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**SEMI-ANNUAL MONITORING REPORT,  
(APRIL 1 TO SEPTEMBER 30, 1998)**

**UNION PACIFIC MOTOR FREIGHT FACILITY  
1750 FERRO STREET  
OAKLAND, CALIFORNIA**

**Prepared For:**

**UNION PACIFIC RAILROAD  
ENVIRONMENTAL MANAGEMENT  
1416 DODGE STREET, ROOM 930  
OMAHA, NEBRASKA 68179**



**Prepared by:**

**Safety Kleen Consulting Services  
5665 Flatiron Parkway  
Boulder, Colorado 80301**

**October 19, 1998**

October 27, 1998

Mr. Harry Patterson  
Union Pacific Railroad  
1416 Dodge Street, Room 930  
Omaha, Nebraska 68179

Subject: *Semi-Annual Monitoring Report, April 1, 1998 to September 30, 1998*, Oakland  
Motor Freight Facility, 1750 Ferro Street, Oakland, California, Safety Kleen  
Project No. 96120-844

Dear Mr. Patterson:

Enclosed is the final copy of the *Semi-Annual Monitoring Report, April 1, 1998 to September 30, 1998*, for the Union Pacific Motor Freight Facility at 1750 Ferro Street in Oakland, California.

If you have any questions, please call us at (303) 938-5500.

Sincerely,



Lisa Hennessy, E.I.T.  
Project Manager



Sam Marquis, R.G., P.G.  
Project Hydrogeologist

cc: Larry Seto, ACDEH  
John Prall, Port of Oakland  
Jack Murphy, APL

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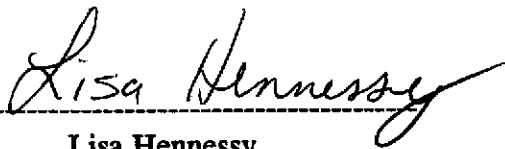
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Prepared for:  
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Environmental Management - Room 930  
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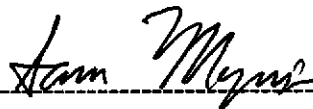
for submittal to:  
Larry Seto  
Alameda County  
Department of Environmental Health  
1131 Harbor Bay Parkway  
Alameda, California 94502

Prepared by:  
Safety Kleen Consulting Services  
5665 Flatiron Parkway  
Boulder, Colorado 80301



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Lisa Hennessy  
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Sam Marquis  
Project Hydrogeologist  
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October 19, 1998

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## 1. INTRODUCTION

This semi-annual report presents the results from the May and August 1998 groundwater monitoring events conducted at the Union Pacific Railroad Motor Freight (UPMF) facility at 1750 Ferro Street in Oakland, California (Figure 1). The report has been prepared by Consulting Services of Safety-Kleen, Inc. (Consulting Services) on behalf of Union Pacific Railroad (UPRR). The report was prepared in response to an April 29, 1993, Alameda County Department of Environmental Health, Hazardous Materials Division (ACDEH) request for UPRR to begin a quarterly monitoring program at the UPMF facility. In a letter dated June 1, 1998, the ACDEH approved the reporting frequency to be decreased from quarterly to semi-annually.

This report presents the results of fluid-level measurements obtained in May and August, 1998, as well as analytical results for groundwater samples collected on May 22 and August 12, 1998. The groundwater monitoring program is directed towards understanding the hydraulic gradient and the changes in the concentration of dissolved petroleum hydrocarbons at the site. This report includes a discussion of the background information about the site, field and analytical results for the semi-annual period (April 1 to September 30, 1998), and conclusions.

## 2. BACKGROUND INFORMATION

The following subsections present information about the site history and investigative procedures.

### 2.1 Site History

The (UPMF) site is located on the southeastern portion of the UPRR Oakland trailer-on-flat-car (TOFC) Yard, which is adjacent to the Oakland Inner Harbor or Oakland Estuary (Figures 1 and 2). The area surrounding the site is used for heavy to light commerce. Residential areas are located approximately one-half mile north of the site and across the Oakland Estuary one-half mile south of the site.

Five underground storage tanks (USTs) were removed from the UPMF facility between 1987 and 1990. As a result of the tank removal activities, a site assessment was performed in two phases to define the extent of petroleum hydrocarbons in the soil and groundwater (Laidlaw, 1993). All petroleum hydrocarbons found at the site have been identified as either used motor oil or "bunker C." For brevity, the light non-aqueous phase of these hydrocarbons is referred to as "product."

Groundwater monitoring has been conducted at the site since 1993. A skimming system that removes product only has operated periodically in recovery well RW since May 2, 1994. Due to the limited volume of product recovered and the amount of time the skimmer was inoperable, a request was made in the First Quarter 1998 Monitoring Report dated April 28, 1998, to decrease the frequency of fluid-level measurements in recovery well RW from monthly to quarterly and to discontinue the product skimming pump. In a letter dated July 21, 1998, the ACDEH approved the request.

The refueling portion of the TOFC yard, approximately 700 feet northwest and upgradient of the UPMF site, is currently undergoing groundwater remediation for recovery of non-aqueous phase liquid as diesel. (The refueling area is a separate project and is not the subject of this report.) The extent of contamination at the refueling area was defined during previous investigations (Laidlaw, 1991). On the basis of these investigations and subsequent monitoring, petroleum hydrocarbons from the refueling area do not extend to the UPMF facility.

## **2.2 Investigative Procedures**

UPRR has contracted with Burns and McDonnell Waste Consultants, Inc. to perform a portion of the field work associated with the project. Consulting Services and the UPRR subcontractor followed the standard operating procedures previously approved by the ACDEH (Laidlaw, 1994). The semi-annual monitoring activities consist of the following:

- Measuring fluid-levels in all of the UPMF groundwater monitoring wells quarterly;
- Purging and sampling of all groundwater monitoring wells where product is not observed semi-annually, with the exception of OKUS-W2, OKUS-W3, APL/UP-W1 and APL/UP-W2 which are done quarterly;
- Analyzing groundwater samples for total petroleum hydrocarbons and volatile aromatic constituents;
- Determining the local groundwater flow direction and hydraulic gradient based on the potentiometric surface elevations.

All groundwater samples for the May and August 1998 monitoring events were analyzed for:

- total petroleum hydrocarbons as diesel (TPH-D) and total petroleum hydrocarbons as gasoline (TPH-G) by EPA Method 8015 Modified; and
- benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020.

In addition to the above analyses, arsenic was sampled and analyzed in all wells during the August 1998 sampling event.

## **3. FIELD INVESTIGATION RESULTS**

The following subsections present the findings from activities completed during the monitoring event.

### **3.1 Fluid-Level Measurements**

Fluid-levels were measured on May 21 and 22, and August 12 and 13, 1998 and are compiled into Table 1. A decrease in groundwater elevations relative to the first quarter monitoring event was noted in all monitoring wells except for APL/UP-W1 and APL/UP-W2. These two wells exhibited groundwater levels slightly higher in August than in May. Since 1995, groundwater elevations have been highest during the first quarter of each year, and are typically lower during the second, third, and fourth quarters.

### **3.2 Groundwater Gradient**

A potentiometric surface map created with measurements collected from groundwater monitoring wells at the UPMF facility as well as measurements obtained from the adjacent TOFC site on May 21 and May 22, 1998, are presented as Figure 3. In the region of the UPMF facility the potentiometric surface results for May indicate that groundwater flow is to the east and the hydraulic gradient is 0.008 feet per foot (42 feet per mile).

Figure 4 presents the potentiometric surface map created with measurements collected from groundwater monitoring wells at the UPMF, as well as measurements obtained from the adjacent TOFC site on August 12 and 13, 1998. The potentiometric surface results for August indicate that groundwater flow in the region of UMPF facility is to the east at a hydraulic gradient of 0.006 feet per foot (32 feet per mile).

The groundwater gradient and flow direction were consistent with gradients and flow directions observed during previous monitoring events

### **3.3 Non-Aqueous Phase Liquid**

Fluid-level measurement data showed that monitoring wells OKUS-W5 and OKUS-W6 continued to contain "bunker C" type product. An accurate determination of the product thickness and groundwater level in OKUS-W5 and OKUS-W6 was not possible due to the high viscosity of the product, which prohibited the measurement of product thickness.

A product/water interface was not detected in recovery well RW during the May 1998 sampling event. However, Consulting Services personnel did observe product on the water level probe after gauging the well on May 22, 1998.

### **3.4 Analytical Results**

During the May 1998 monitoring event, samples were collected from monitoring wells OKUS-W2, OKUS-W3, APL/UP-W1, and APL/UP-W2. During the August 1998 monitoring event samples were collected from OKUS-W2, OKUS-W3, OKUS-W7, OKUS-W8, APL/UP-W1, and APL/UP-W2. The groundwater analytical results are presented in Table 2.

#### **3.4.1 May 1998 Analytical Results**

Samples collected from OKUS-W2 and OKUS-W3 contained dissolved benzene, ethylbenzene, toluene, and xylenes (BTEX). The samples collected from monitoring well APL/UP-W1 contained dissolved benzene, ethylbenzene, and xylenes. Samples from APL/UP-W2 contained dissolved benzene and ethylbenzene.

Benzene concentrations ranged from 4 µg/l in well APL/UP-W2 to 280 µg/l in OKUS-W3. The range for toluene was from below the method detection limit (MDL) of 0.50 µg/l in wells APL/UP-W1 and APL/UP-W2 to 67 µg/l in OKUS-W3. Ethylbenzene concentrations ranged from 1.7 µg/l in APL/UP-W1 to 45 µg/l in OKUS-W2. Xylenes ranged from below the MDL of 0.50 µg/l in APL/UP-W1 to 51



µg/l in APL/UP-W2. Total BTEX concentrations ranged from 5.7 µg/l in APL/UP-W1 to 420 µg/l in OKUS-W3.

Dissolved TPH-G, indicative of gasoline, was detected in samples collected from all monitoring wells sampled during the May 1998 monitoring event. TPH-G concentrations ranged from 250 µg/l in APL/UP-W1 to 3,200 µg/l in OKUS-W3.

Dissolved TPH-D, representing diesel fuel, was detected in samples collected from all monitoring wells sampled during the May 1998 monitoring event. TPH-D concentrations ranged from 88 µg/l in APL/UP-W2 to 7,000 µg/l in OKUS-W3.

The dissolved BTEX plume in the groundwater for May 1998 is presented as Figure 5. Analytical reports and chain of custody forms are included in Appendix B.

### **3.4.2 August 1998 Analytical Results**

Samples collected from monitoring wells OKUS-W1 and OKUS-W8 did not contain dissolved BTEX concentrations above the MDL of 0.50 µg/l. Samples obtained from monitoring wells OKUS-W2, OKUS-W3, and APL/UP-W1 contained BTEX. Samples collected from OKUS-W7 and APL/UP-W2 contained dissolved benzene and ethylbenzene, and xylenes.

Benzene concentrations ranged from below the MDL in wells OKUS-W1 and OKUS-W8 to 23 µg/l in OKUS-W3. The range for toluene was from below the MDL in OKUS-W1, OKUS-W7, OKUS-W8, and APL/UP-W2 to 58 µg/l in OKUS-W3. Ethylbenzene concentrations ranged from below the MDL in OKUS-W1, and OKUS-W8 to 5,400 µg/l in OKUS-W3. Xylenes ranged from below the MDL in OKUS-W1 and OKUS-W8, to 170 µg/l in OKUS-W3. Total BTEX concentrations ranged from below the MDL in OKUS-W1 and OKUS-W8 to 5,900 µg/l in OKUS-W3.

Dissolved TPH-G, indicative of gasoline, was detected in samples collected from all monitoring wells sampled during the August 1998 monitoring event except for OKUS-W1. TPH-G concentrations ranged from below the MDL of 50 µg/l in OKUS-W1 to 6,900 µg/l in OKUS-W3.

Dissolved TPH-D, representing diesel fuel, was detected in samples collected from all monitoring wells sampled during the August 1998 monitoring event. TPH-D concentrations ranged from 230 µg/l in APL/UP-W2 to 7,000 µg/l in OKUS-W3.

Arsenic concentrations ranged from below the MDL of 5 µg/l in wells OKUS-W1, OKUS-W7, and OKUS-W8 to 120 µg/l in OKUS-W2. Arsenic results are consistent with historic values seen at the site.

The dissolved BTEX plume in the groundwater for August 1998 is presented as Figure 6. Analytical reports and chain of custody forms are included in Appendix B.

## 4. CONCLUSIONS

On the basis of the information obtained from the May and August 1998 monitoring activities, Consulting Services concludes that:

- The groundwater flow direction is to the east. This is consistent with previous groundwater monitoring events.
- The average groundwater flow gradient for May 1998 was 0.008 feet per foot (42 feet per mile). The average hydraulic gradient for August 1998 was 0.006 feet per foot ( 32 feet per mile) These gradients are consistent with previous monitoring events.
- The dissolved BTEX and TPH concentrations in all wells were consistent with historic concentration ranges.
- Historic monitoring results show that residual petroleum contamination in the source area has decreased over time, which suggests that a continued source of volatile aromatic hydrocarbon contamination is not present and that remaining residual contamination is relatively static.

## 5. LIMITATIONS

The project and this report were undertaken for the exclusive use of the Union Pacific Railroad. Use by any other person or organization is subject to no warranty by UPRR or Laidlaw Environmental Services.

The conclusions provided in this report are based solely upon information provided to Laidlaw by UPRR, Burns & McDonnell, and as generated by Laidlaw for this project. Additional investigations as well as information not available to UPRR and Laidlaw at the time this project and report were completed may result in modifications to the understanding of the site, conclusions, and other items generated as part of the work.

The project and this report were conducted and prepared in accordance with generally accepted environmental and engineering practices with a standard of care appropriate to the project. UPRR and Laidlaw express and imply no other warranty.

## 6. REFERENCES

Laidlaw (formerly USPCI), 1991. "Hydrocarbon Investigation and Remediation Design," Union Pacific Railroad, June 10, 1991.

Laidlaw, 1993. "Phase II Site Assessment Report," Union Pacific Railroad, October, 1993.

Laidlaw, 1994. "Fourth Quarter 1993, Monitoring Event," Union Pacific Railroad, May 1994.

