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July 29, 1996

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

Subject: **"Second Quarter 1996 Monitoring Report"** Oakland Motor Freight Facility, 1750 Ferro Street, Oakland, California, USPCI/Laidlaw Project No. 96120-844

Dear Mr. Patterson:

Enclosed is the final copy of the **"Second Quarter 1996 Monitoring Report"**, dated July 29, 1996, 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,

Denton Mauldin
Project Manager

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

cc: Jennifer Eberle, ACDEH
John Amdur, Port of Oakland
Jami Matanky, APL
Mark McCormick, USPCI/Laidlaw

Enclosure
DM/tjh

oakmf\qtrmf296.ltr, 96120-844, July 29, 1996

5665 Flatiron Parkway Boulder, Colorado 80301-2800
Phone 303.938.5500 Fax 303.938.5520

SECOND QUARTER 1996
MONITORING REPORT

UNION PACIFIC MOTOR FREIGHT
FACILITY
OAKLAND, CALIFORNIA

USPCI/LAIDLAW PROJECT NO.
96120-844

PREPARED FOR:

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

Prepared by:

USPCI/Laidlaw Consulting Services
5665 Flatiron Parkway
Boulder, Colorado 80301

July 29, 1996

SECOND QUARTER 1996 MONITORING REPORT
UNION PACIFIC RAILROAD
UNION PACIFIC MOTOR FREIGHT FACILITY
OAKLAND, CALIFORNIA
USPCI/Laidlaw Project No. 96120-844

Prepared for:
Union Pacific Railroad
Environmental Management - Room 930
1416 Dodge Street
Omaha, Nebraska 68179

for submittal to:
Jennifer Eberle
Alameda County
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

Prepared by:
USPCI/Laidlaw Consulting Services
5665 Flatiron Parkway
Boulder, Colorado 80301

Mark McCormick
Environmental Assistant

Sam Marquis
Project Hydrogeologist
R.G. No. 5110

July 29, 1996

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1.0 EXECUTIVE SUMMARY

On April 29, 1993, the Alameda County Department of Environmental Health, Hazardous Materials Division (ACDEH) requested that Union Pacific Railroad (UPRR) begin a quarterly monitoring program at the Union Pacific Motor Freight (UPMF) facility in Oakland, California. The facility was the site of a release of petroleum hydrocarbons from former underground storage tanks (USTs). Laidlaw has prepared this report to satisfy the requirements of the ACDEH for the second quarter of 1996. This report summarizes the activities and findings of the second quarter 1996 groundwater monitoring event.

The results from the second quarter monitoring event indicated a decrease in groundwater elevations relative to the previous monitoring event (first quarter 1996) at the site. Dissolved petroleum hydrocarbons were detected at decreased levels when compared with those observed during the first quarter 1996 event. Fluid-level measurement data indicate that monitoring wells OKUS-W5, OKUS-W6, and recovery well RW contained product. The recovery system in well RW was operational and removed hydrocarbon product.

On the basis of the findings revealed by the second quarter 1996 monitoring event, Laidlaw recommends the following:

- The quarterly monitoring program should be continued; and
- Monitoring and recovery of product near the UPMF facility should be continued.

2.0 INTRODUCTION

Laidlaw prepared this document on behalf of Union Pacific Railroad (UPRR) as part of the groundwater monitoring and reporting program at the Union Pacific Motor Freight (UPMF) facility at 1750 Ferro Street in Oakland, California. 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.

The quarterly monitoring program consists of the collection of fluid-level measurements in the groundwater monitoring wells and an analysis of dissolved contaminants in groundwater. Field and analytical data are compiled in this report. The monitoring program is directed towards an understanding of the groundwater 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, and conclusions and recommendations.

3.0 Background Information

The 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 site 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 used motor oil and "bunker C." For brevity, the light non-aqueous phase of these hydrocarbons are referred to as product.

The refueling portion of the TOFC yard, approximately 700 feet northwest (upgradient) of the UPMF site, is currently undergoing groundwater remediation for recovery of non-aqueous phase liquid as diesel. The extent of contamination at the refueling area was defined during previous investigations (Laidlaw, 1993). On the basis of the investigations, petroleum hydrocarbons do not extend to the UPMF facility.

4.0 INVESTIGATIVE PROCEDURES

UPRR has subcontracted Burns and McDonnell Waste Consultants, Inc. to perform a portion of the fieldwork associated with the project. Laidlaw and the UPRR subcontractor followed the standard operating procedures previously supplied to the ACDEH (Laidlaw, 1994). The quarterly monitoring activities consist of the following:

- Measuring fluid-levels in all of the groundwater monitoring wells;
- Purging and sampling groundwater monitoring wells where product is not observed;
- Analyzing groundwater samples for petroleum hydrocarbons and constituents;
- Removing product from the recovery well (RW) and monitoring the performance of the product skimmer; and
- Determining the local hydraulic gradient based on the groundwater level measurements.

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

Fluid-level measurements are collected from groundwater monitoring wells OKUS-W5 and OKUS-W6 on a monthly basis. Since May 12, 1993, observable product has been absent in OKUS-W4. Therefore, the ACDEH has granted Laidlaw's request to reduce the frequency of fluid-level monitoring in the well from a monthly basis to a quarterly schedule. However, no measurements were collected from monitoring well OKUS-W4 during the second quarter 1996 because the well was damaged.

Fluid-level measurements are collected from the recovery well RW on a monthly basis. These measurements are collected to assess the temporal variations in the thickness of product.

Fluid-level measurements are collected from the remaining monitoring wells on a quarterly basis.

5.0 Field Investigation Results

The following subsections present the findings and activities completed during the second quarter monitoring event.

5.1 Groundwater Gradient

Fluid-levels were measured on May 29, 1996 and are compiled into Table 1. The data were used to produce the groundwater elevation map presented as Figure 3. A decrease in groundwater elevations relative to the previous monitoring event (first quarter 1996) was noted in all of the monitoring wells gauged at the site. Since 1995, groundwater elevations have been highest during the first quarter of each year. These elevations gradually decrease during the second, third, and fourth quarters.

The groundwater gradient at the site averaged approximately 0.007 foot per foot and the observed groundwater flow direction was to the east. The groundwater gradient and flow direction were consistent with gradients and flow directions observed during previous monitoring events. Fluid-level measurements in groundwater monitoring wells do not indicate that product has migrated downgradient.

Monitoring well APL/UP-W1 was not gauged or sampled during the event because stacked trailers were placed directly upon the well head. Laidlaw personnel did not observe any visible damage to the well. Monitoring well OKUS-W4 was not gauged or sampled because of visible damage to the well head. The damage consists of churned asphalt surrounding the well and bent well casing that may possibly be fractured. Burns and McDonnell will be repairing this well in the near future.

5.2 Analytical Results

Analytical results for all monitoring wells sampled during the second quarter 1996 monitoring event were compiled into Table 2. The samples collected from monitoring well OKUS-W2 and OKUS-W3 contained dissolved benzene and xylenes. The sample collected from monitoring well OKUS-W8 contained xylenes only. The sample collected from monitoring well OKUS-W7 contained dissolved benzene and ethylbenzene. The one downgradient well sampled during this monitoring event, APL/UP-W2, contained benzene and xylene compounds that are consistent with historical levels for this well. Monitoring well OKUS-W1 did not contain dissolved BTEX concentrations above the method detection limit (MDL) of 0.50 micrograms per liter (μg/l). Total BTEX concentrations ranged from below the MDL of 0.50 μg/l (OKUS-W1) to 390 μg/l (OKUS-W2).

Dissolved TPH-G was detected in the samples collected from monitoring wells OKUS-W2, OKUS-W3, OKUS-W7, and OKUS-W8. Monitoring wells OKUS-W1 and APL/UP-W2 did not contain detectable levels of TPH-G contamination. The TPH-G concentrations ranged from below the MDL of 50 µg/l (OKUS-W1 and APL/UP-W2) to 8,900 µg/l (OKUS-W3).

Dissolved TPH-D concentrations were detected in the samples collected from all monitoring wells during the second-quarter-1996 monitoring event. TPH-D concentrations ranged from 320 µg/l (OKUS-W1) to 2,300 µg/l (OKUS-W3).

Samples were not collected from monitoring wells OKUS-W4, OKUS-W5, OKUS-W6, and APL/UP-W1. Groundwater analytical results for the wells at the site are presented in Table 2. The dissolved BTEX plume in the groundwater is presented in Figure 4. Analytical reports and chain of custody forms are included in Appendix B.

5.3 Non-Aqueous Phase Liquid

Fluid-level measurement data indicated that monitoring wells OKUS-W5, OKUS-W6, and recovery well RW contained product. Groundwater monitoring wells OKUS-W5 and OKUS-W6 continue to contain "bunker C" type product. An accurate determination of product thicknesses in OKUS-W5 and OKUS-W6 was not possible due to the high viscosity of the product and difficulty in measuring product thickness.

As mentioned in Section 5.1, monitoring well OKUS-W4 was not gauged during the second quarter 1996 sampling event because of damage to the well head. Monitoring well APL/UP-1 was not gauged because it was inaccessible.

During the second quarter of 1996, the product skimmer system recovered approximately 3 gallons of product. As evidenced by the fluid level measurements in the recovery well RW and the lack of product recovery, the accumulation rate of product in RW has decreased.

6.0 Conclusions and Recommendations

The following subsections present conclusions and recommendations based on the second quarter 1996 monitoring results.

