.50 / After sampling: _____

Total purging time (min): 17

Depth to sediment in well (ft) Before purging: _____ After purging: _____

	Time Since Purging Started (min)	Time	Cumulative Volume Removed (gallons)	PARAMETERS: Temp (°F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other
Initial		1145	0	72.4	7.87	1790		Water is
During		1155	2	67.4	7.54	1530		cloudy, gray
During		1159	4	67.4	7.22	1530		with no odor
During		1202	6	67.4	7.19	1610		or sheen
During								
During								
During								
After								

*CL = clear CO = cloudy TU = turbid

Well Sampling

Sample #: mw9397	Lab: Pace
Container Type:	Filtered?–Y/(N)
Preservatives:	Analysis Requested:

Comments Related to Sample: Purged 3 well volumes Prior to Sampling

Quality Control Samples:

Duplicated Sample Info:

Blank Sample Info:

Other Sample Info:

Formulas/Conversions

r = well radius in feet
h = ht. of water col. in feet
vol. of col. = $\pi r^2 h$
7.48 gal./ft.^{3}
V_2" casing = 0.163 gal./ft.
V_3" casing = 0.367 gal./ft.
V_4" casing = 0.653 gal./ft.
$V_{4.5}$" casing = 0.826 gal./ft.
V_6" casing = 1.47 gal./ft.
V_8" casing = 2.61 gal./ft.

Frank WP: Well P&S 102396 QX KH

U&A | URIBE & ASSOCIATES ENVIRONMENTAL AND ENGINEERING CONSULTING SERVICES

PROJECT NO.: [redacted]

Well Purging & Sampling Log

PAGE 1 OF 1

SITE LOCATION: Port of Oakland	WELL NUMBER: MW05
DATE(S): 3/20/97	WELL TYPE, (MONITORING, EXTRACTION, ETC.): Monitoring
PURGING EQUIPMENT: Disposable bailer	MEASUREMENT REFERENCE DATUM:

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT:

Total depth = 18.1 ft

Depth to water measured from TOC (ft): Before Purging: 6.95 { After Purging: 7.00 / After sampling: ____

Total purging time (min): 12

Depth to sediment in well (ft) Before purging: ____ After purging: ____

	Time Since Purging Started (min)	Time	Cumulative Volume Removed (gallons)	PARAMETERS: Temp (°F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other
Initial		1105	0	67.6	8.33	3000		water was
During		1110	2	66.8	7.25	3170		cloudy, gray
During		1113	4	65.2	6.93	3110		with no odor
During		1117	6	65.2	6.91	3110		or sheen.
During								
During								
During								
After								

*CL = clear CO = cloudy TU = turbid

Well Sampling

Sample #: MW5397	Lab: Pace
Container Type:	Filtered?–Y/(N)
Preservatives:	Analysis Requested:

Comments Related to Sample: Purged 3 casing volumes prior to sampling.

Quality Control Samples:

Duplicated Sample Info:

Blank Sample Info:

Other Sample Info:

Formulas/Conversions

r = well radius in feet
h = ht. of water col. in feet
vol. of col. = $\pi r^2 h$
7.48 gal./ft.^{3}
V_2 casing = 0.163 gal./ft.
V_3 casing = 0.367 gal./ft.
V_4 casing = 0.653 gal./ft.
$V_{4.5}$ casing = 0.826 gal./ft.
V_6 casing = 1.47 gal./ft.
V_8 casing = 2.61 gal./ft.

$V_{MW} = 0.653$ gal/ft

Frank WP: Well P&S 10/396 OX KH

U&A | URIBE & ASSOCIATES ENVIRONMENTAL AND ENGINEERING CONSULTING SERVICES

PROJECT NO.:

Well Purging & Sampling Log

PAGE 1 OF 1

SITE LOCATION: Port of Oakland	WELL NUMBER: MW-7
DATE(S): 3/28/97	WELL TYPE, (MONITORING, EXTRACTION, ETC.): Monitoring
PURGING EQUIPMENT: disposable bailer	MEASUREMENT REFERENCE DATUM:

DATA FROM IMMEDIATELY BEFORE AND AFTER DEVELOPMENT:

Depth to water measured from TOC (ft): Before Purging: 8.06 { After Purging: 9.50 / After sampling: _____

Total purging time (min): 16

Depth to sediment in well (ft) Before purging: _____ After purging: _____

	Time Since Purging Started (min)	Time	Cumulative Volume Removed (gallons)	PARAMETERS: Temp (°F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other
Initial	~~0415~~	0915		73.1	7.83	2040		Water is cloudy,
During		0922	1.75	68.4	6.89	2580		gray with no
During		0926	3.50	68.9	6.92	2610		odor or
During		0931	5.25	68.9	6.89	2600		sheen
During								
During								
During								
After								

*CL = clear CO = cloudy TU = turbid

Well Sampling

Sample #: MW 7397	Lab: Pace
Container Type:	Filtered?–Y/(N)
Preservatives:	Analysis Requested: TPH-d

Comments Related to Sample: 3 well volumes removed prior to sampling.

