GROUNDWATER TECHNOLOGY, INC.

1401 Halyard Drive, Suite 140, West Sacramento, CA 95691, (916) 372-4700
FAX (916) 372-8781

TO: Mr. Don Ringsby
Ringsby Terminals, Inc.
P.O. Box 7240
3980 Quebec Street, Suite 214
Denver, CO 80207
(303) 320-3960 FAX: (303) 355-2451

DATE: 12/04/95 JOB NO. 02070-00205
FROM: Jaff Auchterlonie
RE: Ringsby Terminals- Port of Oakland
2225 7th Street
Oakland, California

We are sending via: [X] AIRBORNE [ ] MAIL [ ] FAX

ORIGINALS	COPIES	DATE	DESCRIPTION
1		11/29/95	Third Quarter 1995 Groundwater Monitoring and Sampling Report

Transmitted as checked:

[X] For Approval [ ] For Your Use [X] As You Requested

[ ] For Comment [ ] For Resubmittal [X] For Your Records

Remarks: Please review the attached report. With your approval, an original of this Quarterly Monitoring and Sampling Report will be mailed to your office, and copies will be mailed as noted below. If you have any comments or questions, please call.

Jaff Auchterlonie

Copies to:

Ms. Jennifer Eberle, Hazardous Materials Specialist (510) 567-6761
Alameda County Department of Environmental Health FAX (510) 337-9335
1131 Harbor Bay Parkway, #250
Alameda, California 94502-6577

Mr. Dan Schoenholz (510) 272-1220
Environmental Scientist FAX (510) 465-3755
Port of Oakland
530 Water Street
Oakland, California 94607

Trns10.wk4

GROUNDWATER TECHNOLOGY, INC.
1401 Halyard Drive, Suite 140, West Sacramento, CA 95691, (916) 372-4700
FAX (916) 372-8781

November 29, 1995

Mr. Don Ringsby
Ringsby Terminals, Inc.
3980 Quebec Street, Suite 214
Denver, CO 80207

Subject: Third Quarter 1995 Groundwater Monitoring and Sampling Report
Ringsby Terminals, Port of Oakland
2225 7th Street
Oakland, California 94607
GTI Project 02070 0061

Dear Mr. Ringsby:

This letter summarizes the groundwater monitoring and sampling work performed by Groundwater Technology Inc. at the subject site (Attachment 1, Figures 1 and 2). On September 28, 1995, Groundwater Technology personnel monitored the depth to groundwater in three groundwater monitoring wells, MW-1, MW-2, and MW-3, located on the property leased by Ringsby Terminals, Inc. and also collected water samples from the three wells to determine the distribution of hydrocarbons in the groundwater. The groundwater monitoring wells were gauged a second time on November 28, 1995. The work was performed at the request of Ms. Jennifer Eberle of the Alameda County Health Care Services, Department of Environmental Health (ACHC).

The groundwater monitoring information and results of analyses of groundwater samples collected since January 1993, are summarized in Table 1 (Attachment 2). The analytical data and chain-of-custody for the September 28, 1995 sampling event are included in Attachment 3. The groundwater monitoring and sampling field notes for September 28, 1995, are included in Attachment 4. The monitoring wells, MW-1, MW-2, and MW-3, are located on the Ringsby Terminal Lease, and the three wells, MW-1*, MW-2*, and MW-3*, are located north of the Ringsby Terminal lease on the Port of Oakland property (Attachment 1, Figure 2).

Groundwater Monitoring

On September 28, 1995, Groundwater Technology personnel monitored the depth to groundwater and checked for presence of any separate-phase-liquid hydrocarbon (SP) in monitoring wells MW-1, MW-2, and MW-3, and consultants for the Port of Oakland monitored the Port of Oakland wells MW-1*, MW-2*, MW-3*, MW-4*, MW-5*, MW-6*, MW-7*, and MW-8* (Attachment 2, Table 1). Groundwater Technology does not have any information concerning the location of wells MW-4*, MW-5*, MW-6*, MW-7*, and MW-8*, installed by the Port of Oakland in the Spring and Fall of 1995. Due to an anomalous depth reading in MW-1, collected on September 28, 1995, Groundwater Technology personnel monitored the depth to groundwater and checked for presence of any separate-phase-liquid

hydrocarbon (SP) in monitoring wells MW-1, MW-2, and MW-3 on November 20, 1995.

Depth to water was measured using an ORS Environmental Equipment INTERFACE PROBE Well Monitoring System, consisting of a dual optical sensor and electrical conductivity probe, that distinguishes between water and SP hydrocarbons. The probe was cleaned between each well to avoid cross-contamination of the groundwater. To diminish the effects of fluctuations in the groundwater table due to tides, the depth to groundwater was measured in the three wells within a one-hour time period. All measurements were made from the top of casing in each well. No SP hydrocarbons were noted in the three Ringsby Terminals groundwater monitoring wells.

Groundwater Gradient and Flow Direction

Due to an anomalous depth reading in MW-1, the groundwater elevations measured on September 28, 1995 were not used. From June 1995 to November 20, 1995, the groundwater elevations declined in all three wells: 0.84 feet in MW-1, 0.70 feet in MW-2, and 0.63 feet in MW-3 (Attachment 2, Table 1). The calculated groundwater gradient on November 20, 1995 was South 85 degrees West at 0.0006 foot per foot (Attachment 1, Figure 3).

Since January 15, 1995, no separate phase hydrocarbons have been measured in the three wells. As stated in previous reports, there is an abrupt change in the lithology and drop in groundwater elevations, (2 feet), between the Ringsby Terminal Lease and the Port of Oakland property located to the North; it appears that an east-west oriented hydrologic barrier exists between the two properties. The lateral extent and continuity of the hydrologic barrier between the two properties is not known. Given the history of land reclamation via dredging and backfilling the tidal mud flats and construction of roadways for pier access, linear barriers to shallow groundwater flow are expected.

Groundwater Sampling

Following groundwater monitoring, Groundwater Technology personnel sampled the groundwater in the three Ringsby Terminals monitoring wells to determine the distribution of dissolved hydrocarbons in the groundwater. Prior to water-sample collection, the three wells were purged of 4 well volumes of water and allowed to recharge with representative formation water. Temperature, conductivity, and pH measurements of the purged water were recorded. Due to an obstruction in its screened section, well MW-3 was only purged to a depth of 9.25 feet below the casing top. A disposable Teflon bailer was used for the groundwater sampling. One distilled-water field blank was collected for quality control purposes. Each water sample was then transferred to two 40-milliliter glass vials with Teflon-septum caps and two 1-liter amber bottles, preserved on ice, and transported to a California state-certified laboratory, accompanied by a chain-of-custody manifest. The three samples were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX), total petroleum hydrocarbons-as-gasoline (TPH-G), total petroleum hydrocarbons-as-diesel (TPH-D), and total petroleum hydrocarbons-as-motor oil (TPH-O) by EPA methods 8020 and modified 8015.

WASTEWATER

A total of 27 gallons of purge water was generated during the purging event of the monitoring wells. The 55-gallon drum was labeled "Ringsby, non-hazardous well purge water, 09-28-95". Two drums of purged groundwater are now stored on site.

GROUNDWATER ANALYTICAL RESULTS

Water samples collected from MW-1 did not contain concentrations of BTEX, TPH-G, TPH-D, and TPH-O above the laboratory reporting limits. Water samples collected from MW-2 and MW-3 did not contain concentrations of BTEX, TPH-D, and TPH-O above the laboratory reporting limits. The TPH-G concentrations of 250 μg/L in MW-2, and 51 μg/L in MW-3, reported by WEST laboratory, have gas chromatogram (GC) patterns that are not characteristic of a gasoline signature (Attachment 3).

The recent and historical analytical results are summarized in Table 1. Copies of the laboratory reports and chain-of-custody for the groundwater samples are included in Attachment 3 and the field notes are included in Attachment 4.

Please contact Groundwater Technology's West Sacramento office if you have questions or comments regarding this quarterly report.