6.1 Conclusions

On the basis of the information in the previous sections, Laidlaw concludes that:

- The groundwater flow to the east with an average gradient of 0.007 foot per foot is consistent with previous monitoring events;
- Total BTEX concentrations in the two groundwater monitoring wells near the source area (OKUS-W2 and OKUS-W3) have decreased substantially since the first quarter 1996 sampling event;
- Product was observed in OKUS-W5 and OKUS-W6;
- Product does not appear to have migrated downgradient; and
- The accumulation of product in recovery well RW has decreased.

6.2 Recommendations

On the basis of the above conclusions, Laidlaw recommends the following:

- Continue the quarterly monitoring program; and
- Continue product monitoring and removal.

7.0 REFERENCES

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	WATER ELEV.	CORR'D ELEV.
OKUS-W1	9.17	02/22/95	N/A	NP	7.61	1.56	1.56
	9.17	06/22/95	N/A	NP	8.00	1.17	1.17
	9.17	08/09/95	N/A	NP	8.18	0.99	0.99
	9.17	11/29/95	N/A	NP	8.78	0.39	0.39
	9.17	02/27/96	N/A	NP	7.58	1.59	1.59
	9.17	05/29/96	N/A	NP	7.80	1.37	1.37
OKUS-W2	9.71	02/22/95	N/A	NP	8.49	1.22	1.22
	9.71	06/22/95	N/A	NP	8.90	0.81	0.81
	9.71	08/09/95	N/A	NP	9.09	0.62	0.62
	9.71	11/29/95	N/A	NP	9.69	0.02	0.02
	9.71	02/27/96	N/A	NP	8.49	1.22	1.22
	9.71	05/29/96	N/A	NP	8.72	0.99	0.99
OKUS-W3	9.80	02/22/95	N/A	NP	8.76	1.04	1.04
	9.80	06/22/95	N/A	NP	9.15	0.65	0.65
	9.80	08/09/95	N/A	NP	9.41	0.39	0.39
	9.80	11/29/95	N/A	NP	9.97	-0.17	-0.17
	9.80	02/27/96	N/A	NP	8.73	1.07	1.07
	9.80	05/29/96	N/A	NP	8.94	0.86	0.86
OKUS-W4	7.35	02/22/95	N/A	NP	5.71	1.64	1.64
	7.35	06/22/95	N/A	NP	6.01	1.34	1.34
	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
	7.35	02/27/96	N/A	NP	WELL INACCESSABLE		
	7.35	05/29/96	N/A	NP	WELL INACCESSABLE		
OKUS-W5	9.25	06/22/95	N/A	Trace	9.29	-0.04	-0.04
	9.25	07/31/95	N/A	Trace	9.34	-0.09	-0.09
	9.25	08/09/95	N/A	Trace	9.75	-0.50	-0.50
	9.25	09/07/95	N/A	Trace	9.56	-0.31	-0.31
	9.25	10/18/95	9.82	P	--	--	--
	9.25	11/10/95	9.97	P	--	--	--
	9.25	11/29/95	10.19	P	--	--	--
	9.25	12/15/95	9.60	P	--	--	--
	9.25	01/10/96	9.58	P	--	--	--
	9.25	02/16/96	9.08	P	--	--	--
	9.25	02/27/96	8.81	P	--	--	--
	9.25	03/25/96	8.99	P	--	--	--
	9.25	04/18/96	9.22	P	--	--	--
	9.25	05/29/96	9.06	P	--	--	--
OKUS-W6	7.02	06/22/95	5.30	P	--	--	--
	7.02	07/31/95	5.60	P	--	--	--
	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	11/29/95	5.75	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	02/27/96	4.69	P	--	--	--
	7.02	03/25/96	4.72	P	--	--	--
	7.02	04/18/96	5.19	P	--	--	--
	7.02	05/29/96	5.02	P	--	--	--

TABLE 1 (CONT.)
FLUID LEVEL MEASUREMENT DATA
UNION PACIFIC RAILROAD
OAKLAND MOTOR FREIGHT FACILITY

WELL NO.	ELEV.* TOC	DATE	DEPTH TO PRODUCT	PRODUCT THICKNESS	DEPTH TO WATER	WATER ELEV.	CORR'D ELEV.
OKUS-W7	6.91	02/22/95	N/A	NP	4.89	2.02	2.02
	6.91	06/22/95	N/A	NP	5.26	1.65	1.65
	6.91	08/09/95	N/A	NP	5.53	1.38	1.38
	6.91	11/29/95	N/A	NP	6.09	0.82	0.82
	6.91	02/27/96	N/A	NP	4.98	1.93	1.93
	6.91	05/29/96	N/A	NP	5.08	1.83	1.83
OKUS-W8	6.75	02/22/95	N/A	NP	4.79	1.96	1.96
	6.75	06/22/95	N/A	NP	5.18	1.57	1.57
	6.75	08/09/95	N/A	NP	5.32	1.43	1.43
	6.75	11/29/95	N/A	NP	5.95	0.80	0.80
	6.75	02/27/96	N/A	NP	4.84	1.91	1.91
	6.75	05/29/96	N/A	NP	4.93	1.82	1.82
APL/UP-W1	8.12	02/22/95	N/A	NP	9.76	-1.64	-1.64
	8.12	06/22/95	N/A	NP	10.25	-2.13	-2.13
	8.12	08/09/95	N/A	NP	10.01	-1.89	-1.89
	8.12	11/29/95	N/A	NP	10.29	-2.17	-2.17
	8.12	02/27/96	N/A	NP	WELL INACCESSABLE		
	8.12	05/29/96	N/A	NP	WELL INACCESSABLE		
APL/UP-W2	7.31	02/22/95	N/A	NP	8.85	-1.54	-1.54
	7.31	06/22/95	N/A	NP	9.42	-2.11	-2.11
	7.31	08/09/95	N/A	NP	9.42	-2.11	-2.11
	7.31	11/29/95	N/A	NP	9.41	-2.10	-2.10
	7.31	02/27/96	N/A	NP	8.89	-1.58	-1.58
	7.31	05/29/96	N/A	NP	9.68	-2.37	-2.37
RW	--	06/22/95	8.72	0.10	8.82	--	--
	--	07/31/95	8.94	0.04	8.98	--	--
	--	08/09/95	9.07	0.03	9.10	--	--
	--	09/07/95	9.18	0.01	9.19	--	--
	--	10/18/95	9.41	0.02	9.43	--	--
	--	11/10/95	9.58	--	N/A	--	--
	--	11/29/95	9.63	0.09	9.72	--	--
	--	12/15/95	9.46	0.12	9.58	--	--
	--	01/10/96	9.24	0.04	9.28	--	--
	--	02/16/96	8.73	--	N/A	--	--
	--	02/27/96	9.22	0.12	9.31	--	--
	--	03/25/96	8.50	--	N/A	--	--
	--	04/18/96	8.70	--	N/A	--	--
	--	05/29/96	8.68	--	N/A	--	--

* All well casings measured to mean sea level (MSL).
-- 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.

