



FLUOR DANIEL GTI

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ENVIRONMENTAL
PROTECTION
97 OCT 16 AM 9:40

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: 10/10/97 JOB NO. 02070-0205
FROM: Bruce Beale
RE: Ringsby Terminals- Port of Oakland
2225 7th Street
Oakland, California 94607

We are sending via: AIRBORNE MAIL FAX

ORIGINALS	COPIES	DATE	DESCRIPTION
1		09/26/97	Revised pages for the Third Quarter 1997 Groundwater Monitoring and Sampling Report

Transmitted as checked:

For Approval For Your Use As You Requested
 For Comment For Resubmittal For Your Records

Remarks: Mr. Ringsby:
Included are the revised pages for the Third Quarter 1997 Monitoring and Sampling Report.
As we discussed, the report will be mailed to the parties listed below. Please call our Martinez office with any questions or comments.

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. John Prall (510) 272-1373
Environmental Scientist FAX (510) 465-3755
Port of Oakland
530 Water Street
Oakland, California 94607



FLUOR DANIEL GTI

May 6, 1997

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

Subject: First Quarter 1997 Groundwater Monitoring and Sampling Report
Ringsby Terminals, Port of Oakland
2225 7th Street
Oakland, California
Fluor Daniel GTI Project 02070 0205

Dear Mr. Ringsby:

This letter summarizes the groundwater monitoring and sampling work performed by Fluor Daniel GTI, Inc. (Fluor Daniel GTI) at the subject site (Figures 1 and 2, Attachment 1). On March 19, 1997, Fluor Daniel GTI 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 dissolved hydrocarbons in the groundwater. The work was performed at the request of Ms. Jennifer Eberle of the Alameda County Department of Environmental Health, Health Care Services (ACDEH).

The groundwater monitoring information, and laboratory analytical results of groundwater samples collected since January 1993, are summarized in Table 1 (Attachment 2). Monitoring wells MW-1, MW-2, and MW-3, are located on the Ringsby Terminal lease, and eight wells, MW-1* through MW-8*, are located north of the Ringsby Terminal lease, on the Port of Oakland property (Figure 2).

Groundwater Monitoring

On March 19, 1997, Fluor Daniel GTI personnel monitored the depth to groundwater and checked for presence of any separate-phase liquid hydrocarbons (SP) in monitoring wells MW-1, MW-2, and MW-3 (Table 1). The Port of Oakland wells were not monitored on March 19, 1997. No third quarter 1996 through first quarter 1997 data are included for these wells in Table 1. 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 prior to gauging 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 monitoring and sampling field notes are included in Attachment 3.

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Groundwater Gradient and Flow Direction

The calculated groundwater flow on July 18, 1997, was south 59 degrees east at a gradient of 0.0004 foot per foot (Figure 3). No SP hydrocarbons have been measured in the three wells since monitoring began on January 15, 1993. As stated in previous reports, there is an abrupt change in the lithology and drop in groundwater elevations (2 feet) has been reported 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 and rail lines, linear barriers to shallow groundwater flow are expected.

Groundwater Sampling

Following groundwater monitoring, Fluor Daniel GTI 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 at least 3 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 11.6 feet below the casing top. A disposable Teflon bailer was used for the groundwater sampling. Each water sample was then transferred to three 40-milliliter glass vials with Teflon-septum caps, and two 1-liter amber glass bottles, preserved on ice, and transported to a California state-certified laboratory, accompanied by a chain-of-custody manifest. The groundwater samples were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX), methyl-tert-butyl-ether (MTBE), total petroleum hydrocarbons-as-gasoline (TPH-G), and total petroleum hydrocarbons-as-diesel (TPH-D) by Environmental Protection Agency (EPA) methods 8020/modified 8015.

Wastewater

A total of 34 gallons of water was purged from the monitoring wells and stored in one 55-gallon drum labeled "Ringsby, non-hazardous well purge water, 7/18/97". One drum of purged groundwater is now stored on site. The drum of water will be transported from the site in October 1997.

Groundwater Analytical Results

Laboratory analytical results for groundwater samples collected on July 18, 1997, are summarized in Table 1. Dissolved TPH-G was detected in only one well, MW-2, at 63 micrograms per liter ($\mu\text{g/L}$). No BTEX, MTBE or TPH-D concentrations were detected in any of the analyzed groundwater samples. Copies of the laboratory reports and chain-of-custody for the groundwater samples are included in Attachment 4.



Groundwater Gradient and Flow Direction

The calculated groundwater flow on March 19, 1997, was north 17 degrees east at a gradient of 0.001 foot per foot (Figure 3). No SP hydrocarbons have been measured in the three wells since monitoring began on January 15, 1993. 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 and rail lines, ~~linear barriers to shallow groundwater flow are expected.~~

Groundwater Sampling

Following groundwater monitoring, Fluor Daniel GTI 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 at least 3 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 11.6 feet below the casing top. A disposable Teflon bailer was used for the groundwater sampling. Each water sample was then transferred to three 40-milliliter glass vials with Teflon-septum caps, and two 1-liter amber glass bottles, preserved on ice, and transported to a California state-certified laboratory, accompanied by a chain-of-custody manifest. The groundwater samples were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX), methyl-tert-butyl-ether (MTBE), total petroleum hydrocarbons-as-gasoline (TPH-G), and total petroleum hydrocarbons-as-diesel (TPH-D) by Environmental Protection Agency (EPA) methods 8020/modified 8015.

Wastewater

A total of 45 gallons of water was purged from the monitoring wells and stored in one 55-gallon drum labeled "Ringsby, non-hazardous well purge water, 3/19/97". Four drums of purged groundwater are now stored on site. The drums of water will be transported from the site in May 1997.

Groundwater Analytical Results

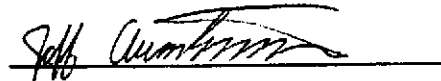
Laboratory analytical results for groundwater samples collected on March 19, 1997, are summarized in Table 1. Dissolved TPH-G was detected in only one well, MW-2, at 150 micrograms per liter ($\mu\text{g/L}$). No BTEX, MTBE or TPH-D concentrations were detected in any of the analyzed groundwater samples. Copies of the laboratory reports and chain-of-custody for the groundwater samples are included in Attachment 4.



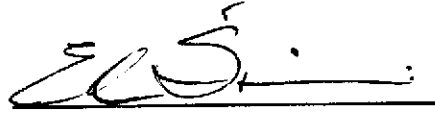
Please contact Fluor Daniel GTI's West Sacramento office if you have questions or comments regarding this quarterly report.

Sincerely,
Fluor Daniel GTI, Inc.
Submitted by:

Fluor Daniel GTI, Inc.
Approved by:



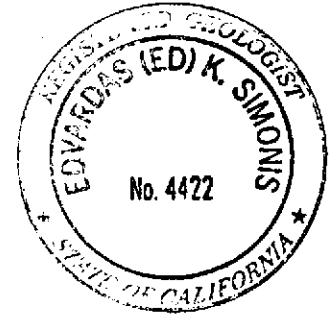
Jaff Auchterlonie
Lead Geologist
Project Manager