Quality Control Samples:

Duplicated Sample Info:

Blank Sample Info:

Other Sample Info:

Formulas/Conversions

r = well radius in feet
h = ht. of water col. in feet
vol. of col. = $\pi r^2 h$
7.48 gal./ft.^{3}
V_2" casing = 0.163 gal./ft.
V_3" casing = 0.367 gal./ft.
V_4" casing = 0.653 gal./ft.
$V_{4.5}$" casing = 0.826 gal./ft.
V_6" casing = 1.47 gal./ft.
V_8" casing = 2.61 gal./ft.

$V_{1''}$ = 0.0408 gal/ft

Frank WP: Well P&S 10/3/96 OX KH

Attachment 3

Laboratory Analytical Reports and Chain-of-Custody Form

Pace Analytical

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

April 08, 1997

Mr. Doug Sheeks
Uribe & Associates
Suite 200
2930 Lakeshore Avenue
Oakland, CA 94610-3614

RE: Pace Project Number: 708044
Client Project ID: 2277 7th St.Oakland/207-01-10b

Dear Mr. Sheeks:

Enclosed are the results of analyses for sample(s) received on March 31, 1997. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew
Project Manager

CA ELAP Certificate Number 2059

Enclosures

Pace Analytical

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

DATE: 04/08/97
PAGE: 1

Uribe & Associates
Suite 200
2930 Lakeshore Avenue
Oakland, CA 94610-3614

Attn: Mr. Doug Sheeks
Phone: (510)832-2233

Pace Project Number: 708044
Client Project ID: 2277 7th St.Oakland/207-01-10b

Pace Sample No: 70933239
Client Sample ID: MW7397

Date Collected: 03/28/97
Date Received: 03/31/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Water								
Gasoline	65	ug/L	50	04/02/97	EPA 8015M/8020M	ADS		1
Benzene	ND	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	04/02/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	106	%		04/02/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	105	%		04/02/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	0.094	mg/L	0.05	04/03/97	EPA 8015M w/ SG	AMH	11-84-7	2
Motor Oil	ND	mg/L	0.25	04/03/97	EPA 8015M w/ SG	AMH		
n-Pentacosane (S)	99	%		04/03/97	EPA 8015M w/ SG	AMH	629-99-2	
Date Extracted				04/01/97				

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

Pace Project Number: 708044
Client Project ID: 2277 7th St.Oakland/207-01-10b

Pace Sample No: 70933247 Date Collected: 03/28/97
Client Sample ID: MW5397 Date Received: 03/31/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Water								
Gasoline	ND	ug/L	50	04/02/97	EPA 8015M/8020M	ADS		
Benzene	ND	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	04/02/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	117	%		04/02/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	108	%		04/02/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	ND	mg/L	0.05	04/03/97	EPA 8015M w/ SG	AMH	11-84-7	
Motor Oil	ND	mg/L	0.25	04/03/97	EPA 8015M w/ SG	AMH		
n-Pentacosane (S)	77	%		04/03/97	EPA 8015M w/ SG	AMH	629-99-2	
Date Extracted				04/01/97				

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

Pace Project Number: 708044
Client Project ID: 2277 7th St.Oakland/207-01-10b

Pace Sample No: 70933254 Date Collected: 03/28/97
Client Sample ID: MW4397 Date Received: 03/31/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Water								
Gasoline	440	ug/L	50	04/02/97	EPA 8015M/8020M	ADS		2
Benzene	190	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	1.2	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	0.64	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	04/02/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	114	%		04/02/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	97	%		04/02/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	ND	mg/L	0.05	04/03/97	EPA 8015M w/ SG	AMH	11-84-7	
Motor Oil	ND	mg/L	0.25	04/03/97	EPA 8015M w/ SG	AMH		
n-Pentacosane (S)	68	%		04/03/97	EPA 8015M w/ SG	AMH	629-99-2	
Date Extracted				04/01/97				

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

Pace Project Number: 708044
Client Project ID: 2277 7th St.Oakland/207-01-10b

Pace Sample No: 70933262
Client Sample ID: MW2397

Date Collected: 03/28/97
Date Received: 03/31/97

Parameters	Results	Units	PRL	Analyzed	Method	Analyst	CAS#	Footnotes
GC -- Volatiles								
GAS/BTEX, Water								
Gasoline	ND	ug/L	50	04/02/97	EPA 8015M/8020M	ADS		
Benzene	ND	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	71-43-2	
Toluene	ND	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	108-88-3	
Ethylbenzene	ND	ug/L	0.5	04/02/97	EPA 8015M/8020M	ADS	100-41-4	
Xylene (Total)	ND	ug/L	1	04/02/97	EPA 8015M/8020M	ADS	1330-20-7	
a,a,a-Trifluorotoluene (S)	111	%		04/02/97	EPA 8015M/8020M	ADS	2164-17-2	
4-Bromofluorobenzene (S)	110	%		04/02/97	EPA 8015M/8020M	ADS	460-00-4	
GC -- Semi-VOA								
TPH by 8015M w/ silica gel								
Diesel Fuel	0.071	mg/L	0.05	04/03/97	EPA 8015M w/ SG	AMH	11-84-7	3
Motor Oil	ND	mg/L	0.25	04/03/97	EPA 8015M w/ SG	AMH		
n-Pentacosane (S)	58	%		04/03/97	EPA 8015M w/ SG	AMH	629-99-2	
Date Extracted				04/01/97				