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

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/IR (mg/l)	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)	Pb (mg/l)
OKUS–W1	OKUS–W1	01/14/93	ND	ND	410	20	4	220	ND	240	ND	ND
"	"	05/12/93	80	120	ND	ND	ND	ND	ND	ND	ND	ND
"	"	08/25/93	ND	100	ND	ND	ND	ND	ND	ND	ND	ND
"	"	11/11/93	ND	160	91	1.1	0.88	21	1.6	24	ND	ND
"	"	02/08/94	NA	92	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10	<0.02
"	"	05/03/94	NA	61	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10	<0.02
"	"	08/24/94	NA	86	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10	NA
"	"	11/16/94	NA	51	<50	<0.50	<0.50	<0.50	<0.50	ND	NA	NA
"	"	02/22/95	NA	120	<50	<0.50	<0.50	<0.50	<0.50	ND	NA	NA
"	"	06/22/95	NA	<50	<50	<0.50	<0.50	<0.50	<0.50	ND	NA	NA
"	"	08/09/95	NA	<50	<50	<0.50	<0.50	<0.50	<0.50	ND	0.040	<0.050
"	"	11/29/95	NA	480	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.0050	NA
"	"	02/27/96	NA	330	<50	<0.50	<0.50	<0.50	<0.50	ND	NA	NA
"	"	05/30/96	NA	320	<50	<0.50	<0.50	<0.50	<0.50	ND	NA	NA
OKUS–W2	OKUS–W2	01/14/93	2.5	5400	14000	480	92	8500	ND	9100	0.036	ND
"	"	05/12/93	ND	2800	8800	220	47	4600	100	5000	0.093	ND
"	"	08/25/93	5.8	6500	22000	420	92	10000	210	11000	0.089	ND
"	"	11/11/93	3.5	7700	24000	540	150	13000	280	14000	ND	ND
"	"	02/08/94	NA	2300	4900	150	29	3000	78	3300	<0.10	<0.02
"	"	05/03/94	NA	2600	17000	300	<0.50	5800	220	6300	<0.10	<0.02
"	"	08/24/94	NA	8200	11000	320	67	7500	250	8100	<0.10	NA
"	"	11/16/94	NA	5500	10000	290	79	130	160	660	NA	NA
"	"	02/22/95	NA	2000	3500	100	18	1600	66	1800	NA	NA
"	"	06/22/95	NA	3200	13000	260	62	<0.50	110	430	NA	NA
"	"	08/09/95	NA	2900	4800	160	28	<0.50	200	390	0.920	<0.050
"	"	11/29/95	NA	5600	7100	240	34	<0.50	58	330	0.049	NA
"	"	02/27/96	NA	2400	5300	200	42	3400	160	3800	NA	NA
"	"	05/30/96	NA	1900	7000	210	<0.50	<0.50	180	390	NA	NA
OKUS–W3	OKUS–W3	01/14/93	4.5	4200	4900	230	42	2600	44	2900	NA	ND
"	"	05/12/93	1.7	4400	4600	290	60	3500	72	3900	0.14	ND
"	"	08/25/93	1.5	2700	9400	260	55	4300	41	4700	0.06	ND
"	"	11/11/93	2.3	5000	9500	390	110	5100	130	5700	0.14	ND
"	"	02/08/94	NA	4400	17000	420	78	9800	160	10000	0.12	<0.02
"	"	05/03/94	NA	3000	14000	310	61	6400	210	7000	0.14	<0.02
"	"	08/24/94	NA	4500	10000	350	78	7300	170	7900	<0.10	NA
"	"	11/16/94	NA	4700	9100	260	64	95	<0.50	420	NA	NA
"	"	02/22/95	NA	2400	7400	250	51	4400	150	4900	NA	NA
"	"	06/22/95	NA	3300	8100	250	53	<0.50	76	380	NA	NA
"	"	08/09/95	NA	3100	5200	200	39	<0.50	140	380	1.60	<0.050
"	"	11/29/95	NA	4500	5300	220	42	<0.50	44	310	0.18	NA
"	"	02/27/96	NA	4000	7900	330	75	6400	240	7000	NA	NA
"	"	05/30/96	NA	2300	8900	200	<0.50	<0.50	61	260	NA	NA
OKUS–W4	OKUS–W4	01/15/93	2.5	5400	8900	300	ND	4500	ND	4800	NA	ND
"	"	05/12/93	1.3	2900	6000	320	110	4600	230	5300	0.16	ND
"	"	08/26/93	ND	2200	6700	350	72	4800	130	5400	0.098	ND
"	"	11/11/93	ND	2400	5500	250	53	4600	140	5000	0.13	ND
"	"	02/07/94	NA	2700	9100	250	<0.50	4900	150	5300	<0.10	<0.02
"	"	05/03/94	NA	2300	6500	240	34	4200	140	4600	0.12	<0.02
"	"	08/24/94	NA	2900	5200	200	41	3600	190	4000	0.11	NA
"	"	11/16/94	NA	2800	5500	320	52	<0.50	120	490	NA	NA
"	"	02/22/95	NA	2000	4300	250	47	2900	160	3400	NA	NA
"	"	06/22/95	NA	2700	4900	280	38	5200	140	5700	NA	NA
"	"	08/09/95	NA	2900	5300	270	54	<0.50	210	530	1.30	<0.050
"	"	11/29/95	NA	3100	4500	200	41	<0.50	46	290	0.14	NA
"	"	02/27/96	WELL INACCESSABLE –			NOT SAMPLED						
"	"	05/30/96	WELL INACCESSABLE –			NOT SAMPLED						

TABLE 2 (CONT.)
ANALYTICAL RESULTS – GROUNDWATER MONITORING WELLS
UNION PACIFIC RAILROAD
OAKLAND MOTOR FREIGHT FACILITY

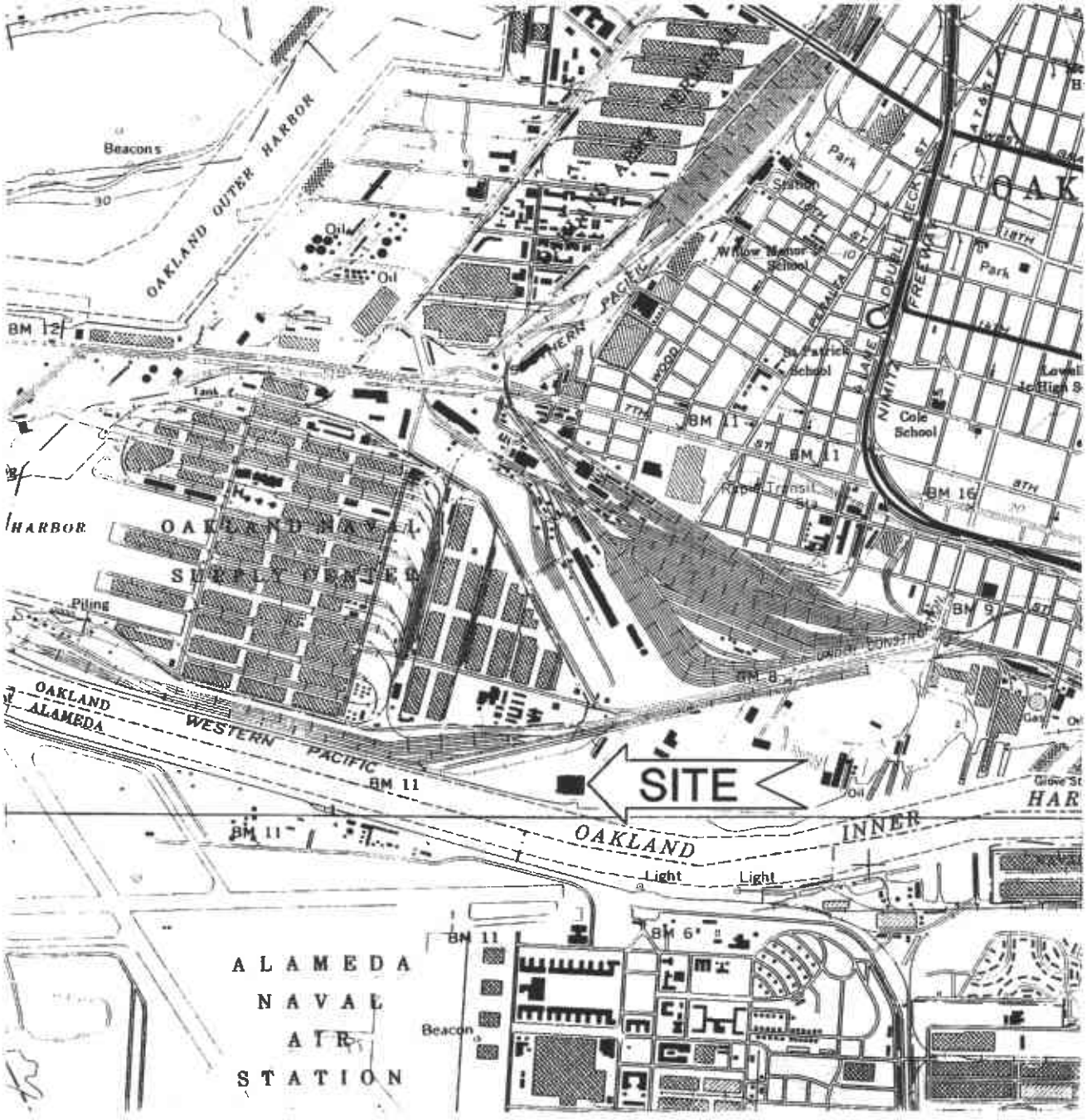
SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/IR (mg/l)	TPH/D (ug/l)	TPH/G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	BTEX (ug/l)	As (mg/l)	Pb (mg/l)
					550							
OKUS–W5	OKUS–W5	01/15/93	ND	2900	550	53	11	160	20	260	NA	ND
"	"	05/12/93	130	2100	550	81	14	250	37	380	0.56	ND
"	"	08/25/93	PRODUCT IN WELL – NOT SAMPLED									
"	"	11/11/93	2.7	1600	590	14	3.1	54	6.2	77	0.53	ND
"	"	02/07/94	NA	1900	760	54	9.4	220	24	310	0.55	<0.02
"	"	05/03/94	NA	2000	820	57	9.5	240	27	330	0.38	<0.02
"	"	08/24/94	NA	1700	910	55	14	8.5	18	96	0.45	NA
"	"	02/27/96	PRODUCT IN WELL – THE WELL HAS NOT BEEN SAMPLED SINCE 3RD QUARTER 1994									
"	"	05/30/96	PRODUCT IN WELL – THE WELL HAS NOT BEEN SAMPLED SINCE 3RD QUARTER 1994									
OKUS–W6	OKUS–W6	07/16/93	BRK	BRK	ND	2.5	ND	ND	ND	2.5	0.004	ND
"	"	08/25/93	ND	590	ND	2.6	ND	4.9	1.3	8.8	0.013	ND
"	"	11/12/93	ND	610	ND	3.6	ND	3.7	1.3	8.6	ND	ND
"	"	02/27/96	PRODUCT IN WELL – THE WELL HAS NOT BEEN SAMPLED SINCE 4TH QUARTER 1993									
"	"	05/30/96	PRODUCT IN WELL – THE WELL HAS NOT BEEN SAMPLED SINCE 4TH QUARTER 1993									
OKUS–W7	OKUS–W7	07/16/93	16	ND	ND	2.1	ND	ND	ND	2.1	0.009	ND
"	"	08/25/93	ND	930	56	2.9	ND	1.2	ND	4.1	ND	ND
"	"	11/12/93	ND	1100	ND	ND	ND	ND	ND	ND	ND	ND
"	"	02/07/94	NA	1100	ND	0.7	<0.50	<0.50	<0.50	0.7	<0.10	<0.02
"	"	05/03/94	NA	1300	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10	<0.02
"	"	08/24/94	NA	910	<50	2.5	0.54	<0.50	<0.50	3.0	<0.10	NA
"	"	11/16/94	NA	820	<50	0.62	<0.50	<0.50	<0.50	0.6	NA	NA
"	"	02/22/95	NA	830	<50	0.54	<0.50	<0.50	<0.50	0.5	NA	NA
"	"	06/22/95	NA	850	<50	2.4	<0.50	0.52	<0.50	2.9	NA	NA
"	"	08/09/95	NA	640	71	4.2	<0.50	1.2	1.2	6.6	0.074	<0.050
"	"	11/29/95	NA	1300	64	4.3	<0.50	1.3	0.51	6.1	0.0095	NA
"	"	02/27/96	NA	2600	<50	1.5	<0.50	0.54	<0.50	2.0	NA	NA
"	"	05/30/96	NA	1900	60	2	<0.50	0.54	<0.50	2.0	NA	NA
OKUS–W8	OKUS–W8	07/16/93	15	ND	ND	ND	ND	ND	ND	ND	0.012	0.003
"	"	08/27/93	ND	1100	120	1.3	ND	ND	0.85	2.2	ND	0.005
"	"	11/11/93	ND	1300	190	3.5	1.3	46	4.9	55.7	ND	ND
"	"	02/07/94	NA	1000	120	0.9	<0.50	<0.50	<0.50	0.9	<0.10	<0.02
"	"	05/03/94	NA	780	79	0.99	<0.50	<0.50	<0.50	1.0	<0.10	<0.02
"	"	08/24/94	NA	700	100	1.4	<0.50	<0.50	<0.50	1.4	<0.10	NA
"	"	11/16/94	NA	830	110	0.77	<0.50	<0.50	<0.50	0.8	NA	NA
"	"	02/22/95	NA	370	150	0.96	<0.50	<0.50	1.2	2.2	NA	NA
"	"	06/22/95	NA	870	76	0.92	<0.50	<0.50	<0.50	0.9	NA	NA
"	"	08/09/95	NA	1100	90	1.1	<0.50	<0.50	1.3	2.4	0.078	<0.050
"	"	11/29/95	NA	2400	100	0.73	<0.50	<0.50	0.91	1.6	<0.0050	NA
"	"	02/27/96	NA	1900	80	<0.50	<0.50	<0.50	1.3	1.3	NA	NA
"	"	05/30/96	NA	2200	210	<0.50	<0.50	<0.50	0.7	1.0	NA	NA
APL/UP–W1	APL/UP–W1	07/16/93	11	700	300	25.4	1.7	ND	3.0	30	0.011	ND
"	"	08/26/93	ND	810	720	47	1.3	360	14.0	420	0.013	ND
"	"	11/11/93	ND	530	560	26	ND	220	11.0	260	ND	ND
"	"	02/07/94	NA	660	620	25	<0.50	160	10	220	<0.10	<0.02
"	"	05/03/94	NA	590	680	48	2.9	260	9.8	320	<0.10	<0.02
"	"	08/24/94	NA	420	830	48	4.8	12	3.2	68	<0.10	NA
"	"	11/15/94	NA	480	470	36	3.6	9.6	12	61	NA	NA
"	"	02/22/95	NA	510	470	33	2.8	170	9	210	NA	NA
"	"	06/22/95	NA	320	160	12	0.82	3.5	2.4	19	NA	NA
"	"	08/09/95	NA	160	69	4.2	<0.50	<0.50	2.3	7	<0.0050	<0.050
"	"	11/29/95	NA	920	170	7.4	0.58	66	3.5	78	0.018	NA
"	"	02/27/96	WELL INACCESSABLE – NOT SAMPLED									
"	"	05/30/96	WELL INACCESSABLE – NOT SAMPLED									