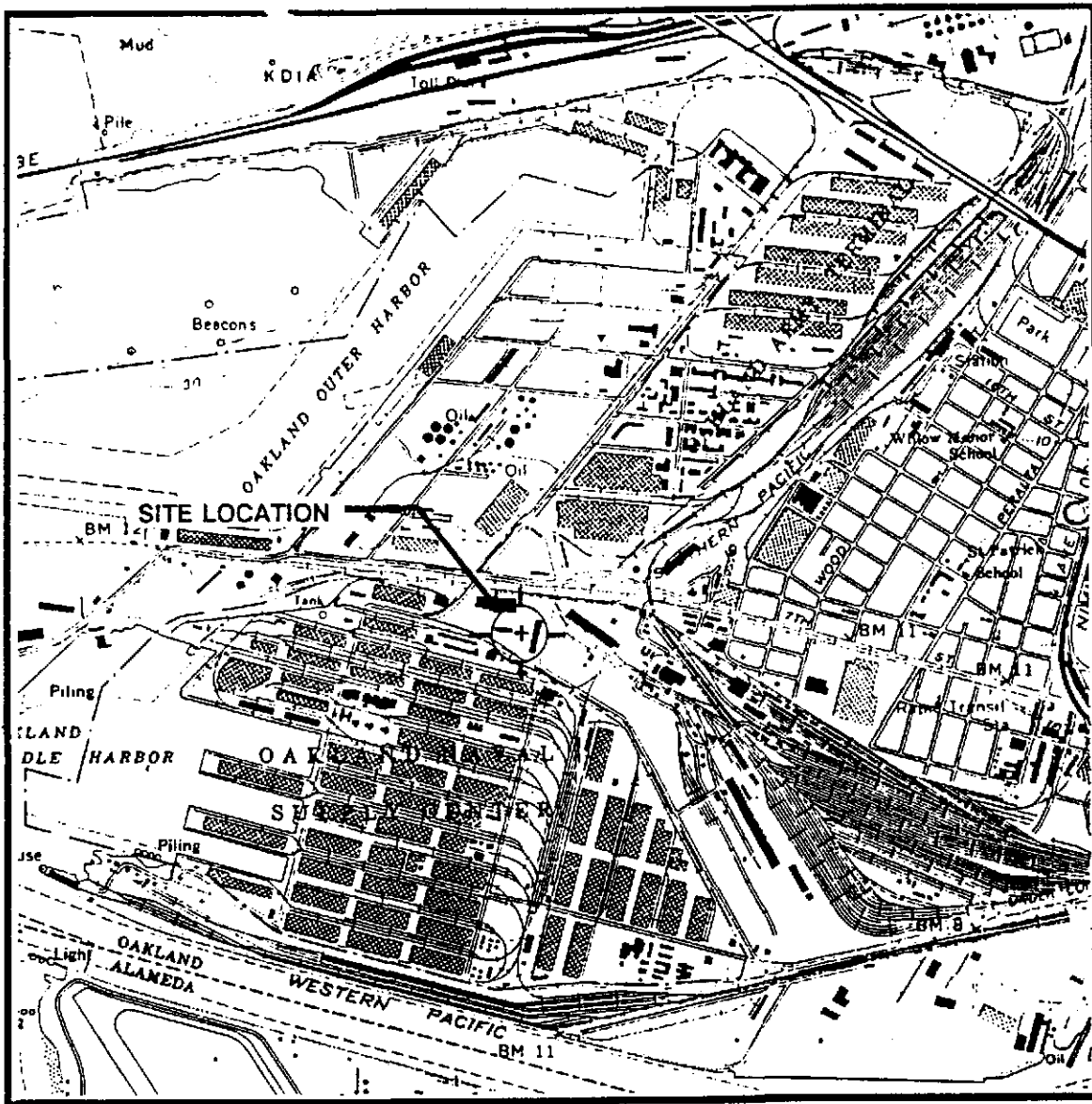


Ed K. Simonis, R.G.
Senior Geologist

Attachments

1. Figures
2. Table 1
3. Groundwater Monitoring and Sampling Field Notes, March 19, 1997,
4. Laboratory Reports and Chain-of-Custody Manifest

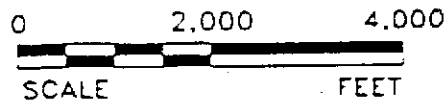




SOURCE: U.S.G.S. TOPOGRAPHIC QUADRANGLE
 OAKLAND WEST
 7.5 MINUTE SERIES
 1959/PHOTOREVISED 1980



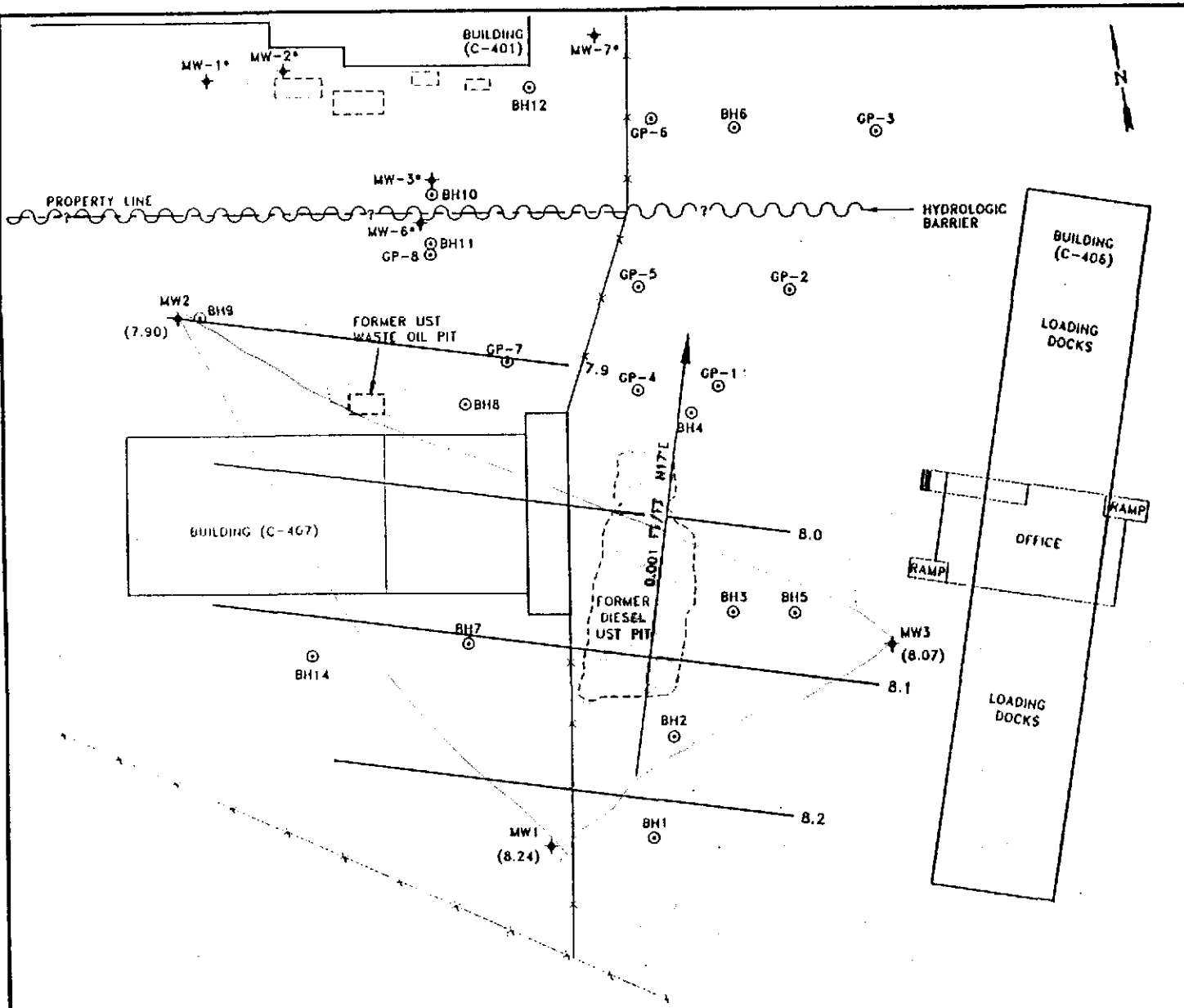
SCALE 1:24,000



FLUOR DANIEL GTI

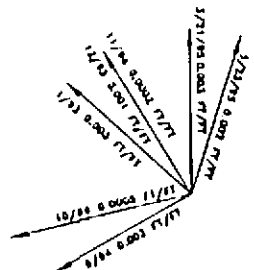
SITE LOCATION MAP

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



LEGEND

- FENCE
- ✦ GROUNDWATER MONITORING WELL
- ⊙ SOIL BORING LOCATIONS
- - - - FORMER UST LOCATIONS
- PORT OF OAKLAND WELLS
- SP SEPARATE-PHASE HYDROCARBONS
- NM NOT MONITORED
- POTENTIOMETRIC SURFACE CONTOUR INTERVAL = 0.1
- N17°E ESTIMATED GROUNDWATER FLOW DIRECTION AND GRADIENT 0.001 FT/FT