**TABLE 1  
FLUID LEVEL MEASUREMENT DATA  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

WELL NO.	ELEV. TOC *	DATE	DEPTH TO PRODUCT	PRODUCT THICKNESS	DEPTH TO WATER	GROUNDWATER ELEV. *	CORR'D ELEV.
OKUS-W1	9.17	05/29/96**	N/A	NP	7.80	1.37	1.37
	9.17	08/27/96**	N/A	NP	8.34	0.83	0.83
	9.17	11/13/96**	N/A	NP	8.71	0.46	0.46
	9.17	02/17/97**	N/A	NP	7.58	1.59	1.59
	9.17	05/21/97**	N/A	NP	8.24	0.93	0.93
	9.17	08/27/97**	N/A	NP	8.37	0.80	0.80
	9.17	11/19/97**	N/A	NP	8.28	0.89	0.89
	9.17	02/04/98**	N/A	NP	6.95	2.22	2.22
	9.17	05/21/98**	N/A	NP	7.48	1.69	1.69
	9.17	08/12/98**	N/A	NP	7.95	1.22	1.22
OKUS-W2	9.71	05/29/96**	N/A	NP	8.72	0.99	0.99
	9.71	07/25/96	N/A	NP	9.03	0.68	0.68
	9.71	08/27/96**	N/A	NP	9.24	0.47	0.47
	9.71	09/16/96	N/A	NP	9.35	0.36	0.36
	9.71	11/13/96**	N/A	NP	9.62	0.09	0.09
	9.71	11/25/96	N/A	NP	9.36	0.35	0.35
	9.71	01/20/97	N/A	NP	8.48	1.23	1.23
	9.71	02/17/97**	N/A	NP	8.41	1.30	1.30
	9.71	03/06/97	N/A	NP	8.67	1.04	1.04
	9.71	05/21/97**	N/A	NP	9.13	0.58	0.58
	9.71	05/27/97	N/A	NP	9.10	0.61	0.61
	9.71	07/15/97	N/A	NP	9.24	0.47	0.47
	9.71	08/27/97**	N/A	NP	9.29	0.42	0.42
	9.71	09/15/97	N/A	NP	9.42	0.29	0.29
	9.71	11/19/97**	N/A	NP	9.21	0.50	0.50
	9.71	02/04/98**	N/A	NP	7.50	2.21	2.21
	9.71	05/21/98**	N/A	NP	8.33	1.38	1.38
9.71	08/12/98**	N/A	NP	8.80	0.91	0.91	
OKUS-W3	9.80	05/29/96**	N/A	NP	8.94	0.86	0.86
	9.80	07/25/96	N/A	NP	9.32	0.48	0.48
	9.80	08/27/96**	N/A	NP	9.52	0.28	0.28
	9.80	09/16/96	N/A	NP	9.63	0.17	0.17
	9.80	11/13/96**	N/A	NP	9.90	-0.10	-0.10
	9.80	11/25/96	N/A	NP	9.65	0.15	0.15
	9.80	01/20/97	N/A	NP	8.74	1.06	1.06
	9.80	02/17/97**	N/A	NP	8.67	1.13	1.13
	9.80	03/06/97	N/A	NP	8.92	0.88	0.88
	9.80	05/21/97**	N/A	NP	9.44	0.36	0.36
	9.80	05/27/97	N/A	NP	9.40	0.40	0.40
	9.80	07/15/97	N/A	NP	9.53	0.27	0.27
	9.80	08/27/97**	N/A	NP	WELL INACCESSABLE		
	9.80	11/19/97**	N/A	NP	9.45	0.35	0.35

**TABLE 1  
FLUID LEVEL MEASUREMENT DATA  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

WELL NO.	ELEV. TOC *	DATE	DEPTH TO PRODUCT	PRODUCT THICKNESS	DEPTH TO WATER	GROUNDWATER ELEV. *	CORR'D ELEV.
OKUS-W3	9.80	02/05/98	N/A	NP	7.65	2.15	2.15
	9.80	05/21/98**	N/A	NP	8.63	1.17	1.17
	9.80	08/12/98**	N/A	NP	9.13	0.67	0.67
OKUS-W4	7.35	08/09/95	N/A	NP	6.10	1.25	1.25
	7.35	11/29/95	N/A	NP	6.70	0.65	0.65
		05/13/97	WELL DECOMMISSIONED				
OKUS-W5	9.25	05/29/96**	9.06	P	--	--	--
	9.25	06/13/96	9.11	P	--	--	--
	9.25	07/25/96	9.11	P	--	--	--
	9.25	08/09/96	9.22	P	--	--	--
	9.25	08/27/96**	9.44	P	--	--	--
	9.25	09/16/96	N/A	--	--	--	--
	9.25	10/17/96	9.65	P	--	--	--
	9.25	11/13/96**	9.87	P	--	--	--
	9.25	12/16/96	N/A	--	--	--	--
	9.25	01/20/97	N/A	--	--	--	--
	9.25	02/17/97**	9.09	P	--	--	--
	9.25	05/21/97**	9.29	P	--	--	--
	9.25	08/27/97**	9.42	P	--	--	--
	9.25	11/19/97**	9.87	P	--	--	--
	9.25	02/05/98	7.13	P	--	--	--
	9.25	05/22/98**	8.65	P	--	--	--
9.25	08/13/98**	9.03	P	--	--	--	
OKUS-W6	7.02	08/09/95	5.65	P	--	--	--
	7.02	09/07/95	5.98	P	--	--	--
	7.02	10/18/95	6.38	P	--	--	--
	7.02	11/10/95	6.52	P	--	--	--
	7.02	12/15/95	5.47	P	--	--	--
	7.02	01/10/96	5.58	P	--	--	--
	7.02	02/16/96	4.70	P	--	--	--
	7.02	03/25/96	4.72	P	--	--	--
	7.02	05/29/96**	5.02	P	--	--	--
	7.02	06/13/96	4.99	P	--	--	--
	7.02	07/25/96	5.23	P	--	--	--
	7.02	08/09/96	5.66	P	--	--	--
	7.02	08/27/96**	5.82	P	--	--	--
	7.02	09/16/96	N/A	--	--	--	--
	7.02	10/17/96	6.50	P	--	--	--
	7.02	11/13/96**	6.27	P	--	--	--
	7.02	12/16/96	N/A	--	--	--	--
7.02	01/20/97	N/A	--	--	--	--	

**TABLE 1  
FLUID LEVEL MEASUREMENT DATA  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

WELL NO.	ELEV. TOC *	DATE	DEPTH TO PRODUCT	PRODUCT THICKNESS	DEPTH TO WATER	GROUNDWATER ELEV. *	CORR'D ELEV.
OKUS-W6	7.02	02/17/97**	4.71	P	--	--	--
	7.02	05/21/97**	6.03	P	--	--	--
	7.02	08/27/97**	6.00	P	--	--	--
	7.02	11/19/97**	5.54	P	--	--	--
	7.02	02/05/98	3.30	P	--	--	--
	7.02	05/22/98**	4.48	P	--	--	--
	7.02	08/13/98**	5.81	P	--	--	--
OKUS-W7	6.91	05/29/96**	N/A	NP	5.08	1.83	1.83
	6.91	08/27/96**	N/A	NP	5.68	1.23	1.23
	6.91	11/13/96**	N/A	NP	6.00	0.91	0.91
	6.91	02/17/97**	N/A	NP	4.85	2.06	2.06
	6.91	05/21/97**	N/A	NP	5.53	1.38	1.38
	6.91	08/27/97**	N/A	NP	5.76	1.15	1.15
	6.91	11/19/97**	N/A	NP	5.65	1.26	1.26
	6.91	02/04/98**	N/A	NP	4.45	2.46	2.46
	6.91	05/21/98**	N/A	NP	4.69	2.22	2.22
6.91	08/12/98**	N/A	NP	5.28	1.63	1.63	
OKUS-W8	6.75	05/29/96**	N/A	NP	4.93	1.82	1.82
	6.75	08/27/96**	N/A	NP	5.52	1.23	1.23
	6.75	11/13/96**	N/A	NP	5.90	0.85	0.85
	6.75	02/17/97**	N/A	NP	4.69	2.06	2.06
	6.75	05/21/97**	N/A	NP	5.36	1.39	1.39
	6.75	08/27/97**	N/A	NP	5.59	1.16	1.16
	6.75	11/19/97**	N/A	NP	5.45	1.30	1.30
	6.75	02/04/98**	N/A	NP	4.36	2.39	2.39
	6.75	05/21/98**	N/A	NP	4.45	2.30	2.30
6.75	08/12/98**	N/A	NP	5.05	1.70	1.70	
APL/UP-W1	8.12	05/29/96**	N/A	NP	WELL INACCESSABLE		
	8.12	08/27/96**	N/A	NP	WELL INACCESSABLE		
	8.12	11/12/96	N/A	NP	WELL INACCESSABLE		
	8.12	02/17/97**	N/A	NP	10.02	-1.90	-1.90
	8.12	05/21/97**	N/A	NP	10.14	-2.02	-2.02
	8.12	08/27/97**	N/A	NP	9.91	-1.79	-1.79
	8.12	11/18/97	N/A	NP	9.32	-1.20	-1.20
	8.12	02/04/98**	N/A	NP	9.80	-1.68	-1.68
	8.12	05/21/98**	N/A	NP	10.21	-2.09	-2.09
8.12	08/12/98**	N/A	NP	9.76	-1.64	-1.64	
APL/UP-W2	7.31	05/29/96**	N/A	NP	9.68	-2.37	-2.37
	7.31	08/27/96**	N/A	NP	9.53	-2.22	-2.22
	7.31	11/13/96**	N/A	NP	9.57	-2.26	-2.26
	7.31	02/17/97**	N/A	NP	9.07	-1.76	-1.76

**TABLE 1  
FLUID LEVEL MEASUREMENT DATA  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

WELL NO.	ELEV. TOC *	DATE	DEPTH TO PRODUCT	PRODUCT THICKNESS	DEPTH TO WATER	GROUNDWATER ELEV. *	CORR'D ELEV.
APL/UP-W2	7.31	05/21/97**	N/A	NP	9.42	-2.11	-2.11
	7.31	08/27/97**	N/A	NP	9.17	-1.86	-1.86
	7.31	11/18/97	N/A	NP	8.59	-1.28	-1.28
	7.31	02/04/98**	N/A	NP	8.80	-1.49	-1.49
	7.31	05/21/98**	N/A	NP	9.58	-2.27	-2.27
	7.31	08/12/98**	N/A	NP	8.99	-1.68	-1.68
RW	--	05/29/96**	N/A	NP	8.68	--	--
	--	06/13/96	N/A	NP	8.68	--	--
	--	07/25/96	N/A	NP	9.09	--	--
	--	08/09/96	N/A	NP	9.16	--	--
	--	08/27/96**	N/A	NP	9.18	--	--
	--	09/16/96	N/A	NP	9.33	--	--
	--	10/17/97	N/A	NP	9.50	--	--
	--	11/12/96	N/A	SHEEN	9.59	--	--
	--	11/25/96	9.43	0.02	9.45	--	--
	--	12/16/96	9.12	0.10	9.22	--	--
	--	01/20/97	N/A	SHEEN	8.50	--	--
	--	02/11/97	N/A	NP	8.33	--	--
	--	02/17/97**	8.39	0.01	8.40	--	--
	--	03/06/97	N/A	NP	8.70	--	--
	--	04/29/97	N/A	SHEEN	9.03	--	--
	--	05/21/97**	9.10	0.02	9.12	--	--
	--	05/27/97	9.09	0.03	9.12	--	--
	--	07/15/97	N/A	NP	9.22	--	--
	--	08/15/97	N/A	NP	9.17	--	--
	--	08/27/97**	N/A	SHEEN	9.29	--	--
--	11/19/97**	N/A	SHEEN	9.29	--	--	
--	02/06/98	N/A	SHEEN	7.24	--	--	
--	05/22/98**	N/A	SHEEN	8.21	--	--	
--	08/13/98**	8.74	0.08	8.82	--	--	

-- Information not available or inaccurate.

N/A Non Applicable

NP - No Product

P - Product (bunker C) was encountered but the oil/water interface could not be found.

\* All well casings and groundwater elevations measured to mean sea level (MSL).

\*\* Measurements taken by Safety-Kleen personnel during sampling. All other measurements obtained by Burns & McDonnell Waste Consultants during monthly site visits.



**TABLE 2  
ANALYTICAL RESULTS - GROUNDWATER MONITORING WELLS  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/D (ug/l)	TPH/G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	BTEX (ug/l)	As (mg/l)
OKUS-W1	OKUS-W1	01/14/93	ND	410	20	4	220	ND	240	ND
"	"	05/12/93	120	ND	ND	ND	ND	ND	ND	ND
"	"	08/25/83	100	ND	ND	ND	ND	ND	ND	ND
"	"	11/11/93	160	91	1.1	0.88	21	1.6	24	ND
"	"	02/08/94	92	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	05/03/94	61	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	08/24/94	86	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	11/16/94	51	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	02/22/95	120	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	06/22/95	<50	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	08/09/95	<50	<50	<0.50	<0.50	<0.50	<0.50	ND	0.04
"	"	11/29/95	480	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.0050
"	"	02/27/96	330	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	05/30/96	320	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	08/27/96	440	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	11/13/96	180	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	02/18/97	400	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	05/21/97	190	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	08/27/97	140	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.0050
"	"	11/19/97	260	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	02/05/98	WELL NOT SAMPLED							NA
"	"	08/12/98	230	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.0050
OKUS-W2	OKUS-W2	01/14/93	5400	14000	480	92	8500	ND	9100	0.036
"	"	05/12/93	2800	8800	220	47	4600	100	5000	0.093
"	"	08/25/93	6500	22000	420	92	10000	210	11000	0.089
"	"	11/11/93	7700	24000	540	150	13000	280	14000	ND
"	"	02/08/94	2300	4900	150	29	3000	78	3300	<0.10
"	"	05/03/94	2600	17000	300	<0.50	5800	220	6300	<0.10
"	"	08/24/94	8200	11000	320	67	7500	250	8100	<0.10
"	"	11/16/94	5500	10000	290	79	130	160	660	NA
"	"	02/22/95	2000	3500	100	18	1600	66	1800	NA
"	"	06/22/95	3200	13000	260	62	<0.50	110	430	NA
"	"	08/09/95	2900	4800	160	28	<0.50	200	390	0.92
"	"	11/29/95	5600	7100	240	34	<0.50	58	330	0.049
"	"	02/27/96	2400	5300	200	42	3400	160	3800	NA
"	"	05/30/96	1900	7000	210	<0.50	<0.50	180	390	NA
"	"	08/27/96	3100	6700	240	65	170	180	660	0.17
"	"	11/12/96	2900	6000	160	34	130	64	390	NA
"	"	02/18/97	3000	7800	190	44	4000	150	4390	NA
"	"	05/21/97	2500	3300	120	23	11	31	185	NA
"	"	08/27/97	1800	4600	140	34	76	48	300	0.052
"	"	11/19/97	2200	3300	120	23	2400	67	2600	NA
"	"	02/06/98	1600	1100	72	11	<0.50	18	100	NA
"	"	05/22/98	1700	5400	170	41	45	51	310	NA
"	"	08/12/98	2400	2800	190	39	2600	150	3000	0.12
OKUS-W3	OKUS-W3	01/14/93	4200	4900	230	42	2600	44	2900	NA
"	"	05/12/93	4400	4600	290	60	3500	72	3900	0.14
"	"	08/25/93	2700	9400	280	55	4300	41	4700	0.08
"	"	11/11/93	5000	9500	390	110	5100	130	5700	0.14
"	"	02/08/94	4400	17000	420	78	9800	160	10000	0.12
"	"	05/03/94	3000	14000	310	61	6400	210	7000	0.14
"	"	08/24/94	4500	10000	350	78	7300	170	7900	<0.10
"	"	11/16/94	4700	9100	260	64	95	<0.50	420	NA
"	"	02/22/95	2400	7400	250	51	4400	150	4900	NA
"	"	06/22/95	3300	8100	250	53	<0.50	76	380	NA
"	"	08/09/95	3100	5200	200	39	<0.50	140	380	1.6
"	"	11/29/95	4500	5300	220	42	<0.50	44	310	0.18
"	"	02/27/96	4000	7900	330	75	6400	240	7000	NA
"	"	05/30/96	2300	8900	200	<0.50	<0.50	61	260	NA