TABLE 2 (CONT.)
ANALYTICAL RESULTS – GROUNDWATER MONITORING WELLS
UNION PACIFIC RAILROAD
OAKLAND MOTOR FREIGHT FACILITY

SAMPLE LOCATION	SAMPLE ID	DATE SAMPLED	TPH/IR (mg/l)	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)	Pb (mg/l)
APL/UP-W2	APL/UP-W2	07/16/93	19	ND	ND	8.0	ND	ND	ND	8	0.016	ND
"	"	08/26/93	ND	240	94	ND	ND	35	2.4	37	0.023	ND
"	"	11/11/93	ND	190	110	5.0	ND	38	2.6	46	ND	ND
"	"	02/07/94	NA	270	120	6.6	<0.50	38	1.8	46	<0.10	<0.02
"	"	05/03/94	NA	100	<50	<0.50	<0.50	<0.50	<0.50	ND	<0.10	<0.02
"	"	08/24/94	NA	330	220	13.0	0.77	3.5	3.1	20	<0.10	NA
"	"	11/15/94	NA	320	190	11.0	<0.50	63.0	5.4	79	NA	NA
"	"	02/22/95	NA	550	320	19.0	<0.50	100	9.5	130	NA	NA
"	"	06/22/95	NA	300	170	10.0	62	2.2	2.3	76	NA	NA
"	"	08/09/95	NA	180	62	3.5	<0.50	<0.50	2.3	5.8	0.220	<0.050
"	"	11/29/95	NA	690	110	7.2	<0.50	49	2.3	59	0.019	NA
"	"	02/27/96	NA	480	100	5.3	<0.50	33	2.9	41	NA	NA
"	"	05/30/96	NA	280	ND	1.9	<0.50	<0.50	1.2	3	NA	NA
DUPLICATES												
OKUS-W5	OKUS-W6	01/15/93	ND	2800	510	50	10	170	19	250	NA	NA
OKUS-W1	OKUS-W6	05/12/93	ND	140	ND	ND	ND	ND	ND	ND	ND	ND
APL/UP-W1	QA/QC-1	07/16/93	12	ND	0.21	22.4	ND	ND	2.4	25	0.012	ND
OKUS-W4	OKUS-W9	08/26/93	ND	2700	6200	340	78	4500	100	5000	0.100	ND
OKUS-W8	OKUS-W9	11/11/93	ND	1300	120	1.3	ND	4	1.4	7	2.400	ND
OKUS-W3	QA/QC-1	02/08/94	NA	2900	15000	280	64	5800	<0.50	6100	0.120	0.12
OKUS-W4	OKUS-QC1	05/03/94	NA	2500	5400	300	41	5200	130	5700	0.120	<0.02
OKUS-W8	OKUS-QC1	08/24/94	NA	950	92	1.6	<0.50	<0.50	<0.50	2	<0.10	NA
APL/UP-W2	OKUS-QC1	11/16/94	NA	310	190	10	<0.50	62	4.7	77	NA	NA
APL/UP-W2	APL-W12	02/22/95	NA	490	360	20	<0.50	110	6.7	140	NA	NA
APL/UP-W2	APL-W12	08/09/95	NA	160	71	3.4	<0.50	<0.50	2.2	6	0.200	<0.050
APL/UP-W1	APL-W11	11/29/95	NA	1100	170	7.5	0.57	66	4.4	79	0.021	NA
OKUS-W1	OKUS-W11	02/27/96	NA	330	<50	<0.50	<0.50	<0.50	<0.50	ND	NA	NA
OKUS-W1	OKUS-W11	05/30/96	NA	570	<50	<0.50	<0.50	<0.50	<0.50	ND	NA	NA
TRIP BLANKS												
UPMF	OAK-FB 1	07/16/93	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA
UPMF	OAK-TB 2	07/16/93	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA
UPMF	TB-1	08/27/93	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA
UPMF	TB-2	08/27/93	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA
UPMF	TB-1	11/12/93	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA
UPMF	TB-1	08/24/94	NA	NA	NA	ND	ND	ND	ND	ND	NA	NA
UPMF	TB-1	11/16/94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
UPMF	TB-1	02/22/95	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA
UPMF	TB-1	06/22/95	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA
UPMF	TB-1	08/09/95	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA
UPMF	TRIP BLANK	11/29/95	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA
UPMF	TRIP BLANK	02/27/96	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA
UPMF	TRIP BLANK	05/29/96	NA	NA	ND	ND	ND	ND	ND	ND	NA	NA

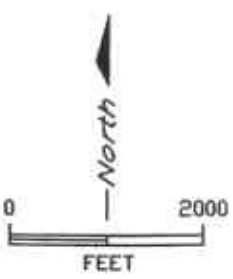
ND – Not Detected
NA – Not Analyzed
BRK – Bottle broken during shipment
TPH – Total Petroleum Hydrocarbons
mg/L – milligram per liter
ug/L – microgram per liter

TPH/IR – analyzed using EPA Method 418.1
TPH/D – anaylzed using EPA Method 8015 Mod.
TPH/G – anaylzed using EPA Method 8015 Mod.
BTEX – analyzed using EPA Method 8020
As – analyzed using EPA Method 7060
Pb – analyzed using EPA Method 7421