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

FLUOR DANIEL GTI			
POTENTIOMETRIC SURFACE MAP (3/19/97)			
CLIENT: RINGSBY TERMINALS INC.			
LOCATION: 2225 7th STREET OAKLAND, CALIFORNIA			
FILE: PSM098		PROJECT NO.: 02070-0205	
REV.:			
DES.: BB	DET.: EfK	DATE: 4/29/97	FIGURE: 2
DWG: 30A 1/21/97		PC/AC: [Signature]	

Table 1
HISTORICAL GROUNDWATER MONITORING AND ANALYTICAL DATA

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

WELL ID/ ELEVATION (TOC)	DATE	BENZENE (ppb)	TOLUENE (ppb)	ETHYL- BENZENE (ppb)	XYLENES (ppb)	TPH-G (ppb)	TPH-D (ppb)	TPH-O (ppb)	MTBE (ppb)	DTW (feet)	SPT (feet)	GWE (feet)
MW-1* 14.14	11/30/94	--	--	--	--	--	--	--	--	9.51	0.91	5.43
	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
	12/27/95	--	--	--	--	--	--	--	--	9.04	0.53	5.56
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-2* 14.36	11/30/94	--	--	--	--	--	--	--	--	8.91	0.00	5.45
	03/29/95	< 0.4	< 0.3	< 0.3	< 0.3	< 50	110	1,400	--	7.47	0.00	6.89
	05/23/95	--	--	--	--	--	--	--	--	--	--	--
	06/23/95	--	--	--	--	--	--	--	--	8.62	0.00	5.74
	09/28/95	< 0.4	< 0.3	< 0.3	< 0.4	120 c	< 100	1,300	--	9.17	0.00	5.19
	12/27/95	--	--	--	--	--	--	--	--	8.95	0.00	5.41
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-3* 14.22	11/30/94	--	--	--	--	--	--	--	--	13.07	5.21	5.71
	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	5.05	5.52
	12/27/95	--	--	--	--	--	--	--	--	12.71	4.77	5.62
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-4* 13.15	03/29/95	--	--	--	--	--	--	--	--	9.59	0.00	3.56
	09/28/96	18	< 0.3	< 0.3	< 0.3	210 c	< 50	400	--	8.54	0.00	4.61
	12/27/95	--	--	--	--	--	--	--	--	8.39	0.00	4.76
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-5* 13.49	09/28/95	< 0.4	< 0.3	< 0.3	< 0.4	< 50	< 300	2,000	--	6.56	0.00	6.93
	12/27/95	--	--	--	--	--	--	--	--	7.71	0.00	5.78
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-6* 14.00	09/28/95	12	1	9	6	2,400 c	8,400	8000 e	--	7.74	0.00	6.26
	12/27/95	--	--	--	--	--	--	--	--	8.07	0.00	5.93
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-7* 14.35	09/28/95	< 0.4	< 0.3	< 0.3	< 0.4	< 50	390 d	1,200	--	9.74	0.00	4.61
	12/27/95	--	--	--	--	--	--	--	--	9.06	0.00	5.29
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-8* 12.94	09/28/95	--	--	--	--	--	--	--	--	8.91	0.00	4.14
	12/27/95	--	--	--	--	--	--	--	--	8.61	0.31	4.60
	03/25/96	--	--	--	--	--	--	--	--	--	--	--

Page 2 of 2

EXPLANATION:

- TPH-G = Total petroleum hydrocarbons-as-gasoline
- TPH-D = Total petroleum hydrocarbons-as-diesel
- TPH-O = Total petroleum hydrocarbons-as-Motor Oil
- DTW = Depth to water
- SPT = Separate-phase thickness
- GWE = Groundwater elevation in feet above mean sea level
- TOC = Top of casing elevation in feet above mean sea level
- + = Possible well gauging error, data not used
- = Not analyzed or no sample/measurement 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
- e = Hydrocarbon pattern present in sample is not characteristic of oil
- f = Product is not typical gasoline.

SURVEY INFORMATION:

Well #	TOC	Grade	Property/Well Owner
MW-1	13.72	--	Ringsby Terminals
MW-2	13.80	--	Ringsby Terminals
MW-3	15.06	--	Ringsby Terminals
MW-1*	14.14	--	Port of Oakland
MW-2*	14.36	--	Port of Oakland
MW-3*	14.22	--	Port of Oakland
MW-4*	13.15	--	Port of Oakland
MW-5*	13.49	--	Port of Oakland
MW-6*	14.00	--	Port of Oakland
MW-7*	14.35	--	Port of Oakland
MW-8*	12.94	--	Port of Oakland

Notes

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).

Table 1
HISTORICAL GROUNDWATER MONITORING AND ANALYTICAL DATA

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

WELL ID/ ELEVATION (TOC)	DATE	BENZENE (ppb)	TOLUENE (ppb)	ETHYL- BENZENE (ppb)	XYLENES (ppb)	TPH-G (ppb)	TPH-D (ppb)	TPH-O (ppb)	MTBE (ppb)	DTW (feet)	SPT (feet)	GWE (feet)
MW-1 13.72	01/15/93	< 0.3	< 0.3	< 0.3	< 0.3	< 50 ~	< 50	--	--	5.21	0.00	8.51
	09/12/94	0.5	< 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	--
	11/20/95	--	--	--	--	--	--	--	--	6.28	0.00	7.44
	12/27/95	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	< 100	--	5.86	0.00	7.86
	03/25/96	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	< 100	--	5.21	0.00	8.51
	06/26/96	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	--	< 5.0	5.58	0.00	8.14
	10/14/96	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	--	< 5.0	6.22	0.00	7.50
03/19/97	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	--	< 5.0	5.48	0.00	8.24	
MW-2 13.80	01/15/93	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	--	--	6.21	0.00	7.59
	09/12/94	0.5	< 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	76	--	--	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
	12/27/95	< 0.3	< 0.3	< 0.3	< 0.3	220 c	< 50	< 100	--	6.31	0.00	7.49
	03/25/96	< 0.3	< 0.3	< 0.3	< 0.3	200 c	< 50	< 100	--	5.74	0.00	8.06
	06/26/96	< 0.50	< 0.50	< 0.50	< 0.50	77 f	< 50	--	< 5.0	5.85	0.00	7.95
	10/14/96	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	--	< 5.0	6.36	0.00	7.44
03/19/97	< 0.50	< 0.50	< 0.50	< 0.50	150	< 50	--	< 5.0	5.90	0.00	7.90	
MW-3 15.06	01/15/93	< 0.3	< 0.3	< 0.3	< 0.3	< 50	< 50	--	--	6.44	0.00	8.62
	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
	12/27/95	< 0.3	< 0.3	< 0.3	< 0.3	55 c	< 50	< 100	--	7.20	0.00	7.86
	03/25/96	< 0.3	< 0.3	< 0.3	< 0.3	53	< 50	< 100	--	6.64	0.00	8.42
	06/26/96	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	--	< 5.0	6.98	0.00	8.08
	10/14/96	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	--	< 5.0	7.47	0.00	7.59
03/19/97	< 0.50	< 0.50	< 0.50	< 0.50	< 50	< 50	--	< 5.0	6.99	0.00	8.07	

mt contaminants

Attachment 3
Monitoring and Sampling Field Notes

WORK REQUEST FORM

JOB NAME: Ringsby Terminals JOB NUMBER: 02070-0205-030504
SITE ADDRESS: 2225 7th Street START DATE: 03/19/97
Oakland, California DATE PREPARED: 03/12/97
PREPARED FOR: Field Services PREPARED BY: Bruce Beale

WORK DESCRIPTION: **MONITOR AND SAMPLE THREE MONITORING WELLS**

MONITOR DEPTH TO GROUNDWATER AND SAMPLE THREE WELLS

- 1) Due to tidal influences at the site, it is important to measure depth to water in the three wells within a reasonably short period of time.
- 2) Break the sanitary seal in each well and allow groundwater to stabilize.
- 3) Within 15 minutes, measure the depth to water (top of casing) in all three wells.
- 4) **HAND BAIL ONLY- NO PUMP**
Using a hand bailer, purge four casing volumes of water from each well. Measure & record pH, conductivity, and temperature of the purged water.
- 5) Collect three 40 ml VOA vials and two 1-liter amber bottles from each of the three wells in the following order: MW-3, MW-2, MW-1.
No Trip blanks necessary.