Sincerely,
Groundwater Technology, Inc.
Submitted by:

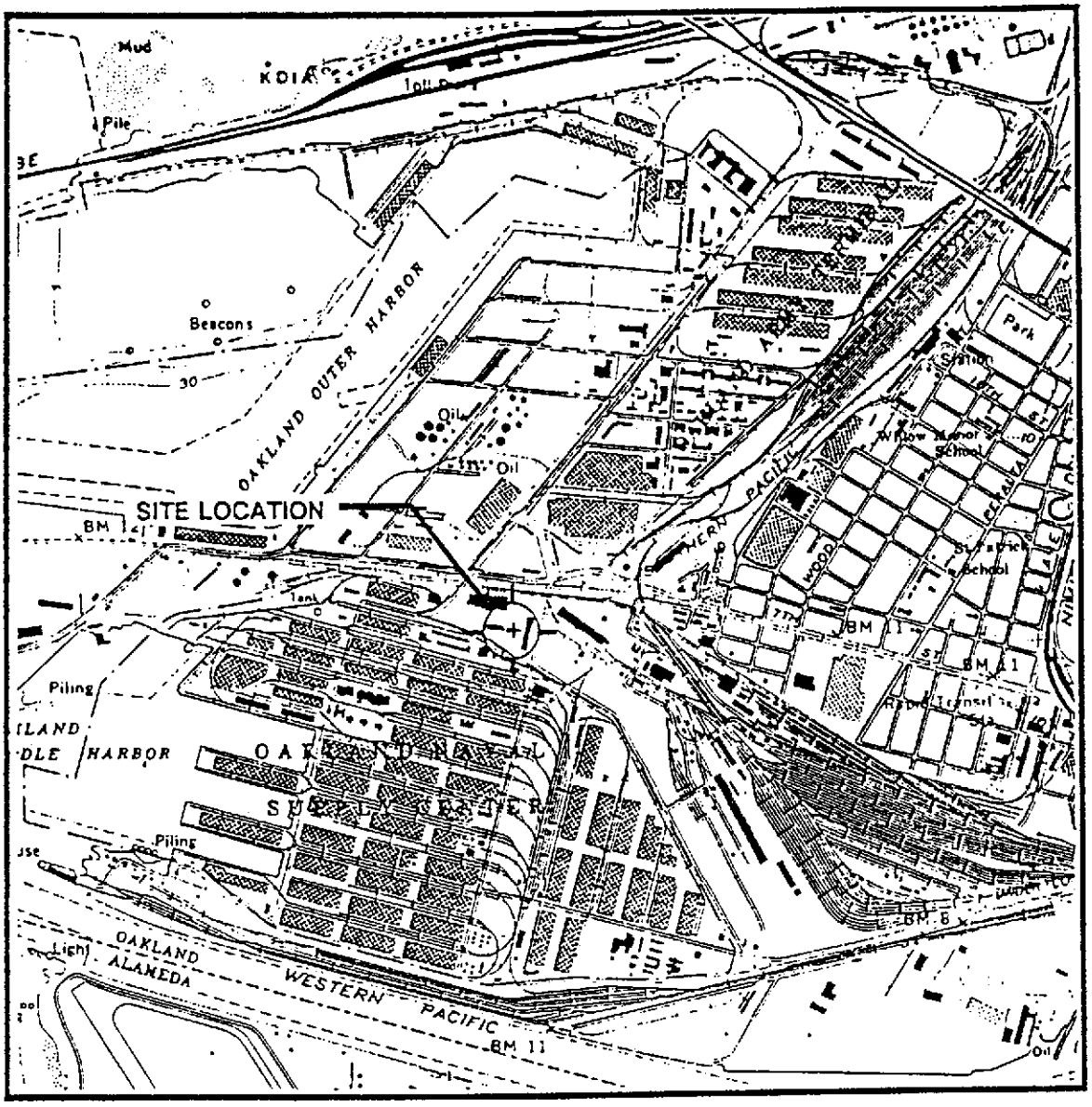
Jaffrey S. Auchterlonie
Lead Geologist
Project Manager

Groundwater Technology, Inc.
Approved by:

Ed K. Simonis, R.G.
Senior Geologist

REGISTERED GEOLOGIST
EDVARDAS (ED) K. SIMONIS
No. 4422
STATE OF CALIFORNIA

Attachments
1. Figures
2. Tables
3. Laboratory Reports
4. Groundwater Monitoring and Sampling Field Notes, September 28, 1995



SOURCE: U.S.G.S. TOPOGRAPHIC QUADRANGLE
OAKLAND WEST
7.5 MINUTE SERIES
1959/PHOTOREVISED 1980

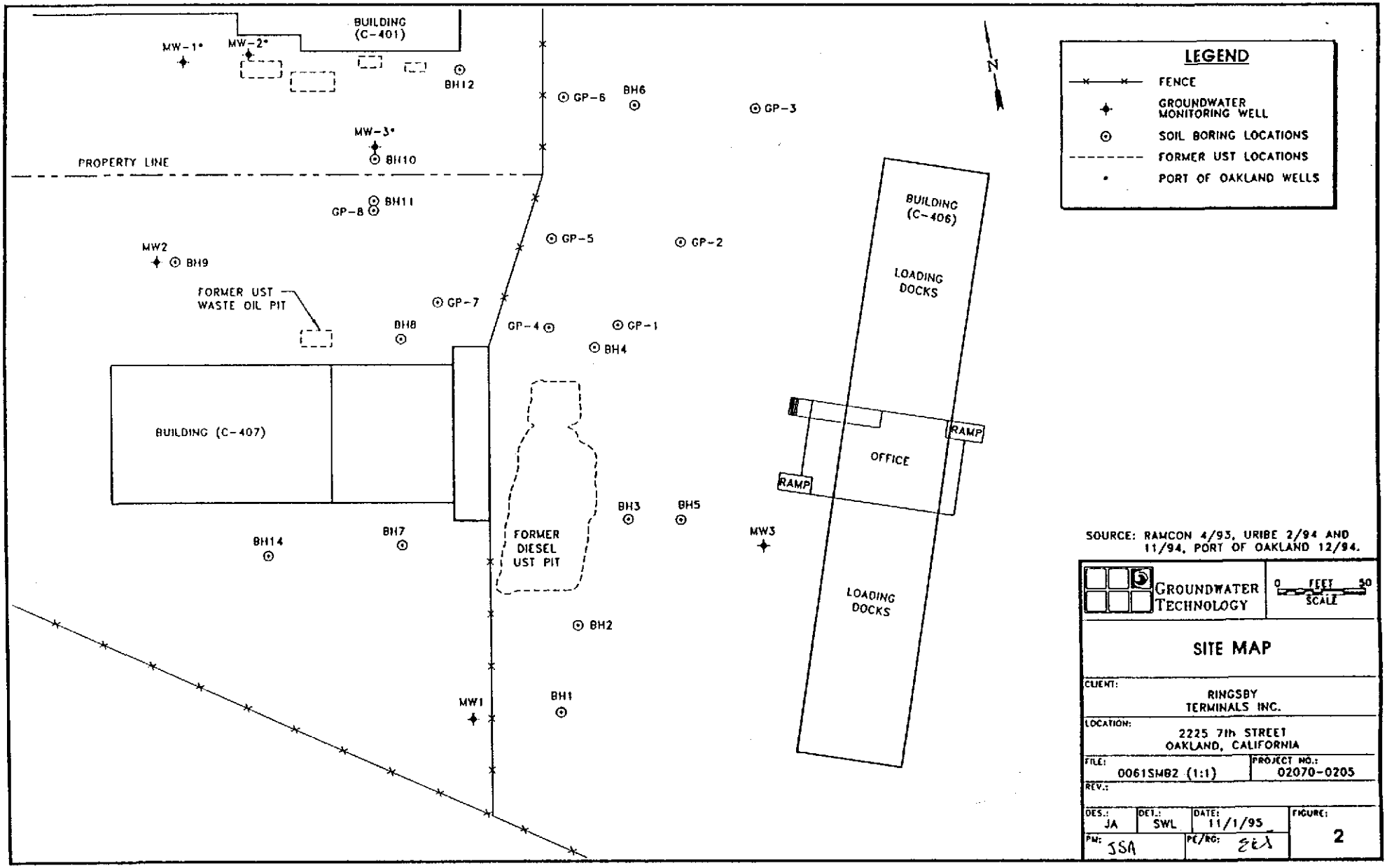
SCALE 1:24,000

0 2,000 4,000
SCALE FEET

GROUNDWATER TECHNOLOGY

SITE LOCATION MAP

CLIENT: RINGSBY TERMINALS INC	FILE: 0061-SL (1:1)	PROJECT NO.: 02070-0061	PM: [illegible]	PE/RG: [illegible]
	REV:			
LOCATION: 2225 7th STREET OAKLAND, CA	DES: JA	DET: SP	DATE: 4-4-95	FIGURE: 1



SOURCE: RAMCON 4/93, URIBE 2/94 AND 11/94, PORT OF OAKLAND 12/94.