ADAPTED FROM U.S.G.S. 7.5' SERIES QUADRANGLE OAKLAND WEST, CALIFORNIA

LOCMAP



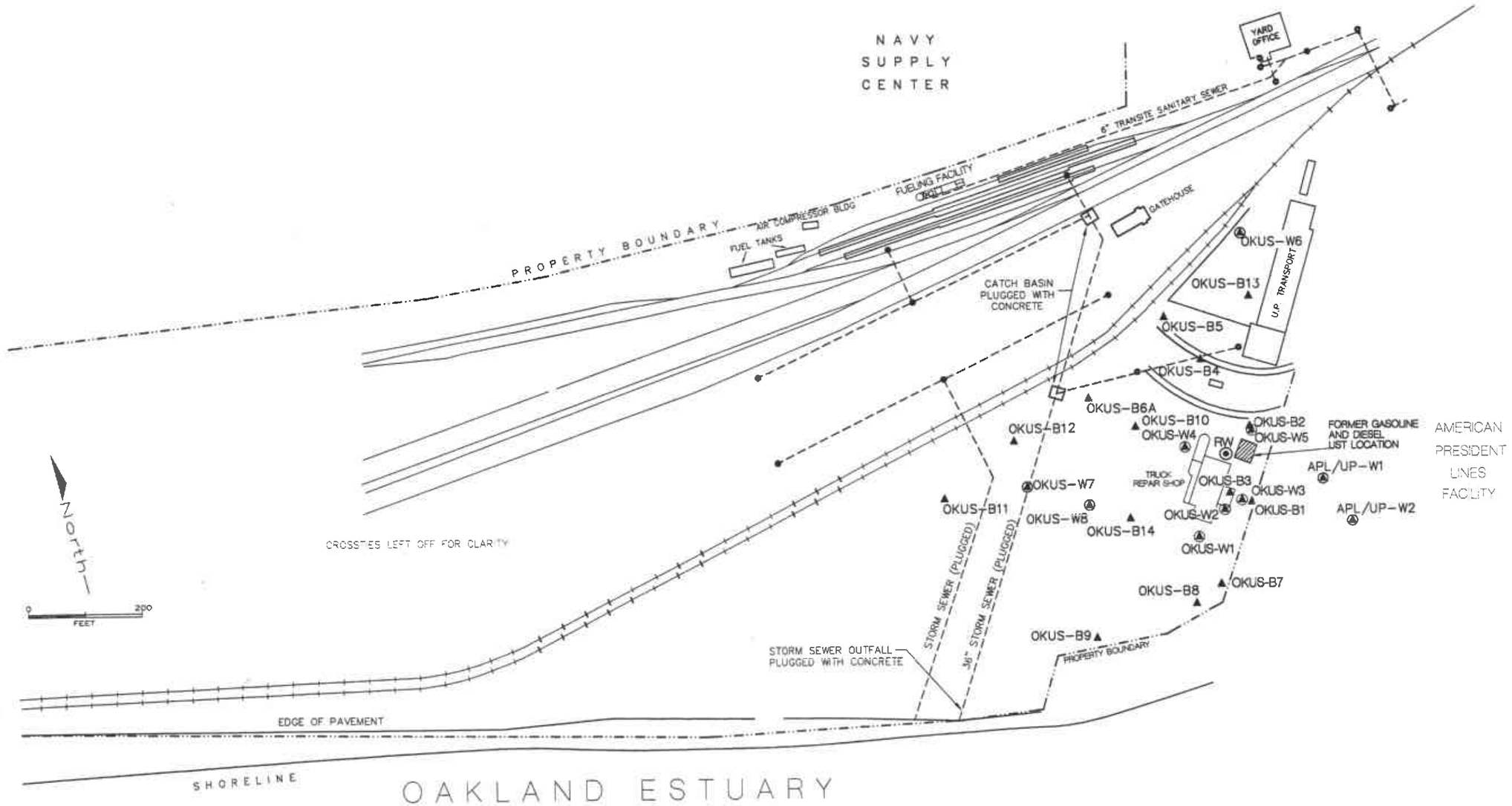
USPCI

A LAIDLAW COMPANY

UP MOTOR FREIGHT FACILITY-OAKLAND, CA

FIGURE 1
SITE LOCATION MAP

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



LEGEND

◉ OKUS-W1	MONITORING WELL LOCATION AND NUMBER
▲ OKUS-B1	BORING LOCATION AND NUMBER
•	CATCH BASIN FOR STORM SEWER
◉ RW	RECOVERY WELL

BY	DATE
DRAWN WRB	7/18/95
CHECKED	
APPROVED	
APPROVED	
APPROVED	

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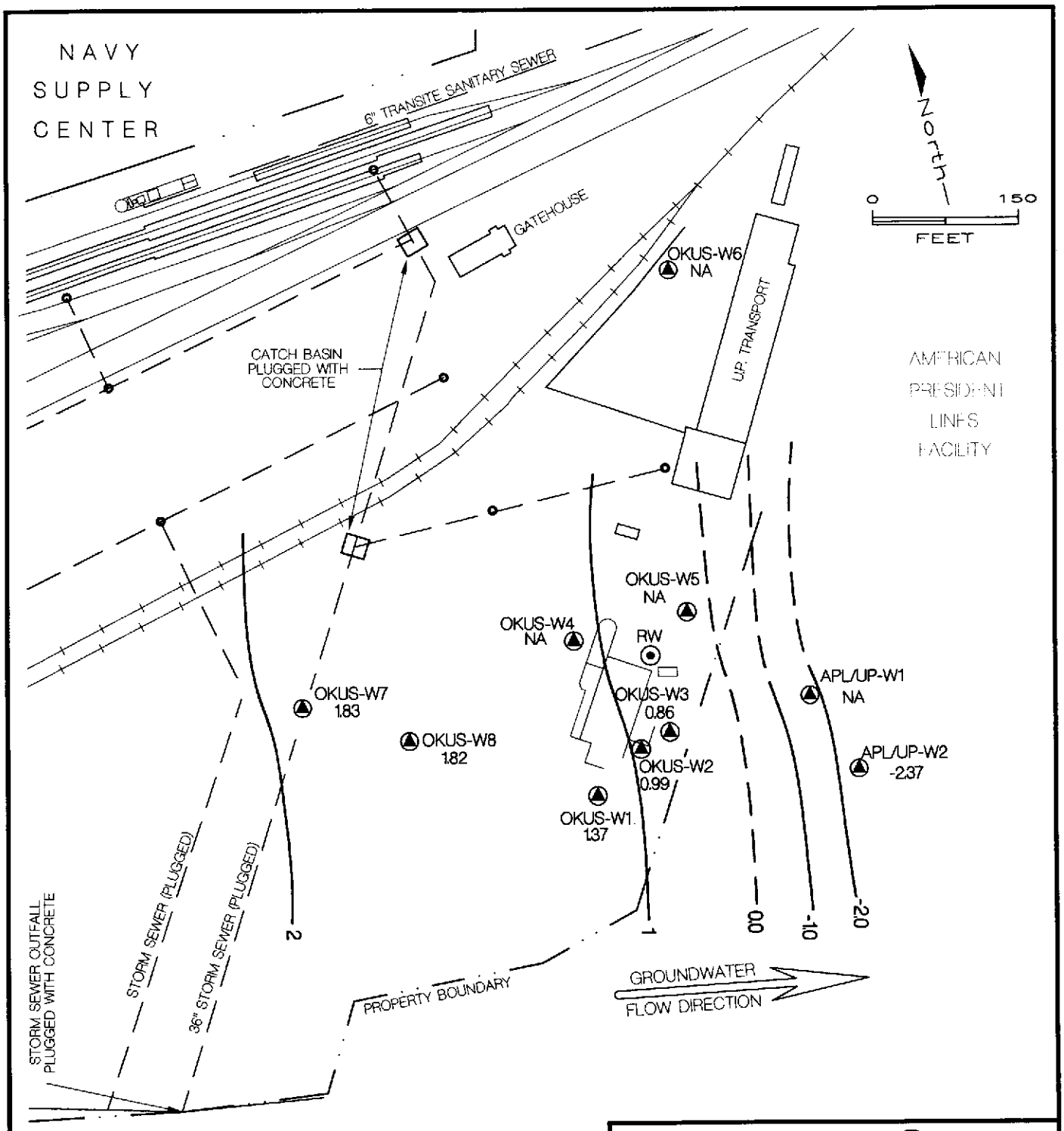
UPRR TOFC RAILYARD
UPMF REPAIR SHOP, OAKLAND, CALIFORNIA

FIGURE 2
SITE VICINITY MAP

SCALE	DATE	DWG. NO.
1"=200'	9/93	96120-556



LEGEND

OKUS-W1 0.39	MONITOR WELL LOCATION AND NUMBER WITH GROUNDWATER ELEVATION
RW	RECOVERY WELL
	CATCH BASIN FOR STORM SEWER
0	GROUNDWATER ELEVATION CONTOUR (FEET RELATIVE TO MEAN SEA LEVEL)
NA	NOT AVAILABLE