**TABLE 2  
ANALYTICAL RESULTS - GROUNDWATER MONITORING WELLS  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/D (ug/l)	TPH/G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	BTEX (ug/l)	As (mg/l)	
OKUS-W3	OKUS-W3	08/27/96	2700	3100	170	37	64	36	310	0.20	
"	"	11/12/96	4700	7400	220	60	<0.50	<0.50	280	NA	
"	"	02/18/97	4600	9300	260	62	5800	85	6210	NA	
"	"	05/21/97	2400	6100	190	43	120	41	394	NA	
"	"	08/27/97	WELL INACCESSABLE - NOT SAMPLED								NA
"	"	11/19/97	2800	6800	260	67	5600	280	6200	NA	
"	"	02/06/98	3400	6000	210	<0.50	<0.50	<0.50	210	NA	
"	"	05/22/98	3200	7000	280	67	25	47	420	NA	
"	"	08/12/98	2600	6900	230	58	5400	170	5900	0.093	
OKUS-W4	OKUS-W4	01/15/93	5400	8900	300	ND	4500	ND	4800	NA	
"	"	05/12/93	2900	6000	320	110	4600	230	5300	0.16	
"	"	08/26/93	2200	6700	350	72	4800	130	5400	0.098	
"	"	11/11/93	2400	5500	250	53	4600	140	5000	0.13	
"	"	02/07/94	2700	9100	250	<0.50	4900	150	5300	<0.10	
"	"	05/03/94	2300	6500	240	34	4200	140	4600	0.12	
"	"	08/24/94	2900	5200	200	41	3600	190	4000	0.11	
"	"	11/16/94	2800	5500	320	52	<0.50	120	490	NA	
"	"	02/22/95	2000	4300	250	47	2900	160	3400	NA	
"	"	06/22/95	2700	4900	280	38	5200	140	5700	NA	
"	"	08/09/95	2900	5300	270	54	<0.50	210	530	1.3	
"	"	11/29/95	3100	4500	200	41	<0.50	46	290	0.14	
"	"	05/13/97	WELL DECOMMISSIONED								
OKUS-W5	OKUS-W5	01/15/93	2900	550	53	11	180	20	260	NA	
"	"	05/12/93	2100	550	81	14	250	37	380	0.56	
"	"	08/25/93	PRODUCT IN WELL - NOT SAMPLED								
"	"	11/11/93	1600	590	14	3.1	54	6.2	77	0.53	
"	"	02/07/94	1900	760	54	9.4	220	24	310	0.55	
"	"	05/03/94	2000	820	57	9.5	240	27	330	0.38	
"	"	08/24/94	1700	910	55	14	8.5	18	96	0.45	
"	"		PRODUCT IN WELL - THE WELL HAS NOT BEEN SAMPLED SINCE 1994								
OKUS-W6	OKUS-W6	07/16/93	BRK	ND	2.5	ND	ND	ND	2.5	0.004	
"	"	08/25/93	590	ND	2.6	ND	4.9	1.3	8.8	0.013	
"	"	11/12/93	610	ND	3.6	ND	3.7	1.3	8.6	ND	
"	"		PRODUCT IN WELL - THE WELL HAS NOT BEEN SAMPLED SINCE 1993								
OKUS-W7	OKUS-W7	07/16/93	ND	ND	2.1	ND	ND	ND	2.1	0.009	
"	"	08/25/93	930	56	2.9	ND	1.2	ND	4.1	ND	
"	"	11/12/93	1100	ND	ND	ND	ND	ND	ND	ND	
"	"	02/07/94	1100	ND	0.7	<0.50	<0.50	<0.50	0.7	<0.10	
"	"	05/03/94	1300	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10	
"	"	08/24/94	910	<50	2.5	0.54	<0.50	<0.50	3.0	<0.10	
"	"	11/16/94	820	<50	0.62	<0.50	<0.50	<0.50	0.6	NA	
"	"	02/22/95	830	<50	0.54	<0.50	<0.50	<0.50	0.5	NA	
"	"	06/22/95	850	<50	2.4	<0.50	0.52	<0.50	2.9	NA	
"	"	08/09/95	640	71	4.2	<0.50	1.2	1.2	6.6	0.074	
"	"	11/29/95	1300	64	4.3	<0.50	1.3	0.51	6.1	0.0095	
"	"	02/27/96	2600	<50	1.5	<0.50	0.54	<0.50	2.0	NA	
"	"	05/30/96	1900	60	2	<0.50	0.54	<0.50	2.0	NA	
"	"	08/27/96	1700	70	2.3	<0.50	<0.50	<0.50	2.3	<0.10	
"	"	11/12/96	1400	86	4.1	<0.50	<0.50	<0.50	4.1	NA	
"	"	02/18/97	2000	<50	0.75	<0.50	<0.50	<0.50	0.7	NA	
"	"	05/21/97	1200	<50	2.6	<0.50	0.84	<0.50	3.4	NA	
"	"	08/27/97	700	65	4.7	0.53	1.3	1.5	8.0	0.0069	
"	"	11/19/97	1600	<50	2.0	<0.50	0.84	<0.50	2.8	NA	
"	"	02/05/98	1500	<50	0.79	<0.50	<0.50	<0.50	0.8	NA	
"	"	08/12/98	1500	81	3.10	<0.50	1.0	0.11	4.2	<0.0050	

**TABLE 2  
ANALYTICAL RESULTS - GROUNDWATER MONITORING WELLS  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/D (ug/l)	TPH/G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	BTEX (ug/l)	As (mg/l)
OKUS-W8	OKUS-W8	07/16/93	ND	ND	ND	ND	ND	ND	ND	0.012
"	"	08/27/93	1100	120	1.3	ND	ND	0.85	2.2	ND
"	"	11/11/93	1300	190	3.5	1.3	46	4.9	55.7	ND
"	"	02/07/94	1000	120	0.9	<0.50	<0.50	<0.50	0.9	<0.10
"	"	05/03/94	780	79	0.99	<0.50	<0.50	<0.50	1.0	<0.10
"	"	08/24/94	700	100	1.4	<0.50	<0.50	<0.50	1.4	<0.10
"	"	11/16/94	830	110	0.77	<0.50	<0.50	<0.50	0.8	NA
"	"	02/22/95	370	150	0.96	<0.50	<0.50	1.2	2.2	NA
"	"	06/22/95	870	76	0.92	<0.50	<0.50	<0.50	0.9	NA
"	"	08/09/95	1100	90	1.1	<0.50	<0.50	1.3	2.4	0.078
"	"	11/29/95	2400	100	0.73	<0.50	<0.50	0.91	1.6	<0.0050
"	"	02/27/96	1900	80	<0.50	<0.50	<0.50	1.3	1.3	NA
"	"	05/30/96	2200	210	<0.50	<0.50	<0.50	0.7	0.7	NA
"	"	08/27/96	2100	150	0.64	<0.50	<0.50	<0.50	0.64	<0.10
"	"	11/12/96	1600	170	<0.50	<0.50	<0.50	1.1	1.1	NA
"	"	02/18/97	1900	140	<0.50	<0.50	<0.50	1.3	1.3	NA
"	"	05/21/97	1600	100	1.3	<0.50	<0.50	1.1	2.4	NA
"	"	08/27/97	1100	100	1.5	<0.50	1.1	3.2	5.8	<0.0050
"	"	11/19/97	1500	94	<0.50	<0.50	<0.50	0.69	0.69	NA
"	"	02/05/98	1400	56	<0.50	<0.50	<0.50	<0.50	ND	NA
"	"	08/12/98	2000	79	<0.50	<0.50	<0.50	<0.50	ND	<0.0050
APL/UP-W1	APL/UP-W1	07/16/93	700	300	25.4	1.7	ND	3.0	30	0.011
"	"	08/26/93	810	720	47	1.3	360	14	420	0.013
"	"	11/11/93	530	560	26	ND	220	11	260	ND
"	"	02/07/94	660	620	25	<0.50	180	10	220	<0.10
"	"	05/03/94	590	680	48	2.9	260	9.8	320	<0.10
"	"	08/24/94	420	830	48	4.8	12	3.2	68	<0.10
"	"	11/15/94	480	470	36	3.6	9.6	12	61	NA
"	"	02/22/95	510	470	33	2.8	170	9	210	NA
"	"	06/22/95	320	160	12	0.82	3.5	2.4	19	NA
"	"	08/09/95	160	69	4.2	<0.50	<0.50	2.3	7	<0.0050
"	"	11/29/95	920	170	7.4	0.58	66	3.5	78	0.018
"	"	02/27/96	WELL INACCESSABLE - NOT SAMPLED							
"	"	05/30/96	WELL INACCESSABLE - NOT SAMPLED							
"	"	08/27/96	WELL INACCESSABLE - NOT SAMPLED							
"	"	11/12/96	WELL INACCESSABLE - NOT SAMPLED							
"	"	02/18/97	1800	620	43	3.3	130	20	196	NA
"	"	05/21/97	850	260	22	<0.50	13	2.5	38	NA
"	"	08/27/97	930	310	31	1.2	9.7	8.5	50	0.026
"	"	11/18/97	1400	740	53	<0.50	370	28	450	NA
"	"	02/05/98	1000	640	55	<0.50	<0.50	22	77	NA
"	"	05/22/98	490	270	20	<0.50	5.2	5.4	31	NA
"	"	08/12/98	500	160	17	0.72	130	11	160	0.027
APL/UP-W2	APL/UP-W2	07/16/93	ND	ND	8.0	ND	ND	ND	8	0.016
"	"	08/26/93	240	94	ND	ND	35	2.4	37	0.023
"	"	11/11/93	190	110	5.0	ND	38	2.6	46	ND
"	"	02/07/94	270	120	6.6	<0.50	38	1.8	46	<0.10
"	"	05/03/94	100	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
"	"	08/24/94	330	220	13	0.77	3.5	3.1	20	<0.10
"	"	11/15/94	320	190	11	<0.50	63	5.4	79	NA
"	"	02/22/95	550	320	19	<0.50	100	9.5	130	NA
"	"	06/22/95	300	170	10	62	2.2	2.3	76	NA
"	"	08/09/95	180	62	3.5	<0.50	<0.50	2.3	5.8	0.22
"	"	11/29/95	690	110	7.2	<0.50	49	2.3	59	0.019
"	"	02/27/96	480	100	5.3	<0.50	33	2.9	41	NA
"	"	05/30/96	280	<50	1.9	<0.50	<0.50	1.2	3.1	NA
"	"	08/27/96	320	<50	1.1	<0.50	1.0	<0.50	2.1	<0.10
"	"	11/12/96	470	85	3.2	<0.50	1.7	0.62	5.5	NA
"	"	02/18/97	770	170	12	0.77	81	9.4	103	NA

**TABLE 2  
ANALYTICAL RESULTS - GROUNDWATER MONITORING WELLS  
UNION PACIFIC RAILROAD  
OAKLAND MOTOR FREIGHT FACILITY**

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/D (ug/l)	TPH/G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	BTEX (ug/l)	As (mg/l)
APL/UP-W2	APL/UP-W2	05/21/97	430	92	4.8	<0.50	1.1	<0.50	5.9	NA
"	"	08/27/97	450	130	6.4	<0.50	3.8	1.9	12.0	0.017
"	"	11/18/97	640	300	17	<0.50	120	15	150	NA
"	"	02/05/98	730	180	15	<0.50	<0.50	4.9	20	NA
"	"	05/22/98	250	88	4	<0.50	1.7	<0.50	5.7	NA
"	"	08/12/98	360	58	3	<0.50	35	3.2	42	0.012
<b>DUPLICATES</b>										
OKUS-W5	OKUS-W6	01/15/93	2800	510	50	10	170	19	250	NA
OKUS-W1	OKUS-W6	05/12/93	140	ND	ND	ND	ND	ND	ND	ND
APL/UP-W1	QA/QC-1	07/16/93	ND	0.21	22.4	ND	ND	2.4	25	0.012
OKUS-W4	OKUS-W9	08/26/93	2700	6200	340	78	4500	100	5000	0.10
OKUS-W8	OKUS-W9	11/11/93	1300	120	1.3	ND	4	1.4	7	2.40
OKUS-W3	QA/QC-1	02/08/94	2900	15000	280	64	5800	<0.50	6100	0.12
OKUS-W4	OKUS-QC1	05/03/94	2500	5400	300	41	5200	130	5700	0.12
OKUS-W8	OKUS-QC1	08/24/94	950	92	1.6	<0.50	<0.50	<0.50	2	<0.10
APL/UP-W2	OKUS-QC1	11/16/94	310	190	10	<0.50	62	4.7	77	NA
APL/UP-W2	APL-W12	02/22/95	490	360	20	<0.50	110	6.7	140	NA
APL/UP-W2	APL-W12	08/09/95	160	71	3.4	<0.50	<0.50	2.2	6	0.20
APL/UP-W1	APL-W11	11/29/95	1100	170	7.5	0.57	66	4.4	79	0.02
OKUS-W1	OKUS-W11	02/27/96	330	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
OKUS-W1	OKUS-W11	05/30/96	570	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
OKUS-W1	OKUS-W11	08/27/96	330	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10
OKUS-W2	OKUS-W12	11/12/96	3000	11000	210	55	26	89	380	NA
APL/UP-W1	APL/UP-W11	02/18/97	1800	370	42	1.4	140	18	201	NA
OKUS-W1	OKUS-W11	05/21/97	220	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
OKUS-W2	OKUS-W12	08/27/97	1500	4800	140	29	70	23	260	0.068
OKUS-W7	OKUS-W17	11/19/97	1400	<50	2.1	<0.50	0.66	<0.50	2.8	NA
OKUS-W2	OKUS-100	05/22/98	1400	<50	<0.50	<0.50	<0.50	<0.50	ND	NA
OKUS-W2	OKUS-W200	08/12/98	2100	<50	<0.50	<0.50	<0.50	<0.50	ND	0.10
<b>TRIP BLANKS</b>										
UPMF	OAK-FB 1	07/16/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	OAK-TB 2	07/16/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-1	08/27/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-2	08/27/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-1	11/12/93	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-1	08/24/94	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TB-1	11/16/94	NA	NA	NA	NA	NA	NA	NA	NA
UPMF	TB-1	02/22/95	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TB-1	06/22/95	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TB-1	08/09/95	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	11/29/95	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	02/27/96	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	05/29/96	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	08/27/96	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	11/12/96	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	02/18/97	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	05/21/97	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	08/27/97	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	11/19/97	NA	ND	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	02/02/98	NA	NA	ND	ND	ND	ND	ND	NA
UPMF	TRIP BLANK	08/14/98	NA	NA	ND	ND	ND	ND	ND	NA