GROUNDWATER TECHNOLOGY

0 FEET 50 SCALE

SITE MAP

CLIENT: RINGSBY TERMINALS INC.

LOCATION: 2225 7th STREET OAKLAND, CALIFORNIA

FILE: 0061SM82 (1:1)

PROJECT NO.: 02070-0205

REV.:

DES.:	DET.:	DATE:	FIGURE:
JA	SWL	11/1/95	2

PM: JSA PE/RG:

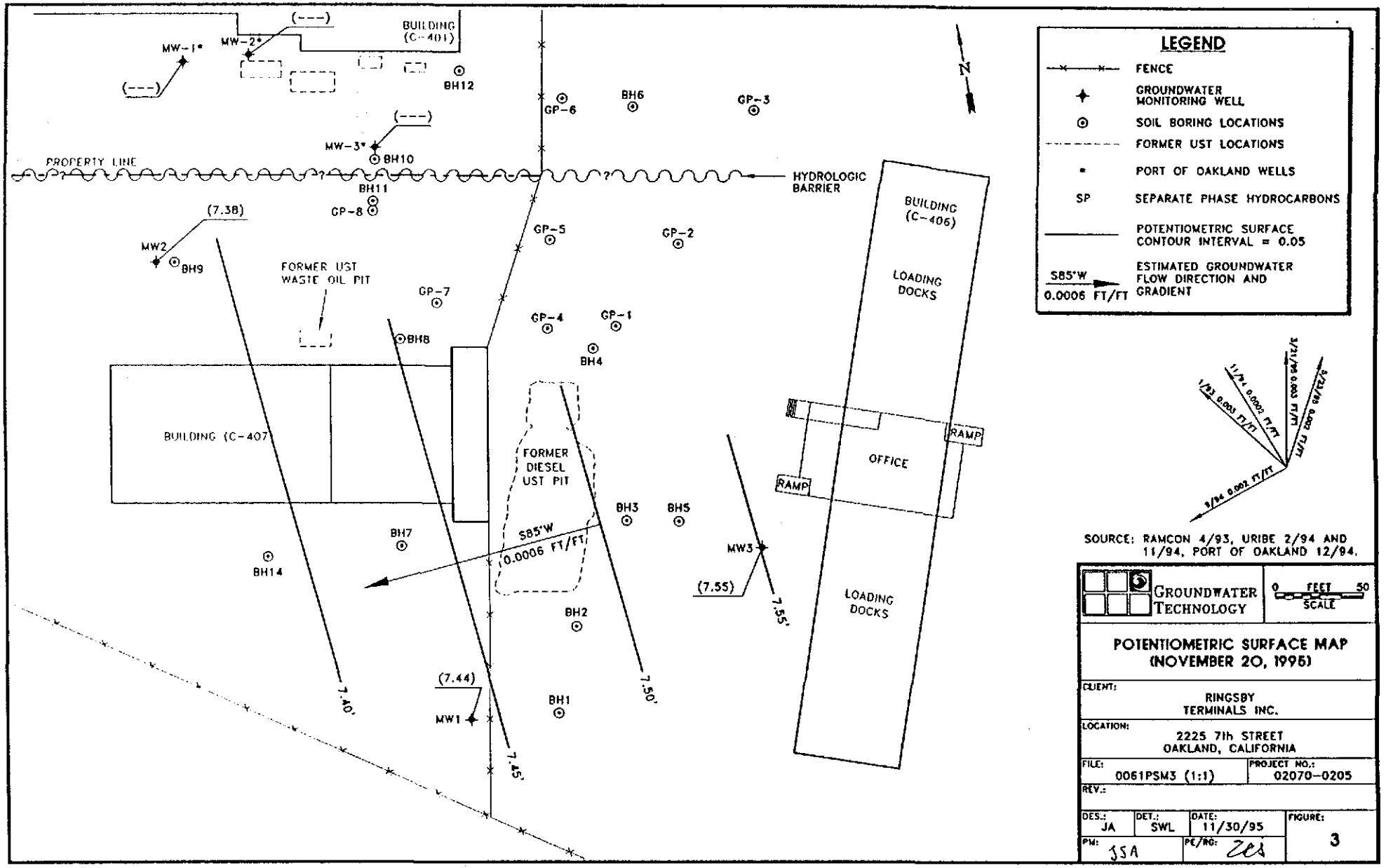

LEGEND
FENCE
GROUNDWATER MONITORING WELL
SOIL BORING LOCATIONS
FORMER UST LOCATIONS
PORT OF OAKLAND WELLS
SP SEPARATE PHASE HYDROCARBONS
POTENTIOMETRIC SURFACE CONTOUR INTERVAL = 0.05
S85°W 0.0006 FT/FT ESTIMATED GROUNDWATER FLOW DIRECTION AND GRADIENT
N
BUILDING (C-401)
MW-1*
MW-2*
MW-3*
BH12
BH10
BH11
GP-6
BH6
GP-3
PROPERTY LINE
HYDROLOGIC BARRIER
BUILDING (C-406)
LOADING DOCKS
GP-8
GP-5
GP-2
(7.38)
MW2
BH9
FORMER UST WASTE OIL PIT
GP-7
GP-4
GP-1
BH8
BH4
BUILDING (C-407)
FORMER DIESEL UST PIT
RAMP
OFFICE
BH3
BH5
BH7
S85°W (0.0006 FT/FT)
MW3
(7.55)
7.55'
BH14
BH2
(7.44)
MW1
BH1
7.40'
7.50'
7.45'
1/93 0.003 FT/FT
11/94 0.0002 FT/FT
5/21/96 0.003 FT/FT
3/94 0.002 FT/FT
SOURCE: RAMCON 4/93, URIBE 2/94 AND 11/94, PORT OF OAKLAND 12/94.
GROUNDWATER TECHNOLOGY
0 FEET 50
SCALE
POTENTIOMETRIC SURFACE MAP (NOVEMBER 20, 1995)
CLIENT: RINGSBY TERMINALS INC.
LOCATION: 2225 7th STREET OAKLAND, CALIFORNIA
FILE: 0061PSM3 (1:1)
PROJECT NO.: 02070-0205
REV.:
DES.: JA
DET.: SWL
DATE: 11/30/95
FIGURE: 3
PM: JSA
PE/RG:

Table 1
GROUNDWATER MONITORING AND ANALYTICAL DATA, 1993, 1994, and 1995
Concentrations in parts per billion (ppb), or micrograms per liter (µg/l)

Ringsby Terminals, Inc.- Port of Oakland
2225 7th Street, Oakland, California

WELL ID/ ELEVATION (TOC:feet)	DATE	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	TPH-G	TPH-D	DTW (feet)	SPT (feet)	GWE (feet)
MW-1	01/15/93	< 0.3	< 0.3	< 0.3	< 0.3	< 50 ~	< 50	5.21	0.00	8.51
13.72	09/12/94	0.6	< 0.3	< 0.3	< 0.3	< 10 c	10,000	6.37	0.00	7.35
	11/30/94	< 0.3	< 0.3	< 0.3	< 0.3	< 10	2,800	5.76	0.00	7.96
	03/29/95	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	4.57	0.00	9.15
	05/25/95	---	---	---	---	---	---	5.14	0.00	8.58
	06/21/95	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50 d	5.41	0.00	8.31
	06/23/95	---	---	---	---	---	---	5.44	0.00	8.28
	09/28/95	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	6.9 +	0.00	13.72
	11/20/95	---	---	---	---	---	---	6.28	0.00	7.44
MW-2	01/15/93	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	6.21	0.00	7.59
13.80	09/12/94	0.6	< 0.3	< 0.3	< 0.3	34 c	< 50	6.47	0.00	7.33
	11/30/94	0.9	< 0.3	< 0.3	< 0.3	< 10	81	6.34	0.00	7.46
	03/29/95	0.3	< 0.3	< 0.3	< 0.3	< 50 b	75	5.51	0.00	8.29
	05/25/95	---	---	---	---	---	---	5.60	0.00	8.20
	06/21/95	< 0.3	< 0.3	< 0.3	< 0.3	< 50 b	< 50	5.72	0.00	8.08
	06/23/95	---	---	---	---	---	---	5.72	0.00	8.08
	09/28/95	< 0.3	< 0.3	< 0.3	< 0.3	250 c	< 50	6.15	0.00	7.65
	11/20/95	---	---	---	---	---	---	6.42	0.00	7.38
MW-3	01/15/93	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	6.44	0.00	8.62
15.06	09/12/94	0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	7.35	0.00	7.71
	11/30/94	< 0.3	< 0.3	< 0.3	< 0.3	110	150	7.12	0.00	7.94
	03/29/95	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	6.31	0.00	8.75
	05/25/95	---	---	---	---	---	---	6.75	0.00	8.31
	06/21/95	< 0.3	< 0.3	< 0.3	< 0.3	< 50 b	< 50 d	6.87	0.00	8.19
	06/23/95	---	---	---	---	---	---	6.88	0.00	8.18
	09/28/95	< 0.3	< 0.3	< 0.3	< 0.3	51 c	< 50	7.28	0.00	7.78
	11/20/95	---	---	---	---	---	---	7.51	0.00	7.55