Store water in two 55 gallon drums at location shown on site plan.
Label drums as purged groundwater, Dongary Investments/FDGTI, and date. Note total number of drums stored at the site.

SUBMIT GROUNDWATER SAMPLES TO WEST LABORATORY, DAVIS, CA

Fill out COC and request BTEX, TPH-G, and TPH-D on a one week TAT

EQUIPMENT NEEDED:

Health & Safety Site Plan

Two 55 gallon drums, Nine 40 ml VOAs, Six 1 liter amber bottles (Bring extra containers)

Bailers to purge water from 4" wells and three disposable bailers **NO PUMPS**

1/2", 9/16", and 15/16" sockets

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

RECEIVED

APR - 3 1997

PROJECT MANAGER, Jaff Auchterlonie AUTHORIZATION
file:WkReq3.wk1

FAXED
3/24/97
JC

SITE VISITATION REPORT

Project: Ringsby Terminals, Oakland, CA Date: 3/19/97 Project No: 02070 0205 030522
 Name(s): HECTOR MERINO Did you call in? Yes No
 Arrival Time: 9:30 Departure Time: 12:00 Who did you call? BRUCE BEALE
 Weather Notations: SUN CLOUDY RAIN SNOW Temperature 65° OF

PURPOSE OF VISIT

<input checked="" type="checkbox"/>	GAUGE WELLS	<input type="checkbox"/>	SURVEY	<input type="checkbox"/>	INSTALL EQUIPMENT
<input type="checkbox"/>	BAIL SEPARATE-PHASE	<input type="checkbox"/>	MONITOR VAPORS	<input type="checkbox"/>	INSTALL SYSTEM
<input type="checkbox"/>	SAMPLE A/S INF EFF	<input type="checkbox"/>	SAMPLE CARBON	<input type="checkbox"/>	
<input type="checkbox"/>	SYSTEM CHECK	<input type="checkbox"/>	BATCH FEED	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	SAMPLE WELLS	<input type="checkbox"/>	EQUIPMENT REPAIR	<input type="checkbox"/>	

DRUM INVENTORY

<input type="checkbox"/>	WATER	<input type="checkbox"/>	CARBON	<input type="checkbox"/>	TOTAL OPEN TOP
<input type="checkbox"/>	SOIL	<input type="checkbox"/>	EMPTY	<input type="checkbox"/>	TOTAL BUNG TOP

SAMPLE INFORMATION

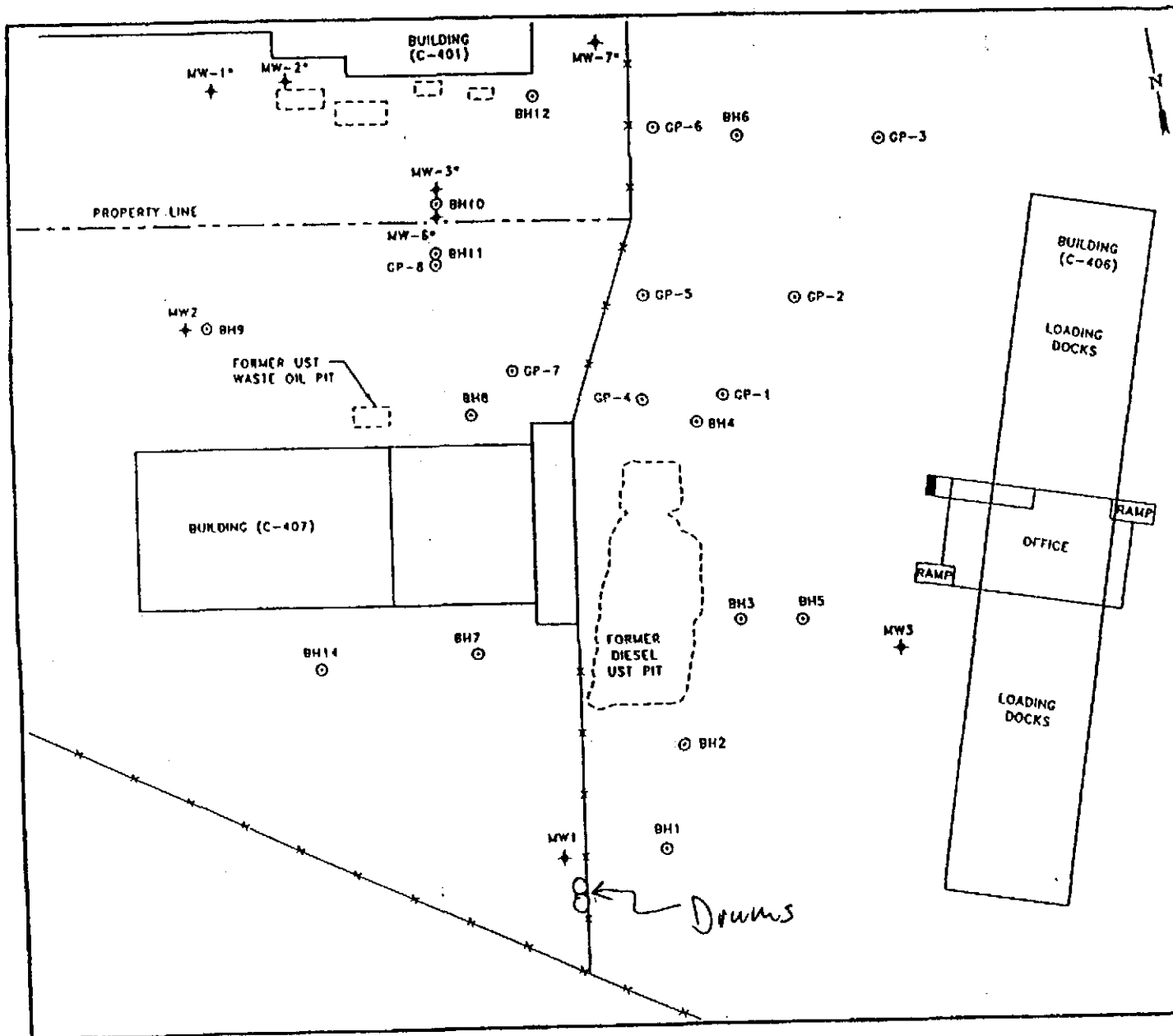
SAMPLED: YES NO PARAMETERS: _____
 STATION NO: _____
 WATER SOIL LABORATORY: _____
 AIR OTHER LAB RELEASE NO: _____

REMEDIATION SYSTEM

FLOW TOTALIZER: _____ AIR VELOCITY: _____
 FLOW RATE: _____ PID INF: _____
 % LEL: _____ PID EFF: _____

DESCRIPTION OF ACTIVITIES ON SITE AND NOTES

MONITORED & SAMPLED MW-1-2-3 ALL WENT WELL.
Bailed ABOUT 1 gal worth of silt/sand from MW3. Well was
obstructed @ 11.5 NOT 9.6 FEET. POSSIBLE BLOCKAGE MAY BE SAND?
THESE ARE FOUR DRUMS ON SITE 3 FULL 1 HAS 35 GALLONS.
ALL CAPS & LOCKS IN GOOD CONDITION. MW2 WAS MISSING 9/16 BOLT.
INSTALLED 2 NEW ONES.