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

Pace Project Number: 708044
Client Project ID: 2277 7th St.Oakland/207-01-10b

PARAMETER FOOTNOTES

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
(S)	Surrogate
[1]	High boiling point hydrocarbons are present in sample.
[2]	Hydrocarbons present do not match profile of laboratory standard.
[3]	Chromatographic pattern matches known laboratory contaminant.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

Pace Analytical

QUALITY CONTROL DATA

DATE: 04/08/97

Uribe & Associates
Suite 200
2930 Lakeshore Avenue
Oakland, CA 94610-3614

Pace Project Number: 708044
Client Project ID: 2277 7th St.Oakland/207-01-10b

Attn: Mr. Doug Sheeks
Phone: (510)832-2233

QC Batch ID: 22663
QC Batch Method: EPA 3520
Analysis Method: EPA 8015M w/ SG
Analysis Description: TPH by 8015M w/ silica gel
Associated Pace Samples: 70933239 70933247 70933254 70933262

METHOD BLANK: 70933593
Associated Pace Samples:

		70933239	70933247	70933254	70933262
			Method Blank		
Parameter	Units		Result	PRL	Footnotes
Diesel Fuel	mg/L		ND	0.05	
Motor Oil	mg/L		0.57	0.25	1
n-Pentacosane (S)	%		110		

LABORATORY CONTROL SAMPLE & LCSD: 70930631 70930649

		Spike	LCS	Spike	LCSD	Spike Dup		
Parameter	Units	Conc.	Result	% Rec	Result	% Rec	RPD	Footnotes
Diesel Fuel	mg/L	1.0	0.3521	35.2	0.3063	30.6	14	
n-Pentacosane (S)				57		51		

REPORT OF LABORATORY ANALYSIS

Pace Analytical

Pace Analytical Services, Inc.
1455 McDowell Blvd. North, Suite D
Petaluma, CA 94954
Tel: 707-792-1865
Fax: 707-792-0342

QUALITY CONTROL DATA

DATE: 04/08/97
PAGE: 7

Uribe & Associates
Suite 200
2930 Lakeshore Avenue
Oakland, CA 94610-3614

Attn: Mr. Doug Sheeks
Phone: (510)832-2233

Pace Project Number: 708044
Client Project ID: 2277 7th St.Oakland/207-01-10b

QC Batch ID: 22769
Analysis Method: EPA 8015M/8020M
Associated Pace Samples: 70933239 70933247 70933254 70933262

QC Batch Method: EPA 8015M/8020M
Analysis Description: GAS/BTEX, Water

METHOD BLANK: 70934468
Associated Pace Samples: 70933239 70933247 70933254 70933262

Parameter	Units	Method Blank Result	PRL	Footnotes
Gasoline	ug/L	ND	50	
Benzene	ug/L	ND	0.5	
Toluene	ug/L	ND	0.5	
Ethylbenzene	ug/L	ND	0.5	
Xylene (Total)	ug/L	ND	1	
a,a,a-Trifluorotoluene (S)	%	103		
4-Bromofluorobenzene (S)	%	102		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 70934476 70934484

Parameter	Units	70933239	Spike Conc.	Matrix Spike Result	Spike % Rec	Matrix Sp. Dup. Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/L	65.08	1000	925.4	86.0	898.6	83.4	3	

LABORATORY CONTROL SAMPLE & LCSD: 70934492 70934500

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Gasoline	ug/L	1000	958.9	95.9	915.7	91.6	5	

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	Chromatographic pattern matches known laboratory contaminant.

REPORT OF LABORATORY ANALYSIS

Data File: /chem/70gce04.i/040397.b/idqr0006.d
Date : 03-APR-1997 14:40
Client ID: BLK01
Lab Sample ID: 70933593
Volume Injected (uL): 1.0
Column phase: J&W DB-1