ND - Not Detected

NA - Not Analyzed

BRK - Bottle broken during shipment

TPH - Total Petroleum Hydrocarbons

mg/L - milligram per liter

BTEX -Benzene, toluene, ethylbenzene, and xylenes

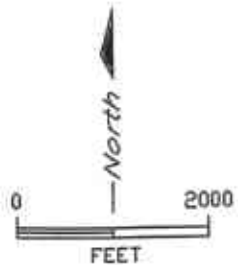
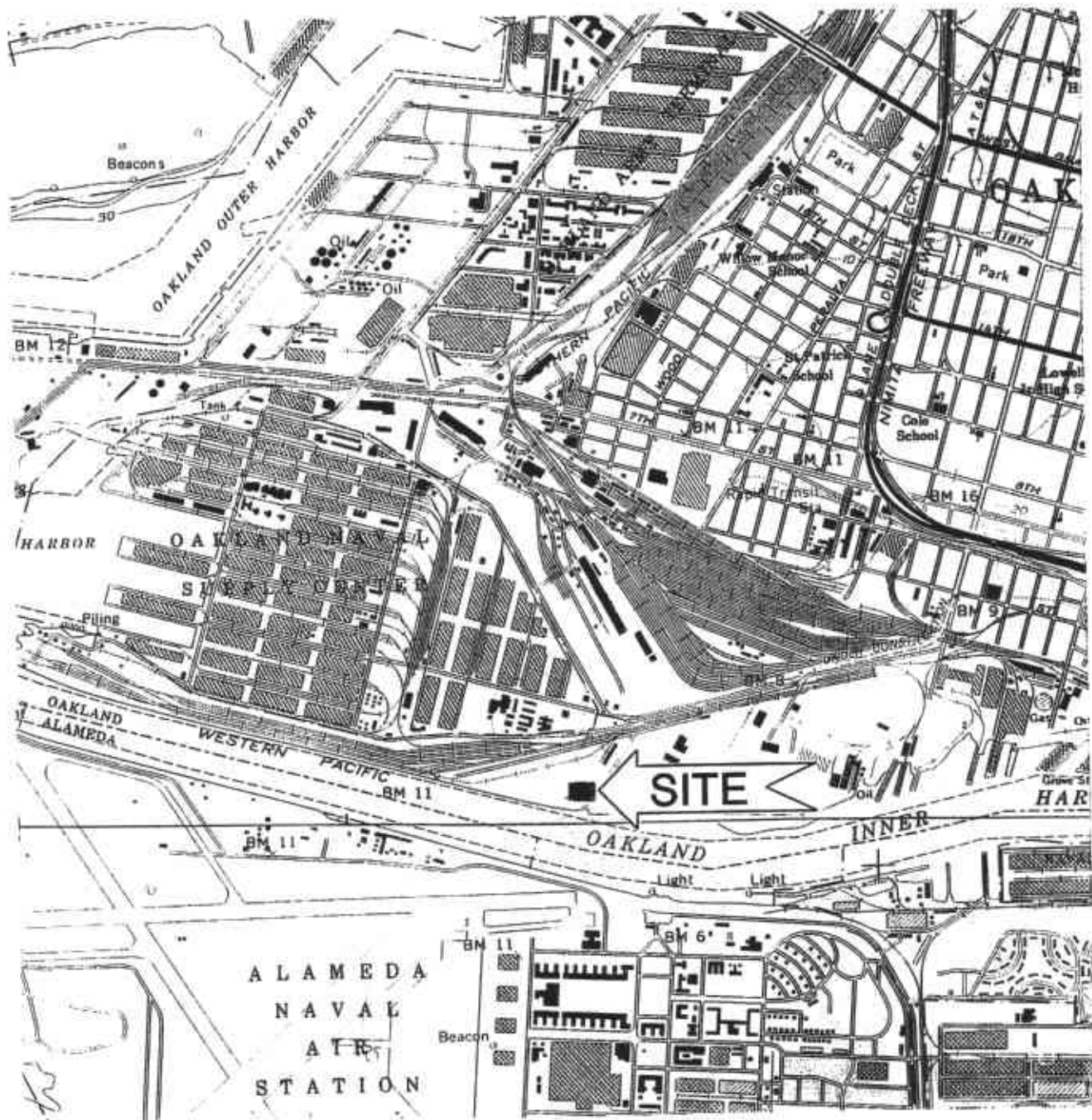
ug/L - microgram per liter

TPH/D - analyzed using EPA Method 8015 Mod.

TPH/G - analyzed using EPA Method 8015 Mod.

BTEX - analyzed using EPA Method 8020

As - Arsenic analyzed using EPA Method 7060



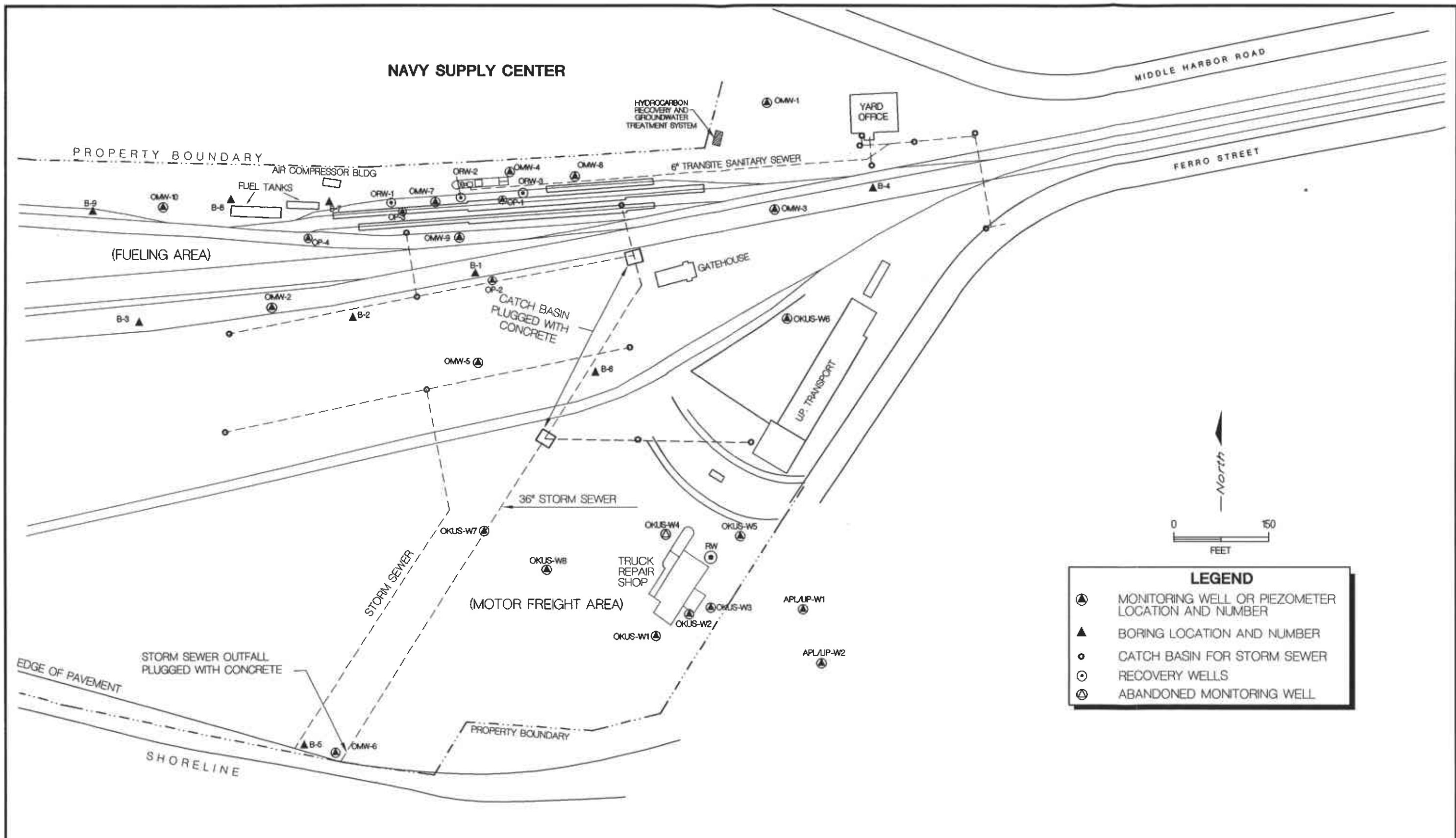
**USPCI**  
A LAIDLAW COMPANY

UP MOTOR FREIGHT FACILITY-OAKLAND, CA

FIGURE 1  
SITE LOCATION MAP

SCALE	DATE
1" = 2000'	6/27/96

LOCMAP



OAKLAND ESTUARY

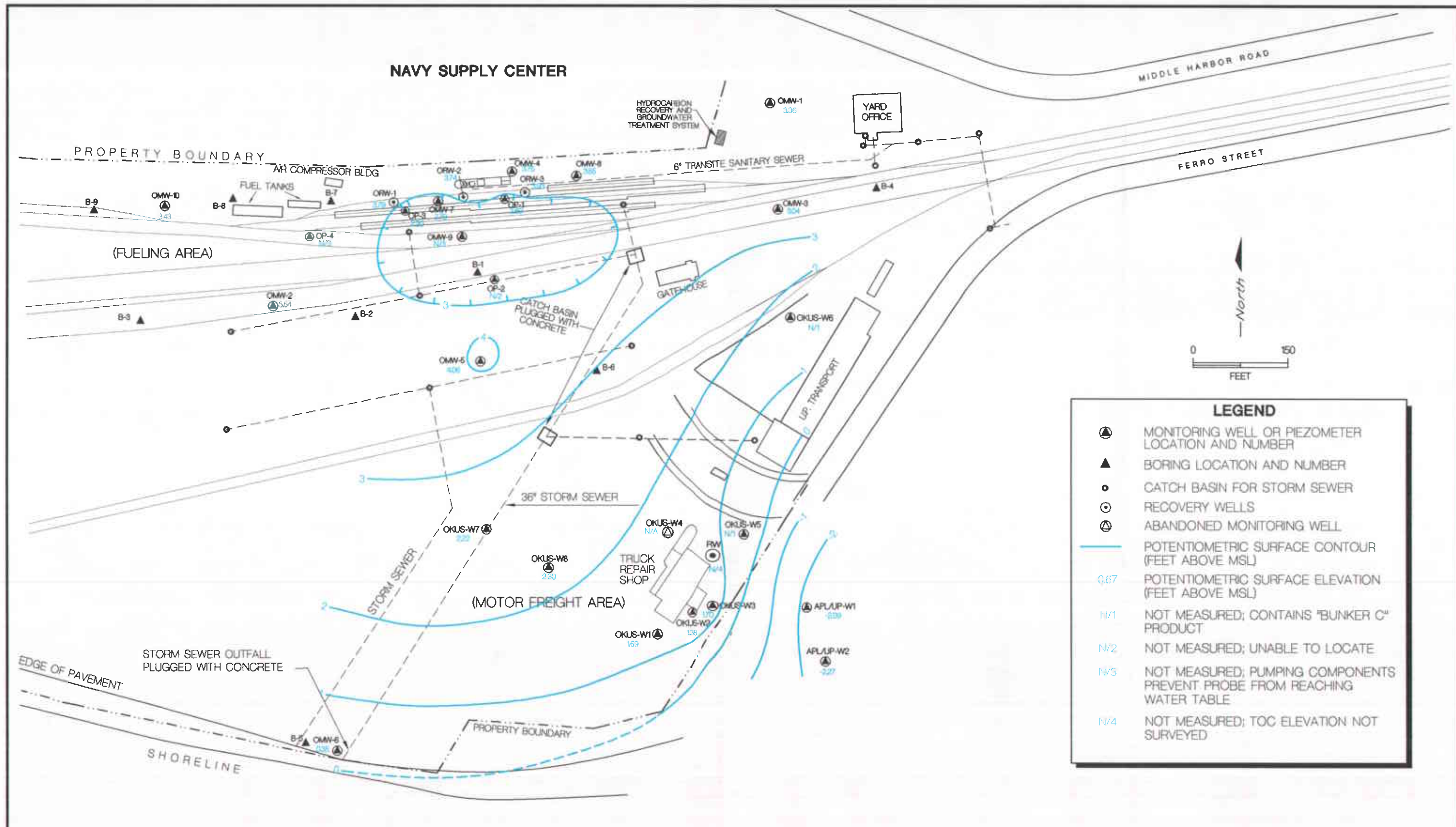
BY	DATE
DESIGN C.U.	10/8/98
CHECKED	
APPROVED	
APPROVED	
APPROVED	



UPRR TOFC RAILYARD  
UPMF REPAIR SHOP- OAKLAND, CALIFORNIA

FIGURE 2  
SITE VICINITY MAP

SCALE: 1" = 150'      DWG. NO: 96199-0007



**LEGEND**

- ⊙ MONITORING WELL OR PIEZOMETER LOCATION AND NUMBER
- ▲ BORING LOCATION AND NUMBER
- CATCH BASIN FOR STORM SEWER
- ⊕ RECOVERY WELLS
- ⊖ ABANDONED MONITORING WELL
- POTENTIOMETRIC SURFACE CONTOUR (FEET ABOVE MSL)
- 0.67 POTENTIOMETRIC SURFACE ELEVATION (FEET ABOVE MSL)
- N/1 NOT MEASURED; CONTAINS "BUNKER C" PRODUCT
- N/2 NOT MEASURED; UNABLE TO LOCATE
- N/3 NOT MEASURED; PUMPING COMPONENTS PREVENT PROBE FROM REACHING WATER TABLE
- N/4 NOT MEASURED; TOC ELEVATION NOT SURVEYED

OAKLAND ESTUARY

**FIGURE 3**

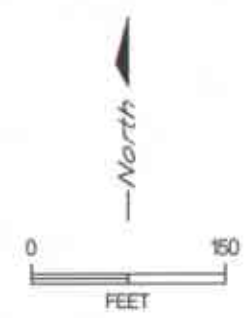
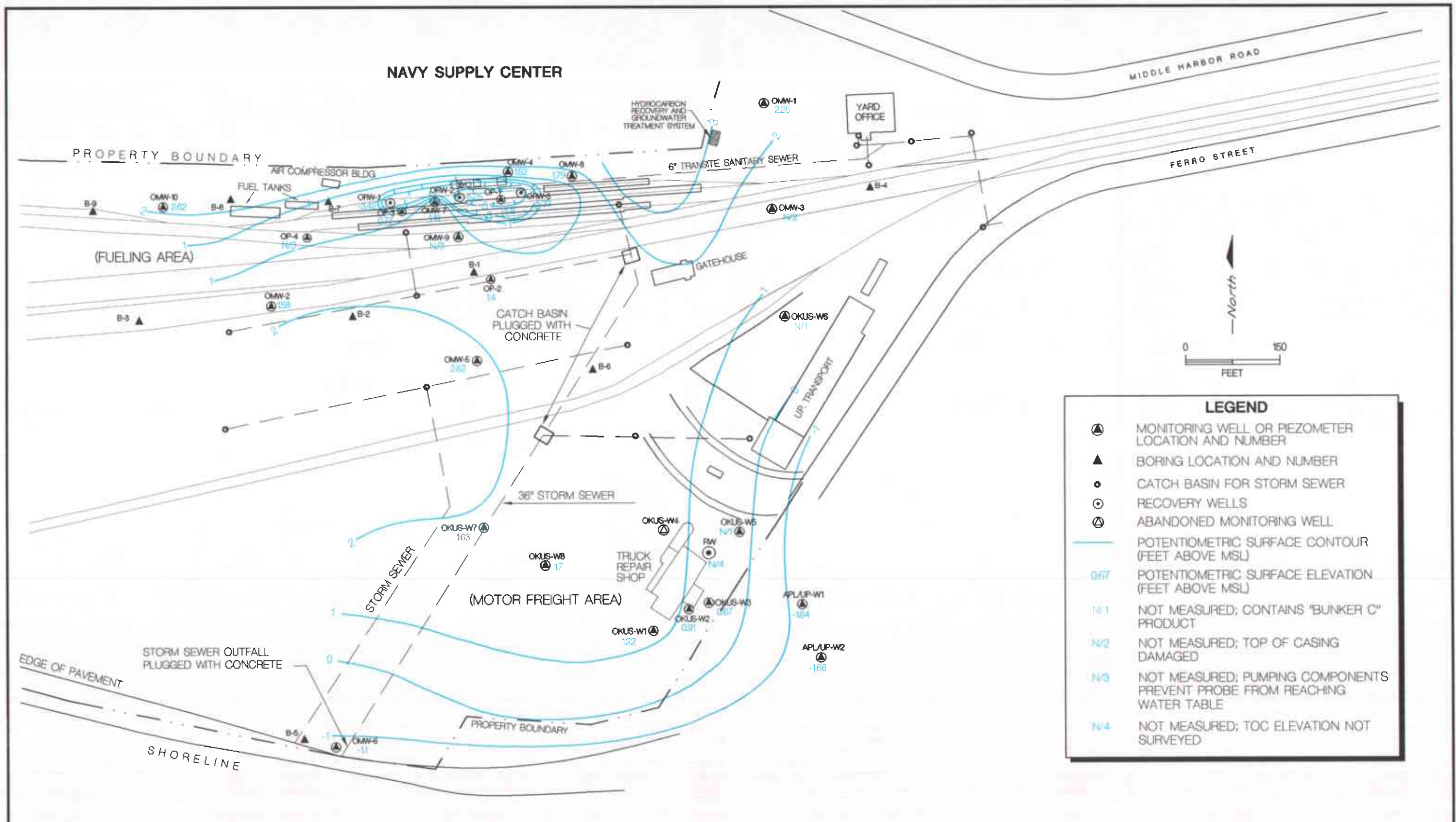
BY	DATE
OPWA CJU	10/9/98
CHECKED	
APPROVED	
APPROVED	