LEGEND

- x — x — x — FENCE
- ⊕ GROUNDWATER MONITORING WELL
- ⊙ SOIL BORING LOCATIONS
- - - - - FORMER UST LOCATIONS
- PORT OF OAKLAND WELLS

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

FLUOR DANIEL BTI			
SITE MAP			
CLIENT: RINGSBY TERMINALS INC.			
LOCATION: 2225 7th STREET OAKLAND, CALIFORNIA			
FILE: 00615MB2 (1:50)	PROJECT NO.: 02070-0205		
REV:			
DES.: JA	DET.: SWL	DATE: 4/18/95	FIGURE: 2
PM: SSA	PC/RG: CBS		

03/13/97 13:39 FAX 916 572 8781 FLUOR DANIEL 011 744 FUGIA BAKALICZ

Purge Sheet

JOB NAME: Ringsby Terminal
2225 7th Street, Oakland, CA

JOB NUMBER: 02070-0205-030504

Name: HECTOR MERVINO

Well ID: MW-3

DTW Measurements:

Instrument Used:

Well Diameter: 4

Initial: 7.95 6.99

YSI: X

Purge Method: _____

TD: 11.15

Hydac: _____

Recharge: _____

Other: _____

Well Volume: 8.3

Time	Temp		Conductivity µmhos/cm	pH	Purge Volume (Gallons)	Turbidity	Comments
	C	F					
10:35	17.0		1.31	6.17	0	CLOUDY	VERY SILTY
10:35	16.8		1.37	6.59	4	↓	↓
10:38	16.8		1.48	6.85	6	↓	↓
10:40	16.8		1.47	6.80	10	↓	↓

Purge Sheet

JOB NAME: Ringsby Terminal
 2225 7th Street, Oakland, CA

JOB NUMBER: 02070-0205-030504

Name: HECTOR MORALES

Well ID: MW-2

DTW Measurements:

Instrument Used:

Well Diameter: 4

Initial: 8.85 5.90

YSI: X

Purge Method: HANDBAIL

TD: 14.60

Hydac: _____

Recharge: _____

Other: _____

Well Volume: 16

Time	Temp		Conductivity µM/cm	pH	Purge Volume (Gallons)	Turbidity	Comments
	C	F					
10:38	17.3		2.32	6.71	0	CLOUDY	GREY
10:00	17.3		2.72	7.01	5	↓	↓
11:02	17.4		2.75	7.04	10	↓	↓
					15		Dry @ 10 gallons

Purge Sheet

JOB NAME: Ringsby Terminal
 2225 7th Street, Oakland, CA

JOB NUMBER: 02070-0205-030504

Name: Hector Merino

Well ID: MW-1

DTW Measurements:

Instrument Used:

Well Diameter: 4"

Initial: ~~5.48~~ 5.48

YSI: X

Purge Method: HAND BALL

TD: 14.90

Hydac: _____

Recharge: _____

Other: _____

Well Volume: 25

Time	Temp		Conductivity mS/cm μS/cm	pH	Purge Volume (Gallons)	Turbidity	Comments
	C	F					
11:15	16.8		1.06	7.18	0	CLOUDY	
11:16	16.4		1.24	7.19	5	↓	
11:19	16.2		1.33	7.20	10		
11:21	16.5		1.34	7.21	15		
					20		
					25		



1046 Olive Drive, Suite 2
Davis, CA 95616

Phone#: 916-753-9500
Fax#: 916-753-6091
Sample Receiving#: 916-757-0920

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: **BRUCE BEALE** Phone #: **(916) 379-4700**

Company/Address: **2225 TH ST. CARMICA.** FAX #:

Project Number: **916700005130504** P.O.#: Project Name: **P. INGERSBY TERMINAL**

Project Location: **HECTOR MERRINO** Sampler Signature:

ANALYSIS REQUEST

TAT
12 hour / 24 hour / 48 hour / 1 week / 2 weeks

For Lab Use ONLY

WEST Lab Number

Sample ID	Sampling		Container (Type/Amount)			Method Preserved				Matrix		BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/M8015)	TPH as Diesel (M8015)	TPH as Motor Oil (M8015)	EPA 601/8010	EPA 608/8080 - Pesticides	EPA 608/8080 - PCBs	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	LEAD(6010/7421/239.2)	Cd, Cr, Pb, Zn, Ni	W.E.T. <input checked="" type="checkbox"/>	TOTAL <input checked="" type="checkbox"/>		
	DATE	TIME	VOA	SLEEVE	1L GLASS	1L PLASTIC	HCl	HNO ₃	ICE	NONE	WATER															SOIL	
MW 3	3/	11:40	X	X ₂	X	X	X	X	X	X	X	X	X	X													
MW 2	1/19/	11:45	X	X ₂	X	X	X	X	X	X	X	X	X	X													
MW 1	1/97	11:50	X	X ₂	X	X	X	X	X	X	X	X	X	X													

Relinquished by: **[Signature]** Date: **3/19/97** Time: **11:25** Received by: **[Signature]**

Relinquished by: Date: Time: Received by:

Relinquished by: Date: Time: Received by Laboratory:

Remarks:

Bill To:

Attachment 4
Laboratory Reports and Chain-of-Custody Manifest

April 1, 1997
Sample Log 16621

Bruce Beale
Fluor Daniel GTI
1401 Halyard Drive Suite #140
West Sacramento, CA 95691

Subject: Analytical Results for 3 Water Samples
Identified as: Ringsby Terminal (Proj. # 020700205-030504)
Received: 03/21/97

Dear Mr. Beale:

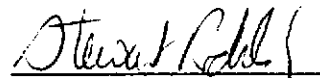
Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on April 1, 1997 and describes procedures used to analyze the samples.

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:



Stewart Podolsky
Senior Chemist

RECEIVED

APR 18 1997

April 1, 1997
Sample Log 16621

Bruce Beale
Fluor Daniel GTI
1401 Halyard Drive Suite #140
West Sacramento, CA 95691

Subject: Analytical Results for 3 Water Samples
Identified as: Ringsby Terminal (Proj. # 020700205-030504)
Received: 03/21/97

Dear Mr. Beale:

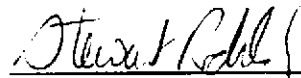
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Please refer to the following table(s) for summarized analytical results and contact us at 916-753-9500 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:



Stewart Podolsky
Senior Chemist

RECEIVED

APR 16 1997

April 1, 1997
Sample Log 16621

MTBE (Methyl-t-butyl ether) By EPA Method 8020/602

From : Ringsby Terminal (Proj. # 020700205-030504)
Sampled : 03/19/97
Received : 03/21/97
Matrix : Water

SAMPLE	Date Analyzed	(MRL) ug/L	Measured Value ug/L
MW-3	03/31/97	(5.0)	<5.0
MW-2	03/31/97	(5.0)	<5.0
MW-1	03/31/97	(5.0)	<5.0

Approved By:



Stewart Podolsky
Senior Chemist

Sample: MW-3

From : Ringsby Terminal (Proj. # 020700205-030504)