Instrument: 70gce04.i
Misc Info: 70933593,,1,22663,1,3,,BLANK,,,dmof.sub,dmor.sub,
Operator: AMH
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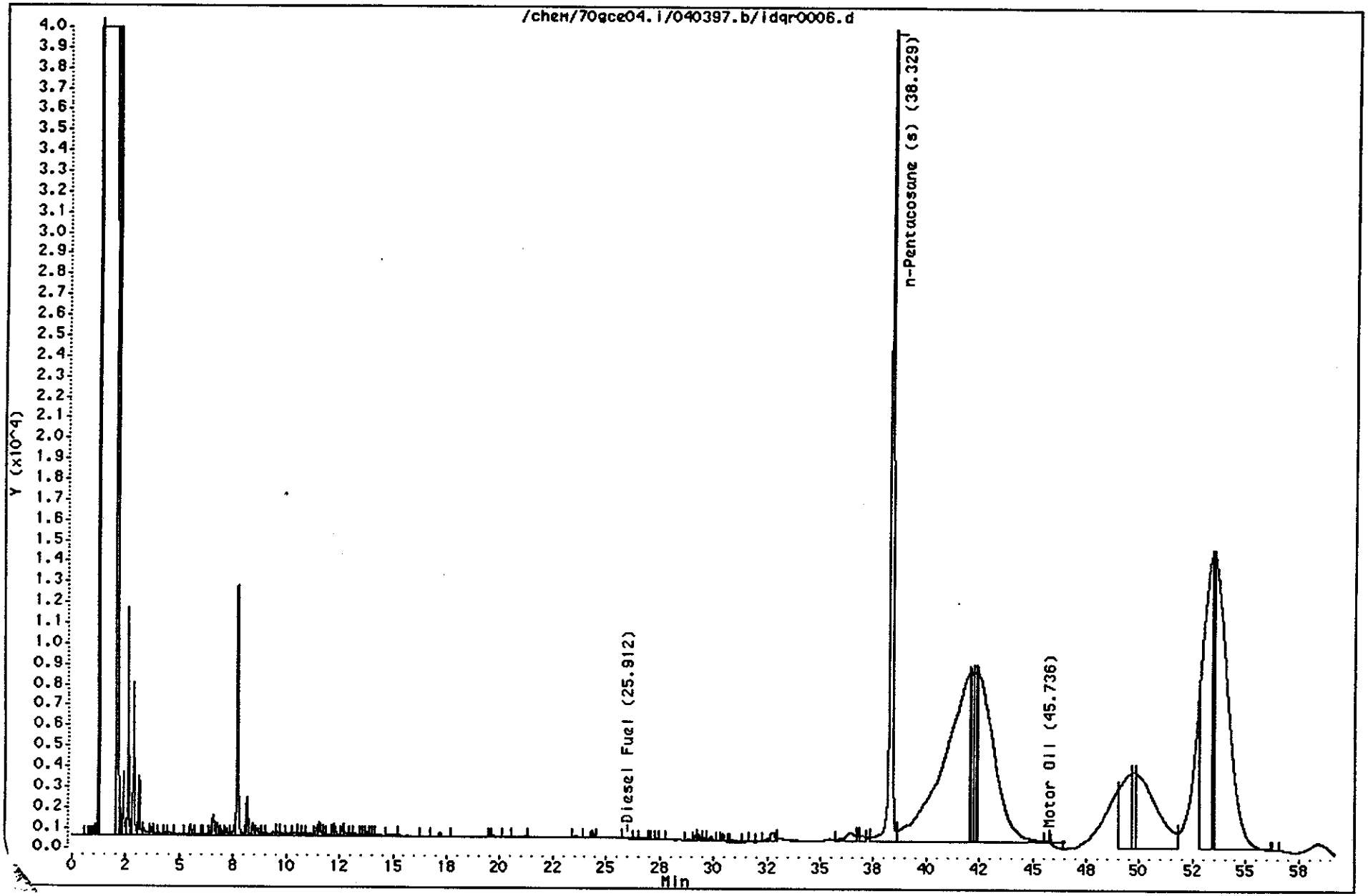