UPRR TOFC RAILYARD  
UPMF MOTOR FREIGHT - OAKLAND, CALIFORNIA  
GROUNDWATER POTENTIOMETRIC  
SURFACE MAP - MAY 1998

SCALE: 1" = 150'

DWG NO: 96199-0012



LEGEND	
⊙	MONITORING WELL OR PIEZOMETER LOCATION AND NUMBER
▲	BORING LOCATION AND NUMBER
○	CATCH BASIN FOR STORM SEWER
⊖	RECOVERY WELLS
⊙	ABANDONED MONITORING WELL
—	POTENTIOMETRIC SURFACE CONTOUR (FEET ABOVE MSL)
0.67	POTENTIOMETRIC SURFACE ELEVATION (FEET ABOVE MSL)
N/1	NOT MEASURED; CONTAINS "BUNKER C" PRODUCT
N/2	NOT MEASURED; TOP OF CASING DAMAGED
N/3	NOT MEASURED; PUMPING COMPONENTS PREVENT PROBE FROM REACHING WATER TABLE
N/4	NOT MEASURED; TOC ELEVATION NOT SURVEYED

OAKLAND ESTUARY

FIGURE 4

BY CJJ	DATE 10/14/98		<b>UPRR TOFC RAILYARD UPMF MOTOR FREIGHT - OAKLAND, CALIFORNIA</b>		
DRAWN			<b>GROUNDWATER POTENTIOMETRIC SURFACE MAP - AUGUST 1998</b>		
CHECKED			SCALE: 1" = 150'	DWG. NO: 96199-0013	
APPROVED					
APPROVED					



NAVY  
SUPPLY  
CENTER

6" TRANSITE SANITARY SEWER

GATEHOUSE

CATCH BASIN  
PLUGGED WITH  
CONCRETE

UP: TRANSPORT

AMERICAN  
PRESIDENT  
LINES  
FACILITY

OKUS-W5  
NA

OKUS-W4

OKUS-W7  
NA

OKUS-W8  
ND

OKUS-W1  
NA

OKUS-W3  
420

OKUS-W2  
310

APLUP-W1  
31

APLUP-W2  
5.7

STORM SEWER OUTFALL  
PLUGGED WITH CONCRETE

STORM SEWER (PLUGGED)

36" STORM SEWER (PLUGGED)

PROPERTY BOUNDARY



**LEGEND**

- OKUS-W2  
▲  
310  
MONITOR WELL LOCATION AND NUMBER WITH TOTAL DISSOLVED BTEX CONCENTRATION ug/L
- RW  
●  
RECOVERY WELL
- CATCH BASIN FOR STORM SEWER
- 100  
—  
TOTAL BTEX DISTRIBUTION CONTOUR; DASHED WHERE INFERRED
- ND  
NA  
○  
NOT DETECTED  
NOT ANALYZED  
ABANDONED WELL

NOTE: ALL ANALYTICAL RESULTS IN  $\mu\text{g/L}$



UPMF REPAIR SHOP-OAKLAND, CALIFORNIA

FIGURE 5  
APPROXIMATE DISSOLVED PHASE  
BTEX DISTRIBUTION (5-98)

SCALE: 1" = 150'

APPROVED DATE

56120-0111

NAVY  
SUPPLY  
CENTER

6" TRANSITE SANITARY SEWER

GATEHOUSE

CATCH BASIN  
PLUGGED WITH  
CONCRETE

UP. TRANSPORT

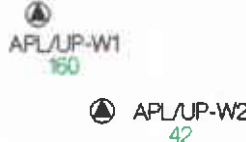
AMERICAN  
PRESIDENT  
LINES  
FACILITY

STORM SEWER OUTFALL  
PLUGGED WITH CONCRETE

STORM SEWER (PLUGGED)

36" STORM SEWER (PLUGGED)

PROPERTY BOUNDARY



**LEGEND**

- OKUS-W2  
▲ 3000  
MONITOR WELL LOCATION AND NUMBER WITH TOTAL DISSOLVED BTEX CONCENTRATION ug/L
- RW ●  
RECOVERY WELL
- CATCH BASIN FOR STORM SEWER
- 100  
TOTAL BTEX DISTRIBUTION CONTOUR; DASHED WHERE INFERRED
- ND  
NOT DETECTED
- NA  
NOT ANALYZED
- ▲  
ABANDONED WELL

NOTE: ALL ANALYTICAL RESULTS IN  $\mu\text{g/L}$



UPMF REPAIR SHOP-OAKLAND, CALIFORNIA

FIGURE 6  
APPROXIMATE DISSOLVED PHASE  
BTEX DISTRIBUTION (8-98)

SCALE 1" = 150'

APPROVED DATE

35120-0112

**APPENDIX A**

**FLUID-LEVEL MEASUREMENTS AND SAMPLE COLLECTION LOGS**

LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top of Casing** Well No. **OKUS-W2**  
 Well Depth: (Below MP): **22.31 Feet**

Casing Diameter: **2 Inches** Sampling Date **5/22/98**

Depth to Ground Water (Below MP): **8.33 Feet** Sample ID No. **OKUS-W2**

**Method of Well Development:** Time: **0958**

Tap  Submersible Pump  Bladder Pump Riser Elevation (MP):

Bailer  Centrifugal Pump  Other Top of Screen Elevation:

**Sampling Collection Method:** Sample Appearance: **Cloudy, Brown**

Tap  Submersible Pump  Bladder Pump Sample Odor: **Diesel**

Bailer Type  Teflon  Stainless Steel Sampling Problems (if any): **None**

ABS Plastic  PVC  HDPE

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if used):

Tubing Used For:  Sample Collection  Well Development/Field Tests Samples Collected: **BTEX,TPH-Diesel**

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
0940	6.5	2,700	22.0		2.0	
0949	6.5	3,400	22.0		4.0	
0955	6.5	4,160	23.0		6.0	

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments: Took duplicate sample OKUS-W100.

[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:

LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top of Casing** Well No. **OKUS-W3**  
 Well Depth: (Below MP): **22.10 Feet**

Casing Diameter: **2 Inches** Sampling Date: **5/22/98**

Depth to Ground Water (Below MP): **8.65 Feet** Sample ID No. **OKUS-W3**

Method of Well Development: Time: **1100**

Tap  Submersible Pump  Bladder Pump Riser Elevation (MP):

Bailer  Centrifugal Pump  Other Top of Screen Elevation:

Sampling Collection Method: Sample Appearance: **Cluody brown**

Tap  Submersible Pump  Bladder Pump Sample Odor: **Diesel**

Bailer Type  Teflon  Stainless Steel Sampling Problems (if any): **None**

ABS Plastic  PVC  HDPE

Pump Intake Or Bailer Set At   N/A   Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if used):

Tubing Used For:  Sample Collection  Well Development/Field Tests Samples Collected: **BTEX,TPH-Diesel**

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
1045	6.5	2,950	23.0		2.1	
1049	6.5	3,390	23.5		4.2	
1055	6.5	3,210	23.0		6.3	

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments:

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[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:

LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: <b>UP Motor Freight</b>				Laidlaw Project Number: <b>96120-844</b>		
Measuring Point (MP) Location: <b>Top of Casing</b>				<b>Well No. APL/UP-W1</b>		
Well Depth: (Below MP): <b>21.85 Feet</b>						
Casing Diameter: <b>2 Inches</b>				Sampling Date: <b>5/22/98</b>		
Depth to Ground Water (Below MP): <b>10.21 Feet</b>				Sample ID No. <b>APL/UP-W1</b>		
<b>Method of Well Development:</b>				Time: <b>1240</b>		
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input checked="" type="checkbox"/> Bladder Pump				Riser Elevation (MP):		
<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Centrifugal Pump <input type="checkbox"/> Other				Top of Screen Elevation:		
<b>Sampling Collection Method:</b>				Sample Appearance: <b>Rust Colored</b>		
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump Sample				Odor: <b>None</b>		
<input checked="" type="checkbox"/> Bailer Type <input type="radio"/> Teflon <input type="radio"/> Stainless Steel				Sampling Problems (if any): <b>None</b>		
<input type="radio"/> ABS Plastic <input type="radio"/> PVC <input checked="" type="radio"/> HDPE						
Pump Intake Or Bailer Set At _____ Feet Below MP				Decontamination Performed: <b>Probe</b>		
Tubing Type (if used):						
Tubing Used For: <input type="checkbox"/> Sample Collection <input type="checkbox"/> Well Development/Field Tests				Samples Collected: <b>BTEX,TPH-Diesel</b>		
Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
1222	6.5	2,130	19.0	2.0		
1229	6.5	2,140	18.5	4.0		
1235	6.5	2,180	20.0	6.0		

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments:

[Comments may continue on back]

Form Completed By: **Joe Franzen**

Witnessed By:

LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top of Casing** **Well No. APL/UP-W2**  
 Well Depth: (Below MP): **16.97 Feet**

Casing Diameter: **2 Inches** Sampling Date: **5/22/98**

Depth to Ground Water (Below MP): **9.58 Feet** Sample ID No. **APL/UP-W2**

**Method of Well Development:** Time: **1150**

Tap  Submersible Pump  Bladder Pump Riser Elevation (MP):

Bailer  Centrifugal Pump  Other Top of Screen Elevation:

**Sampling Collection Method:** Sample Appearance: **Clear**

Tap  Submersible Pump  Bladder Pump Sample Odor: **None**

Bailer Type  Teflon  Stainless Steel Sampling Problems (if any): **None**

ABS Plastic  PVC  HDPE

Pump Intake Or Bailer Set At N/A Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if used):

Tubing Used For:  Sample Collection  Well Development/Field Tests Samples Collected: **BTEX,TPH-Diesel**

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
1135	6.5	2,320	23.5		1.2	
1139	6.5	2,470	22.5		2.4	
1144	6.5	2,130	23.5		3.6	

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments:

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[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:

5/21/98

ARRIVED AT OAKLAND RAILYARD  
AT 12:15

TIME	WELL	NTP	DTW	T.D
1245	OMW-1 ✓		5.45 ✓	
1313	OMW-6 ✓		6.13 ✓	
1325	OMW-2 ✓		2.34 ✓	
1332	OMW-5 ✓		3.56 ✓	
1345	OMW-8 ✓		3.97 ✓	
1406	OMW-10 ✓		4.13 ✓	
1420	OKUS-7		4.69	
1426	OKUS-8		4.45	
1446	ARRUP-W2		9.58	16.97
1454	APLUP-W1		10.21	21.85
1510	OMW-3 ✓		4.12 ✓	
1522	OKUS-W1		7.48	
1526	OKUS-W2		8.33	22.31
1532	OKUS-W3		8.65	22.10
1557	ORW-3 2.31 ✓		2.70	
1603	OP-1		3.82 ✓	
1607	ORW-2 2.77 ✓		4.53	
1613	OMW-7 3.68		7.15 ✓	
1622	OP-3 ✓		3.80	6.77
1634	ORW-1 2.66 ✓		3.65	
5/22/98				
1510	OMW-4		3.52	7.40

1110

5 Key



LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top Of Casing** **Well No. OKUS-W1**

Well Depth: (Below MP): **18.70 Feet** Sampling Date: **8/12/98**

Casing Diameter: **2 Inches** Sample ID No. **OKUS-W1**

Depth to Ground Water (Below MP): **7.95 Feet** Time: **1600**

Method of Well Development:  Tap  Submersible Pump  Bladder Pump Riser Elevation (MP): **9.17 Feet**

Bailer  Centrifugal Pump  Other Top of Screen Elevation: **6.85 Feet**

Sampling Collection Method: Sample Appearance: **Yellowish**

Tap  Submersible Pump  Bladder Pump Sample Odor: **Slight diesel**

Bailer Type  Teflon  Stainless Steel Sampling Problems (if any): **None**

ABS Plastic  PVC  HDPE

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if used):

Tubing Used For:  Sample Collection  Well Development/Field Tests Samples Collected: **BTEX, TPH-Gasoline, and TPH-Diesel**

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
17:06	7.0	740	23.1		1.7	
17:10	7.0	760	23.1		3.4	
17:14	7.0	780	23.9		5.1	

At Least 3 Well Bore Volumes Were Evacuated Before Sampling

Comments:

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[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:

LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top of Casing** **Well No. OKUS-W2**

Well Depth: (Below MP): **22.32 Feet** **Sampling Date: 8/12/98**

Casing Diameter: **2 Inches** **Sample ID No. OKUS-W2**

Depth to Ground Water (Below MP): **8.80 Feet** **Time: 1640**

**Method of Well Development:** **Riser Elevation (MP):**

Tap  Submersible Pump  Bladder Pump **Top of Screen Elevation:**

Bailer  Centrifugal Pump  Other **Sample Appearance: Yellow**

**Sampling Collection Method:** **Odor: slight diesel**

Tap  Submersible Pump  Bladder Pump Sample **Sampling Problems (if any): None**

Bailer Type  Teflon  Stainless Steel **Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP** **Decontamination Performed: Probe**

ABS Plastic  PVC  HDPE **Tube Type (if used):**

**Tubing Used For:**  Sample Collection  Well Development/Field Tests **Samples Collected: BTEX, TPH-Gasoline, and TPH-Diesel**

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
16:21	7.0	2,900	23.1		2.2	
16:25	7.0	3,300	22.4		4.4	
16:30	7.0	3,300	22.4		6.6	

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments: Took duplicate sample OKUS-W200.