GROUNDWATER TECHNOLOGY

like Port's wells

Table 1

GROUNDWATER MONITORING AND ANALYTICAL DATA, 1993, 1994, and 1995

Concentrations in parts per billion (ppb), or micrograms per liter (µg/l)

Ringsby Terminals, Inc.- Port of Oakland
2225 7th Street, Oakland, California

WELL ID/ ELEVATION (TOC:feet)	DATE	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	TPH-G	TPH-D	DTW (feet)	SPT (feet)	GWE (feet)
MW-1*	11/30/94	—	—	—	—	—	—	9.51	0.91	5.43
14.14	03/29/95	—	—	—	—	—	—	7.67	0.17	6.62
	05/23/95	—	—	—	—	—	—	8.68	0.17	5.61
	06/23/95	—	—	—	—	—	—	9.60	1.40	5.77
	09/28/95							9.85	1.11	5.26
MW-2*	11/30/94	—	—	—	—	—	—	8.91	0.00	5.45
14.36	03/29/95	—	—	—	—	—	—	7.47	0.00	6.89
	05/23/95	—	—	—	—	—	—	----	—	—
	06/23/95	—	—	—	—	—	—	8.62	0.00	5.74
	09/28/95							9.17	0.00	5.19
MW-3*	11/30/94	—	—	—	—	—	—	13.07	5.21	5.71
14.22	03/29/95	—	—	—	—	—	—	9.59	2.93	7.19
	05/23/95	—	—	—	—	—	—	11.09	6.46	8.78
	06/23/95	—	—	—	—	—	—	12.21	6.09	7.34
	09/28/95							13.60	5.60	5.52

EXPLANATION:

TPH-G = Total petroleum hydrocarbons-as-gasoline
TPH-D = Total petroleum hydrocarbons-as-diesel
DTW = Depth to water
SPT = Separate-phase thickness
GWE = Groundwater elevation
MSL = Mean sea level
TOC = Top of casing
+= Possible well gauging error, data not used
-- = Not analyzed or no sample/measurment collected

~ = Sample also analyzed using EPA 624, volatile organics were present.
a = Uncategorized compound not included in the hydrocarbon concentration
b = Uncategorized compound not included in the gasoline concentration
c = Hydrocarbon pattern is not characteristic of gasoline
d = Hydrocarbon pattern present in sample is not characteristic of diesel

SURVEY INFORMATION:

Well #	TOC	Grade	Property/well Owner
MW-1	13.72	---	Ringsby Terminals, Inc.
MW-2	13.80	---	Ringsby Terminals, Inc.
MW-3	15.06	---	Ringsby Terminals, Inc.
MW-1*	14.14	---	Port of Oakland
MW-2*	14.36	---	Port of Oakland
MW-3*	14.22	---	Port of Oakland

GWE for wells with separate phase hydrocarbons calculated assuming a specific gravity of (0.875)
Wells surveyed to Port of Oakland Datum 12/06/94, (3.2 feet below mean sea level)

GROUNDWATER TECHNOLOGY

WEST LABORATORY

October 6, 1995
Sample Log 13026

Jaff Auchterlonie
Groundwater Technology Inc.
1401 Halyard Dr., Suite 140
West Sacramento, CA 95691

Subject: Analytical Results for 5 Water Samples
Identified as: Ringsby Terminal 5 (Proj. # 020700205-030504)
Received: 09/28/95

Dear Mr. Auchterlonie:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on October 6, 1995 and describes procedures used to analyze the samples.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)
"TPH as Diesel,Motor Oil,Jet/Kerosene" (Mod. 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us at 916-753-9500 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Joel Kiff
Senior Chemist

WEST LABORATORY

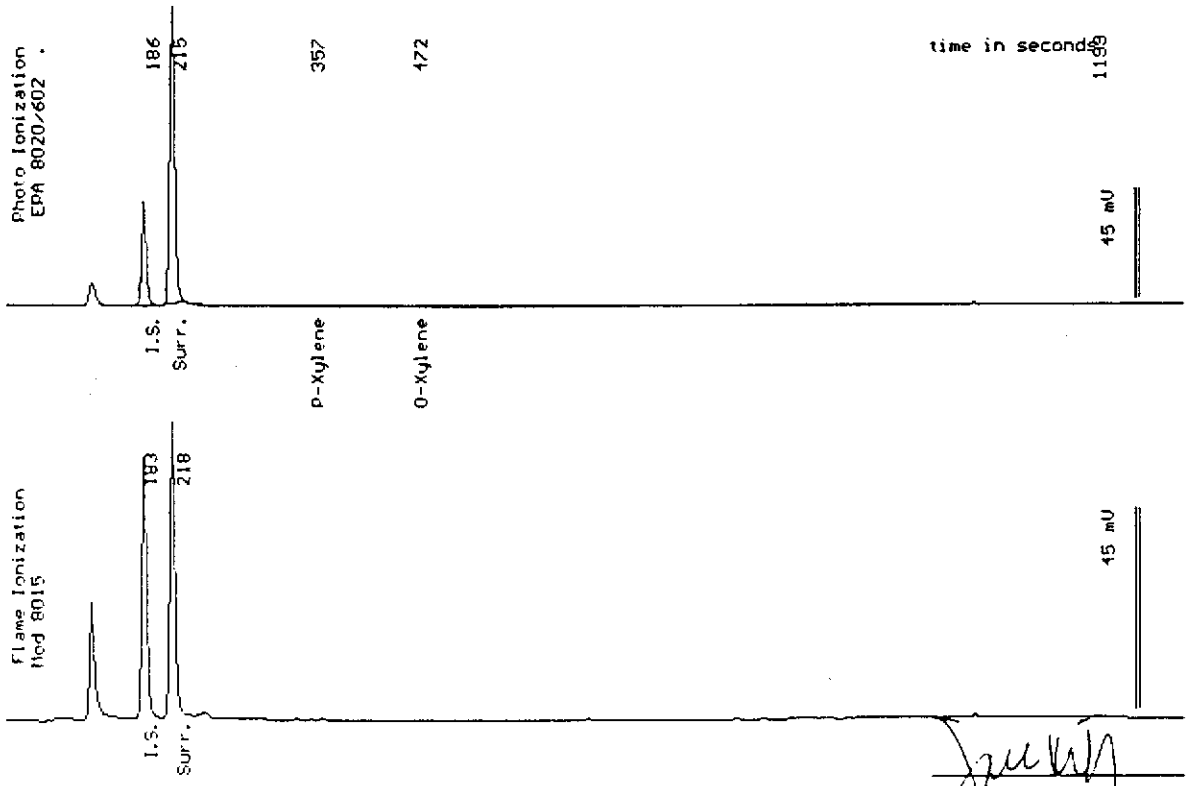
Sample Log 13026

13026-01

Sample: Trip Blank

From : Ringsby Terminal 5 (Proj. # 020700205-030504)
Sampled : 09/28/95
Dilution : 1:1 QC Batch : 4132W
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		96 %



Date Analyzed: 10-04-95
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

WEST LABORATORY

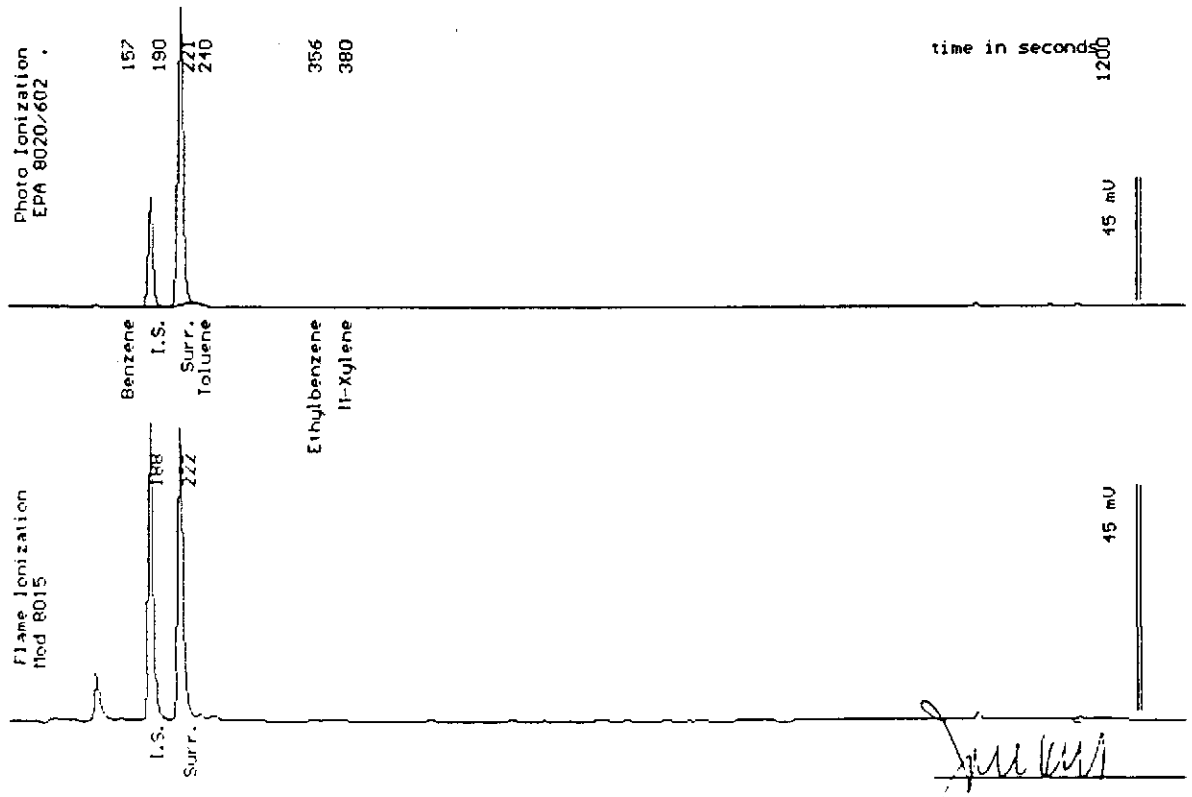
Sample Log 13026

13026-02

Sample: Field Blank

From : Ringsby Terminal 5 (Proj. # 020700205-030504)
Sampled : 09/28/95
Dilution : 1:1 QC Batch : 4132W
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		99 %



Date Analyzed: 10-04-95
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

WEST LABORATORY

Sample Log 13026

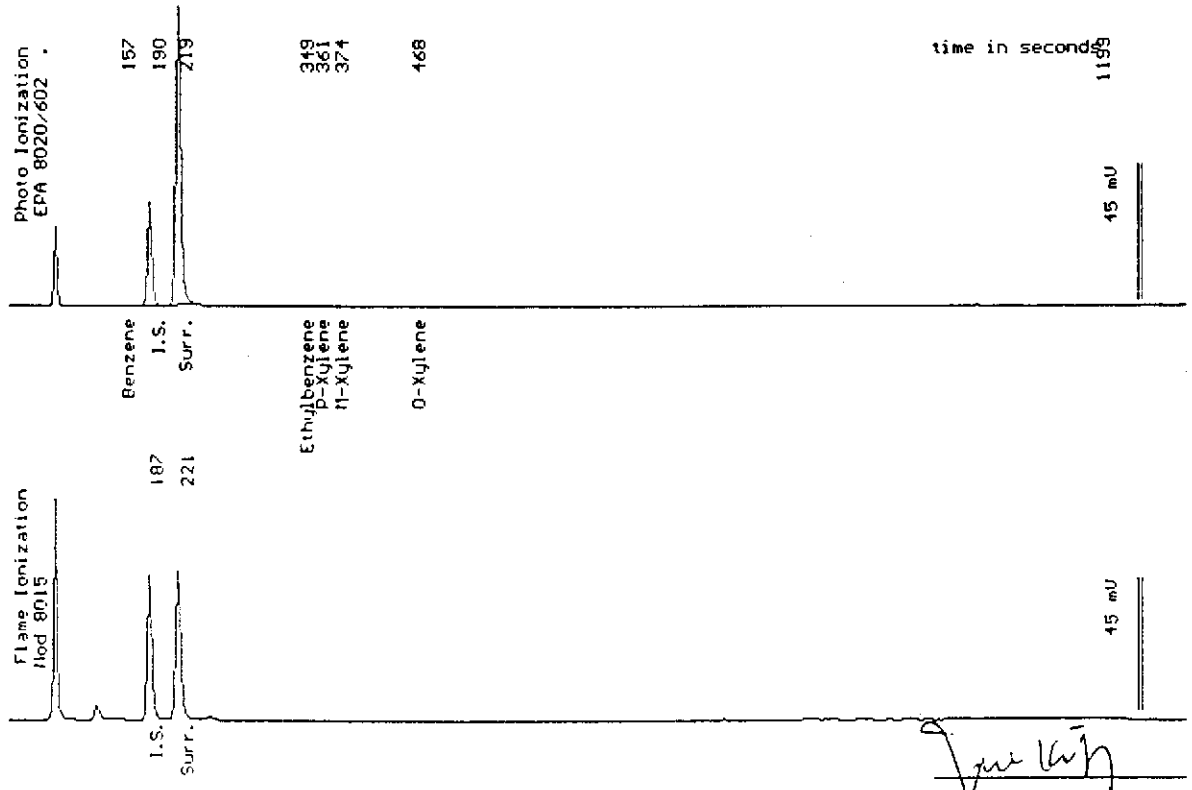
13026-03

Sample: **MW-3**

From : Ringsby Terminal 5 (Proj. # 020700205-030504)
Sampled : 09/28/95
Dilution : 1:1 QC Batch : 4132W
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	51 *
Surrogate Recovery		101 %

* Product is not typical gasoline.