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Instrument: 70gce04.i
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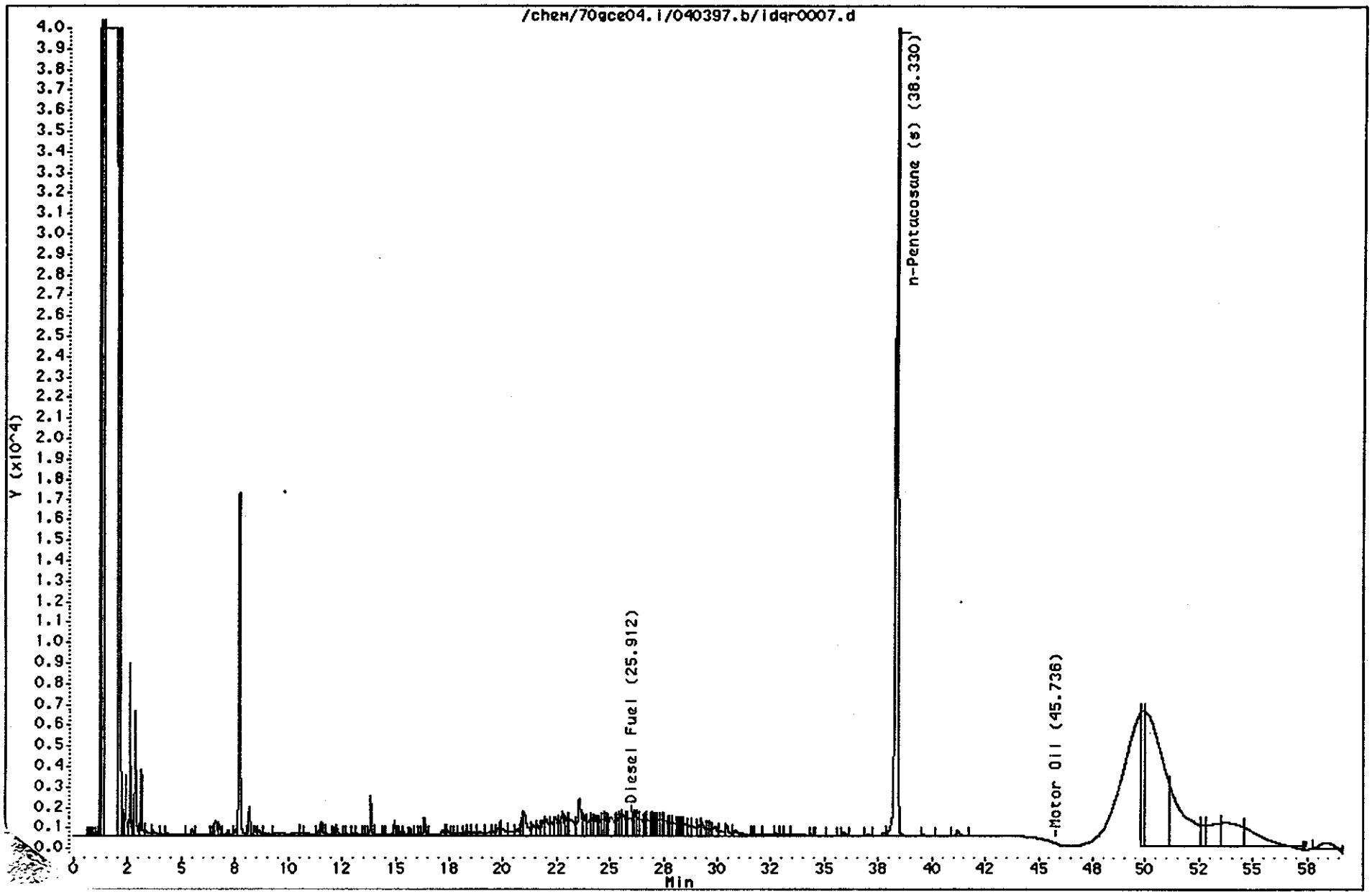

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Lab Sample ID: 70933247
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce04.i
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Operator: AMH
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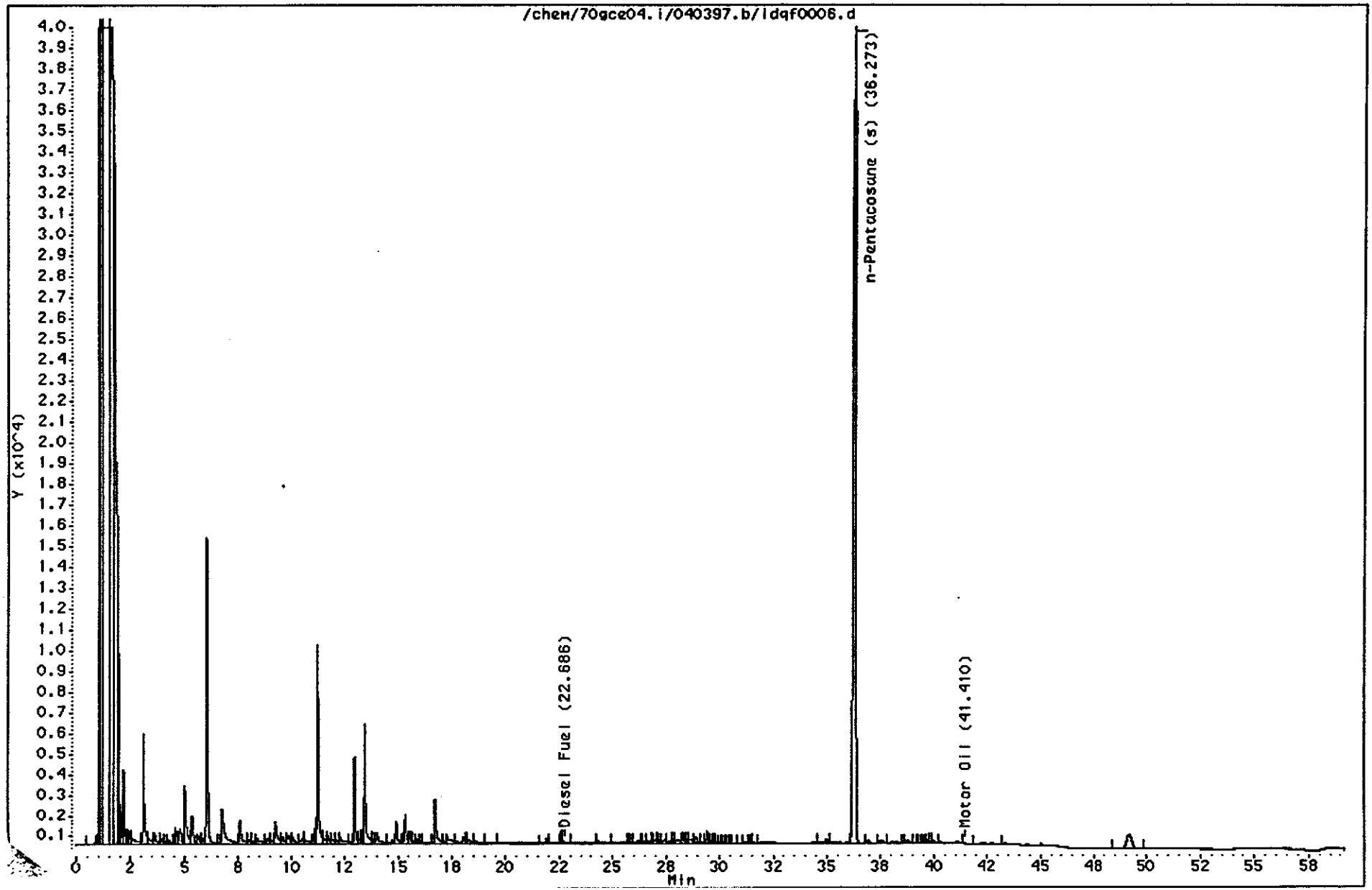