[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:

LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top of Casing** **Well No. OKUS-W3**

Well Depth: (Below MP): **22.08 Feet** Sampling Date: **8/12/98**

Casing Diameter: **2 Inches** Sample ID No. **OKUS-W3**

Depth to Ground Water (Below MP): **9.13 Feet** Time: **1800**

**Method of Well Development:** Riser Elevation (MP):

Tap  Submersible Pump  Bladder Pump Top of Screen Elevation:

Bailer  Centrifugal Pump  Other

**Sampling Collection Method:** Sample Appearance: **Yellowish**

Tap  Submersible Pump  Bladder Pump Sample Odor: **Diesel**

Bailer Type  Teflon  Stainless Steel Sampling Problems (if any):

ABS Plastic  PVC  HDPE

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if used):

Tubing Used For:  Sample Collection  Well Development/Field Tests Samples Collected: **BTEX, TPH-Gasoline, and TPH-Diesel**

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
17:41	7.0	2,620	23.4		2.0	
17:45	7.0	3,160	22.8		4.0	
17:50	7.0	3,010	21.9		6.0	

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments:

[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:

LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top of Casing** Well No. **OKUS-W5**  
 Well Depth: (Below MP): **21.00 Feet**

Casing Diameter: **2 Inches** Sampling Date: **N/A**  
 Depth to Product (Below MP): **9.03 Feet** Sample ID No. **N/A**

**Method of Well Development:** Time: **0903**  
 Tap  Submersible Pump  Bladder Pump Riser Elevation (MP):  
 Bailer  Centrifugal Pump  Other Top of Screen Elevation:

**Sampling Collection Method:** Sample Appearance: **N/A**  
 Tap  Submersible Pump  Bladder Pump Sample Odor: **N/A**  
 Bailer Type  Teflon  Stainless Steel Sampling Problems (if any): **Product in well water**  
 ABS Plastic  PVC  HDPE

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if used):

Tubing Used For:  Sample Collection  Well Development/Field Tests Samples Collected:

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
<b>WELL NOT SAMPLED</b>						

Comments: **The well was not sampled because of the presence of phase-separated hydrocarbon.**

[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:

**LIDLAW SAMPLING AND WELL STABILIZATION FORM**

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top of Casing** **Well No. OKUS-W6**

Well Depth: (Below MP): **16.30 Feet** Casing Diameter: **2 Inches**

Depth to Product (Below MP): **5.81 Feet** Sampling Date: **N/A**

**Method of Well Development:** Time: **1451**

Tap  Submersible Pump  Bladder Pump Riser Elevation (MP):

Bailer  Centrifugal Pump  Other Top of Screen Elevation:

**Sampling Collection Method:** Sample Appearance: **N/A**

Tap  Submersible Pump  Bladder Pump Sample Odor: **N/A**

Bailer Type  Teflon  Stainless Steel Sampling Problems (if any): **Product in well water**

ABS Plastic  PVC  HDPE

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if used):

Tubing Used For:  Sample Collection  Well Development/Field Tests Samples Collected:

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
<b>WELL NOT SAMPLED</b>						

Comments: **The well was not sampled because of the presence of phase-separated hydrocarbon.**

[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:

LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top of Casing** **Well No. OKUS-W7**

Well Depth: (Below MP): **20.82 Feet** Sampling Date: **8/12/98**

Casing Diameter: **2 Inches** Sample ID No. **OKUS-W7**

Depth to Ground Water (Below MP): **5.28 Feet** Time: **1600**

**Method of Well Development:** Riser Elevation (MP):

Tap  Submersible Pump  Bladder Pump Top of Screen Elevation:

Bailer  Centrifugal Pump  Other

**Sampling Collection Method:** Sample Appearance: **Brown and Turbid**

Tap  Submersible Pump  Bladder Pump Sample Odor: **None**

Bailer Type  Teflon  Stainless Steel Sampling Problems (if any): **None**

ABS Plastic  PVC  HDPE

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if used):

Tubing Used For:  Sample Collection  Well Development/Field Tests Samples Collected: **BTEX, TPH-Gasoline, TPH-Diesel, Arsenic**

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
15:50	7.0	2,500	23.4		2.5	
15:54	7.0	2,500	22.8		5.0	
15:59	7.0	2,500	22.6		7.5	

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments:

[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:

LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: <b>UP Motor Freight</b>				Laidlaw Project Number: <b>96120-844</b>		
Measuring Point (MP) Location: <b>Top of Casing</b>				<b>Well No. OKUS-W8</b>		
Well Depth: (Below MP): <b>14.86 Feet</b>						
Casing Diameter: <b>2 Inches</b>			Sampling Date: <b>8/12/98</b>			
Depth to Ground Water (Below MP): <b>5.05 Feet</b>			Sample ID No. <b>OKUS-W8</b>			
<b>Method of Well Development:</b>				Time: <b>1400</b>		
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump			Riser Elevation (MP):			
<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Centrifugal Pump <input type="checkbox"/> Other			Top of Screen Elevation:			
<b>Sampling Collection Method:</b>				Sample Appearance: <b>Brown</b>		
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump Sample			Odor: <b>Diesel</b>			
<input checked="" type="checkbox"/> Bailer Type <input type="checkbox"/> Teflon <input type="checkbox"/> Stainless Steel			Sampling Problems (if any):			
<input type="checkbox"/> ABS Plastic <input type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE						
Pump Intake Or Bailer Set At _____ Feet Below MP			Decontamination Performed: <b>Probe</b>			
Tubing Type (if used):						
Tubing Used For: <input type="checkbox"/> Sample Collection <input type="checkbox"/> Well Development/Field Tests			Samples Collected: <b>BTEX, TPH-Gasoline, Arsenic, TPH-Diesel</b>			

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
13:46	7.0	3,800	24.1		1.5	
13:50	7.0	3,700	23.2		3.0	
13:52	7.0	3,700	23.0		4.5	

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments:

[Comments may continue on back]

Form Completed By: **Joe Franzen**

Witnessed By:

**LIDLAW SAMPLING AND WELL STABILIZATION FORM**

Laidlaw Project Name: **UP Motor Freight** Laidlaw Project Number: **96120-844**

Measuring Point (MP) Location: **Top of Casing** **Well No. APL/UP-W1**

Well Depth: (Below MP): **21.86 Feet** Casing Diameter: **2 Inches**

Depth to Ground Water (Below MP): **9.76 Feet** Sampling Date: **8/13/98**

Method of Well Development: Sample Appearance: **Rust Colored**

Tap  Submersible Pump  Bladder Pump Time: **0835**

Bailer  Centrifugal Pump  Other Riser Elevation (MP):

Sampling Collection Method: Top of Screen Elevation:

Tap  Submersible Pump  Bladder Pump Sample Odor: **None**

Bailer Type  Teflon  Stainless Steel Sampling Problems (if any):

ABS Plastic  PVC  HDPE

Pump Intake Or Bailer Set At \_\_\_\_\_ Feet Below MP Decontamination Performed: **Probe**

Tubing Type (if used):

Tubing Used For:  Sample Collection  Well Development/Field Tests Samples Collected: **BTEX, TPH-Gasoline, TPH-Diesel, Arsenic**

Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
8:24	7.0	1,860	19.5	2.0		
8:29	7.0	1,840	18.9	4.0		
8:33	7.0	1,890	19.0	6.0		

**At Least 3 Well Bore Volumes Were Evacuated Before Sampling**

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

[Comments may continue on back]

Form Completed By: **Joe Franzen** Witnessed By:



LIDLAW SAMPLING AND WELL STABILIZATION FORM

Laidlaw Project Name: <b>UP Motor Freight</b>				Laidlaw Project Number: <b>96120-844</b>		
Measuring Point (MP) Location: <b>Top of Casing</b>				<b>Well No. APL/UP-W2</b>		
Well Depth: (Below MP): <b>16.97 Feet</b>						
Casing Diameter: <b>2 Inches</b>				Sampling Date: <b>8/13/98</b>		
Depth to Ground Water (Below MP): <b>8.99 Feet</b>				Sample ID No. <b>APL/UP-W2</b>		
<b>Method of Well Development:</b>				Time: <b>0915</b>		
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump				Riser Elevation (MP):		
<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Centrifugal Pump <input type="checkbox"/> Other				Top of Screen Elevation:		
<b>Sampling Collection Method:</b>				Sample Appearance: <b>Yellowish</b>		
<input type="checkbox"/> Tap <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Bladder Pump Sample				Odor: <b>None</b>		
<input checked="" type="checkbox"/> Bailer Type <input type="checkbox"/> Teflon <input type="checkbox"/> Stainless Steel				Sampling Problems (if any): <b>None</b>		
<input type="checkbox"/> ABS Plastic <input type="checkbox"/> PVC <input checked="" type="checkbox"/> HDPE						
Pump Intake Or Bailer Set At _____ Feet Below MP				Decontamination Performed: <b>Probe</b>		
Tubing Type (if used):						
Tubing Used For: <input type="checkbox"/> Sample Collection <input type="checkbox"/> Well Development/Field Tests				Samples Collected: <b>BTEX, TPH-Gasoline, Arsenic, TPH-Diesel</b>		
Time	pH (Units)	Temperature Corrected Conductance (umho/cm)	Temperature (Centigrade)	Water Level (Nearest 0.01 Ft.)	Cumulative Volume of Water Removed From Well (Gallons)	Pumping Rate in gallons/Minute (GPM)
09:03	7.0	2,280	22.0		1.3	
09:06	7.0	2,270	22.1		2.6	
09:09	7.0	2,260	22.0		3.9	

At Least 3 Well Bore Volumes Were Evacuated Before Sampling

Comments:

[Comments may continue on back]

Form Completed By: **Joe Franzen**

Witnessed By:

28

ARRIVE AT OAKLAND SITE  
AT 0745

SUNNY, W-RAM, 75°F

WELL	DTW	DTP	TD	TIME
OKUS-W7	5.28		10.82	0827
OKUS-W8	5.05		14.86	0833
APL/UP-W1	9.76		21.06	0855
APL/UP-W2	8.99		16.97	0903
OKUS-W1	7.95		18.70	0913
OKUS-W2	8.80		22.32	0917
OKUS-W3	7.17		22.08	0926
OMW-1	6.54		12.07	0936
OMW-6	6.88		11.80	0945
OMW-5	5.00		12.37	1005
OMW-2	4.3		7.92	1015
OMW-8	5.73			17.46
OMW-10	4.94			15.35
OMW-4	7.02	5.68		17.38
OMW-7	8.03	5.42		16.38
OMW-9	N/A			
ORW-1	10.01			16.28
ORW-2	11.31			17.10
<del>ORW-3</del>	<del>11.72</del>	<del>11.61</del>		
ORW-3	11.72	11.61		17.45

29

WELL	DTW	DTP	TD	TIME
OP-1	12.57	13.90		18.25
✓ OP-2	8.92	5.72		
<del>OP-3</del>	8.40	5.20		15.58
✓ OP-4				

SAMPLED

WELL	TIME
OKUS-W7	1600
OKUS-W8	1400
OKUS-W1	1715
OKUS-W2	1640
OKUS-W3	1800

STEVE CARSON BAILED  
PRODUCT FROM WELLS  
THAT HAVE PRODUCT  
FROM 1515 - 1830

CHECKED WELL OMW-3  
WHICH IS BUSTED AND  
CASING, THE CAP, AND CONCRETE  
PAD ARE ALL BUSTED

30

WELL OWN - STAKES NO 1-90  
 CASING OR WELL CAP 1-90  
 AND NEEDS A NEW CASING  
 LEFT SITE AT 0838  
 1838

8/13/58

31

ARRIVE AT APL/UP-W1  
 AT 0800  
 SUNNY, WARM, 70°F  
 CALIBRATE INSTRUMENTS

SAMPLED	TIME
APL/UP-W1	0835
APL/UP-W2	0915
OMW-1	0950
OMW-3	1015
OMW-5	1045
OMW-4	1110
OMW-8	1300
OMW-2	1415
OMW-10	1340

WELL	DTP	DTW	TIME
RW-1	8.74	8.82	1438
OPUS-5	9.03		1446
OPUS-4	5.81		1451
OP-2	<del>8.91</del> 5.92	8.92	1425

BAZLED PRODUCT FROM RW-1  
 AND OP-2  
 LEFT SITE AT 1510



# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
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FAX (916) 921-0100

Laidlaw Environmental 5665 Flatiron Pkwy. Boulder, CO. 80301 Attention: Lisa Hennessey	Client Project ID: Oakland Freight Area Sample Matrix: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 805-1966	Sampled: May 22, 1998 Received: May 22, 1998 Reported: Jun 8, 1998
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QC Batch Number:	GC060598	GC060598	GC060598	GC060598	GC060598	GC060598
	802005A	802005A	802005A	802005A	802005A	802005A

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 805-1966 OKUS-W2	Sample I.D. 805-1967 OKUS-W3	Sample I.D. 805-1968 APL/UP-W2	Sample I.D. 805-1969 APL/UP-W1	Sample I.D. 805-1970 OKUS-100	Sample I.D. Method Blank
Purgeable Hydrocarbons	50	5,400	7,000	88	270	2,900	N.D.
Benzene	0.50	170	280	4.0	20	100	N.D.
Toluene	0.50	41	67	N.D.	N.D.	17	N.D.
Ethyl Benzene	0.50	45	25	1.7	5.2	31	N.D.
Total Xylenes	0.50	51	47	N.D.	5.4	39	N.D.

Chromatogram Pattern:	Gasoline & Discrete Peaks	Gasoline & Discrete Peaks	Gasoline & Discrete Peaks	Gasoline & Discrete Peaks	Gasoline & Discrete Peaks	--
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### Quality Control Data

Report Limit Multiplication Factor:	20	40	1.0	5.0	20	1.0
Date Analyzed:	6/5/98	6/5/98	6/5/98	6/5/98	6/5/98	6/5/98
Instrument Identification:	HP-5	HP-5	HP-5	HP-5	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	71	79	82	86	72	76

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*

Melissa A. Brewer  
Project Manager

8051966.LLL <1>





# Sequoia Analytical

680 Chesapeake Drive  
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FAX (916) 921-0100

Laidlaw Environmental 5665 Flatiron Pkwy. Boulder, CO. 80301 Attention: Lisa Hennesey	Client Project ID: Oakland Freight Area Sample Matrix: Water Analysis Method: EPA 3510/8015 Mod. First Sample #: 805-1966	Sampled: May 22, 1998 Received: May 22, 1998 Reported: Jun 8, 1998
--	--	--

QC Batch Number:	SP052998	SP052998	SP052998	SP052998	SP052998	SP052998
	8015EXC	8015EXC	8015EXC	8015EXC	8015EXC	8015EXC

## TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 805-1966 OKUS-W2	Sample I.D. 805-1967 OKUS-W3	Sample I.D. 805-1968 APL/UP-W2	Sample I.D. 805-1969 APL/UP-W1	Sample I.D. 805-1970 OKUS-100	Sample I.D. Method Blank
Extractable Hydrocarbons	50	1,700	3,200	250	490	1,400	N.D.