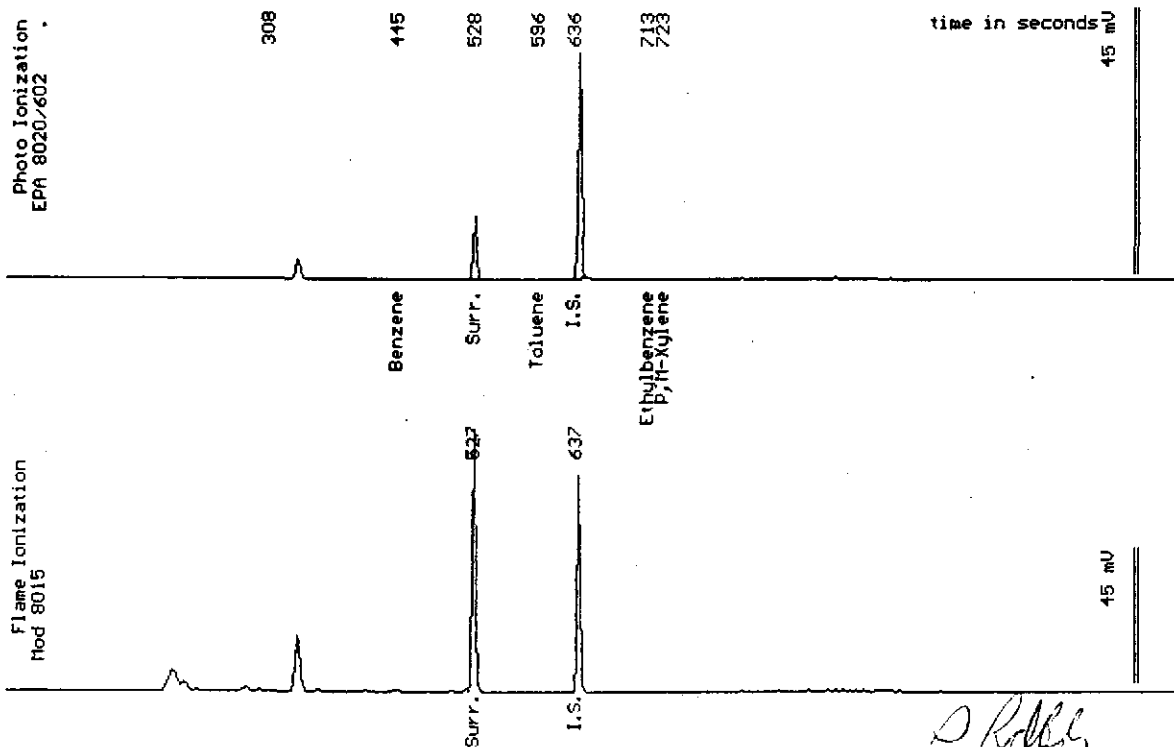
Sampled : 03/19/97

Dilution : 1:1

QC Batch : 2158Y

Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		97 %



Date Analyzed: 03-31-97
 Column : 0.53mm X 60m Restek Rtx-1301

Joel Kiff
 Joel Kiff
 Senior Chemist

Sample: MW-2

From : Ringsby Terminal (Proj. # 020700205-030504)

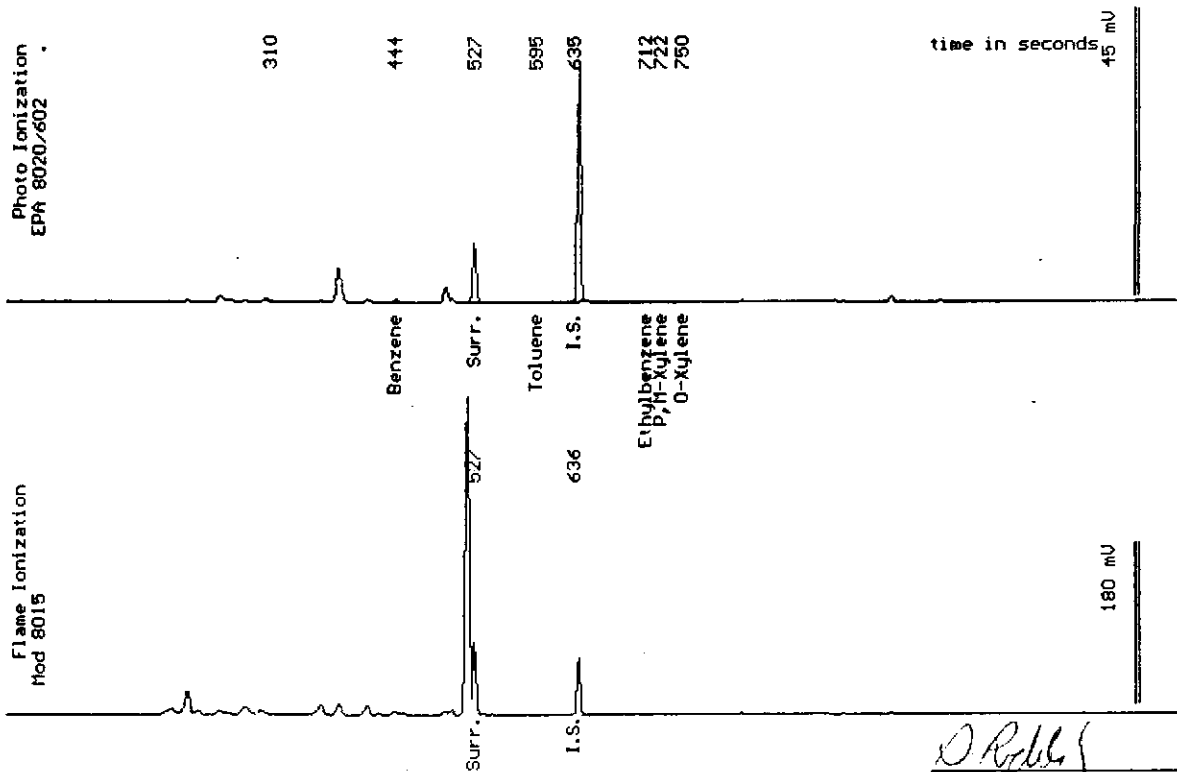
Sampled : 03/19/97

Dilution : 1:1

QC Batch : 2158Y

Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	150
Surrogate Recovery		98 %



Date Analyzed: 03-31-97
 Column : 0.53mm X 60m Restek Rtx-1301

Joel Kiff
 Joel Kiff
 Senior Chemist

Sample: MW-1

From : Ringsby Terminal (Proj. # 020700205-030504)