OK

Data File: /chem/70gce04.i/040397.b/idqf0007.d
Date : 03-APR-1997 15:47
Client ID: MW4397
Lab Sample ID: 70933254
Volume injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce04.i
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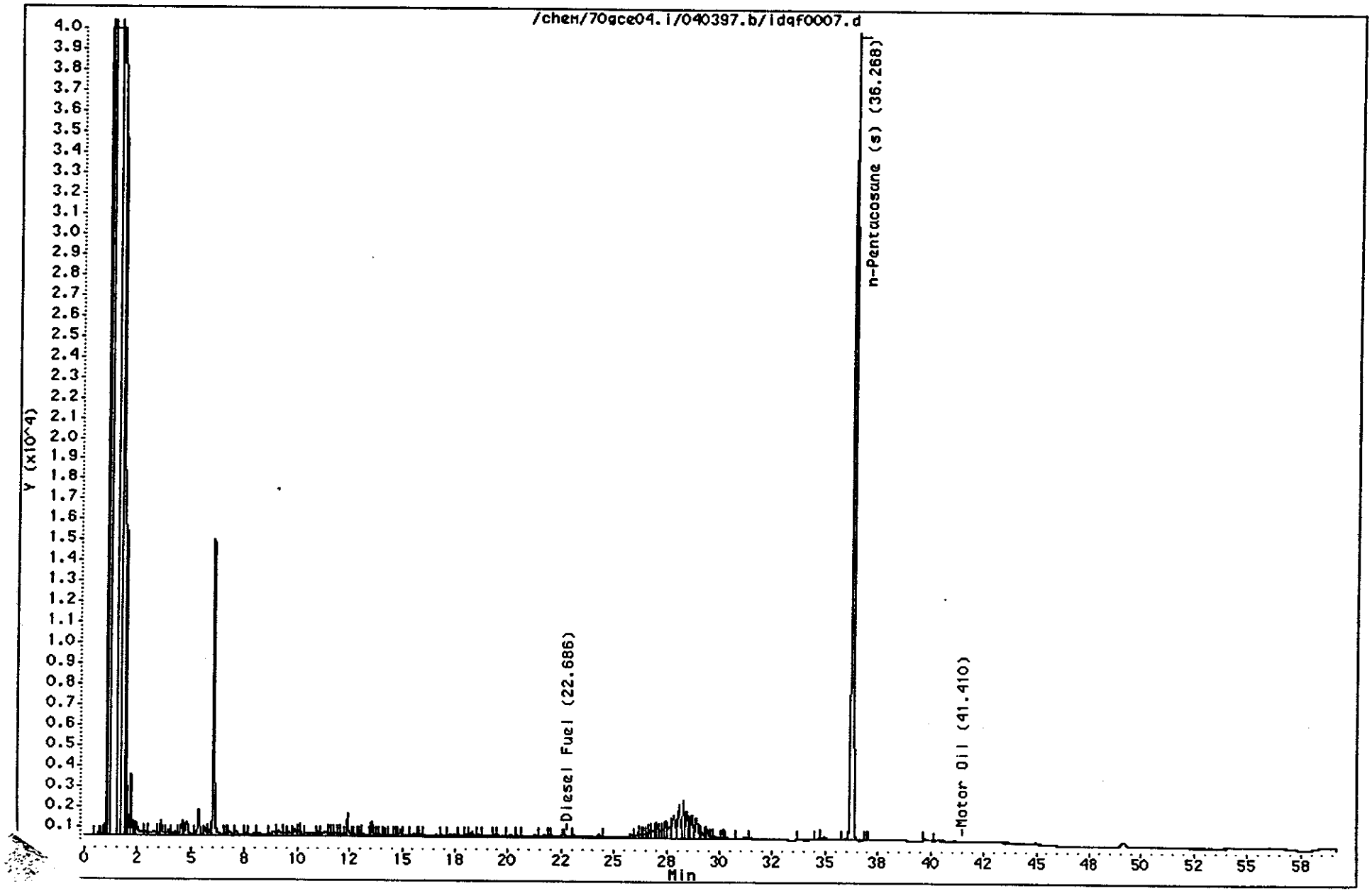