96120-838

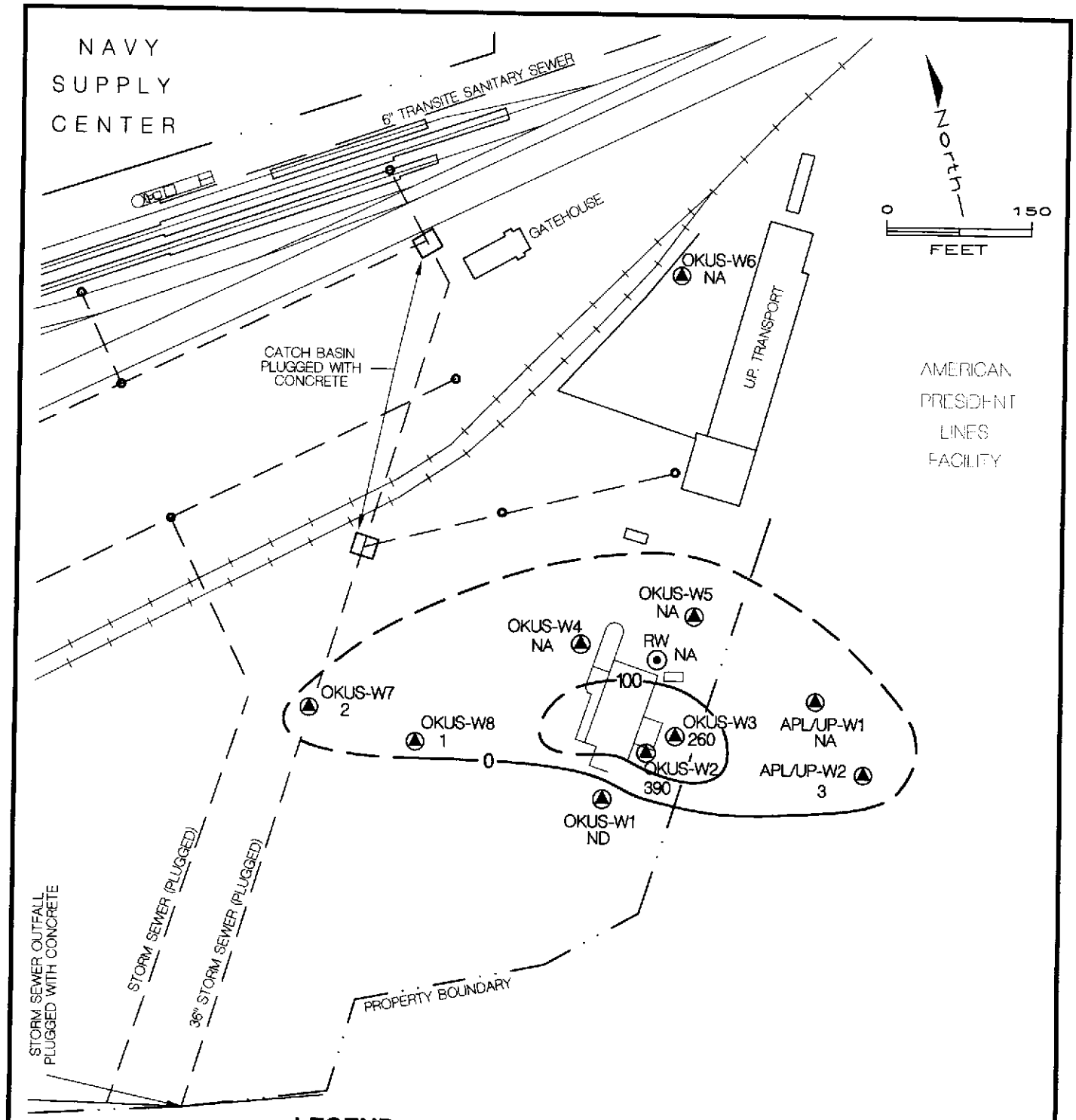
USPCI
A LAIDLAW COMPANY

UPMF REPAIR SHOP-OAKLAND, CALIFORNIA

FIGURE 3
GROUNDWATER ELEVATION MAP (5/96)

SCALE: 1" = 150'

APPROVED/DATE 6/25/96



LEGEND

OKUS-W1 ▲ 0.39	MONITOR WELL LOCATION AND NUMBER WITH TOTAL DISSOLVED BTEX CONCENTRATION µg/L
RW ⊙	RECOVERY WELL
○	CATCH BASIN FOR STORM SEWER
100	TOTAL BTEX DISTRIBUTION CONTOUR; DASHED WHERE INFERRED
ND	NOT DETECTED
NA	NOT ANALYZED

NOTE: ALL ANALYTICAL RESULTS IN µg/L

96120-839

USPCI

A LAIDLAW COMPANY

UPMF REPAIR SHOP-OAKLAND, CALIFORNIA

FIGURE 4
DISSOLVED PHASE BTEX DISTRIBUTION (5/96)

SCALE	APPROVED/DATE
1" = 150'	6/25/96

APPENDIX A

FLUID LEVEL MEASUREMENTS AND SAMPLE COLLECTION LOGS

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland** | USPCI Project Number: **96120-844**

Measuring Point (MP) Location **Top of casing** | **Well No. APL-W1**

Well Depth: (Below MP): **21.87 Feet**

Casing diameter: **2 Inches** | Sampling Date: **05/29/96**

Depth To Ground Water (Below MP): **Not measured (see comments below)** | Sample ID No. **APL-W1**

Method Of Well Development: | Time: 17:26

☐ Tap ☐ Submersible Pump ☐ Bladder Pump | Riser Elevation (MP): 7.11 Feet

☐ Bailer ☐ Centrifugal Pump ☐ Other | Top of Screen Elevation: 2.11 Feet

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): Well inaccessable

○ ABS Plastic ○ PVC ○ HDPE disposable

Pump Intake Or Bailer Set At _____ Feet Below MP | Decontamination Performed:

Tubing Type (if Used):

Tubing Used for: ☐ Sample Collection ☐ Well Development/Field Tests | Samples Collected: None

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)
WELL NOT	SAMPLED					

At Least Well Bore Volumes Were Evacuated Before Sampling Discharge Rate = GPM x 0.00223 = cfs

Comments: **The well was inaccessable due to stacked container trailers resting on the well head. The sampler was unable to gauge or sample the well.**

[Comments may continue on back]

Form Completed By: **Mark McCormick** Witnessed By:

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland**

USPCI Project Number: **96120-844**

Measuring Point (MP) Location **Top of casing**

Well No. APL-W2

Well Depth: (Below MP): **11.10 Feet**

Casing diameter: **2 Inches**

Sampling Date: **05/30/96**

Depth To Ground Water (Below MP): **9.68 Feet on 5/29/96 and 9.67 Feet on 5/30/96**

Sample ID No. **APL-W2**

Method Of Well Development:

Time: **09:55**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump

Riser Elevation (MP): **7.62 Feet**

■ Bailer ☐ Centrifugal Pump ☐ Other

Top of Screen Elevation: **2.62 Feet**

Sampling Collection Method:

Sample Appearance: **Clear**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump Sample

Odor: **Moderate**

■ Bailer Type: ○ Teflon ○ Stainless Steel

Sampling Problems (if any):

○ ABS Plastic ○ PVC ● HDPE disposable

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: **TPH-Gasoline, TPH-Diesel, 8020 BTEX**

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)
09:32	Begin well					
09:40	7.9	1500	19.3		0.25	
09:41	7.9	1600	19.3		0.50	
09:43	7.8	1500	19.4		0.75	
09:55	Sample well					

At Least **3** Well Bore Volumes Were Evacuated Before Sampling Discharge Rate = GPM x 0.00223 = cfs

Comments: **The sampler corroborated the new well depth of 11.10 Feet as measured in February 1996.**

(11.10 - 9.67) * 0.16 = 0.228 or about 0.25 gals/vol

[Comments may continue on back]

Form Completed By: **Mark McCormick**

Witnessed By:

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland** | USPCI Project Number: **96120-844**

Measuring Point (MP) Location **Top of casing** | **Well No. OKUS-W1**

Well Depth: (Below MP): **18.70 Feet**

Casing diameter: **2 Inches** | Sampling Date: **05/30/96**

Depth To Ground Water (Below MP): **7.80 Feet on 5/29/96 and 7.83 Feet on 5/30/96** | Sample ID No. **OKUS-W1**

Method Of Well Development: | Time: **10:41**

☐ 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: **Clear**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump Sample | Odor: **Slight**

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

○ ABS Plastic ○ PVC ● HDPE plastic disposable

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: **TPH-Gasoline, , TPH-Diesel 8020 BTEX**

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)
10:13	Begin well					
10:21	7.2	500	21.7		1.75	
10:26	7.1	600	21.6		3.50	
10:31	7.1	500	21.5		5.25	
10:41	Sample well					

At Least 3 Well Bore Volumes Were Evacuated Before Sampling Discharge Rate = GPM x 0.00223 = cfs

Comments: **(18.70 - 7.83) * 0.16 = 1.739 or about 1.75 gals/vol**

Duplicate sample labelled OKUS-W11 was taken at 11:00

[Comments may continue on back]

Form Completed By: **Mark McCormick** Witnessed By:

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland** | USPCI Project Number: **96120-844**

Measuring Point (MP) Location **Top of casing** | **Well No. OKUS-W2**

Well Depth: (Below MP): **22.00 Feet**

Casing diameter: **2 Inches** | Sampling Date: **05/30/96**

Depth To Ground Water (Below MP): **8.72 Feet on 5/29/96 and 8.74 Feet on 5/30/96** | Sample ID No. **OKUS-W2**

Method Of Well Development: | Time: **11:22**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump | Riser Elevation (MP): 9.71 Feet

■ Bailer ☐ Centrifugal Pump ☐ Other | Top of Screen Elevation: 7.05 Feet

Sampling Collection Method: | Sample Appearance: **Very slightly turbid, very light yellow color**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump Sample | Odor: **Moderate - strong**

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

○ ABS Plastic ○ PVC ● HDPE plastic disposable

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: **TPH-Gasoline, TPH-Diesel, 8020 BTEX**

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)
11:01	Begin well					
11:06	7.6	2700	19.3		2.25	
11:09	7.7	2700	19.3		4.50	
11:12	7.7	2600	19.3		6.75	
11:22	Sample well					

At Least 3 Well Bore Volumes Were Evacuated Before Sampling | Discharge Rate = GPM x 0.00223 = cfs

Comments: **(22.0 - 8.74) * 0.16 = 2.122 or about 2.25 gals/vol**

[Comments may continue on back]

Form Completed By: **Mark McCormick** | Witnessed By:

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland**

USPCI Project Number: **96120-844**

Measuring Point (MP) Location **Top of casing**

Well No. OKUS-W3

Well Depth: (Below MP): **21.50 Feet**

Casing diameter: **2 Inches**

Sampling Date: **05/30/96**

Depth To Ground Water (Below MP): **8.94 Feet on 5/29/96 and 8.98 on 5/30/96**

Sample ID No. **OKUS-W3**

Method Of Well Development:

Time: **11:51**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump

Riser Elevation (MP): **9.80 Feet**

■ Bailer ☐ Centrifugal Pump ☐ Other

Top of Screen Elevation: **6.55 Feet**

Sampling Collection Method:

Sample Appearance: **Very slightly turbid, very light yellow color**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump Sample

Odor: **Moderate - strong**

■ Bailer Type: ○ Teflon ○ Stainless Steel

Sampling Problems (if any): **Water is reactive**

○ ABS Plastic ○ PVC ● HDPE plastic disposable

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: **TPH-Gasoline, TPH-Diesel, 8020 BTEX**

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)
11:27	Begin well					
11:33	7.2	2700	19.3		2.0	
11:37	7.2	2600	19.5		4.0	
11:41	7.1	2800	19.5		6.0	
11:51	Sample well					

At Least 3 Well Bore Volumes Were Evacuated Before Sampling Discharge Rate = GPM x 0.00223 = cfs

Comments: **(21.50 - 8.98) * 0.16 = 2.00 or 2.0 gals/vol**

[Comments may continue on back]

Form Completed By: **Mark McCormick**

Witnessed By:

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland** | USPCI Project Number: **96120-844**

Measuring Point (MP) Location **Top of casing** | **Well No. OKUS-W4**

Well Depth: (Below MP): **20.69 Feet**

Casing diameter: **2 Inches** | Sampling Date: **05/29/96**

Depth To Ground Water (Below MP): **Not measured (see comments below** | Sample ID No. **OKUS-W4**

Method Of Well Development: | Time: **16:43**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump | Riser Elevation (MP): 7.11 Feet

☐ Bailer ☐ Centrifugal Pump ☐ Other | Top of Screen Elevation: 2.11 Feet

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): Well inaccessable

◯ ABS Plastic ◯ PVC ◯ HDPE plastic disposable

Pump Intake Or Bailer Set At _____ Feet Below MP | Decontamination Performed:

Tubing Type (if Used):

Tubing Used for: ☐ Sample Collection ☐ Well Development/Field Tests | Samples Collected: **None**

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)
WELL NOT	SAMPLED					

At Least 3 Well Bore Volumes Were Evacuated Before Sampling Discharge Rate = GPM x 0.00223 = cfs

Comments: **The well head is no longer accessable due to severe damage by UPMF heavy equipment.**

[Comments may continue on back]

Form Completed By: **Mark McCormick** Witnessed By:

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland** | USPCI 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: **05/29/96**

Depth To Product (Below MP): **9.06 Feet (See comments)**
Depth To Groundwater (Below MP): **9.93 Feet** | Sample ID No. **N/A**

Method Of Well Development: | Time: **16:24**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump | Riser Elevation (MP): 9.25 Feet

☐ Bailer ☐ Centrifugal Pump ☐ Other | Top of Screen Elevation: 5.95 Feet

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

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: **None**

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)
WELL NOT	SAMPLED					

At Least Well Bore Volumes Were Evacuated Before Sampling Discharge Rate = GPM x 0.00223 = cfs

Comments: **The sampler dropped a disposable bailer down-hole until contact was made with hydrocarbon and measured to TOC for depth to product. Product was noted as "Bunker C" type hydrocarbon. Depth to water was extrapolated by forcing the bailer further down-hole until contact was made with water. The bailer was then extracted and the depth to water was gauged by measuring the product coating left on the bailer.**

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

[Comments may continue on back]

Form Completed By: **Mark McCormick** Witnessed By

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland** | USPCI 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** | Sampling Date: **05/29/96**

Depth To Product (Below MP): **5.02 Feet (See comments)**
Depth To Groundwater (Below MP): **6.23 Feet** | Sample ID No. **N/A**

Method Of Well Development: | Time: **16:36**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump | Riser Elevation (MP): 7.29 Feet

☐ Bailer ☐ Centrifugal Pump ☐ Other | Top of Screen Elevation: 2.29 Feet

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

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: **None**

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)
WELL NOT	SAMPLED					

At Least Well Bore Volumes Were Evacuated Before Sampling Discharge Rate = GPM x 0.00223 = cfs

Comments: **The sampler dropped a disposable bailer down-hole until contact was made with hydrocarbon and measured to TOC for depth to product. Product was noted as "Bunker C" type hydrocarbon. Depth to water was extrapolated by forcing the bailer further down-hole until contact was made with water. The bailer was then extracted and the depth to water was gauged by measuring the product coating left on the bailer.**

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

[Comments may continue on back]

Form Completed By: **Mark McCormick** Witnessed By

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland** | USPCI Project Number: **96120-844**

Measuring Point (MP) Location **Top of casing** | **Well No. OKUS-W7**

Well Depth: (Below MP): **19.78 Feet**

Casing diameter: **2 Inches** | Sampling Date: **05/30/96**

Depth To Ground Water (Below MP): **5.08 Feet on 5/29/96 and 5.12 Feet on 5/30/96** | Sample ID No. **OKUS-W7**

Method Of Well Development: | Time: **13:10**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump | Riser Elevation (MP): 7.4 Feet

■ Bailer ☐ Centrifugal Pump ☐ Other | Top of Screen Elevation: 2.4 Feet

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

☐ Tap ☐ Submersible Pump ☐ Bladder Pump Sample | Odor: **Light**

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

○ ABS Plastic ○ PVC ● HDPE plastic disposable

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: **TPH-Gasoline, TPH-Diesel, 8020 BTEX**

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)
12:36	Begin well					
12:46	7.3	2100	19.3		2.5	
12:52	7.2	2100	19.1		5.0	
12:57	7.3	2100	19.3		7.5	
13:10	Sample well					

At Least 3 Well Bore Volumes Were Evacuated Before Sampling Discharge Rate = GPM x 0.00223 = cfs

Comments: **(19.78 - 5.12) * 0.16 = 2.346 or about 2.5 gals/vol**

[Comments may continue on back]

Form Completed By: **Mark McCormick** Witnessed By:

USPCI SAMPLING AND WELL STABLIZATION FORM

USPCI Project Name: **UPMF Oakland** | USPCI Project Number: **96120-844**

Measuring Point (MP) Location **Top of casing**

Well No. OKUS-W8

Well Depth: (Below MP): **14.87 Feet**

Casing diameter: **2 Inches** | Sampling Date: **05/29/96**

Depth To Ground Water (Below MP): **4.93 Feet on 5/29/96 and 4.97 Feet on 5/30/96** | Sample ID No. **OKUS-W8**

Method Of Well Development: | Time: **12:26**

☐ Tap ☐ Submersible Pump ☐ Bladder Pump | Riser Elevation (MP): 7.11 Feet

■ Bailer ☐ Centrifugal Pump ☐ Other | Top of Screen Elevation: 2.11 Feet

Sampling Collection Method: | Sample Appearance: **Clear/Slightly turbid, yellow**

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

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

○ ABS Plastic ○ PVC ● HDPE plastic disposable

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: **TPH-Gasoline, TPH-Diesel, 8020 BTEX**

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)
12:00	Begin well					
12:08	7.9	2900	19.8		1.75	
12:13	7.9	2900	19.8		3.50	
12:16	7.9	3000	19.8		5.25	
12:26	Sample well					

At Least 3 Well Bore Volumes Were Evacuated Before Sampling | Discharge Rate = GPM x 0.00223 = cfs

Comments: **(14.87 - 4.97) * 0.16 = 1.584 or about 1.75 gals/vol**

[Comments may continue on back]

Form Completed By: **Mark McCormick** | Witnessed By:

APPENDIX B

ANALYTICAL REPORTS

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

U.S.P.C.I. / Laidlaw	Client Project ID:	UP Motor Freight, Oakland	Sampled: May 30, 1996
5665 Flatiron Pkwy	Sample Matrix:	Water	Received: May 30, 1996
Boulder, CO 80301	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Jun 13, 1996
Attention: Denton Mauldin	First Sample #:	606-0040	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 606-0040 APL-WZ	Sample I.D. 606-0041 OKUS-W1	Sample I.D. 606-0042 OKUS-W11	Sample I.D. 606-0043 OKUS-WZ	Sample I.D. 606-0044 OKUS-W3	Sample I.D. 606-0045 OKUS-W8
QC Batch Number:		GC061096 802004A	GC061096 802004A	GC061096 802004A	GC061096 802004A	GC061096 802004A	GC061196 802002A
Purgeable Hydrocarbons	50	N.D.	N.D.	N.D.	7,000	8,900	210
Benzene	0.50	1.9	N.D.	N.D.	210	200	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	1.2	N.D.	N.D.	180	61	0.72
Chromatogram Pattern:		--	--	--	Gasoline & Decreat Peaks	Gasoline & Decreat Peaks	Unidentified Hydrocarbons > C8

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	100	100	1.0
Date Analyzed:	6/10/96	6/10/96	6/10/96	6/10/96	6/10/96	6/11/96
Instrument Identification:	HP-4	HP-4	HP-4	HP-4	HP-4	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	94	93	92	105	103	104

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

Kenneth L. Wimer
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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U.S.P.C.I. / Laidlaw	Client Project ID:	UP Motor Freight, Oakland	Sampled: May 30, 1996
5665 Flatiron Pkwy	Sample Matrix:	Water	Received: May 30, 1996
Boulder, CO 80301	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Jun 13, 1996
Attention: Denton Mauldin	First Sample #:	606-0046	

QC Batch Number: GC061096 802004A / GC061096 802004A

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 606-0046 OKUS-W7	Sample I.D. 606-0047 Trip Blank
Purgeable Hydrocarbons	50	60	N.D.
Benzene	0.50	2.0	N.D.
Toluene	0.50	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.
Total Xylenes	0.50	N.D.	N.D.
Chromatogram Pattern:		Gasoline & Unidentified Hydrocarbons >C8	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	6/10/96	6/10/96
Instrument Identification:	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	95	101