Date Analyzed: 10-04-95
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

WEST LABORATORY

Sample Log 13026

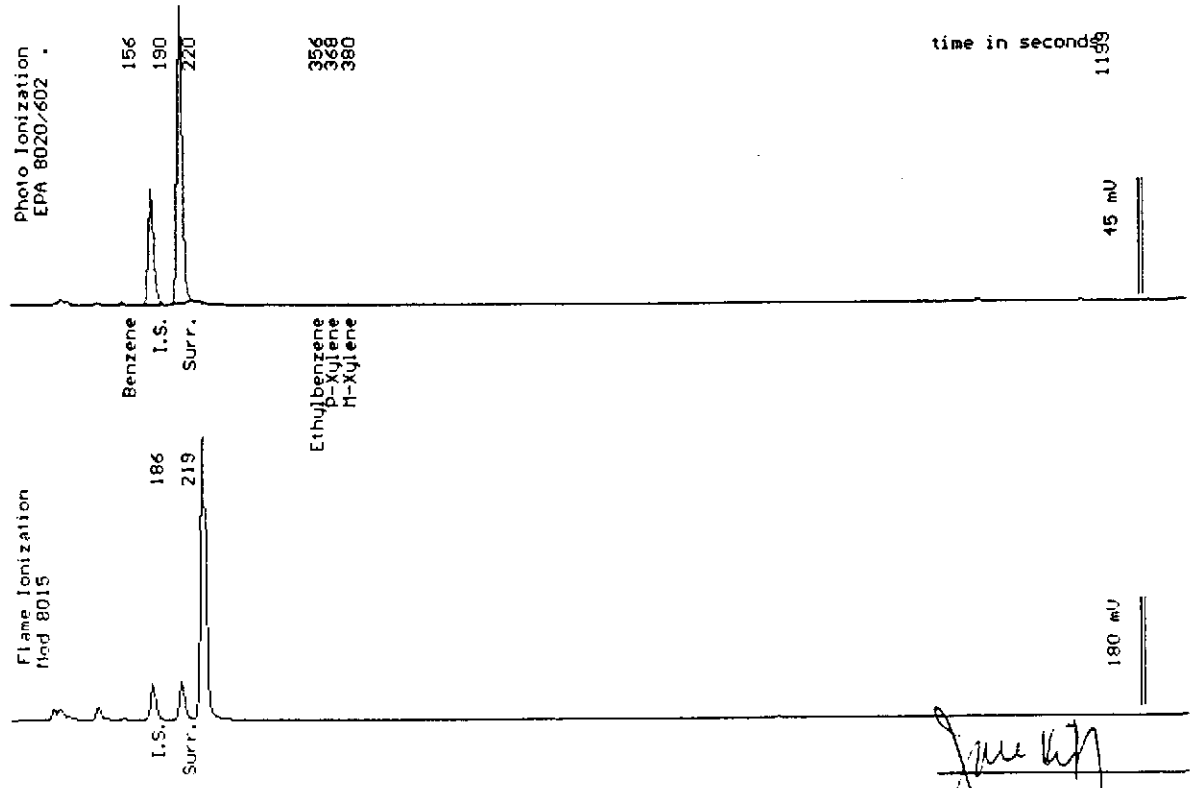
13026-04

Sample: **MW-2**

From : Ringsby Terminal 5 (Proj. # 020700205-030504)
Sampled : 09/28/95
Dilution : 1:1 QC Batch : 4132W
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	250 *
Surrogate Recovery		79 %

* Product is not typical gasoline.



Date Analyzed: 10-05-95
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

WEST LABORATORY

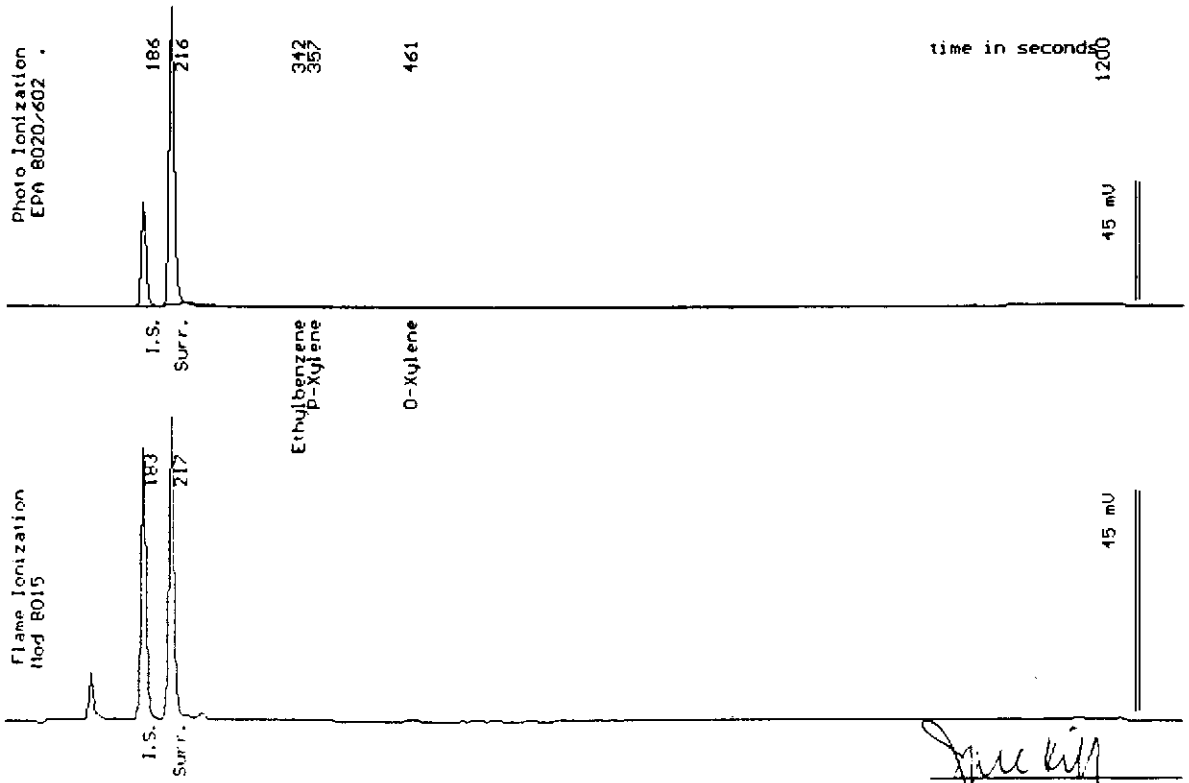
Sample Log 13026

13026-05

Sample: **MW-1**

From : Ringsby Terminal 5 (Proj. # 020700205-030504)
Sampled : 09/28/95
Dilution : 1:1 QC Batch : 4132S
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		95 %



Date Analyzed: 10-03-95
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

WEST LABORATORY

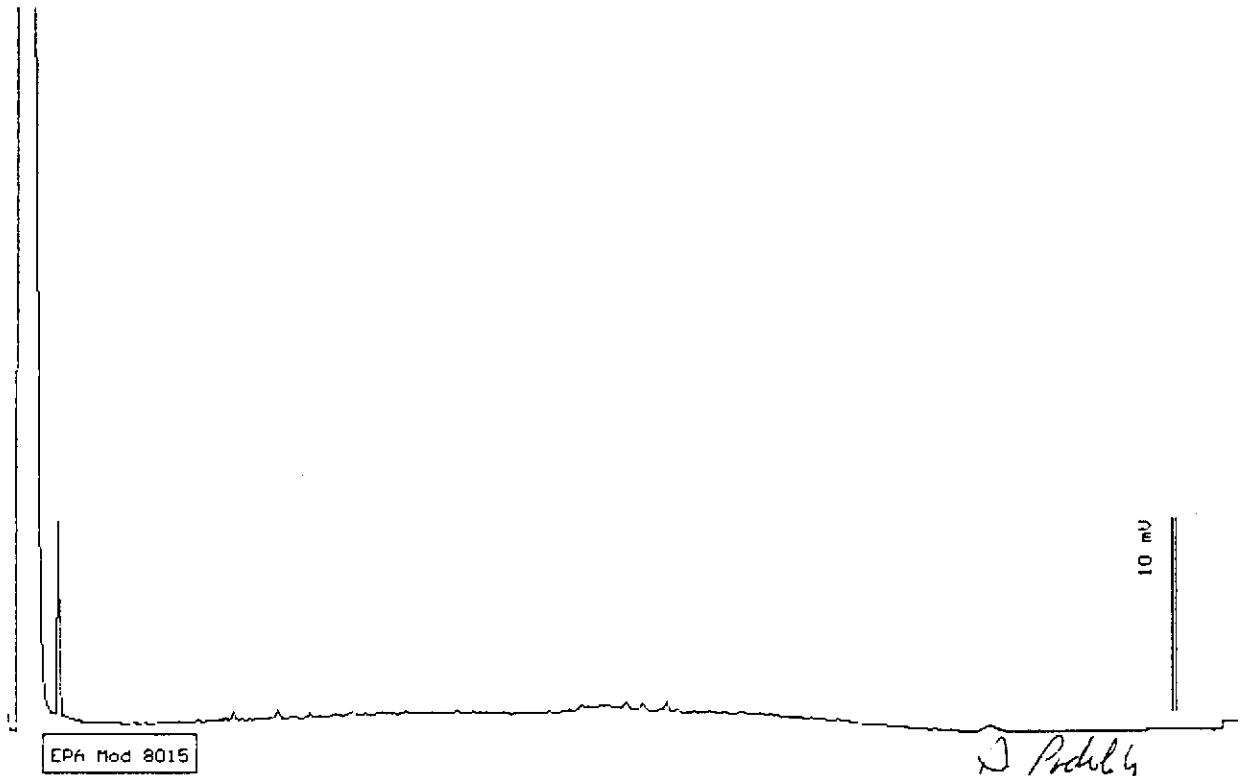
Sample Log 13026

13026-03

Sample: **MW-3**

From : Ringsby Terminal 5 (Proj. # 020700205-030504)
Sampled : 09/28/95
Extracted: 10/03/95 QC Batch : DW951002
Dilution : 1:1 Run Log : 7281E
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
TPH as Diesel	(50)	<50
TPH as Motor Oil	(100)	<100



Date: 10-05-95 Time: 02:23:31
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