Data File: /chem/70gce04.i/040397.b/idqf0008.d
Date : 03-APR-1997 16:54
Client ID: MW2397
Lab Sample ID: 70933262
Volume Injected (uL): 1.0
Column phase: RESTEK XTI-5

Instrument: 70gce04.i
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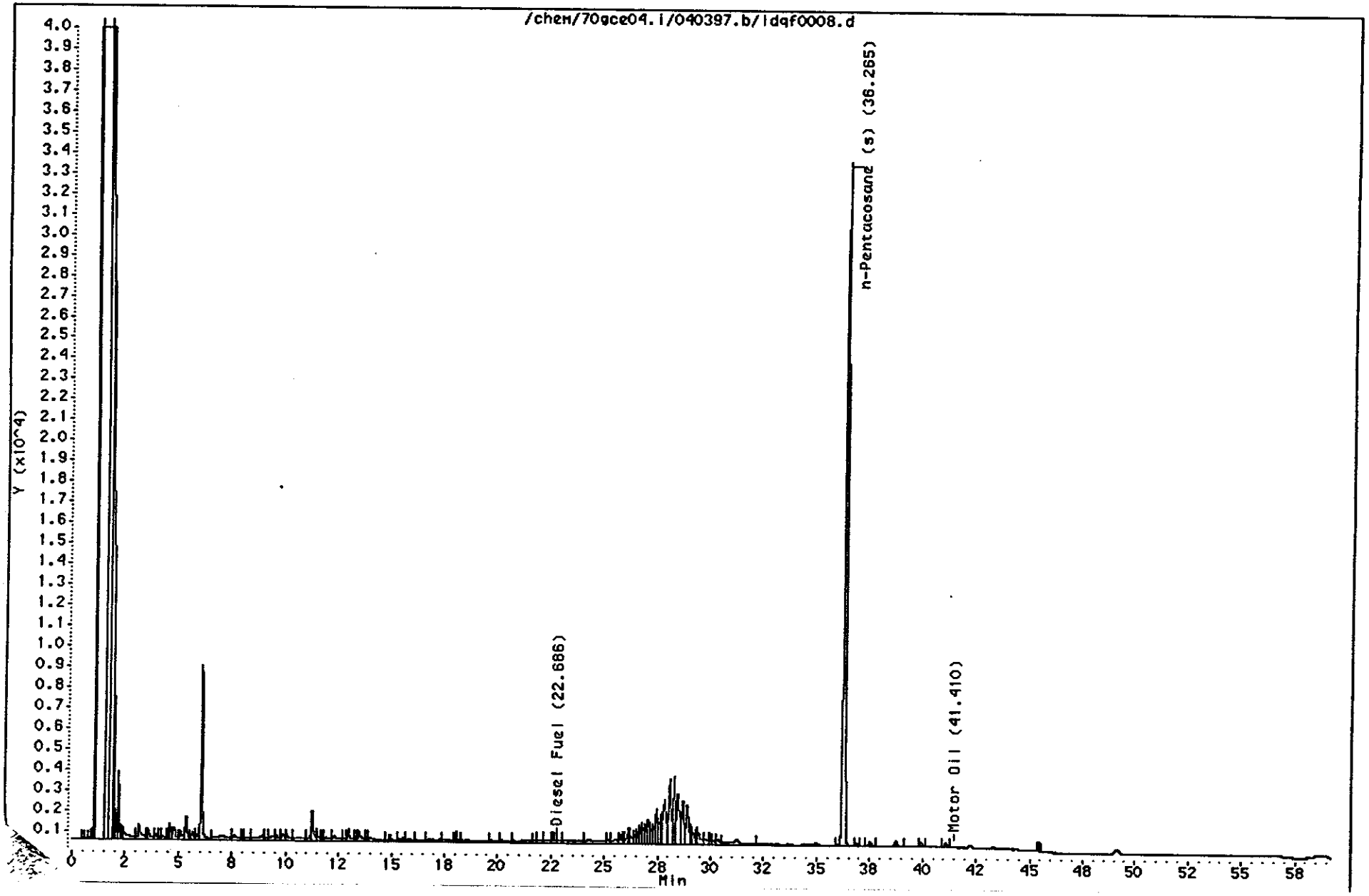
Operator: AMH
Column diameter: 0.53



U&A | **URIBE & ASSOCIATES**
ENVIRONMENTAL CONSULTING SERVICES

CHAIN-OF-CUSTODY RECORD

708044

Project No.:	207-01 10 Bb
Project Name:	Port of Oakland 7th Street

REPORT RESULTS TO

Name:	Jerry Manuell
Company:	URIBE & ASSOCIATES
Mailing Address:	2930 LAKESHORE AVENUE, SUITE 200
City, State, Zip:	OAKLAND, CA 94610-3614
Telephone No.:	510-832-2233 Telefax No.: 510-832-2237