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

Kenneth L. Wimer
Project Manager

Sequoia Analytical

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U.S.P.C.I. / Laidlaw	Client Project ID:	UP Motor Freight, Oakland	Sampled: May 30, 1996
5665 Flatiron Pkwy	Sample Matrix:	Water	Received: May 30, 1996
Boulder, CO 80301	Analysis Method:	EPA 3510/8015 Mod.	Reported: Jun 13, 1996
Attention: Denton Mauldin	First Sample #:	606-0040	

QC Batch Number:	SP053196	SP053196	SP053196	SP053196	SP053196	SP060396
	8015EXA	8015EXA	8015EXA	8015EXA	8015EXA	8015EXA

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 606-0040 APL-WZ	Sample I.D. 606-0041 OKUS-W1	Sample I.D. 606-0042 OKUS-W11	Sample I.D. 606-0043 OKUS-WZ	Sample I.D. 606-0044 OKUS-W3	Sample I.D. 606-0045 OKUS-W8
Extractable Hydrocarbons	50	280	320	570	1,900	2,300	2,200
Chromatogram Pattern:		Diesel	Unidentified Hydrocarbons >C18	Unidentified Hydrocarbons >C18	Diesel & Unidentified Hydrocarbons <C15	Diesel & Unidentified Hydrocarbons <C15	Diesel & Unidentified Hydrocarbons >C25

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Extracted:	5/31/96	5/31/96	5/31/96	5/31/96	5/31/96	6/3/96
Date Analyzed:	6/3/96	6/3/96	6/3/96	6/3/96	6/3/96	6/4/96
Instrument Identification:	HP3A	HP-3B	HP-3B	HP-3B	HP-3B	HP3A

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

Kenneth L. Wimer
Project Manager

Sequoia Analytical

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U.S.P.C.I. / Laidlaw	Client Project ID:	UP Motor Freight, Oakland	Sampled: May 30, 1996
5665 Flatiron Pkwy	Sample Matrix:	Water	Received: May 30, 1996
Boulder, CO 80301	Analysis Method:	EPA 3510/8015 Mod.	Reported: Jun 13, 1996
Attention: Denton Mauldin	First Sample #:	606-0046	

QC Batch Number: SP060396

8015EXA

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 606-0046 OKUS-W7
Extractable Hydrocarbons	50	1,900
Chromatogram Pattern:		Diesel & Unidentified Hydrocarbons >C25

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Extracted:	6/3/96
Date Analyzed:	6/4/96
Instrument Identification:	HP3A

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

Kenneth L. Wimer
Project Manager

Sequoia Analytical

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U.S.P.C.I. / Laidlaw
5665 Flatiron Pkwy
Boulder, CO 80301
Attention: Denton Mauldin

Client Project ID: UP Motor Freight, Oakland
Matrix: Liquid
QC Sample Group: 6060040-046
Reported: Jun 13, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC061196	GC061196	GC061196	GC061196
	802001A	802001A	802001A	802001A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	S. Chullakorn	S. Chullakorn	S. Chullakorn	S. Chullakorn
MS/MSD #:	6060184	6060184	6060184	6060184
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/11/96	6/11/96	6/11/96	6/11/96
Analyzed Date:	6/11/96	6/11/96	6/11/96	6/11/96
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:	23	23	24	70
MS % Recovery:	115	115	120	117
Dup. Result:	19	19	20	58
MSD % Recov.:	95	95	100	97
RPD:	19	19	18	19
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	LCS061196	LCS061196	LCS061196	LCS061196
Prepared Date:	6/11/96	6/11/96	6/11/96	6/11/96
Analyzed Date:	6/11/96	6/11/96	6/11/96	6/11/96
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:	22	22	23	68
LCS % Recov.:	110	110	115	113

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

SEQUOIA ANALYTICAL, #1271

Kenneth L. Wimer
Project Manager

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

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U.S.P.C.I. / Laidlaw
5665 Flatiron Pkwy
Boulder, CO 80301
Attention: Denton Mauldin

Client Project ID: UP Motor Freight, Oakland
Matrix: Liquid
QC Sample Group: 6060040-046

Reported: Jun 13, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel	Diesel
QC Batch#:	GC061096	GC061096	GC061096	GC061096	SP053196	SP060396
Analy. Method:	8020EXA EPA 8020	8020EXA EPA 8020	8020EXA EPA 8020	8020EXA EPA 8020	8015EXA EPA 8015	8015EXA EPA 8015
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 3510	EPA 3510
Analyst:	K. Nill	K. Nill	K. Nill	K. Nill	J. Dinsay	J. Dinsay
MS/MSD #:	6060044	6060044	6060044	6060044	BLK053196	Blk060396
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	300 mg/L
Prepared Date:	6/10/96	6/10/96	6/10/96	6/10/96	5/31/96	6/3/96
Analyzed Date:	6/10/96	6/10/96	6/10/96	6/10/96	6/3/96	6/4/96
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	GCHP-3A	GCHP-3B
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/kg	300 µg/kg
Result:	17	17	16	50	290	250
MS % Recovery:	85	85	80	83	97	-
Dup. Result:	16	16	16	48	290	430
MSD % Recov.:	80	80	80	80	97	43
RPD:	6.1	6.1	0.0	4.1	0.0	53
RPD Limit:	0-25	0-25	0-25	0-25	0-25	0-25

LCS #:	LCS061096	LCS061096	LCS061096	LCS061096	LCS053196	LCS060396
Prepared Date:	6/10/96	6/10/96	6/10/96	6/10/96	5/31/96	6/3/96
Analyzed Date:	6/10/96	6/10/96	6/10/96	6/10/96	6/3/96	6/4/96
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	GCHP-3A	GCHP-3B
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/kg	300 µg/kg
LCS Result:	17	18	17	33	290	230
LCS % Recov.:	85	90	83	88	97	77

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	11-148	11-148

SEQUOIA ANALYTICAL, #1271

Kenneth L. Wimer
Project Manager

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
CHAIN OF CUSTODY

❑ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600 FAX (415) 364-9233
❑ 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: USPCI / LAIDLAW	Project Name: UP MOTOR FREIGHT-OAKLAND
Address: 5665 FLATIRON PKWY	Billing Address (if different): 960003
City: BOULDER State: CO Zip Code: 80301	
Telephone: 303 938 5500 FAX #: 303 938 5520	P.O. #: 795
Report To: DENTON MAULDIN Sampler: MARK M. MCCORMICK	QC Data: ❑ Level D (Standard) ☒ Level C ❑ Level B ❑ Level A

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

❑ Drinking Water ❑ Waste Water ☒ Other GW

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	8020 BTEX	MOD 8015 TPH-GASOLINE	MOD 8015 TPH-DIESEL						Comments
1. APL-W2	5/30/96 0955	GW	3	VOA		X	X		6060040	A-D				
2.			1	1L AMBER				X	~~6060041~~					
3. OKUS-W1	5/30/96 1041		3	VOA		X	X		6060041					
4.			1	1L AMBER				X						
5. OKUS-W11	5/30/96 1100		3	VOA		X	X		6060042					
6.			1	1L AMBER				X						
7. OKUS-W2	5/30/96 1122		3	VOA		X	X		6060043					
8.			1	1L AMBER				X						
9. OKUS-W3	5/30/96 1151		3	VOA		X	X		6060044	A-E				
10.			2	1L AMBER				X						USE FOR MS/MSD

Relinquished By: [signature]	Date: 5/30/96	Time: 1450	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab: [signature]	Date: 5/30/96	Time: 1450

Were Samples Received in Good Condition? ❑ Yes ❑ No Samples on Ice? ❑ Yes ❑ No Method of Shipment _____

Pink - Client
Yellow - Sequoia
White - Sequoia

SEQUOIA ANALYTICAL
CHAIN OF COUSTODY

- ☐ 680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600 FAX (415) 364-9233
- ☐ 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: USPCI / LAIDLAW	Project Name: UP MOTOR FREIGHT - OAKLAND
Address: 5665 FLATIRON PKWY	Billing Address (if different): [illegible]
City: BOULDER State: CO Zip Code: 80301	
Telephone: 303 938 5300 FAX #: 303 938 5520	P.O. #: 795
Report To: DENTON MAULDIN Sampler: MARK M. MCCORMICK	QC Data: ☐ Level D (Standard) ☒ Level C ☐ Level B ☐ Level A

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

☐ Drinking Water ☐ Waste Water ☒ Other GW

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	8020 BTEX	MOD 8015's TPH-GASOLINE	MOD 8015 TPH-DIESEL			Comments
1. OKUS-W8	5/30/96 1226	GW	3	VOA		X	X		6060045	A-D	
2. ⊥	⊥	⊥	1	1L AMBER				X		↓	
3. OKUS-W7	5/30/96 1310	⊥	3	VOA		X	X		6060046	↓	
4. ⊥	⊥	⊥	1	1L AMBER				X		↓	
5. TRIP BLANK	—	—	2	VOA		X			6060047	A-B	
6.											
7.											
8.											
9.											
10.											

Relinquished By: [signature]	Date: 5/30/96	Time: 1450	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By Lab: [signature]	Date: 5/30/96	Time: 1450

Were Samples Received in Good Condition? ☐ Yes ☐ No Samples on Ice? ☐ Yes ☐ No Method of Shipment ____________

Page 2 of 2

Pink - Client
Yellow - Sequoia
White - Sequoia