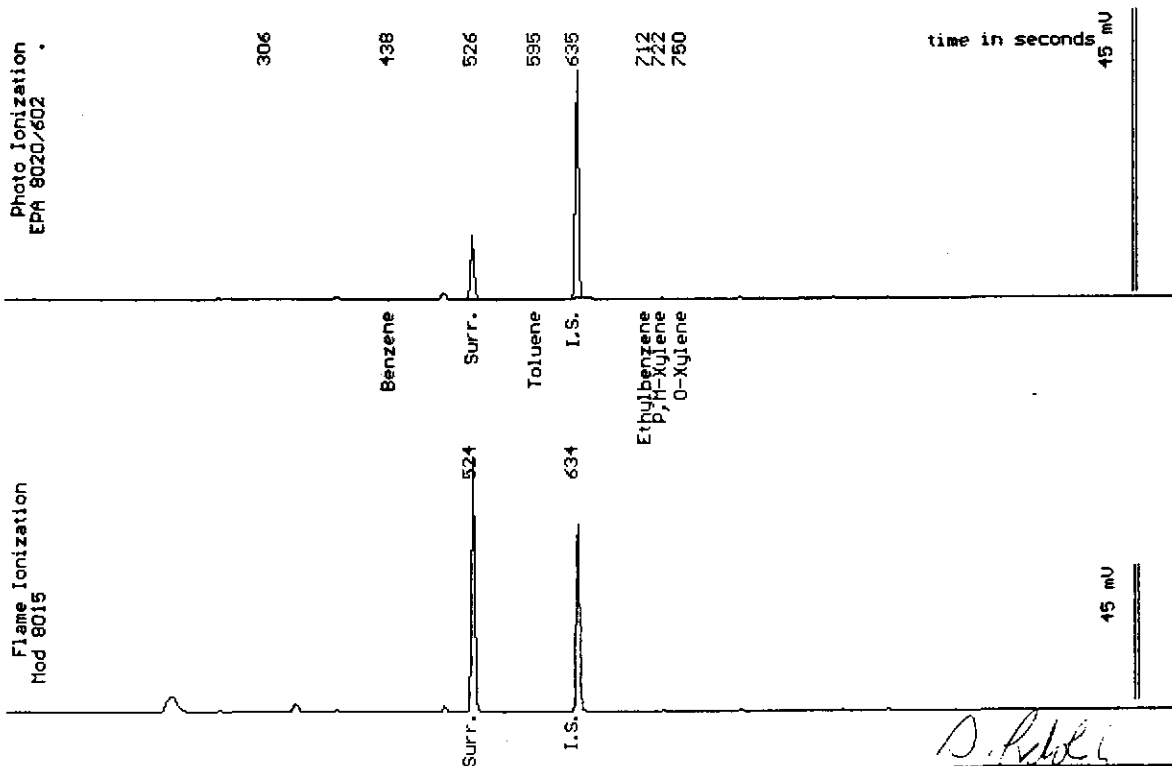
Sampled : 03/19/97

Dilution : 1:1

QC Batch : 2158Y

Matrix : Water

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



Date Analyzed: 03-31-97
 Column : 0.53mm X 60m Restek Rtx-1301

Joel Kiff
 Joel Kiff
 Senior Chemist

April 1, 1997
Sample Log 16621

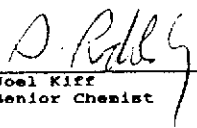
QC Report for EPA 602 & Modified EPA 8015
Run Log : 2158Y
From : Ringsby Terminal (Proj. # 020700205-030504)
Sample(s) Received : 03/21/97

Parameter	Matrix Spike % Recovery	Matrix Spike Duplicate % Recovery	RPD *
Benzene	96	115	18
Ethylbenzene	96	114	17
TPH as Gasoline	102	124	19

* RPD = Relative Percent Difference

Parameter	Laboratory Control Sample % Recovery
Benzene	105
Ethylbenzene	108
Gasoline	114

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


Joel Kiff
Senior Chemist

Sample: MW-3

From : Ringsby Terminal (Proj. # 020700205-030504)

Sampled : 03/19/97

Extracted: 03/25/97

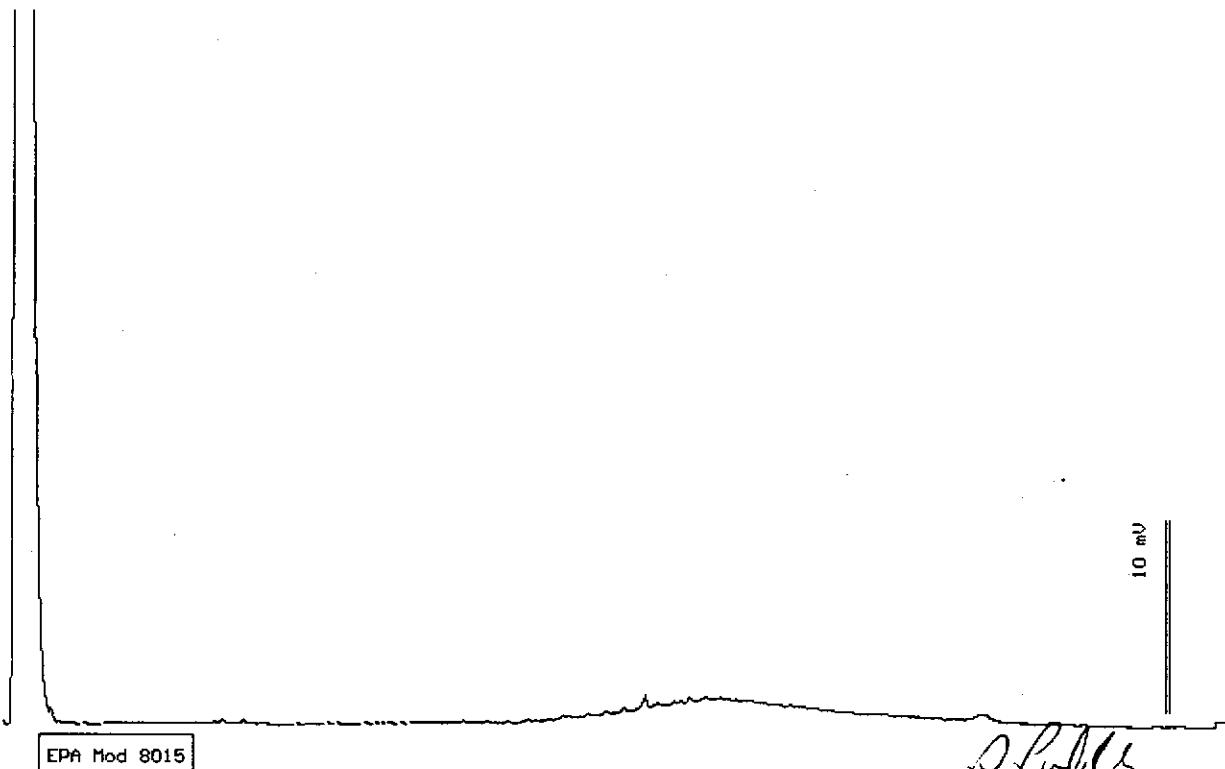
QC Batch : DW970305

Dilution : 1:1

Run Log : 7371A

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
TPH as Diesel	(50)	<50



Date: 03-26-97 Time: 01:47:03
Column : 0.53mm ID X 15m Rtx-1 (Restek Corporation)

Stewart Podolsky
Stewart Podolsky
Senior Chemist

Sample: MW-2

From : Ringsby Terminal (Proj. # 020700205-030504)