SEND INVOICE TO

Purchase Order Number:	202386
Name:	Doug Sheeks
Company:	URIBE & Associates Dept:
Mailing Address:	SAME
City, State, Zip:	

Turn-Around Time: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☐ 5 day ☒ 10 day (Standard)

Rush Charges Authorized? ☐ Yes ☐ No

Phone Results ☐ Fax Results ☐

Special Instructions:
- Do silica gel cleanup procedure for TPH-diesel analyses
- Standard 10 day TAT

ANALYSES REQUESTED

No.	Date	Time	Matrix/Medium	Sample Identification Number	# OF CONTAINERS	BTEX	TPH-gas	TPH-diesel	TPH-motor oil								Remarks
	032897	0940	groundwater	MW7397	6	X	X	X	X						709	33 239	1 Broken Amber
	032897	1130	groundwater	MW5397	6	X	X	X	X						709	33 247	2 Frozen Amber
	032897	1210	groundwater	MW4397	6	X	X	X	X						709	33 254	All Amber Frozen
	032897	1300	groundwater	MW2397	6	X	X	X	X						709	33 262	Broken 2 Ambers

CHAIN OF CUSTODY

Collected by: Jerry Manuell (Print)

Collector's Signature: Jerry Mull

Relinquished by: Jerry Mull Date: 3/31/97 Time: 1245

Received by: [signature] Date: 3-31-97 Time: 1245

Relinquished by: [signature] Date: 3/31/97 Time: 1605

Received by: [signature] Date: 3/31/97 Time: 16:20

Method of Shipment:

Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐

COOLER TEMPERATURE 6 °C

Red

Chain of Custody form 6/2/95 QX FC

Original (White) Laboratory Copy (Yellow) Field Copy (Pink)

Appendix 1

Groundwater Monitoring Wells Recently Installed On Site By Others

Groundwater Monitoring Wells Recently Installed On Site By Others

The following information regarding groundwater monitoring wells recently installed by others on the 2277 Seventh Street site was provided separately by the Port and was not taken from a formal report.

In early 1997, two groundwater monitoring wells were installed on the 2277 Seventh Street site under the supervision of PRC Environmental Management, Inc. (PRC), of Helena, Montana. Well BW-MW30 was installed on January 15 and BW-MW29 was installed on February 24, 1997. These wells are located about 100 feet to the south of MW-4, are about 10 feet apart, and were installed as part of an investigation of the U.S. Navy's Fleet Industrial Supply Center Oakland that lies adjacent to the west side of the 2277 Seventh Street site.

Measurements of the depth to groundwater below top of casing collected by PRC were 8.6 feet for BW-MW30 on February 20 and 5.22 feet for BW-MW29 on February 25. Similar measurements collected by PRC from both wells on April 9, 1997, were 5.58 feet for BW-MW29 and 8.5 feet for BW-MW30.

Analysis of groundwater samples collected by PRC on February 24, 1997, indicated that concentrations of "diesel range organics," "motor oil range organics," and "TPH-purgeables (gasoline)" and "other components" were below reporting limits for the sample collected from BW-MW29 and that "diesel range organics" and "TPH-purgeables (gasoline)" and "other components" were below reporting limits for the sample collected from BW-MW30. Analysis of the sample from BW-MW30 also indicated a concentration of "motor oil range organics" at 590 µg/1. However, this result was noted by the laboratory to be an estimated value and that "other problems" (unspecified) were associated with the result. Concentrations of BTEX compounds were below reporting limits for the samples collected from both BW-MW29 and BW-MW30.

Appendix 2

Off-Site Groundwater Monitoring Wells

Off-Site Groundwater Monitoring Wells

Three groundwater monitoring wells, MW-1, MW-2, and MW-3, are located off the 2277 Seventh Street site, to the south and southeast (Figure 2), on the adjacent Ringsby Terminals, Inc., site. On March 19, 1997, Flour Daniel GTI (GTI), of West Sacramento, California, collected measurements of the depth to groundwater and groundwater samples from the three wells.

Measurements of the depth to groundwater below top of casing collected by GTI on March 19, 1997, were 5.48 feet for MW-1, 5.9 feet for MW-2, and 6.99 feet for MW-3. In a "First Quarter 1997 Groundwater Monitoring and Sampling Report," dated May 6, 1997, GTI inferred the direction of groundwater flow beneath the Ringsby Terminals site to be to the north northwest with a gradient of approximately 0.001 ft/ft.

Analysis of groundwater samples collected by GTI on March 19, 1997, indicated that concentrations of TPH-D, BTEX, and methyl-tert-butyl ether were below reporting limits for each of the three wells. In addition, concentrations of TPH-G were below reporting limits for wells MW-1 and MW-3, but were detected at 150 µg/1 in the sample collected from MW-2. Of the three wells, MW-2 is located closest to the 2277 Seventh Street site.