Chromatogram Pattern:	Diesel & Unidentified Hydrocarbons <C12, >C16	Diesel & Unidentified Hydrocarbons <C14, >C16	Diesel & Unidentified Hydrocarbons <C12	Diesel & Unidentified Hydrocarbons <C12	Diesel & Unidentified Hydrocarbons <C12, >C16	--
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### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Extracted:	5/29/98	5/29/98	5/29/98	5/29/98	5/29/98	5/29/98
Date Analyzed:	6/2/98	6/2/98	6/1/98	6/1/98	6/1/98	6/1/98
Instrument Identification:	HP-3A	HP-3A	HP-3A	HP-3A	HP-3A	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*

Melissa A. Brewer  
Project Manager





Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Freight Area  
Matrix: Liquid

QC Sample Group: 8051966-970

Reported: Jun 8, 1998

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel
QC Batch#:	GC060598 802005A	GC060598 802005A	GC060598 802005A	GC060598 802005A	SP052998 8015EXC
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 3510
Analyst:	K. Nill	K. Nill	K. Nill	K. Nill	K. Grubb
MS/MSD #:	8060531	8060531	8060531	8060531	BLK052998C
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/5/98	6/5/98	6/5/98	6/5/98	5/29/98
Analyzed Date:	6/5/98	6/5/98	6/5/98	6/5/98	6/1/98
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	HP-3A
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	500 µg/L
Result:	19	19	19	60	380
MS % Recovery:	95	95	95	100	76
Dup. Result:	19	20	20	61	390
MSD % Recov.:	95	100	100	102	78
RPD:	0.0	5.1	5.1	1.7	2.6
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	5LCS060598	5LCS060598	5LCS060598	5LCS060598	-
Prepared Date:	6/5/98	6/5/98	6/5/98	6/5/98	-
Analyzed Date:	6/5/98	6/5/98	6/5/98	6/5/98	-
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	-
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	-
LCS Result:	22	22	22	65	-
LCS % Recov.:	110	110	110	108	-

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	60-140
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**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

SEQUOIA ANALYTICAL, #1271

Melissa A. Brewer  
Project Manager



Company Name: <u>LADLAW ENVIRONMENTAL</u>		Project Name: <u>OAKLAND FREIGHT AREA</u>	
Address: <u>5665 FLATERON PKWY</u>		Billing Address (if different):	
City: <u>BOULDER</u>	State: <u>CO</u>	Zip Code: <u>90301</u>	
Telephone: <u>(303) 938-5500</u>		FAX #: <u>(303) 938-5520</u>	
Report To: <u>LISA HENNESEY</u>		Sampler: <u>JOE FRANZEN</u>	
P.O. #: <u>96120-844</u>		QC Data: <input type="checkbox"/> Level D (Standard) <input checked="" type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	

Turnaround	<input checked="" type="checkbox"/> 10 Working Days	<input type="checkbox"/> 3 Working Days	<input type="checkbox"/> 2 - 8 Hours
Time:	<input type="checkbox"/> 7 Working Days	<input type="checkbox"/> 2 Working Days	<input type="checkbox"/> 5 Working Days
	<input type="checkbox"/> 24 Hours		

<input type="checkbox"/> Drinking Water	Analyses Requested
<input checked="" type="checkbox"/> Waste Water	
<input checked="" type="checkbox"/> Other <u>GW</u>	

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	Analyses Requested										Comments				
1. OKUS-W2	5/2/98 0958H <sub>2</sub> O		1	1L AMBER		X													8051966 AC	
2. L	L		2	VOA			X	X												
3. OKUS-W3	1100		1	1L AMBER		X													8051967	
4. L	L		2	VOA			X	X												
5. APL/VA-W2	1150		1	1L AMBER		X													8051968	
6. L	L		2	VOA			X	X												
7. APL/VA-W1	1240		1	1L AMBER		X													8051969	added per Lisa H 5/24/98
8. L	L		2	VOA			X	X												
9. OKUS-100	0958		1	1L AMBER		X													8051970	
10. L	L		2	VOA			X	X												

Relinquished By: <u>Joe Franzen</u>	Date: <u>5/2/98</u>	Time: <u>1655</u>	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab: <u>J Burns</u>	Date: <u>5/2</u>	Time: <u>16:55</u>

 Pink - Client  
 Yellow - Sequoia  
 White - Sequoia



# Sequoia Analytical

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Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Sample Matrix: Water  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 808-1325

Sampled: Aug 12, 1998  
Received: Aug 14, 1998  
Reported: Sep 9, 1998

QC Batch Number: GC082598 GC082698 GC082698 GC082698 GC082698 GC082698  
802002A 802002A 802002A 802002A 802002A 802002A

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 808-1325 OKUS-W2	Sample I.D. 808-1326 OKUS-W200	Sample I.D. 808-1327 OKUS-W1	Sample I.D. 808-1328 APL/UP-W1	Sample I.D. 808-1329 OKUS-W3	Sample I.D. 808-1330 OKUS-W7
Purgeable Hydrocarbons	50	2,800	3,400	N.D.	160	6,900	81
Benzene	0.50	190	190	N.D.	17	230	3.1
Toluene	0.50	39	39	N.D.	0.72	58	N.D.
Ethyl Benzene	0.50	2,600	3,400	N.D.	130	5,400	1.0
Total Xylenes	0.50	150	180	N.D.	11	170	0.11
Chromatogram Pattern:		Gasoline	Gasoline	--	Gasoline	Gasoline	Unidentified Hydrocarbons C6 - C12

### Quality Control Data

Report Limit Multiplication Factor:	10	20	1.0	1.0	100	1.0
Date Analyzed:	8/25/98	8/26/98	8/26/98	8/26/98	8/26/98	8/26/98
Instrument Identification:	HP-2	HP-2	HP-2	HP-2	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	118	124	115	125	116	122

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*  
Melissa A. Brewer  
Project Manager

8081325.LLL <1>







# Sequoia Analytical

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Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Sample Matrix: Water  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 808-1331

Sampled: Aug 12&13, 1998  
Received: Aug 14, 1998  
Reported: Sep 9, 1998

QC Batch Number: GC082698 GC082698

802002A 802002A

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 808-1331 OKUS-W8	Sample I.D. 808-1332 APL/UP-W2
Purgeable Hydrocarbons	50	79	58
Benzene	0.50	N.D.	3.3
Toluene	0.50	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	35
Total Xylenes	0.50	N.D.	3.2

Chromatogram Pattern: Unidentified Hydrocarbons > C8      Unidentified Hydrocarbons C6 - C12

### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	8/26/98	8/26/98
Instrument Identification:	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	110	114

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*

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Project Manager

8081325.LLL <2>





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Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Sample Matrix: Water  
Analysis Method: EPA 5030/8020  
First Sample #: 808-1333

Sampled: Aug 13, 1998  
Received: Aug 14, 1998  
Reported: Sep 9, 1998

QC Batch Number: GC082698 GC082698 GC082698 GC082698 GC082698 GC082698  
802002A 802002A 802002A 802009A 802009A 802002A

### BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 808-1333 OMW-6	Sample I.D. 808-1334 OMW-8	Sample I.D. 808-1335 OMW-800	Sample I.D. 808-1336 OMW-1	Sample I.D. 808-1337 OMW-10	Sample I.D. 808-1338 OMW-3
Benzene	0.50	N.D.	N.D.	N.D.	N.D.	210	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	0.50	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

#### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	8/26/98	8/26/98	8/26/98	8/26/98	8/26/98	8/26/98
Instrument Identification:	HP-2	HP-2	HP-2	HP-9	HP-9	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	121	119	117	103	107	118

Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*  
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8081325.LLL <3>





# Sequoia Analytical

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Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Sample Matrix: Water  
Analysis Method: EPA 5030/8020  
First Sample #: 808-1339

Sampled: Aug 13&14, 1998  
Received: Aug 14, 1998  
Reported: Sep 9, 1998

QC Batch Number: GC082798 GC082798 GC082798  
802002A 802002A 802009A

### BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 808-1339 OMW-5	Sample I.D. 808-1340 OMW-2	Sample I.D. 808-1341 TB(8-14-98)
Benzene	0.50	N.D.	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.
Total Xylenes	0.50	N.D.	N.D.	N.D.

#### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Analyzed:	8/27/98	8/27/98	8/27/98
Instrument Identification:	HP-2	HP-2	HP-9
Surrogate Recovery, %: (QC Limits = 70-130%)	128	124	104

Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*

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Project Manager

8081325.LLL <4>





# Sequoia Analytical

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Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Sample Matrix: Water  
Analysis Method: EPA 3510/8015 Mod.  
First Sample #: 808-1325

Sampled: Aug 12, 1998  
Received: Aug 14, 1998  
Reported: Sep 9, 1998

QC Batch Number: SP081898 SP081898 SP081898 SP081898 SP081898 SP081898  
8015EXB 8015EXB 8015EXB 8015EXB 8015EXB 8015EXB

## TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 808-1325 OKUS-W2	Sample I.D. 808-1326 OKUS-W200	Sample I.D. 808-1327 OKUS-W1	Sample I.D. 808-1328 APL/UP-W1	Sample I.D. 808-1329 OKUS-W3	Sample I.D. 808-1330 OKUS-W7
Extractable Hydrocarbons	50	2,400	2,100	230	500	2,600	1,500
Chromatogram Pattern:		Diesel & Unidentified Hydrocarbons <C12	Diesel & Unidentified Hydrocarbons <C12	Diesel	Diesel	Diesel & Unidentified Hydrocarbons <C12	Diesel

### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Extracted:	8/18/98	8/18/98	8/18/98	8/18/98	8/18/98	8/18/98
Date Analyzed:	8/26/98	8/26/98	8/26/98	8/26/98	8/26/98	8/26/98
Instrument Identification:	HP-3A	HP-3A	HP-3A	HP-3A	HP-3A	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

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8081325.LLL <5>





# Sequoia Analytical

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Laidlaw Environmental 5665 Flatiron Pkwy. Boulder, CO. 80301 Attention: Lisa Hennesey	Client Project ID: Oakland Motor Freight/ Fueling Sample Matrix: Water Analysis Method: EPA 3510/8015 Mod. First Sample #: 808-1331	Sampled: Aug 12&13, 1998 Received: Aug 14, 1998 Reported: Sep 9, 1998
--	--	---

QC Batch Number:	SP081898	SP082098	SP082098	SP082098	SP082098	SP082098
	8015EXB	8015EXB	8015EXB	8015EXB	8015EXB	8015EXB

## TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 808-1331 OKUS-W8	Sample I.D. 808-1332 APL/UP-W2	Sample I.D. 808-1333 OMW-6	Sample I.D. 808-1334 OMW-8	Sample I.D. 808-1335 OMW-800	Sample I.D. 808-1336 OMW-1
Extractable Hydrocarbons	50	2,000	360	1,500	1,600	1,500	170
Chromatogram Pattern:		Diesel	Diesel	Diesel & Unidentified Hydrocarbons >C25	Diesel & Unidentified Hydrocarbons >C25	Diesel	Unidentified Hydrocarbons >C16

### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Extracted:	8/18/98	8/20/98	8/20/98	8/20/98	8/20/98	8/20/98
Date Analyzed:	8/26/98	8/29/98	8/29/98	8/29/98	8/29/98	8/29/98
Instrument Identification:	HP-3A	HP-3A	HP-3B	HP-3B	HP-3A	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

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Melissa A. Brewer  
Project Manager

8081325.LLL <6>





# Sequoia Analytical

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Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Sample Matrix: Water  
Analysis Method: EPA 3510/8015 Mod.  
First Sample #: 808-1337

Sampled: Aug 13, 1998  
Received: Aug 14, 1998  
Reported: Sep 9, 1998

QC Batch Number: SP082098 SP082098 SP082098 SP082098

8015EXB 8015EXB 8015EXB 8015EXB

## TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 808-1337 OMW-10	Sample I.D. 808-1338 OMW-3	Sample I.D. 808-1339 OMW-5	Sample I.D. 808-1340 OMW-2
Extractable Hydrocarbons	50	4,500	3,200	3,700	2,000
Chromatogram Pattern:		Diesel & Unidentified Hydrocarbons > C25	Diesel & Unidentified Hydrocarbons > C25	Diesel & Unidentified Hydrocarbons > C18	Diesel

### Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	5.0	1.0
Date Extracted:	8/20/98	8/20/98	8/20/98	8/20/98
Date Analyzed:	8/29/98	8/29/98	9/6/98	8/29/98
Instrument Identification:	HP-3B	HP-3B	HP-3B	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

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Melissa A. Brewer  
Project Manager

8081325.LLL <7>





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Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Sample Descript: Water  
Analysis for: Arsenic  
First Sample #: 808-1325

Sampled: Aug 12&13, 1998  
Received: Aug 14, 1998  
Digested: Aug 24, 1998  
Analyzed: Aug 25, 1998  
Reported: Sep 9, 1998

## LABORATORY ANALYSIS FOR: Arsenic

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L	QC Batch Number	Instrument ID
808-1325	OKUS-W2	0.0050	0.12	ME0824983020MDA	MV-2
808-1326	OKUS-W200	0.0050	0.10	ME0824983020MDA	MV-2
808-1327	OKUS-W1	0.0050	N.D.	ME0824983020MDA	MV-2
808-1328	APL/UP-W1	0.0050	0.027	ME0824983020MDA	MV-2
808-1329	OKUS-W3	0.0050	0.093	ME0824983020MDA	MV-2
808-1330	OKUS-W7	0.0050	N.D.	ME0824983020MDA	MV-2
808-1331	OKUS-W8	0.0050	N.D.	ME0824983020MDA	MV-2
808-1332	APL/UP-W2	0.0050	0.012	ME0824983020MDA	MV-2

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*

Melissa A. Brewer  
Project Manager

8081325.LLL <8>





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Laidlaw Environmental  
 5665 Flatiron Pkwy.  
 Boulder, CO. 80301  
 Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
 Matrix: Liquid

QC Sample Group: 8081325-341

Reported: Sep 9, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel	Diesel	Arsenic
QC Batch#:	GC082598 802002A	GC082598 802002A	GC082598 802002A	GC082598 802002A	SP081898 8015EXB	SP082098 8015EXB	ME082498 3020MDA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M	EPA 8015M	EPA 206.2
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 3510	EPA 3510	EPA 3020
Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	K. Grubb	K. Grubb	T. Le
MS/MSD #:	8081010	8081010	8081010	8081010	BLK081898B	BLK082098B	8081325
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.12 mg/L
Prepared Date:	8/25/98	8/25/98	8/25/98	8/25/98	8/18/98	8/20/98	8/24/98
Analyzed Date:	8/25/98	8/25/98	8/25/98	8/25/98	8/26/98	8/29/98	8/25/98
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3A	HP-3A	MV-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	500 µg/L	500 µg/L	0.10 mg/L
Result:	19	18	19	55	290	410	0.22
MS % Recovery:	95	90	95	92	58	82	100
Dup. Result:	20	19	19	58	330	330	0.20
MSD % Recov.:	100	95	95	97	66	66	80
RPD:	5.1	5.4	0.0	5.3	13	22	9.5
RPD Limit:	0-20	0-20	0-20	0-20	0-50	0-50	0-20

LCS #:	2LCS082598	2LCS082598	2LCS082598	2LCS082598	LCS081898B	LCS082098B	LCS082498
Prepared Date:	8/25/98	8/25/98	8/25/98	8/25/98	8/18/98	8/20/98	8/24/98
Analyzed Date:	8/25/98	8/25/98	8/25/98	8/25/98	8/28/98	8/29/98	8/25/98
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3A	HP-3A	MV-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	500 µg/L	500 µg/L	0.10 mg/L
LCS Result:	17	17	16	62	390	350	0.11
LCS % Recov.:	85	85	80	103	78	70	110

