



URIBE & ASSOCIATES
2930 LAKESHORE AVENUE
SUITE TWO HUNDRED
OAKLAND, CALIFORNIA 94610
510 - 832 - 2233
FAX 510 - 832 - 2237

E N V I R O N M E N T A L C O N S U L T I N G S E R V I C E S

November 10, 1994

Dup

✓ Reviewed by Be
1/22/95

Mr. Jon Amdur
Associate Environmental Scientist
Port of Oakland
530 Water Street
Oakland, California 94607

Subject: **Quarterly Groundwater Monitoring Report**
Keep On Trucking, Building H-213
375 8th Avenue, Oakland, California
U&A Project No. 96-203

Dear Mr. Amdur:

Uribe & Associates (U&A) is pleased to provide the Port of Oakland (Port) this report documenting the results of quarterly groundwater monitoring conducted at the subject site (Figure 1) on September 30 and October 3, 4, and 5, 1994. The monitoring included collection of depth-to-groundwater measurements from wells MW-1, MW-2, MW-3, and MW-4 located on site (Figure 2). Groundwater samples were collected from three of the wells. Approximately 1 foot of floating liquid hydrocarbons (FLH) were observed in MW-4 on September 30, 1994. Due to the presence of the FLH, a groundwater sample was not collected from MW-4.

This is the fifth quarter of monitoring of the wells following installation of MW-1, MW-2, and MW-3 on August 26, 1993, installation of MW-4 on September 8, 1993, and development of the wells between September 14 and 20, 1993. The wells surround the area of excavation of a former 1,000-gallon diesel underground storage tank (UST) and underground piping associated with a former aboveground storage tank (Figure 2). Well MW-4 is located within the northern corner of the site's Building H-213. Excavation and removal of the UST was completed on April 27, 1993. The piping and nearby areas were excavated from April 28 through May 5, 1993.

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



U&A Groundwater Monitoring

Water-Level Measurements and Bailing of FLH

On September 30, 1994, U&A personnel collected measurements of the depths to groundwater from the four wells, prior to purging of groundwater and/or removal of FLH. All depth-to-groundwater measurements were made to the nearest 0.01 foot, referenced to the surveyed top-of-casing (TOC) elevations, and conducted according to the U&A standard operating procedures (SOP) included as Attachment 1. The depths to groundwater in the four wells ranged from 3.86 to 4.82 feet below TOC. Water-level measurements collected to date are summarized in Table 1. Figure 3 is a potentiometric surface map of the shallow water-bearing zone for September 30, 1994, based on the data summarized in Table 1. The groundwater elevation in MW-4 was corrected for the presence of FLH according to the formula described in Table 1. Based on this, the direction of groundwater flow is inferred to be to the northwest at a gradient of approximately 0.052 ft/ft.

During the measurements, 1.0 foot of FLH was observed in MW-4. No FLH were observed in the other three wells. In addition, the groundwater temperature in the three wells ranged between approximately 62 and 79 degrees Fahrenheit and the pH averaged approximately 7.3. The groundwater data are summarized on the U&A Monitoring Well Sampling Forms included as Attachment 2. The FLH were pumped from MW-4 using a peristaltic pump. All purgewater, and bailed FLH, was stored temporarily on site in 55-gallon drums pending proper disposal. The data summarized in Table 2 indicate the amounts of FLH bailed to date from MW-4.

Groundwater Sampling and Analysis

Groundwater samples were collected from MW-1, MW-2, and MW-3 by U&A personnel on October 3, 4, and 5, 1994. The samples were collected according to the U&A SOP included in Attachment 1 and were submitted under chain-of-custody to Clayton Environmental Consultants of Pleasanton, California, a state-certified analytical laboratory. The samples were analyzed for the following constituents:

- Total petroleum hydrocarbons as diesel (TPH-D) by modified EPA Method 8015.
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8020.

The analyses indicated that concentrations of BTEX were below the method detection limits in the samples collected from the three wells. In addition, the samples indicated that concentrations of TPH-D ranged from 390 µg/l (MW-1) to 1,200 µg/l (MW-2). The analytical results to date are summarized in Table 3. The laboratory analytical reports and chain-of-

custody forms are included as Attachment 3. Figure 4 is a distribution map of TPH-D and benzene in groundwater for October 3, 4, and 5, 1994, based on the data summarized in Table 3.

Remarks and Signature

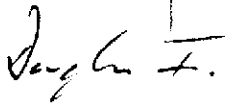
This report is based on available information and was prepared in accordance with currently accepted geologic, hydrogeologic, and engineering practices. No other warranty is implied or intended. This report has been prepared for the sole use of the Port of Oakland and applies to the subject site only.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

The work reported herein was conducted under the direct supervision of the professional geologist, registered with the State of California, whose signature appears below.

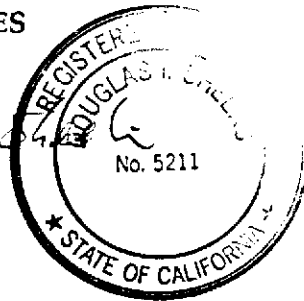
We appreciate the opportunity to provide the Port of Oakland with geologic, engineering, and environmental consulting services, and trust this report meets your needs. If you have any questions or concerns, please call us at (510) 832-2233.

Sincerely,

URIBE & ASSOCIATES



Douglas I. Sheeks
Senior Geologist
CRG No. 5211



Attachments

Figures:

- 1 Site Location Map
- 2 Site Plan
- 3 Potentiometric Surface Map: September 30, 1994
- 4 Distribution Map of TPH, as Diesel, and Benzene in Groundwater: October 3, 4, and 5, 1994

Tables:

- 1 Groundwater Level Data
- 2 Summary of Fluids Bailed from Well MW-4
- 3 Analytical Results: TPH and BTEX in Groundwater

Attachments:

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

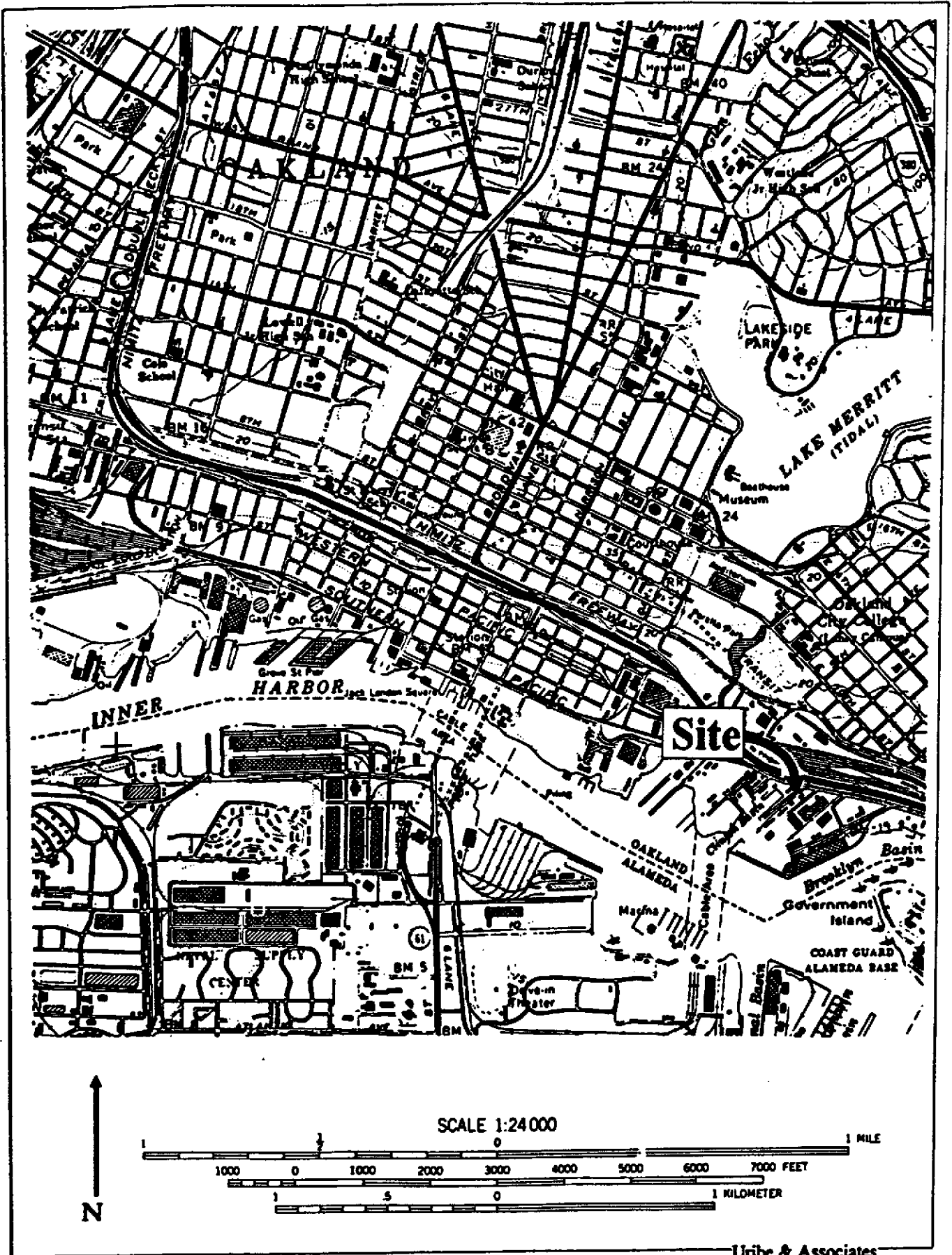
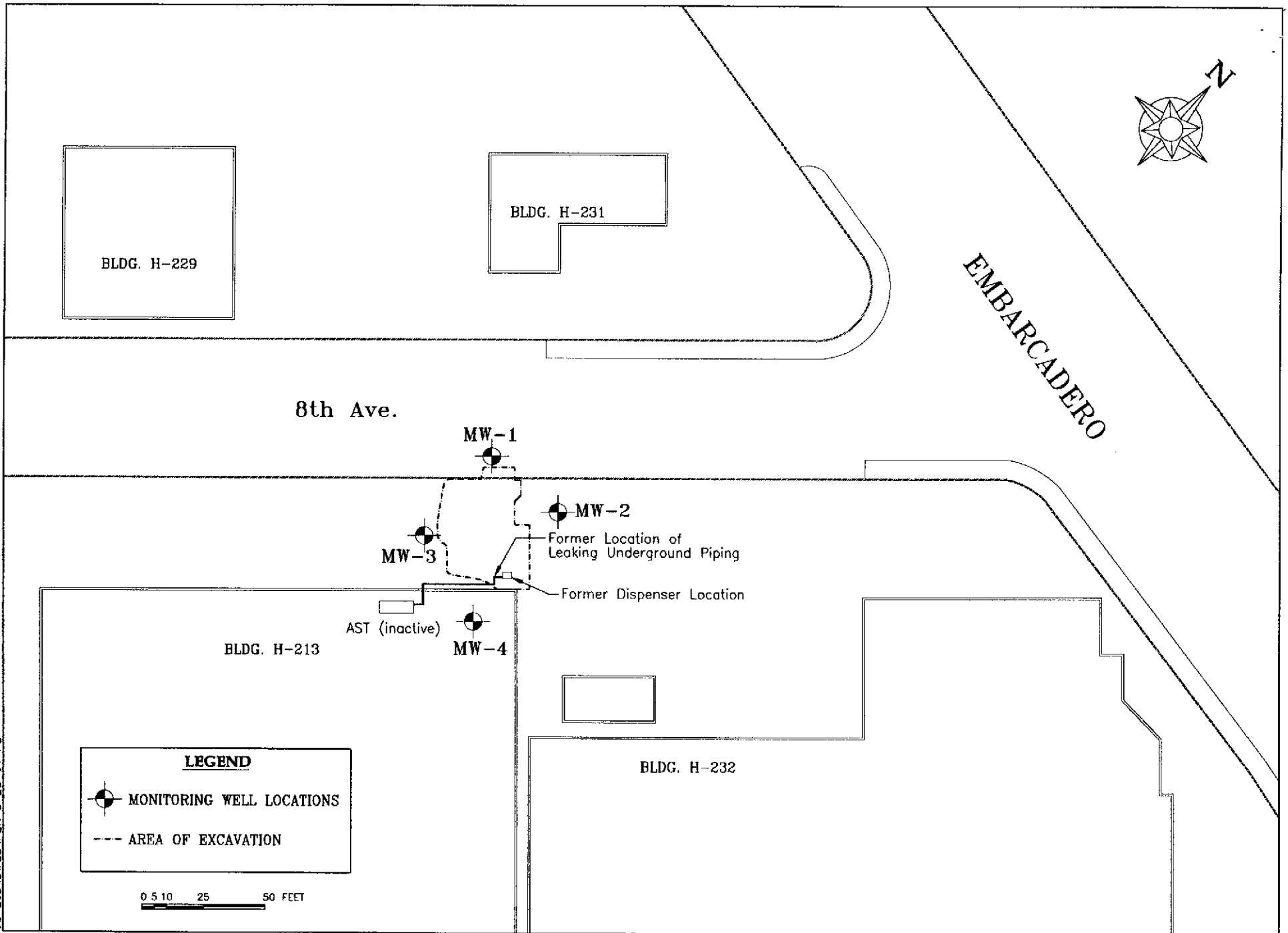


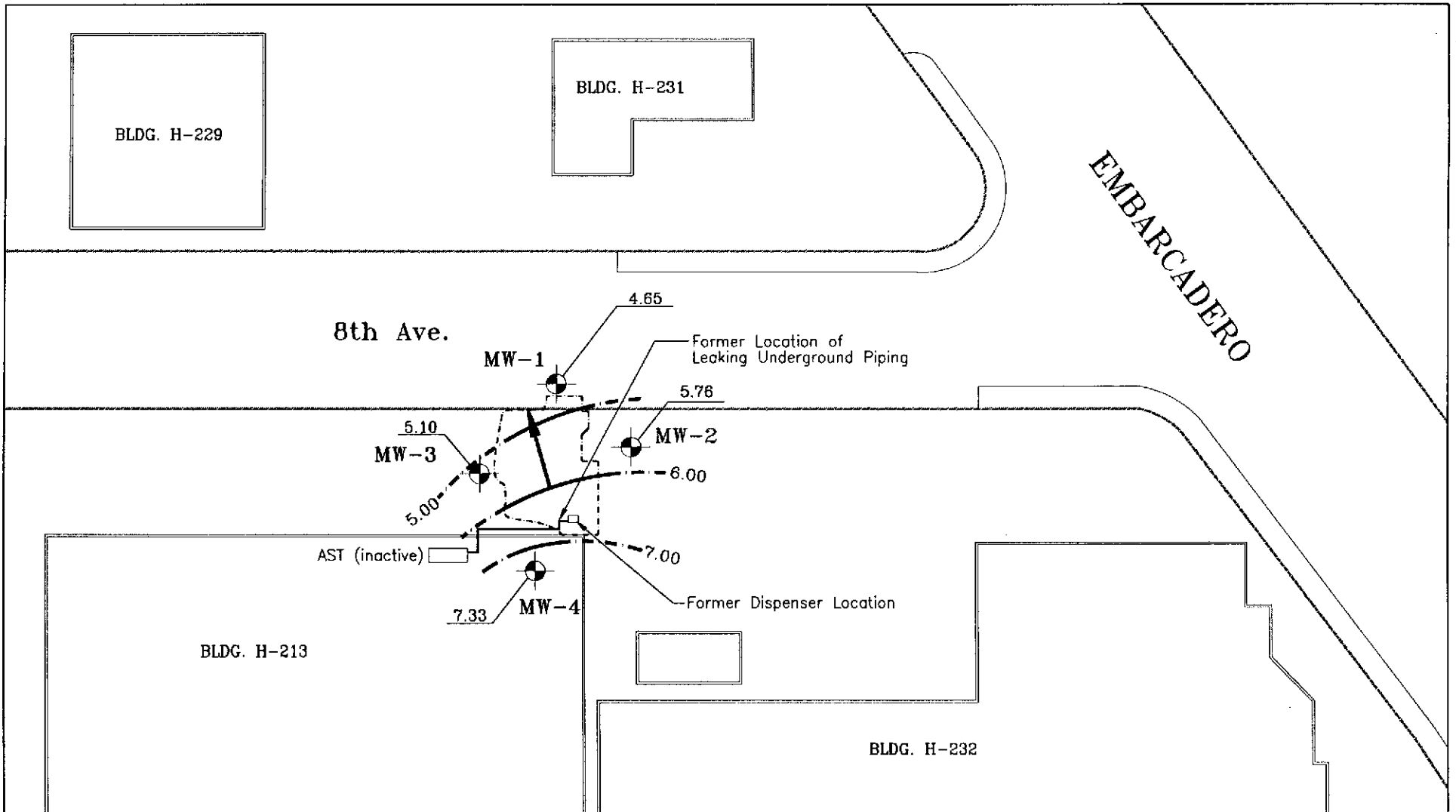
Figure 1: Site Location Map



96-203.DWGSA.F2N 5-23-94 P.J.

Figure 2: Site Plan, Showing Monitoring Well Locations

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LEGEND

Monitoring Well Locations

--- Area of Excavation

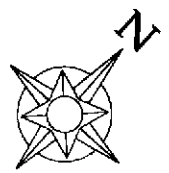
0 5 10 25 50 FEET

NOTE: Contour Interval = 1.0 ft
Groundwater Gradient = 0.052 ft/ft

Inferred Direction of Groundwater Flow

5.10 = Groundwater Elevation
(in feet, relative to Port of
Oakland Datum)

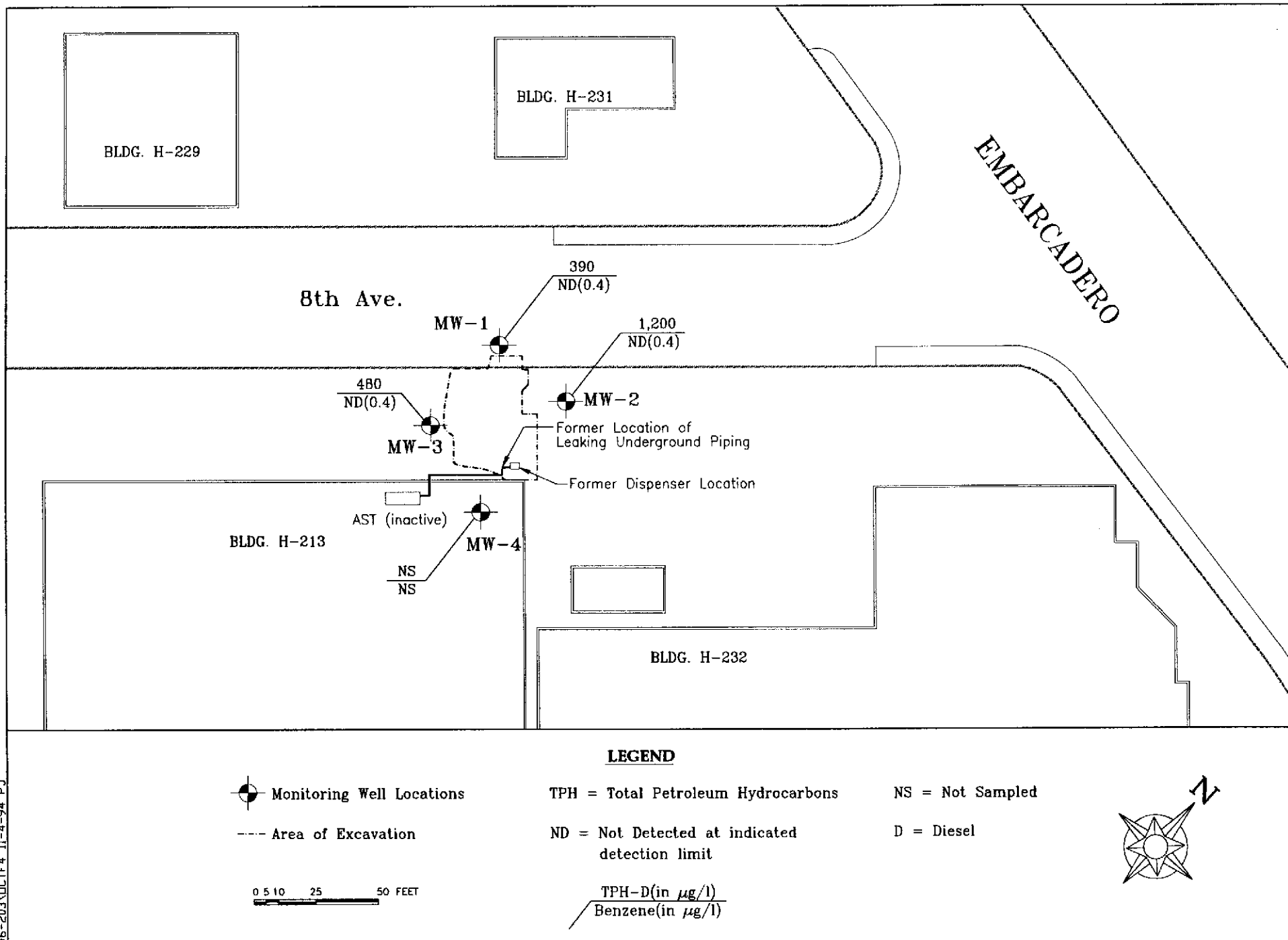
Groundwater Elevation Contours
(dashed where uncertain)



96-203\SEPIF3_10-19-94.PJ

Figure 3: Potentiometric Surface Map: September 30, 1994

Uribe & Associates



96-203\DCIF4 11-4-94 PJ

Figure 4: Distribution Map of TPH, as Diesel, and Benzene in Groundwater: October 3, 4 and 5, 1994

Table 1

**Groundwater Level Data
Keep On Trucking, Building H-213
375 8th Avenue, Oakland, California
(All Measurements in Feet)**

Well / Date	Reference Elevation	Depth to Groundwater	Depth to FLH	Groundwater Elevation
MW-1				
09/14/93	10.28	5.25	nm	5.03
09/20/93		5.20	nm	5.08
01/12/94		5.15	nm	5.13
03/31/94		4.09	nm	6.19
06/02/94		4.82	nm	5.46
09/30/94		5.63	nm	4.65
MW-2				
09/14/93	10.69	5.10	nm	5.59
09/20/93		4.40	nm	6.29
01/12/94		4.75	nm	5.94
03/31/94		5.01	nm	5.68
06/02/94		4.61	nm	6.08
09/30/94		4.93	nm	5.76
MW-3				
09/14/93	10.54	13.80	nm	-3.26
09/20/93		15.20	nm	-4.66
01/12/94		5.70	nm	4.84
03/31/94		4.23	nm	6.31
06/02/94		3.86	nm	6.68
09/30/94		5.44	nm	5.10

Notes on following page

Table 1 Continued

**Groundwater Level Data
Keep On Trucking, Building H-213
375 8th Avenue, Oakland, California
(All Measurements in Feet)**

Well / Date	Reference Elevation	Depth to Groundwater	Depth to FLH	Groundwater Elevation
MW-4				
09/14/93	12.33	5.30	4.97	7.29
09/20/93		5.80	5.13	7.07
01/12/94		4.10	sheen	8.23
03/31/94		4.20	3.62	8.59
06/02/94		3.88	3.38	8.85
09/30/94		5.80	4.80	7.33

Notes:

Reference Elevations and Groundwater Elevations are relative to mean lower low water (3.2 feet below mean sea level; "Port of Oakland Datum").

FLH = Floating liquid hydrocarbons (assumed to be diesel)

Depth to Groundwater and FLH measured from top of well casing.

nm = Not measured/not observed

sheen = less than 0.01 foot

Wells MW-1, MW-2, and MW-3 were installed on August 26, 1993. Well MW-4 was installed on September 8, 1993.

Survey of Reference Elevations by Bissell & Karn, of Pleasanton, California, on October 1, 1993.

Groundwater Elevation corrected for the presence of FLH according to the formula:
 $CDTW = DTW - (0.80 \times PT)$, where CDTW is the corrected depth to groundwater, DTW is the measured depth to groundwater, 0.80 is the density correction factor for diesel (0.75 for unweathered gasoline), and PT is the measured thickness of FLH

Table 2

**Summary of Fluids Bailed From Well MW-4
Keep On Trucking, Building H-213
375 8th Avenue, Oakland, California**

Date	Amount of Fluids Bailed (gallons)	FLH in First Bail (inches)	FLH Measured in Well (feet)
09/14/93	15	4	na
09/17/93	3	12	na
09/20/93	8	8	na
09/21/93	5	18	na
09/27/93	3	8	na
10/04/93	3	6	na
10/14/93	2	5	na
10/18/93	2	2	na
10/26/93	2	sheen	na
11/01/93	3	sheen	na
01/11/94	10	sheen	na
03/31/94	10	6 to 8	na
06/02/94	5	6	na
09/30/94	1	na	1.00

Notes:

FLH = Floating liquid hydrocarbons

Fluids Bailed = mixture of water and FLH

Following first bail, well bailed and fluids recovered until FLH removed

All fluids temporarily stored on site in 55-gallon drums pending proper disposal

Measurement of thickness with interface probe to 0.01 feet.

na = not applicable

Table 3

**Analytical Results: Groundwater
Keep On Trucking, Building H-213
375 8th Avenue, Oakland, California**
(Concentrations in µg/l)

Well / Date	Groundwater Elevation	TPH	Benzene	Toluene	Ethyl- Benzene	Total Xylenes
MW-1						
09/21/93	5.08	1,600 ¹	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)
01/12/94	5.13	610 ²	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)
04/04/94	6.19	ND(50) to 510 ⁴	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
06/02/94	5.46	540	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
10/03/94	4.65	390 ⁵	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)
MW-2						
09/21/93	6.29	1,900 ¹	0.5	ND(0.3)	ND(0.3)	ND(0.4)
01/12/94	5.94	1,800 ²	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)
04/04/94	5.68	ND(50) to 1,800	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
06/02/94	6.08	870	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
10/05/94	5.76	1,200 ²	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)
MW-3						
09/21/93	-4.66	680 ¹	ND(0.4)	0.3	ND(0.3)	ND(0.4)
01/12/94	4.84	430 ³	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)
04/04/94	6.31	ND(50) to 690	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
06/02/94	6.68	280	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
10/04/94	5.10	480 ⁵	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)
MW-4						
09/21/93	7.07	1,300 ¹	140	110	40	235
01/12/94	8.23	32,000	71	41	20	150
04/04/94	8.59	6,200 to 410,000	140	20	47	310
06/02/94	8.85	ns	ns	ns	ns	ns
09/30/94	7.33	ns	ns	ns	ns	ns

Notes:

TPH = Total petroleum hydrocarbons

ND() = Not detected at or above the indicated laboratory method detection/reporting limit

na = Not analyzed

Groundwater Elevation in feet relative to Port of Oakland Datum.

Groundwater elevations in MW-4 corrected for the presence of floating liquid hydrocarbons

1 = Laboratory reported result did not match typical diesel pattern.

2 = Laboratory reported result did not match typical diesel pattern. Sample appeared to be oil.

3 = Laboratory reported result did not match typical diesel pattern. Sample appeared to be of diesel and oil.

4 = Laboratory reported hydrocarbons were found in the diesel range, but did not resemble the fingerprint.

5 = Laboratory reported: Unidentifiable hydrocarbons do not match the typical diesel pattern.

Attachment 1

U&A Standard Operating Procedures

CHAIN-OF-CUSTODY PROCEDURES

Sample Handling

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

Transfer of Custody to Laboratory

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

GROUNDWATER SAMPLING

Groundwater samples for chemical analysis will be collected following this procedure:

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

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

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

Generally, the most rapid improvements from development are noted when development is performed as soon as possible, shortly after the sand pack and bentonite seal have been set.

Development Procedures

All development equipment will be decontaminated prior to use. Development will usually begin by noting fluid-level measurements, and then proceeding slowly, so as to not impact the formation or damage the well screen. Next, a bailer may be used to remove fines which have probably settled in the casing, through the screen during well construction. Typically, a surge block, which is capable of creating significant suction may be used for low flow rate wells. If development is proceeding, or if the formation is of moderate- or high-estimated permeability, pumping may be sufficient to complete development. Development will proceed for 4 hours or until produced groundwater is clear and sand free. All fluids and materials added to and removed from the well will be noted. An initial estimate of the well flow rate will be made, based on well recovery rates or pumping rates. Temperature, conductivity and pH will be monitored during development.

All fluids and materials removed from the well will be stored on-site in drums, pending sampling and analysis. All fluids and materials used and generated by the well installation and development activities will be properly disposed of.

Attachment 2

U&A Monitoring Well Sampling Forms

MONITORING WELL SAMPLING INFORMATION

WATER SAMPLING DATA Well Name MW-1 Date 10/3 Time 4:15
 Job Name Keep on Truckin Job Number 96-203 Initials AGJ
 WELL DATA: Well type M (M=monitoring well; Describe _____)
 Depth to Water 9.7 ft.
 Well Depth 15.2 ft. (spec.) Sounded Depth _____ ft.
 Well Diameter 2 in. Date _____ Time _____

EVACUATION: Sampling Equipment:
 PVC Bailer: 2 in. Dedicated: Bladder Pump _____ ; Bailer _____
 Sampling Port: Number _____ Rate _____ gpm. Volume _____ gal.
 Other 15.2 - 9.7 = 5.5 (0.163) = 0.894 x 3 = 2.69 gal
 Initial Height of Water in Casing _____ ft; Volume _____ gal.
 Volume To Be Evacuated = 2.69 gal. (initial volume x3 _____, x4 _____)

	Evacuated	Evacuated	Evacuated	Formulas / Conversions r = well radius in ft h = ht of water col vol. of col. = $\pi r^2 h$ 7.48 gal/ft ³ V ₁ " casing = 0.163 gal/ft V ₂ " casing = 0.367 gal/ft V ₃ " casing = 0.653 gal/ft V ₄ " casing = 0.826 gal/ft V ₅ " casing = 1.47 gal/ft V ₆ " casing = 2.61 gal/ft
Time: Stop	_____	_____	_____	
Start	_____	_____	_____	
Total minutes	_____	_____	_____	
Amount Evacuated	_____	_____	_____	
Total Evacuated	_____	_____	_____ gal.	
Evacuation Rate	_____	_____	_____ gpm.	

Depth to water during pumping _____ ft. _____ time
 Pumped dry? _____ After _____ gal. Recovery rate _____
 Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # _____ Ph Probe # _____ Cond. Probe # _____

Time	1	2	3	4	_____	_____	_____
<u>0</u>	<u>78.5</u> °F	<u>7.7</u>	<u>7.62</u>	<u>umhos (x1000)</u>			
<u>~1.5gal</u>	<u>74.0</u> °F	<u>7.67</u>	<u>6.74</u>				
<u>~3gal</u>	<u>73.8</u> °F	<u>7.68</u>	<u>7.32</u>				
_____	_____	_____	_____				

SAMPLING: Point of collection: PE Hose _____; End of bailer _____; Other _____
 Samples taken _____ time Depth to water _____ ft. Refrigerated: _____
 Sample description: Water color _____ Odor _____
 Sediment/Foreign matter _____

Sample ID no.	Container VOA / other	Preservative NaHSO ₃ /Azide/other	Analysis	Lab
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: All measurements taken from top of Christy Box.

MONITORING WELL SAMPLING INFORMATION

WATER SAMPLING DATA Well Name MW-2 Date 10/4 Time _____
 Job Name KOT (96-203) Job Number 96-203 Initials AA
 WELL DATA: Well type M (M=monitoring well; Describe _____)
 Depth to Water 4.4 ft.
 Well Depth 15.5 ft. (spec.) Sounded Depth _____ ft.
 Well Diameter 2 in. Date _____ Time _____

EVACUATION: Sampling Equipment:
 PVC Bailer: _____ in. Dedicated: Bladder Pump _____ ; Bailer _____ gal.
 Sampling Port: Number _____ Rate _____ gpm. Volume _____ gal.
 Other 15.5 - 4.4 = 11.1 x 0.163 = 1.8 x 3 = 5.43
 Initial Height of Water in Casing _____ ft; Volume _____ gal.
 Volume To Be Evacuated = _____ gal. (initial volume x3 _____, x4 _____)

	Evacuated	Evacuated	Evacuated
Time: Stop	_____	_____	_____
Start	_____	_____	_____
Total minutes	_____	_____	_____
Amount Evacuated	_____	_____	_____
Total Evacuated	_____ gal.	_____	_____
Evacuation Rate	_____ gpm.	_____	_____

Formulas / Conversions
 r = well radius in ft
 h = ht of water col
 vol. of col. = $\pi r^2 h$
 7.48 gal/ft³
 V₁" casing = 0.163 gal/ft
 V₂" casing = 0.367 gal/ft
 V₃" casing = 0.653 gal/ft
 V₄" casing = 0.626 gal/ft
 V₅" casing = 1.47 gal/ft
 V₆" casing = 2.61 gal/ft

Depth to water during pumping _____ ft. _____ time
 Pumped dry? _____ After _____ gal. Recovery rate _____
 Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # _____ Ph Probe # _____ Cond. Probe # _____

Time	Temp (°C)	Ph	Cond. (umhos x 1000)
0	_____	_____	_____
1 <u>~3gal</u>	<u>65.1</u>	<u>6.8</u>	<u>4.6</u>
2 <u>~5gal</u>	<u>62.4</u>	<u>6.85</u>	<u>4.92</u>
3	<u>64.1</u>	<u>6.95</u>	<u>5.9</u>
4	_____	_____	_____

clear to brown w/ some sheen
black + murky, sheen still present

SAMPLING: Point of collection: PE Hose _____; End of bailer ; Other _____
 Samples taken _____ time Depth to water _____ ft. Refrigerated:
 Sample description: Water color Black Murky Odor Sulfur Swell
 Sediment/Foreign matter _____

Sample ID no.	Container VOA / other	Preservative NaHSO ₄ /Azide/other	Analysis	Lab
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe

COMMENTS: All measurements taken at top of Christy Box

MONITORING WELL SAMPLING INFORMATION

WATER SAMPLING DATA Well Name MW-3 Date 10/3 Time 3:06pm
 Job Name Keep on Truck in Job Number 96-203 Initials AGD
WELL DATA: Well type M (M=monitoring well; Describe _____)
 Depth to Water 5'6" ft.
 Well Depth 5'6" + 20 ft. (spec.) Sounded Depth _____ ft.
 Well Diameter 2 in. Date _____ Time _____

EVACUATION: Sampling Equipment:
 PVC Bailer: 2 in. Dedicated: Bladder Pump _____; Bailer _____
 Sampling Port: Number _____ Rate _____ gpm. Volume _____ gal.
 Other 20 - 5.5 = (14.5) 0.163 = 2.36 gal x 3 = 7.1 gal
 Initial Height of Water in Casing _____ ft; Volume _____ gal.
 Volume To Be Evacuated = 7.1 gal. (initial volume x3 , x4 _____)

	Evacuated	Evacuated	Evacuated	Formulas / Conversions <small>r = well radius in ft h = ht of water in ft vol. of col. = πr²h 7.48 gal/ft³ V_c casing = 0.163 gal/ft V_s casing = 0.367 gal/ft V_o casing = 0.653 gal/ft V₁ casing = 0.826 gal/ft V₂ casing = 1.47 gal/ft V₃ casing = 2.61 gal/ft</small>
Time: Stop	_____	_____	_____	
Start	_____	_____	_____	
Total minutes	_____	_____	_____	
Amount Evacuated	_____	_____	_____	
Total Evacuated	_____	_____ gal.	_____	
Evacuation Rate	_____	_____ gpm.	_____	

Depth to water during pumping _____ ft. _____ time
 Pumped dry? _____ After _____ gal. Recovery rate _____
 Depth to water for 80% recovery _____ ft.

CHEMICAL DATA: Temp. Probe # _____ Ph Probe # _____ Cond. Probe # _____

Time	Temp	Ph	Cond.	Notes
_____	1 <u>76.5</u> °F	<u>7.55</u>	<u>8.27</u> umhos (x1000)	
<u>~4gal</u>	2 <u>79.0</u> °F	<u>7.60</u>	<u>10.09</u>	high TDS, very black water
<u>~1gal</u>	3 _____	_____	_____	no sheen, strong smell (S ₂)
<u>~6gal</u>	4 _____	_____	_____	- very black,

SAMPLING: Point of collection: PE Hose _____; End of bailer _____; Other _____
 Samples taken _____ time Depth to water _____ ft. Refrigerated: _____
 Sample description: Water color _____ Odor _____
 Sediment/Foreign matter _____

Sample ID no.	Container	Preservative	Analysis	Lab
	VOA / other	NaHSO ₃ /Azide/other		
_____ ml	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____
_____ ml	_____	_____	_____	_____

Container codes: P = plastic bottle; C or B = clear/brown glass; Describe _____

COMMENTS: At approx. 16 gal, the well would no longer produce.
It let sit while I bailed MW-2
All measurements taken at top of Christy Box.

Monitoring Well Sampling Form

Site Location: _____
 Well Location: _____

Date: 10-5/99
 Project Reference #: _____

Well #	Time of Sampling	Water Level	Free Product Thickness	Total Depth	Well Volume	Temperature	pH	Electric Conductivity
W-3	10/5/99	5.44	—	26.2				
W-1	10/5/99	3.63	—	15.4				
W-2	10/5/99	4.93	—			77.8		24200 us/cm
W-4	10/5/99	4.70	1'					

Water Level Measurement Method: Solinst

Free Product Thickness Measurement Method: Keek interface probe

Well Purging Procedures: W-4 - peristaltic pump, other hand bail

Well-Purge Water Characterization and Disposal Methods:

Comments: W-4 bit stripped, very close to open well pressure.

Sampling Performed by: S.B./ps

Attachment 3

**Laboratory Analytical Reports and
Chain-of-Custody Forms**

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

October 19, 1994

Mr. Doug Sheeks
URIBE & ASSOCIATES
2930 Lakeshore Ave., Ste 200
Oakland, CA 94610

Client Ref.: 96-203
Clayton Project No.: 94100.56

Dear Mr. Sheeks:

Attached is our analytical laboratory report for the samples received on October 5, 1994. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of after November 18, 1994, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

Sincerely,

Michael Lynch for

Harriotte A. Hurley, CIH
Director, Laboratory Services
Western Operations

HAH/tjb

Attachments

OCT 20 1994

Analytical Results
for
Uribe & Associates/ Port of Oakland
Client Reference: 96-203
Clayton Project No. 94100.56

Sample Identification: 203-MW-1	Date Sampled: 10/03/94
Lab Number: 9410056-01C	Date Received: 10/05/94
Sample Matrix/Media: WATER	Date Prepared: 10/13/94
Preparation Method: EPA 5030	Date Analyzed: 10/13/94
Method Reference: EPA 8020	Analyst: WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	98	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
for
Uribe & Associates/ Port of Oakland
Client Reference: 96-203
Clayton Project No. 94100.56

Sample Identification: 203-MW-3	Date Sampled: 10/04/94
Lab Number: 9410056-02C	Date Received: 10/05/94
Sample Matrix/Media: WATER	Date Prepared: 10/13/94
Preparation Method: EPA 5030	Date Analyzed: 10/13/94
Method Reference: EPA 8020	Analyst: WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
---------	-------	----------------------	-------------------------------

BTEX

Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4

Surrogates

		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	102	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
for
Uribe & Associates/ Port of Oakland
Client Reference: 96-203
Clayton Project No. 94100.56

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9410056-03A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	10/13/94
Preparation Method:	EPA 5030	Date Analyzed:	10/13/94
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
---------	-------	-------------------------	--

BTEX

Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4

<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	108	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Analytical Results
 for
 Uribe & Associates/ Port of Oakland
 Client Reference: 96-203
 Clayton Project No. 94100.56

Sample Identification: See Below
 Lab Number: 9410056
 Sample Matrix/Media: WATER
 Extraction Method: EPA 3510
 Method Reference: EPA 8015 (Modified)

Date Received: 10/05/94
 Date Extracted: 10/07/94
 Date Analyzed: 10/11/94

Lab Number	Sample Identification	Date Sampled	TPH-D (ug/L)	Method Detection Limit (ug/L)
-01	203-MW-1	10/03/94	390 a	50
-02	203-MW-3	10/04/94	480 a	50
-03	METHOD BLANK	--	ND	50

ND: Not detected at or above limit of detection
 --: Information not available or not applicable

TPH-D = Extractable petroleum hydrocarbons from C10 to C42 quantitated as diesel.
 a Unidentifiable hydrocarbons do not match the typical diesel pattern.



CHAIN-OF-CUSTODY RECORD

Project No.: 96-203
Project Name: Keep on Truckin

REPORT RESULTS TO
Name: Doug Sheekes
Company: URIBE & ASSOCIATES
Mailing Address: 2930 LAKESHORE AVE., SUITE 200
City, State, Zip: OAKLAND, CA 94610-3614
Telephone No.: 510-832-2233 Telefax No.: 510-832-2237

SEND INVOICE TO
Purchase Order Number: 201966
Name: Don Schoenholtz
Company: Port of Oakland Dept: Environ.
Mailing Address: 530 Water St.
City, State, Zip: Oakland, CA 94607

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

Rush Charges Authorized? Yes No

Phone Results Fax Results

Special Instructions:

No.	Date	Time	Matrix/Medium	Sample Identification Number
1	10/3		Water	203-MW-1
2	10/4		Water	203-MW-3
[Large handwritten scribble]				

ANALYSES REQUESTED

# OF CONTAINERS	ANALYSES REQUESTED
4	TPH, Diesel, BTEX
4	TPH, Diesel, BTEX Dupage
	TOIA, B, C, D
	TOZA, B, C, D

CHAIN OF CUSTODY

Collected by: Gary Goodemote (Print)

Relinquished by: Gary Goodemote Date: 10/5/94 Time: 12:10 pm

Relinquished by: Jim Mitchell Date: 10/5/94 Time: 1320

Collector's Signature: Gary Goodemote

Received by: Jim Mitchell Date: 10/5/94 Time: 12:10 pm

Received by: Gary Goodemote Date: 10/5/94 Time: 1:20 pm

Method of Shipment: Courier

Sample Condition Upon Receipt: Acceptable Other (explain)

Quality Assurance Results Summary
Matrix Spike/Matrix Spike Duplicate Results
for
Clayton Project No. 94100.56

Quality Assurance Results Summary
for
Clayton Project No. 94100.56

Clayton Lab Number: 9410067-MB
Ext./Prep. Method: EPA3510
Date: 10/07/94
Analyst: GUD
Std. Source: G940927-03W
Sample Matrix/Media: WATER

Analytical Method: EPA8015
Instrument ID: 02883
Date: 10/10/94
Time: 23:56
Analyst: AMN
Units: UG/L

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
DIESEL	ND	1,000	940	94	890	89	92	40	140	5.5	40

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Quality Assurance Results Summary
for
Clayton Project No. 94100.56

Clayton Lab Number: 9410038-04D
Ext./Prep. Method: EPA5030
Date: 10/13/94
Analyst: WAS
Std. Source: V941007-02W
Sample Matrix/Media: WATER

Analytical Method: EPA8015 8020
Instrument ID: 05587
Date: 10/13/94
Time: 20:49
Analyst: WAS
Units: UG/L

Analyte	Sample Result	Spike Level	Matrix Spike Result	MS Recovery (%)	Matrix Spike Duplicate Result	MSD Recovery (%)	Average Recovery (% R)	LCL (% R)	UCL (% R)	RPD (%)	UCL (%RPD)
BENZENE	(PID) ND	9.90	9.70	98	10.2	103	101	81	118	5.0	20
ETHYLBENZENE	(PID) ND	6.10	6.20	102	6.30	103	102	81	114	1.6	20
GASOLINE	(FID) ND	500	523	105	512	102	104	80	150	2.1	25
TOLUENE	(PID) ND	36.9	35.8	97	37.1	101	99	84	118	3.6	20
TOTAL XYLENE	(PID) ND	37.1	37.3	101	38.2	103	102	85	115	2.4	20

LCS = Laboratory Control Sample
ND = Not detected at or above limit of detection

LCL = Lower Control Limit

UCL = Upper Control Limit
SOR = Spike out of range due to high sample concentration.

Western Operations

1252 Quarry Lane
P.O. Box 9019
Pleasanton, CA 94566
(510) 426-2600
Fax (510) 426-0106

Clayton
ENVIRONMENTAL
CONSULTANTS

October 21, 1994

Mr. John Borrego
URIBE & ASSOCIATES
2930 Lakeshore Ave., Ste 200
Oakland, CA 94610

Client Ref.: 96-203
Clayton Project No.: 94100.95

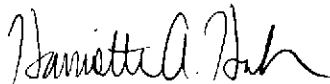
Dear Mr. Borrego:

Attached is our analytical laboratory report for the samples received on October 7, 1994. A copy of the Chain-of-Custody form acknowledging receipt of these samples is attached.

Please note that any unused portion of the samples will be disposed of after November 20, 1994, unless you have requested otherwise.

We appreciate the opportunity to be of assistance to you. If you have any questions, please contact Suzanne Haus, Client Services Supervisor, at (510) 426-2657.

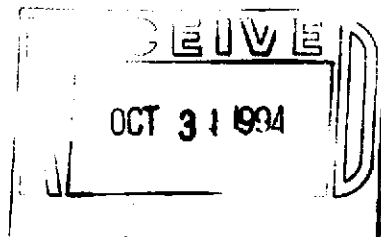
Sincerely,



Harriotte A. Hurley, CIH
Director, Laboratory Services
Western Operations

HAH/tjb

Attachments



Analytical Results
for
Uribe & Associates/ Port of Oakland
Client Reference: 96-203
Clayton Project No. 94100.95

Sample Identification:	MW-2	Date Sampled:	10/05/94
Lab Number:	9410095-01A	Date Received:	10/07/94
Sample Matrix/Media:	WATER	Date Prepared:	10/14/94
Preparation Method:	EPA 5030	Date Analyzed:	10/15/94
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	108	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable

Note: Methyl tert butyl ether was detected in this sample.

Analytical Results
for
Uribe & Associates/ Port of Oakland
Client Reference: 96-203
Clayton Project No. 94100.95

Sample Identification:	METHOD BLANK	Date Sampled:	--
Lab Number:	9410095-02A	Date Received:	--
Sample Matrix/Media:	WATER	Date Prepared:	10/14/94
Preparation Method:	EPA 5030	Date Analyzed:	10/15/94
Method Reference:	EPA 8020	Analyst:	WAS

Analyte	CAS #	Concentration (ug/L)	Method Detection Limit (ug/L)
<u>BTEX</u>			
Benzene	71-43-2	ND	0.4
Ethylbenzene	100-41-4	ND	0.3
Toluene	108-88-3	ND	0.3
o-Xylene	95-47-6	ND	0.4
p,m-Xylenes	--	ND	0.4
<u>Surrogates</u>		<u>Recovery (%)</u>	<u>QC Limits (%)</u>
a,a,a-Trifluorotoluene	98-08-8	116	50 - 150

ND: Not detected at or above limit of detection
--: Information not available or not applicable



CHAIN-OF-CUSTODY RECORD

941.0095

Project No.: 96-203 Project Name: Port of Oakland
8th Ave

REPORT RESULTS TO
Name: Doug Sheeks
Company: URIBE & ASSOCIATES
Mailing Address: 2930 LAKESHORE AVE., SUITE 200
City, State, Zip: OAKLAND, CA 94610-3614
Telephone No.: 510-832-2233 Telefax No.: 510-832-2237

SEND INVOICE TO
Purchase Order Number:
Name: D. Schenholz
Company: _____ Dept: _____
Mailing Address: _____
City, State, Zip: _____

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

Rush Charges Authorized?
 Yes No

Phone Results Fax Results

Special Instructions:

No.	Date	Time	Matrix/Medium	Sample Identification Number
<u>1</u>	<u>10/5</u>		<u>Water</u>	<u>MW-2</u>

ANALYSES REQUESTED

# OF CONTAINERS	ANALYSES REQUESTED	Remarks
<u>4</u>	<u>X BTEX</u> <u>X TPH-Diesel</u>	<u>A+B BTEX log</u> <u>DIESEL g/L (M)</u> <u>g/g</u>

40 ml (M)

CHAIN OF CUSTODY

Collected by: John Barrego (Print)

Relinquished by: Larry Goodemote Date: 10/7/94 Time: 12:05

Relinquished by: Ann Mitchell Date: 10/7/94 Time: 12:40 pm

Collector's Signature: [Signature]

Received by: [Signature] Date: 10/7/94 Time: 12:05 pm

Received by: [Signature] Date: 10/7/94 Time: 12:40 pm

Method of Shipment:

Sample Condition Upon Receipt: Acceptable Other (explain)