Stewart Podolsky
Senior Chemist

WEST LABORATORY

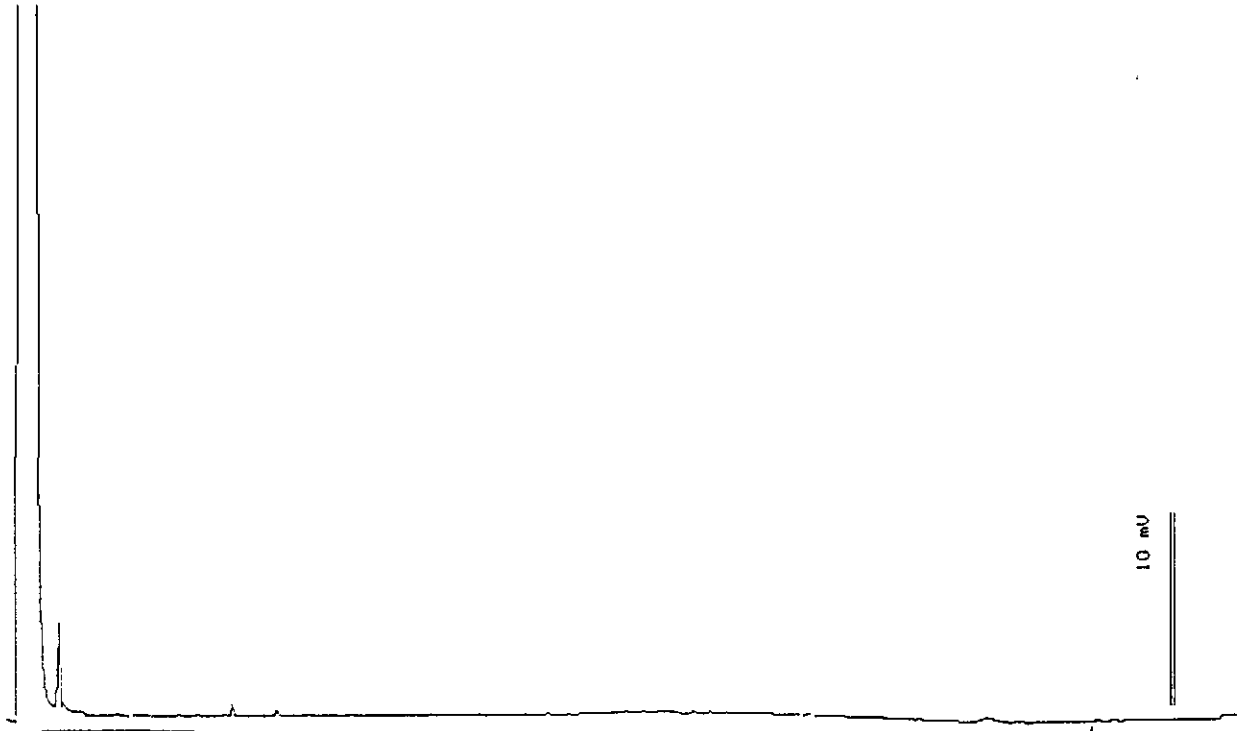
Sample Log 13026

13026-04

Sample: **MW-2**

From : Ringsby Terminal 5 (Proj. # 020700205-030504)
Sampled : 09/28/95
Extracted: 10/03/95 QC Batch : DW951002
Dilution : 1:1 Run Log : 7281E
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
TPH as Diesel	(50)	<50
TPH as Motor Oil	(100)	<100



EPA Mod 8015

Date: 10-05-95 Time: 02:57:49
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

Steuart Podolsky
Senior Chemist

WEST LABORATORY

Sample Log 13026

13026-05

Sample: **MW-1**

From : Ringsby Terminal 5 (Proj. # 020700205-030504)
Sampled : 09/28/95
Extracted: 10/03/95 QC Batch : DW951002
Dilution : 1:1 Run Log : 7281E
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
TPH as Diesel	(50)	<50
TPH as Motor Oil	(100)	<100

Date: 10-05-95 Time: 03:31:43
Column : 0.53mm ID X 15m DB1 (J&W Scientific)

Stewart Podolsky
Senior Chemist

WEST LABORATORY

October 6, 1995
Sample Log 13026

QC Report for EPA 602 & Modified EPA 8015

From : Ringsby Terminal 5 (Proj. # 020700205-030504)
Sample(s) Received : 09/28/95

Parameter	Matrix Spike % Recovery	Matrix Spike Duplicate % Recovery	RPD *
Benzene	87	91	4
Ethylbenzene	88	95	8
TPH as Gasoline	88	91	3

* RPD = Relative Percent Difference

Parameter	Method Blank
Benzene	<0.30 ug/L
Toluene	<0.30 ug/L
Ethylbenzene	<0.30 ug/L
Total Xylenes	<0.50 ug/L
TPH as Gasoline	<50 ug/L

Joel Kiff
Senior Chemist

WEST LABORATORY

October 6, 1995
Sample Log 13026

QC Report
TPH Diesel/Motor Oil by 8015 Mod

From : Ringsby Terminal 5 (Project # 020700205-030504)

QC Batch DW951002 Matrix: Water

Spike and Spike Duplicate Results

Parameter	Matrix Spike (%Rec)	Matrix Spike Dup. (%Rec)	RPD %
TPH as Diesel	Not enough sample for spiking. See duplicate LCS Data.		

Laboratory Control Spike

Parameter	Laboratory Control Spike (%Rec)	Laboratory Control Spike Dup. (%Rec)	RPD %
TPH as Diesel	94	85	10

Method Blank

Parameter	MDL(ug/L)	Measured Value(ug/L)
TPH as Diesel	(50)	<50
TPH as Motor Oil	(100)	<100

Stewart Podolsky
Senior Chemist

WEST
Western Environmental Science & Technology

1046 Olive Drive, Suite 3
Davis, CA 95616

916-753-9500
FAX #: 916-753-6091
LAB#: 916-757-4650

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: JAFF AUCHTERLONIE
Phone #:

Company/Address: 1401 HALYARD DR. SUITE 140 WEST SAC
FAX #:

Project Number: 020700205-030504
P.O.#:
Project Name: RIDGEBY TERMINALS

Project Location: 2225 7TH ST OAKLAND CA.
Sampler Signature: Heather Meeks

Sample ID	Sampling DATE	Sampling TIME	Container VOA	Container SLEEVE	Container 1L GLASS	Container 1L PLASTIC	Method Preserved HCl	Method Preserved HNO_3	Method Preserved ICE	Method Preserved NONE	Matrix WATER	Matrix SOIL
TRIPBlank	9/	—	2				X			X	X	
FIELDBLANK	9/	—	2				X			X	X	
MW 3	9/	12:10	3		1		X			X	X	
MW-2	9/	12:20	3		1		X			X	X	
MW-1	9/	12:30	3		1		X			X	X	

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel/Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	W.E.T.(Y) / TOTAL(Y) CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni
	X																	
	X																	
	X	X																
	X	X																
	X	X																

TAT

RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	STANDARD SERVICE (2wk)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	9/23/95	14:46	Sid Rademan	9/28/95	1446
Sid Rademan	9/28/95	1548			
	9/28/95	1548	Received by Laboratory: [signature]		

Remarks:
TAT = AS CONTRACTED

1 wk TAT

Bill To:

Attachment 4

Monitoring and Sampling Field Notes

WORK REQUEST FORM

JOB NAME: Ringsby Terminals
JOB NUMBER: 02070-0205-030504

SITE ADDRESS: 2225 7th Street
Oakland, California
START DATE: 4th Week in Sept, Dec, March, & June
DATE PREPARED: 09/19/95

PREPARED FOR: Field Services
PREPARED BY: Jaff Auchterlonie

WORK DESCRIPTION: MONITOR AND SAMPLE THREE MONITORING WELLS

SCOPE OF WORK: MONITOR and SAMPLE 3-15 foot deep GROUNDWATER WELLS for four quarters
Projected work dates, the 4th week of: (September, December, March, and June)
Depth to water ranges from 4 to 7 feet BGS

MONITOR GROUNDWATER DEPTH IN THREE WELLS

1) Due to tidal influences at the site it is important to measure the groundwater depth in the in the three wells in a reasonably short time frame.
2) If present, note name of Port of Oakland (Alisto Eng.) Field Tech Monitoring off-site wells
3) Break the sanitary seal in each well and allow groundwater to stabilize.
Measure the depth to groundwater in each well, taking no more than 15 minutes to monitor the depths in all three wells. Measure all depths from TOC

PURGE & COLLECT WATER SAMPLES FROM THE THREE WELLS, MW-1, MW-2, MW-3

1) USING HAND BAILER Purge four well volumes from each well
Approximately 25 gallons per well
2) Measure & record water volume, pH, conductivity, and temperature of the purged groundwater.
3) Store water in one or two 55 gallon drums and place drums as shown on attached site plan.
Label drums as purged groundwater, Ringsby Terminals/GTI, and date.
4) Collect (three) 40-ml VOA's and (two) 1-liter Amber bottles from each well. Place on ice.
5) QA-QC SAMPLES= 1- trip blank and 1- field bank water samples into (two) 40-ml VOA's
Well Sample Order: first= MW-3, second= MW-2, and third= MW-1

ANALYZE WATER SAMPLES WITH WEST LABORATORY WEST Quote #2123
Fill out COC and request BTEX, TPH-G, and TPH-D on a one week TAT, transport on ice.
WEST Lab will pick-up samples in GTI Concord Office. Tell Krissi to call WEST
WEST Lab Contact: Joel Kiff, (916) 757-4650 FAX 753-6091

CALL Jaff Auchterlonie (916) 372-4700 from the field with quick report site work completed.

EQUIPMENT NEEDED:

Health & Safety Site Plan 9/16" sockets
Two 55 gallon drums, Nine 40 ml VOAs, Six 1 liter amber bottles, one reusable and three disposable bailers
Bailers to purge water from 4" wells and three disposable baile NO PUMPS

GENERAL INFORMATION

Direct all questions to Jaff Auchterlonie or Bruce Beale, (916) 372-4700

Site Contacts:	N.W Transport	Monty or Dennis	(510) 451-6987
Off-Site Contact:	Sealand	Todd Burson	(510) 272-5214
Port Consultant:	Alisto Engineering	Brady Nagle	(510) 295-1650

PROJECT MANAGER, Jaff Auchterlonie AUTHORIZATION Jaff Auch

RECEIVED
OCT - 2 1995

file:Dongary\WkReq1.wk4

GROUNDWATER GAUGING FORM

JOB NAME: Ringsby Terminals- Port of Oakland JOB NUMBER: 02070-0205-030504

IP#: 2225 7th Street, Oakland, CA. DATE: 9 12 95

MEASURED TO TOC OR GRADE? Top of Casing

NOTE: Well MW-3 has obstruction at 9.5 feet

WELL I.D.	DTB	WELL DIAM.	WELL ELEV. TOC	DTW	DTP	PT	80% RECHG.	ELEV WATER	COMMENTS Please note if well needs Repair
MW-1	14.90	4"	13.72	6.90					
MW-2	14.90	4"	13.80	6.15					
MW-3	9.86	4"	15.06	7.28					Obstruction @ 9.6 ft

Project Name: Ringsby Terminals

Date: 9/28/05

Site Address: 2225 7th St. Oakland

Page 1 of 3

Project Number: 020700205.030504

Project Manager: Jaff Aushterlonie

Well ID: MW-3

Well Diameter: 4

DTW Measurements:
Initial: 7.28
Recharge:
DTB: 9.86

Calc Well Volume: 1.6 gal
Well Volume: X4 6.7 gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp X C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
11:00	22.1	2.36	6.60	0	cloudy	0 = 1ST Bail
11:01	21.7	2.35	6.71	1	↓	
11:02	21.7	2.34	6.74	2	↓	DRY @ 2 gallons

Project Name: Ringsby Terminals

Site Address: 2225 7th St., Oakland

Project Number: 020700205.030504

Date: 7/28/05

Page 2 of 3

Project Manager: Jaff Aushterlonie

Well ID: MW-2

Well Diameter: 4

DTW Measurements:
Initial: 6.15
Recharge:
DTB: 14.90

Calc Well Volume: 5.7 gal
Well Volume: x4 23 gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed Y
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
11:10	23.5	3.24	6.65	0	cloudy	
11:12	23.0	3.51	6.74	5	↓	
11:14	22.8	3.52	6.76	10	↓	DRY@10GALLONS

Project Name: Ringsby Terminals

Site Address: 2225 7th St. Oakland

Project Number: 020700205.030504

Date: 9/28/05

Page 4 of 4

Project Manager: Jaff Aushterlonie

Well ID: MW-1

Well Diameter: 4

DTW Measurements:
Initial: 6.90
Recharge:
DTB: 14.90

Calc Well Volume: 5.2 gal
Well Volume: X4 21 gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed X
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp X C F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
11:30	22.1	1.61	7.05	0	clay	
11:32	22.0	1.73	6.98	5	↓	
11:34	21.5	2.01	7.01	10	↓	
11:36	21.3	2.01	7.00	15	↓	

SITE VISITATION REPORT

Project: Ringsby Terminals-Port of Oakla Date: 9/28/95 Project No.: 02070- 0205-030504

Name(s) HECTOR MERINO Did you call in? Yes No

Arrival Time: 10:30 Departure Time: _____ Who did you call? _____

Weather Notations: (SUN) CLOUDY RAIN SNOW Temperature: 60 °F

PURPOSE OF VISIT

X	GAUGE WELLS		SURVEY		INSTALL EQUIPMENT
	BAIL SEPARATE-PHASE		MONITOR VAPORS		INSTALL SYSTEM
	SAMPLE A/S INF EFF		SAMPLE CARBON		
	SYSTEM CHECK		BATCH FEED		
X	SAMPLE WELLS		EQUIPMENT REPAIR		

DRUM INVENTORY

2	WATER		CARBON	TOTAL OPEN TOP	
	SOIL		EMPTY	TOTAL BUNG TOP	

SAMPLE INFORMATION

SAMPLED: ✓ YES NO

✓ WATER SOIL

AIR OTHER

PARAMETERS: BTEX/TPH GAS - TPH-DIESEL

STATION NO:

LABORATORY: WESTERN ENVIROMENTAL

LAB RELEASE NO:

REMEDIATION SYSTEM

FLOW TOTALIZER:

FLOW RATE:

% LEL:

AIR VELOCITY:

PID INF:

PID EFF:

DESCRIPTION OF ACTIVITIES ON SITE AND NOTES

OPENED ALL WELLS FOR 15 MIN. MONITORED ALL WELLS, ORDER 32-1

PURGED ALL WELLS FOR 4 WELL VOL.

PLACED NEW DRUM NEXT TO OLD ONE, SEE MAP FOR LOCATION

SAMPLED ALL WELLS FOR BTEX TPHGAS - TPH-DIESEL

WEST
Western Environmental Science & Technology

1046 Olive Drive, Suite 3
Davis, CA 95616

916-753-9500
FAX #: 916-753-6091
LAB#: 916-757-4650

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: JAFF AUCHTERLONIE

Phone #:

Company/Address: HOLLAND AMERICA LINE WESTCAC

FAX #:

Project Number: [illegible]

P.O.#:

Project Name: FAIRWAY TERMINALS

Project Location: [illegible]

Sampler Signature:

Sample ID	Sampling DATE	Sampling TIME	Container VOA	Container SLEEVE	Container 1L GLASS	Container 1L PLASTIC	Method Preserved HCl	Method Preserved HNO_3	Method Preserved ICE	Method Preserved NONE	Matrix WATER	Matrix SOIL	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel/Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	W.E.T. (✓)	TOTAL (✓)	RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	STANDARD SERVICE (2wk)
[illegible]	9/	—	2				X			X	X			X																					
FIELDBLANK	9/	—	2				X			X	X			X																					
MW-3	9/12	12:10	2		1		X			X	X			X	X																				
MW-2	9/12	12:20	2		1		X			X	X			X	X																				
MW-1	9/12	12:30	2		1		X			X	X			X	X																				

Relinquished by:	Date	Time	Received by:	Remarks:
[illegible]	9/23/91	14:46	Ed Packman	9/24/91 1446 TAT = AS CONTRACTED
Relinquished by	Date	Time	Received by:	
Relinquished by	Date	Time	Received by Laboratory:	Bill To:

ANALYSIS REQUEST

TAT

RUSH SERVICE (12 hr) or (24 hr)

EXPEDITED SERVICE (48 hr) or (1 wk)

STANDARD SERVICE (2wk) ✓