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	60-140	60-140	80-120
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**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

SEQUOIA ANALYTICAL, #1271

Melissa A. Brewer  
 Project Manager







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Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Matrix: Liquid

QC Sample Group: 8081325-341

Reported: Sep 9, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082698 802002A	GC082698 802002A	GC082698 802002A	GC082698 802002A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	BLK082698	BLK082698	BLK082698	BLK082698
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/26/98	8/26/98	8/26/98	8/26/98
Analyzed Date:	8/26/98	8/26/98	8/26/98	8/26/98
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Result:	20	20	19	60
MS % Recovery:	100	100	95	100
Dup. Result:	21	20	21	62
MSD % Recov.:	105	100	105	103
RPD:	4.9	0.0	10	3.3
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	-	-	-	-
Prepared Date:	-	-	-	-
Analyzed Date:	-	-	-	-
Instrument I.D.#:	-	-	-	-
Conc. Spiked:	-	-	-	-
LCS Result:	-	-	-	-
LCS % Recov.:	-	-	-	-

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

SEQUOIA ANALYTICAL, #1271

Melissa A. Brewer  
Project Manager





# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite B  
1455 McDowell Blvd. North, Ste. D

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954

(650) 364-9600  
(925) 988-9600  
(916) 921-9600  
(707) 792-1865

FAX (650) 364-9233  
FAX (925) 988-9673  
FAX (916) 921-0100  
FAX (707) 792-0342

Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Matrix: Liquid

QC Sample Group: 8081325-341

Reported: Sep 9, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082698 802009A	GC082698 802009A	GC082698 802009A	GC082698 802009A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	8080596	8080596	8080596	8080596
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/26/98	8/26/98	8/26/98	8/26/98
Analyzed Date:	8/26/98	8/26/98	8/26/98	8/26/98
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Result:	19	20	21	65
MS % Recovery:	95	100	105	108
Dup. Result:	19	21	21	65
MSD % Recov.:	95	105	105	108
RPD:	0.0	4.9	0.0	0.0
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	9LCS082698	9LCS082698	9LCS082698	9LCS082698
Prepared Date:	8/26/98	8/26/98	8/26/98	8/26/98
Analyzed Date:	8/26/98	8/26/98	8/26/98	8/26/98
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
LCS Result:	22	23	24	75
LCS % Recov.:	110	115	120	125

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130
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**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

SEQUOIA ANALYTICAL, #1271

Melissa A. Brewer  
Project Manager





# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
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(707) 792-1865

FAX (650) 364-9233  
FAX (925) 988-9673  
FAX (916) 921-0100  
FAX (707) 792-0342

Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Matrix: Liquid

QC Sample Group: 8081325-341

Reported: Sep 9, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082798 802002A	GC082798 802002A	GC082798 802002A	GC082798 802002A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	8081340	8081340	8081340	8081340
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/27/98	8/27/98	8/27/98	8/27/98
Analyzed Date:	8/27/98	8/27/98	8/27/98	8/27/98
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Result:	21	21	21	64
MS % Recovery:	105	105	105	107
Dup. Result:	21	21	21	63
MSD % Recov.:	105	105	105	105
RPD:	0.0	0.0	0.0	1.6
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	2LCS082798	2LCS082798	2LCS082798	2LCS082798
Prepared Date:	8/27/98	8/27/98	8/27/98	8/27/98
Analyzed Date:	8/27/98	8/27/98	8/27/98	8/27/98
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
LCS Result:	21	20	21	63
LCS % Recov.:	105	100	105	105

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130
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**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*

Melissa A. Brewer  
Project Manager





# Sequoia Analytical

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FAX (916) 921-0100  
FAX (707) 792-0342

Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling  
Matrix: Liquid

QC Sample Group: 8081325-341

Reported: Sep 9, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC082798 802009A	GC082798 802009A	GC082798 802009A	GC082798 802009A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	8081327	8081327	8081327	8081327
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	8/27/98	8/27/98	8/27/98	8/27/98
Analyzed Date:	8/27/98	8/27/98	8/27/98	8/27/98
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Result:	20	21	22	69
MS % Recovery:	100	105	110	115
Dup. Result:	20	21	23	68
MSD % Recov.:	100	105	115	113
RPD:	0.0	0.0	4.4	1.5
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	9LCS082798	9LCS082798	9LCS082798	9LCS082798
Prepared Date:	8/27/98	8/27/98	8/27/98	8/27/98
Analyzed Date:	8/27/98	8/27/98	8/27/98	8/27/98
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
LCS Result:	20	21	23	69
LCS % Recov.:	100	105	115	115

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130

**Please Note:**  
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

SEQUOIA ANALYTICAL, #1271

Melissa A. Brewer  
Project Manager





**Sequoia  
Analytical**

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FAX (916) 921-0100  
FAX (707) 792-0342

Laidlaw Environmental  
5665 Flatiron Pkwy.  
Boulder, CO. 80301  
Attention: Lisa Hennesey

Client Project ID: Oakland Motor Freight/ Fueling

Received: Aug 14, 1998

Lab Number: 8081325-341

Reported: Sep 9, 1998

### LABORATORY NARRATIVE

All quality control measures were within criteria. All Method Blanks were N.D. for the requested analytes.

SEQUOIA ANALYTICAL, #1271

*Melissa A. Brewer*

Melissa A. Brewer  
Project Manager

8081325.LLL <14>





# SEQUOIA ANALYTICAL

## CHAIN OF CUSTODY

680 [redacted] sap [redacted] Drive [redacted] edw [redacted] City, [redacted] 406 [redacted] 50 [redacted] 9600 [redacted] X (65) [redacted] 64-9 [redacted]  
 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100  
 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600 FAX (510) 988-9673

Company Name: <b>LADLAW ENVRO.</b>	Project Name: <b>OAKLAND MOTOR FREIGHT</b>
Address: <b>5665 PLATIRON PKWY.</b>	Billing Address (if different): <b>9808323</b>
City: <b>BOULDER</b> State: <b>CO</b> Zip Code: <b>80301</b>	P.O. #: <b>96120.844</b>
Telephone: <b>(303) 938-5500</b> FAX #:	QC Data: <input type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A
Report To: <b>LISA KEMNESE</b> Sampler: <b>JOE PRANZEN</b>	

Turnaround  10 Working Days  3 Working Days  2 - 8 Hours  
 Time:  7 Working Days  2 Working Days  5 Working Days  24 Hours

Analyses Requested  
 Drinking Water  
 Waste Water  
 Other

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	metals	Asbestos	TPH-G	DTX 8015	TPH-D	Comments
1. OKUS-W2	8/12/98 1640	H <sub>2</sub> O	2	1 AMBER 1 metals	8081325	X			X		
2.			2	40ml.			X	X			
3. OKUS-W200	8/12/98 1640	H <sub>2</sub> O	2	1 AMBER 1 metals	8081326	X			X		
4.			2	40ml.			X	X			
5. OKUS-W1	8/12/98 1715	H <sub>2</sub> O	2	1 AMBER 1 metals	8081327	X			X		
6.			2	40ml.			X	X			
7. APL/UP-W1	8/12/98 0835	H <sub>2</sub> O	2	1 AMBER 1 metals	8081328	X			X		
8.			2	40ml.			X	X			
9. OKUS-W3	8/12/98 1800	H <sub>2</sub> O	2	1 AMBER 1 metals	8081329	X			X		
10.			2	40ml.			X	X			

Relinquished By: <i>[Signature]</i>	Date: <b>8/14/98</b>	Time: <b>12:17</b>	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab: <i>[Signature]</i>	Date: <b>8/14</b>	Time: <b>12:17</b>

Pink - Client  
Yellow - Sequoia  
White - Sequoia



# SEQUIOIA ANALYTICAL

## CHAIN OF CUSTODY

680 Chesapeake Drive, Redwood City, CA 94061 (510) 960-9600 FAX (510) 964-9600  
 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100  
 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600 FAX (510) 988-9673

Company Name: <b>LAIOLA LAW EXUITRO.</b>		Project Name: <b>OAKLAND MOTOR FREIGHT</b>	
Address: <b>5665 FLATERON PEWY</b>		Billing Address (if different): <b>9888888</b>	
City: <b>BOULDER</b>	State: <b>CO</b>	Zip Code: <b>80301</b>	
Telephone: <b>(303) 938-5300</b>		FAX #: _____	
P.O. #: <b>96159</b>		QC Data: <input type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	
Report To: <b>LISA HEENESEY</b>	Sampler: <b>JOE FRANZEN</b>		

Turnaround  10 Working Days  3 Working Days  2 - 8 Hours  
 Time:  7 Working Days  2 Working Days  
 5 Working Days  24 Hours

Analyses Requested  
 Drinking Water  
 Waste Water  
 Other

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	TPH-D	TPH-G	TPH-B	TPH-C	TPH-D	TPH-E	TPH-F	TPH-G	TPH-H	TPH-I	TPH-J	TPH-K	TPH-L	TPH-M	TPH-N	TPH-O	TPH-P	TPH-Q	TPH-R	TPH-S	TPH-T	TPH-U	TPH-V	TPH-W	TPH-X	TPH-Y	TPH-Z	Comments	
1. OKUS-W7	8/12/98 1600	H <sub>2</sub> O	2	1 Amber 1 metal	8081330	X																												
2.			2	40ml			X	X																										
3. OKUS-W8	8/12/98 1400	H <sub>2</sub> O	2	1 Amber 1 metal	8081331	X																												
4.			2	40ml			X	X																										
5. APL/UP-W2	8/13/98 0915	H <sub>2</sub> O	2	1 Amber 1 metal	8081332	X																												ID changed per Lisa Heenesey 8/17/98 MB
6.			2	40ml			X	X																										
7. OMW-6	8/13/98 1110	H <sub>2</sub> O	1	AMBER	8081333																													OAKLAND FUELING
8.			2	40ml																														
9. OMW-8	8/13/98 1300	H <sub>2</sub> O	1	AMBER	8081334																													OAKLAND FUELING
10.			2	40ml																														

Relinquished By: <i>Joe Franzen</i>	Date: <i>8/14/98</i>	Time: <i>10:17</i>	Received By: _____	Date: _____	Time: _____
Relinquished By: _____	Date: _____	Time: _____	Received By: _____	Date: _____	Time: _____
Relinquished By: _____	Date: _____	Time: _____	Received By Lab: <i>J. Hinks</i>	Date: <i>8/14</i>	Time: <i>10:27</i>

Pink - Client  
Yellow - Sequoia  
White - Sequoia



# SEQUIA ANALYTICAL

## CHAIN OF CUSTODY

1680 Chesapeake Drive, Redwood City, CA 94063 • (650) 364-9600 FAX (650) 364-9222  
 ☐ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100  
 ☐ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600 FAX (510) 988-9673

Company Name: <u>LADLAN ENERGY</u>		Project Name: <u>OAKLAND FUELING</u>	
Address: <u>5065 FLATIRON PKWY</u>		Billing Address (if different):	
City: <u>BOULDER</u>	State: <u>CO.</u>	Zip Code: <u>80301</u>	<u>9808323</u>
Telephone: <u>(303) 938-5500</u>		FAX #:	P.O. #: <u>96199</u>
Report To: <u>LISA HENNESEY</u>	Sampler: <u>JOE FRANZEN</u>	QC Data: <input type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	

Turnaround  10 Working Days  3 Working Days  2 - 8 Hours  
 Time:  7 Working Days  2 Working Days  
 5 Working Days  24 Hours

Analyses Requested  
 Drinking Water  
 Waste Water  
 Other

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	Analyses Requested										Comments				
1. <u>OMW-800</u>	<u>8/13/98</u> <u>1300</u>	<u>H<sub>2</sub>O</u>	<u>1</u>	<u>AMBER</u>	<u>8081335</u>	X														
2.		<u>L</u>	<u>2</u>	<u>40ml</u>			X													
3. <u>OMW-1</u>	<u>8/13/98</u> <u>0950</u>	<u>H<sub>2</sub>O</u>	<u>1</u>	<u>AMBER</u>	<u>8081336</u>	X														
4.		<u>L</u>	<u>2</u>	<u>40ml</u>			X													
5. <u>OMW-10</u>	<u>8/13/98</u> <u>1340</u>	<u>H<sub>2</sub>O</u>	<u>1</u>	<u>AMBER</u>	<u>8081337</u>	X														
6.		<u>L</u>	<u>2</u>	<u>40ml</u>			X													
7. <u>OMW-3</u>	<u>8/13/98</u> <u>1015</u>	<u>H<sub>2</sub>O</u>	<u>1</u>	<u>AMBER</u>	<u>8081338</u>	X														
8.			<u>2</u>	<u>40ml</u>			X													
9. <u>OMW-5</u>	<u>8/13/98</u> <u>1045</u>	<u>H<sub>2</sub>O</u>	<u>3</u>	<u>1 AMBER</u> <u>2 40ml</u>	<u>8081339</u>	X	X													
10. <u>OMW-2</u>	<u>8/13/98</u> <u>1415</u>	<u>H<sub>2</sub>O</u>	<u>3</u>	<u>1 AMBER</u> <u>2 40ml</u>	<u>8081340</u>	X	X													

Relinquished By: <u>[Signature]</u>	Date: <u>8/14/98</u>	Time: <u>10:27</u>	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab: <u>T. Frank</u>	Date: <u>8/14</u>	Time: <u>10:27</u>

Pink - Client  
Yellow - Sequoia  
White - Sequoia





# SEQUIOA ANALYTICAL

## CHAIN OF CUSTODY

680 [redacted] Sapa [redacted] Drive [redacted] Edw [redacted] City, [redacted] 406 [redacted] (50) [redacted] 3600 [redacted] (65) [redacted] 924-9200  
 □ 819 Striker Ave., Suite 8 • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100  
 □ 404 N. Wiget Lane • Walnut Creek, CA 94598 • (510) 988-9600 FAX (510) 988-9673

Company Name: <del>SEQUIOA ANALYTICAL</del> LAEDLAW		Project Name: OAKLAND FUEL / MOTOR FUELS	
Address: 5665 FLATIRON PKWY.		Billing Address (if different):	
City: BOULDER	State: CO	Zip Code: 80501	9808323
Telephone: (303) 938-5500 FAX #:		P.O. #:	
Report To: LISA HENNESEY	Sampler: JOE FRANZEN	QC Data: <input type="checkbox"/> Level D (Standard) <input type="checkbox"/> Level C <input type="checkbox"/> Level B <input type="checkbox"/> Level A	

Turnaround  10 Working Days  3 Working Days  2 - 8 Hours  
 Time:  7 Working Days  2 Working Days  
 5 Working Days  24 Hours

Analyses Requested  
 Drinking Water  
 Waste Water  
 Other

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	Analyses Requested										Comments	
1. TB-8-14-98	8/14/98	HD	1	40ml	8081341	BTEX 8015											
2.																	
3.																	
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

Relinquished By: <i>Joe Franzen</i>	Date: 8/14/98	Time: 1027	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab: T Hurk	Date: 8/14	Time: 1027

Pink - Client  
Yellow - Sequoia  
White - Sequoia