Sampled : 03/19/97

Extracted: 03/25/97

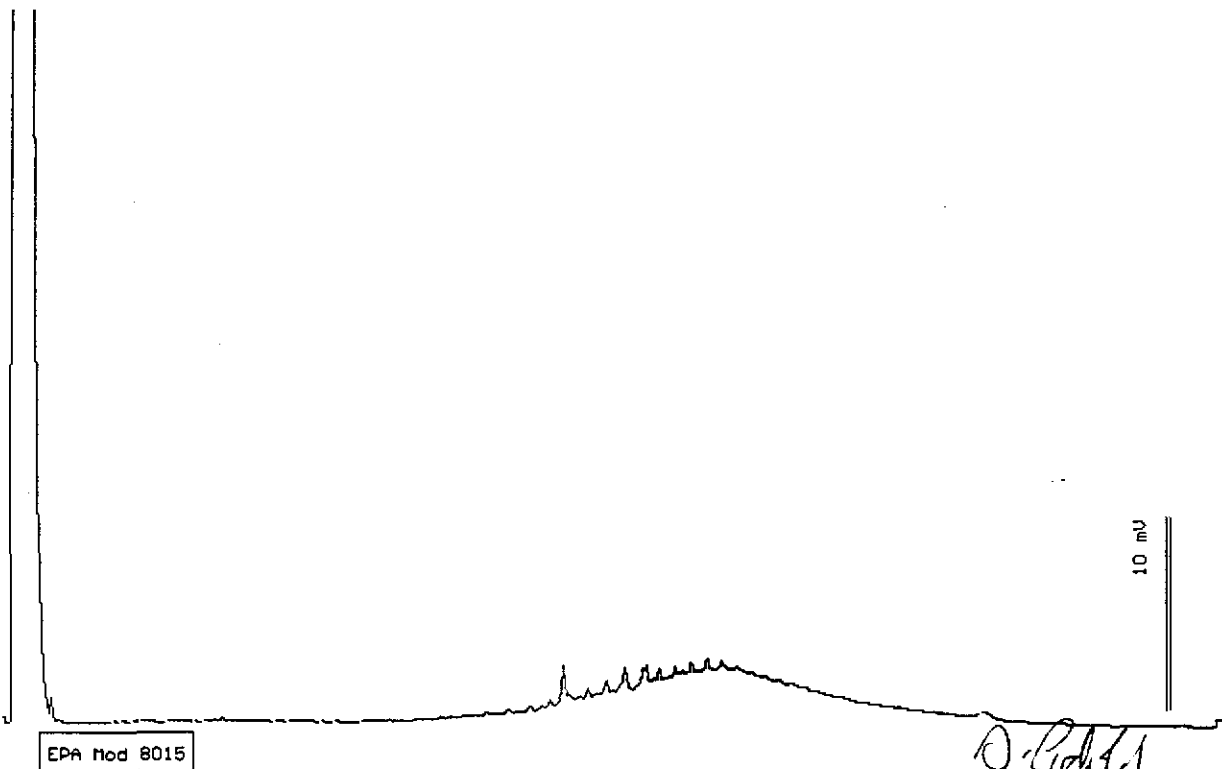
Dilution : 1:1

Matrix : Water

QC Batch : DW970305

Run Log : 7371A

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
TPH as Diesel	(50)	<50



Date: 03-26-97 Time: 02:55:05
Column : 0.53mm ID X 15m Rtx-1 (Restek Corporation)

Stewart Podolsky
Stewart Podolsky
Senior Chemist

Sample: MW-1

From : Ringsby Terminal (Proj. # 020700205-030504)

Sampled : 03/19/97

Extracted: 03/25/97

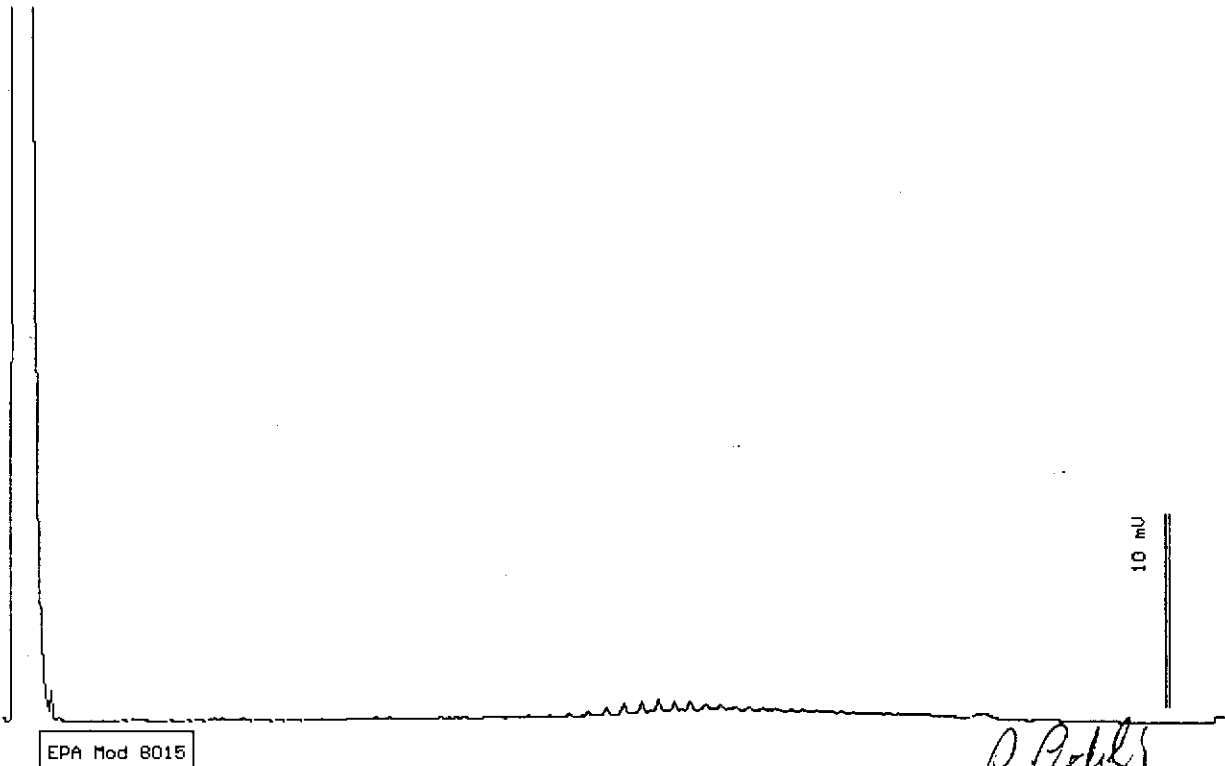
QC Batch : DW970305

Dilution : 1:1

Run Log : 7371A

Matrix : Water

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



Date: 03-26-97 Time: 03:29:09
Column : 0.53mm ID X 15m Rtx-1 (Restek Corporation)

Stewart Podolsky
Stewart Podolsky
Senior Chemist

March 28, 1997
Sample Log 16621

QC Report
TPH Diesel/Motor Oil by 8015 Mod

From : Ringsby Terminal

QC Batch DW970305

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	100	101	1

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



1046 Olive Drive, Suite 2
Davis, CA 95616

Phone#: 916-753-9500
Fax#: 916-753-6091
Sample Receiving#: 916-757-0920

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: **BRUCE BEALE** Phone #: **(916) 378-4700**

Company/Address: **2225 7TH ST. OAKLAND CA.** FAX #:

Project Number: **020700205-030504** P.O.#: Project Name: **RINGSBY TERMINAL**

Project Location: **HECTOR MERRINO** Sampler Signature:

ANALYSIS REQUEST

For Lab Use ONLY

Sample ID	Sampling		Container (Type/Amount)			Method Preserved				Matrix		
	DATE	TIME	VOA	SLEEVE	1L GLASS	1L PLASTIC	HCl	HNO3	ICE	NONE	WATER	SOIL
MW 3	3/19/97	11:40	X3	X2	X2	X2	X	X	X	X	X	X
MW 2	3/19/97	11:45	X3	X2	X2	X2	X	X	X	X	X	X
MW 1	3/19/97	11:50	X3	X2	X2	X2	X	X	X	X	X	X

BTEX (602/8020)	<input checked="" type="checkbox"/>
BTEX/TPH as Gasoline (602/8020/M8015)	<input checked="" type="checkbox"/>
TPH as Diesel (M8015)	<input checked="" type="checkbox"/>
TPH as Motor Oil (M8015)	<input checked="" type="checkbox"/>
EPA 601/8010	<input checked="" type="checkbox"/>
EPA 608/8080 - Pesticides	<input checked="" type="checkbox"/>
EPA 608/8080 - PCBs	<input checked="" type="checkbox"/>
EPA 624/8240	<input checked="" type="checkbox"/>
EPA 625/8270	<input checked="" type="checkbox"/>
CAM - 17 Metals	<input checked="" type="checkbox"/>
LEAD(60107/421/239.2)	<input checked="" type="checkbox"/>
Cd, Cr, Pb, Zn, Ni	<input checked="" type="checkbox"/>

TAT 1 week / 2 weeks
12 hour / 24 hour / 48 hour / 1 week / 2 weeks

16621 WEST Lab Number

01
02
03

Relinquished by: *[Signature]* Date Time: 3/19/97 11:25
 Relinquished by: *[Signature]* Date Time: 03/21/97 1230
 Relinquished by: *[Signature]* Date Time: 03/21/97 1230

Received by: *[Signature]*
 Received by: *[Signature]*
 Received by Laboratory: *[Signature]*

Remarks: DATE 03/21/97 1230
 Bill To: