FLUOR DANIEL GTI

ENVIRONMENTAL PROTECTION
96 NOV -5 PM 2:34

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: 11/04/96 JOB NO. 02070-00205
FROM: Jaff Auchterlonie JSA.
RE: Ringsby Terminals- Port of Oakland
2225 7th Street
Oakland, California

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

ORIGINALS	COPIES	DATE	DESCRIPTION
1		11/04/96	Third Quarter 1996 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 Quarterly Monitoring and Sampling report. With your approval, copies of this report will be mailed as noted below. If you have any comments or questions, please call.

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

qrttran.wkt

FLUOR DANIEL GTI

November 4, 1996

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

Subject: Third Quarter 1996 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 October 14, 1996, 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 results of analyses of groundwater samples collected since January 1993, are summarized in Table 1 (Attachment 2). The 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 October 14, 1996, 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 October 14, 1996, and no third quarter 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

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

hydrocarbons were noted in the three Ringsby Terminals groundwater monitoring wells. Groundwater monitoring and sampling field notes are included in Attachment 3.

Groundwater Gradient and Flow Direction

On October 14, 1996, the groundwater elevations in all three wells were approximately 0.5 foot lower than on June 25, 1996 (Table 1). The calculated groundwater flow on October 14, 1996, was south 77 degrees west at a gradient of 0.0005 foot per foot (Figure 3).

Since January 15, 1993, 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 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 602/5030/modified 8015.

Wastewater

A total of 30 gallons of water was purged from the monitoring wells and stored in one 55-gallon drum labeled "Ringsby, non-hazardous well purge water, 10/14/96." Three drums of purged groundwater are now stored on site.

Groundwater Analytical Results

Laboratory analytical results for groundwater samples collected on October 14, 1996 are summarized in Table 1. No BTEX, MTBE, TPH-G 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.

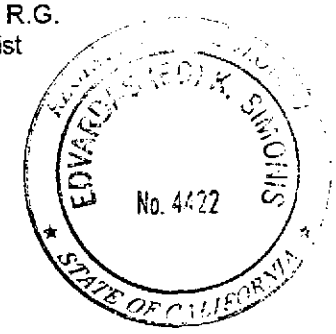
Please contact Fluor Daniel GTI's West Sacramento office if you have questions or comments regarding this quarterly report.

Sincerely,
Fluor Daniel GTI, Inc.
Submitted by:

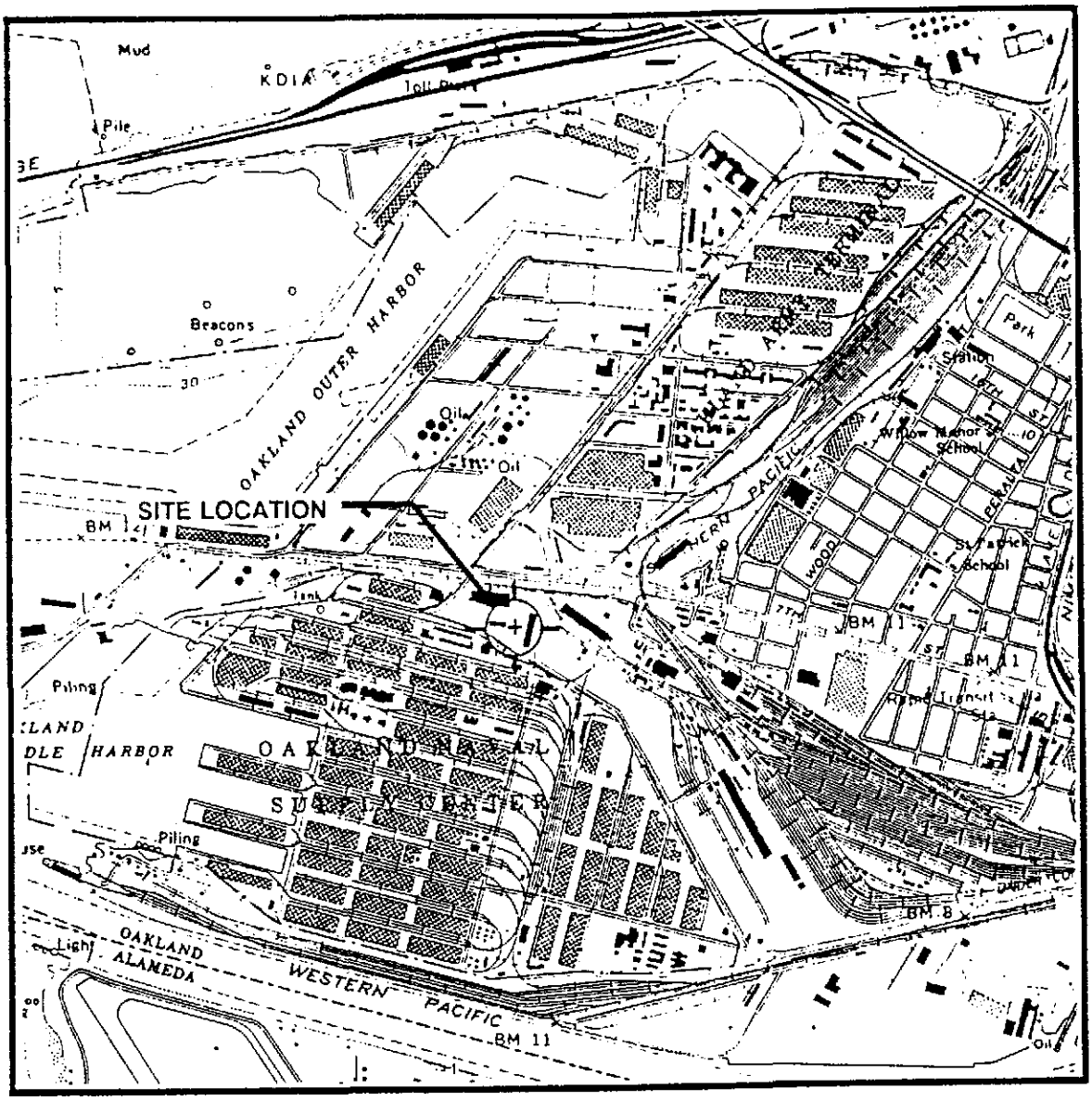
Jaffrey S. Auchterlonie
Lead Geologist
Project Manager

Fluor Daniel GTI, Inc.
Approved by:

Ed K. Simonis, R.G.
Senior Geologist



Attachments
1. Figures
2. Table 1
3. Groundwater Monitoring and Sampling Field Notes, October 14, 1996
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

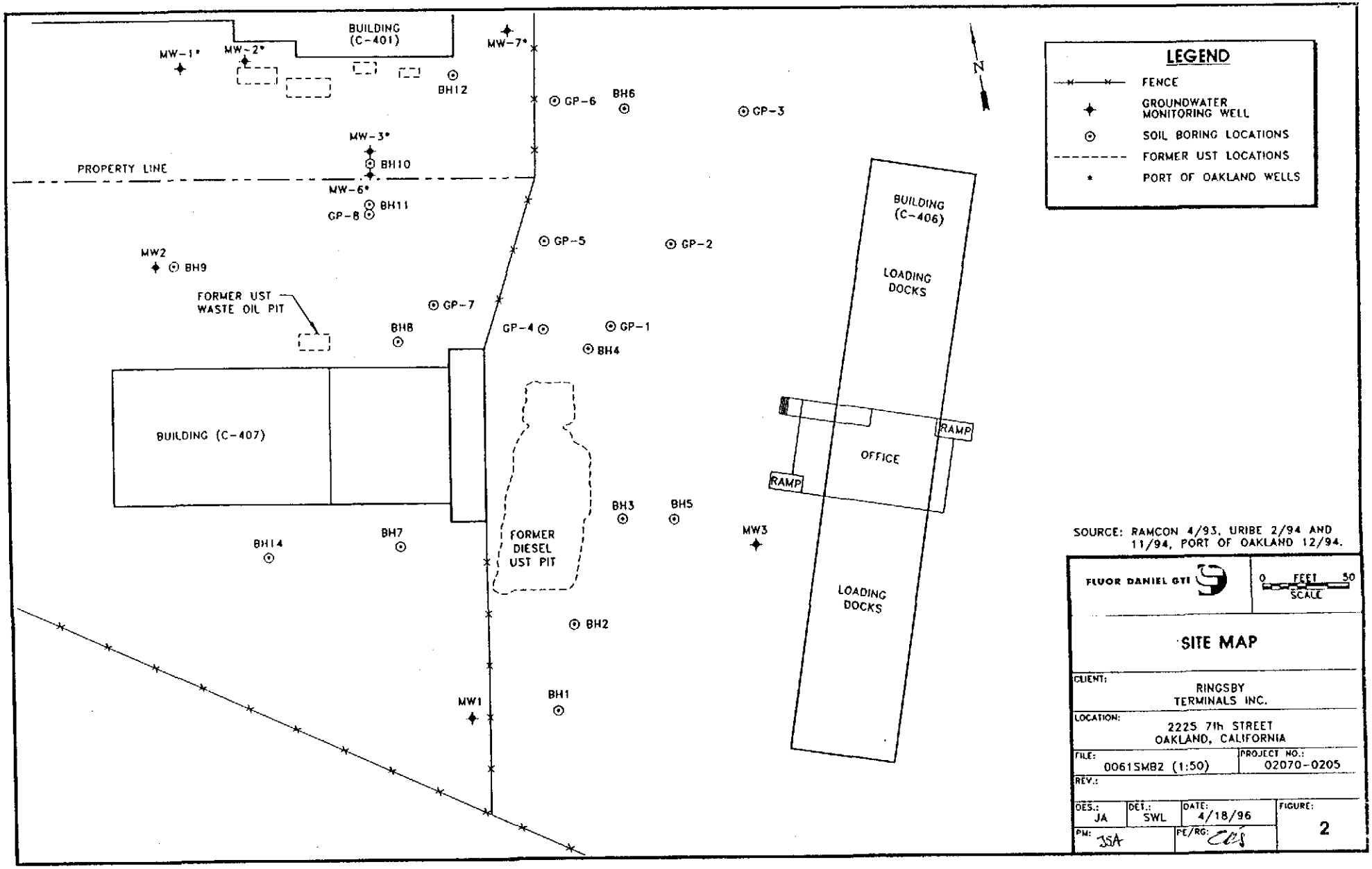
0 2,000 4,000

SCALE FEET

FLUOR DANIEL GTI

SITE LOCATION MAP

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



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

FLUOR DANIEL GTI

0 FEET 50
SCALE

SITE MAP

CLIENT: RINGSBY TERMINALS INC.

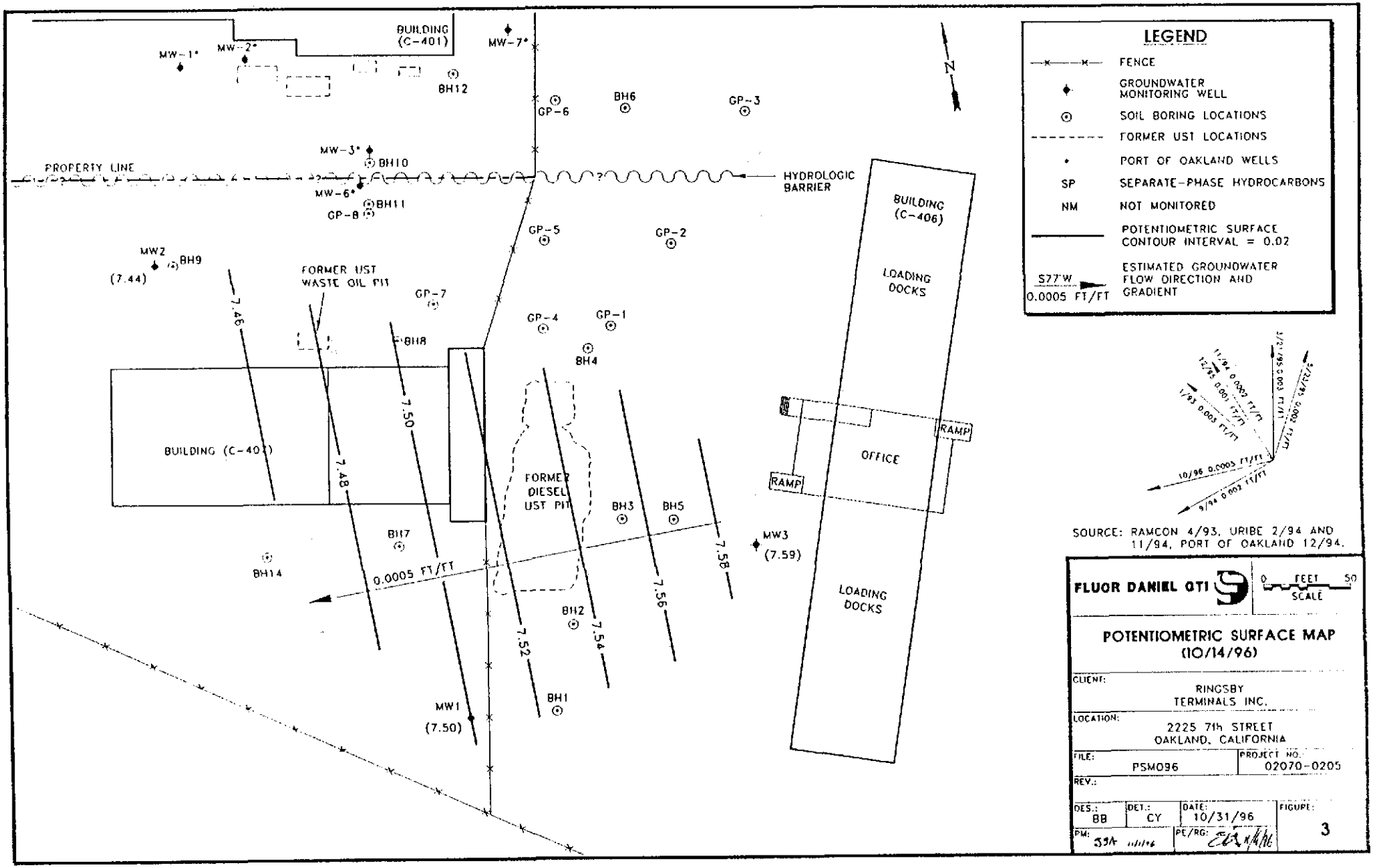
LOCATION: 2225 7th STREET OAKLAND, CALIFORNIA

FILE:	PROJECT NO.:
0061SMB2 (1:50)	02070-0205

REV.:

DES.:	DET.:	DATE:	FIGURE:
JA	SWL	4/18/96	2

PM: JSA PE/RG:



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

FLUOR DANIEL GTI

0 FEET 50
SCALE

POTENTIOMETRIC SURFACE MAP (10/14/96)

CLIENT: RINGSBY TERMINALS INC.

LOCATION: 2225 7th STREET OAKLAND, CALIFORNIA

FILE:	PROJECT NO.
PSM096	02070-0205

REV.:

DES.:	DET.:	DATE:	FIGURE:
BB	CY	10/31/96	3

PM: SSA 11/1/96 PE/RG: 11/4/96

Table 1
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	01/15/93	< 0.3	< 0.3	< 0.3	< 0.3	< 50 ~	< 50	--	--	5.21	0.00	8.51
13.72	09/12/94	0.5	< 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
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	0.5	< 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	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
	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
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
	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

FLUOR DANIEL GTI

Table 1
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*	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
	12/27/95	--	--	--	--	--	--	--	--	9.04	0.53	5.56
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-2*	11/30/94	--	--	--	--	--	--	--	--	8.91	0.00	5.45
14.36	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*	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
	12/27/95	--	--	--	--	--	--	--	--	12.71	4.70	5.62
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-4*	03/29/95	--	--	--	--	--	--	--	--	9.59	0.00	3.56
13.15	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*	09/28/95	< 0.4	< 0.3	< 0.3	< 0.4	< 50	< 300	2,000	--	6.56	0.00	6.93
13.49	12/27/95	--	--	--	--	--	--	--	--	7.71	0.00	5.78
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-6*	09/28/95	12	1	9	6	2,400 c	8,400	8000 e	--	7.74	0.00	6.26
14.00	12/27/95	--	--	--	--	--	--	--	--	8.07	0.00	5.93
	03/25/96	--	--	--	--	--	--	--	--	--	--	--

FLUOR DANIEL GTI

Table 1
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-7*	09/28/95	< 0.4	< 0.3	< 0.3	< 0.4	< 50	390 d	1,200	--	9.74	0.00	4.61
14.35	12/27/95	--	--	--	--	--	--	--	--	9.06	0.00	5.29
	03/25/96	--	--	--	--	--	--	--	--	--	--	--
MW-8*	09/28/95	--	--	--	--	--	--	--	--	8.91	0.12	4.14
12.94	12/27/95	--	--	--	--	--	--	--	--	8.61	0.31	4.60
	03/25/96	--	--	--	--	--	--	--	--	--	--	--

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, 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
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

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)

FLUOR DANIEL GTI

Attachment 3

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: 10/~~10~~14/96

DATE PREPARED: 10/01/96

PREPARED FOR: Field Services

PREPARED BY: Bruce Beale

WORK DESCRIPTION: MONITOR AND SAMPLE THREE MONITORING WELLS

Monitoring well seals must be installed at site, please call Jaff Auchterlonie for details

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.

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

PROJECT MANAGER, Jaff Aushterlonie AUTHORIZATION

10/16/96

file:WkReq3.wk1

SITE VISITATION REPORT

Project: Ringsby Terminals, Oakland, CA Date: 10/14/96 Project No 02070 0205 030522

Name(s) Greg Mason Did you call in? (Yes) No

Arrival Time: 10:15 Departure Time: 14:00 Who did you call? Bruce B

Weather Notations: (SUN) CLOUDY RAIN SNOW Temperature 75 °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

3	WATER		CARBON	TOTAL OPEN TOP	
	SOIL		EMPTY	TOTAL BUNG TOP	

SAMPLE INFORMATION

SAMPLED: ✓ YES NO

✓ WATER SOIL

AIR OTHER

PARAMETERS:

STATION NO:

LABORATORY:

LAB RELEASE NO:

REMEDIATION SYSTEM

FLOW TOTALIZER:

FLOW RATE:

% LEL:

AIR VELOCITY:

PID INF:

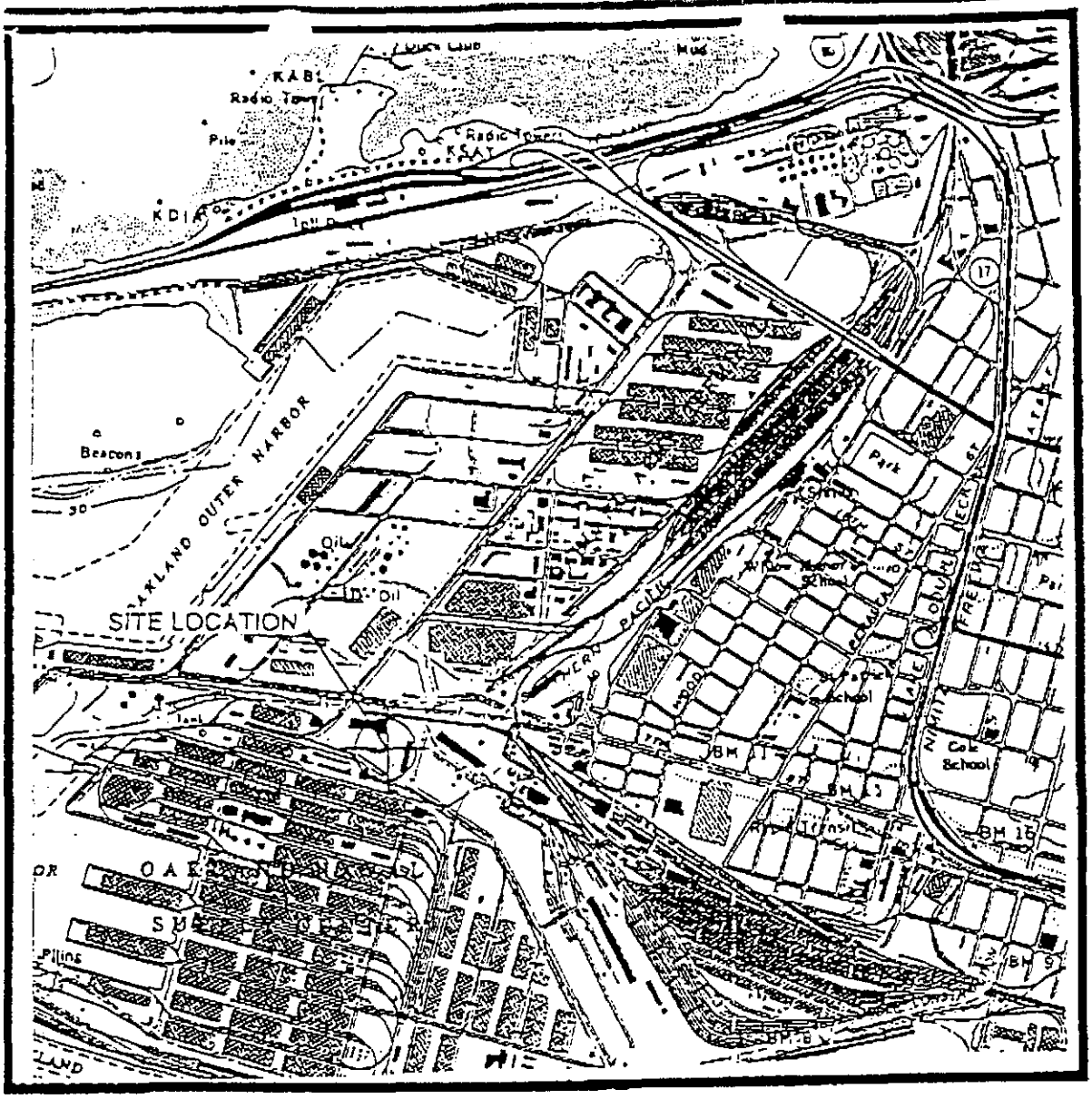
PID EFF:

DESCRIPTION OF ACTIVITIES ON SITE AND NOTES

* 3 full Barrels on site

Need To dispose of

near MW-1.



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

QUADRANGLE LOCATION

SCALE 1:24,000

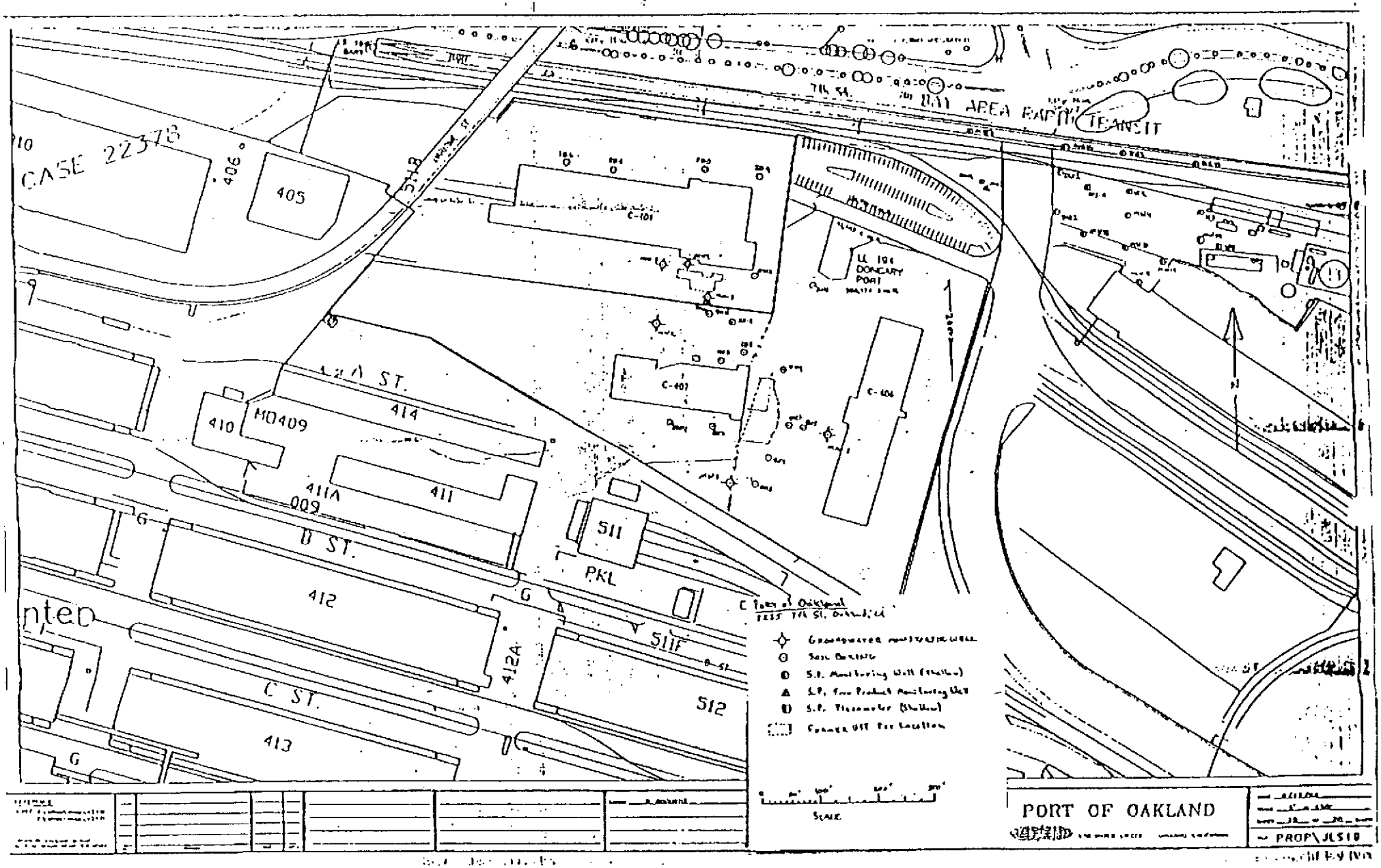
0 2,000 4,000

SCALE FEET

GROUNDWATER TECHNOLOGY

SITE LOCATION MAP

CLIENT: DONGARY INVESTMENTS TRUCKING FACILITIES	FILE: 0061-SL (1:1)	PROJECT NO.: 02070-0061	PM: SSA	PE/RG: EJS
LOCATION: 2225 7th STREET OAKLAND, CA.	REV.			FIGURE: 1
	DES.: BB	DET.: SP	DATE: 9/20/94	


CASE 22378
406
405
410
MO409
414
411A
009
411
511
PKL
412
412A
511F
512
413
B ST.
C ST.
7th St.
BART
AREA RAPID TRANSIT
C-101
C-402
C-404
U.P. 196
DONCARTY
PORT
City of Oakland
1333 7th St. Oakland, CA
Groundwater monitoring well
Soil Boring
S.P. Monitoring Well (Shallow)
S.P. Free Product Monitoring Well
S.P. Piezometer (Shallow)
Former UST Pit Location
SCALE
PORT OF OAKLAND
PROP\JLS10

GROUNDWATER GAUGING FORM

JOB NAME: Ringsby Terminals, Oakland, CA
JOB NUMBER: 02070-0205-030504
IP#: 2225 7th Street, Oakland, CA.
DATE: 10/14/96
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 locking cap or street box repa
MW-1	14.95	4"	97.72'	6.22					
MW-2	15.80	4"	98.59'	6.36					
MW-3	11.60	4"	99.22	7.47					Obstruction @ 9.6 ft

Project Name: Ringsby Terminals

Date: 5/14/96

Site Address: 2225 7th St., Oakland

Page 3 of 3

Project Number: 020700205.030504

Project Manager: Jaff Auchterlonie

Well ID: MW-1

Well Diameter: 4

DTW Measurements: Initial: 6.22 Recharge: _____ DTB: 14.95

Calc Well Volume: 23 gal

Well Volume: _____ gal

Purge Method
Peristaltic_____
Gear Drive_____
Submersible_____

Pump Depth_____ft.
Hand Bailed ✓
Air Lift_____
Other_____

Instruments Used
YSI: ✓
Hydac: _____
Omega: _____
Other: _____

Time	Temp C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	22.5	1.54	7.38	2		
	21.8	1.63	7.01	7		
	21.7	1.69	6.93	13		DRY

Project Name: Ringsby Terminals

Date: 10/14/96

Site Address: 2225 7th St., Oakland

Page 2 of 3

Project Number: 020700205.030504

Project Manager: Jaff Auchterlonie

Well ID: MW-2

Well Diameter: 4

DTW Measurements:
Initial: 6.36
Recharge:
DTB: 15.80

Calc Well Volume: 25 gal
Well Volume: gal

Purge Method
Peristaltic
Gear Drive
Submersible

Pump Depth ft.
Hand Bailed ✓
Air Lift
Other

Instruments Used
YSI: ✓
Hydac:
Omega:
Other:

Time	Temp ✓ C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
	23.4	3.14	6.42	2		
	22.4	3.64	6.31	6		
	22.3	3.73	6.4	12		DRY

Project Name: Ringsby Terminals

Date: 10/14/96

Site Address: 2225 7th St., Oakland

Page 1 of 3

Project Number: 020700205.030504

Project Manager: Jaff Auchterlonie

Well ID: MW-3

Well Diameter: 4

DTW Measurements:
Initial: 7.47
Recharge: _____
DTB: 11.60

Calc Well Volume: 11 gal
4 Well Volume: _____ gal

Purge Method
Peristaltic_____
Gear Drive_____
Submersible_____

Pump Depth _____ ft.
Hand Bailed ↘
Air Lift_____
Other_____

Instruments Used
YSI: ↘
Hydac: _____
Omega: _____
Other: _____

Time	Temp ↘ C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
12:45	22.0	1.94	6.40	1		
12:47	21.1	2.00	6.35	5		
						7 Dry

Western Environmental Science & Technology

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: Jeff Northerline

Phone #: (916) 372-4702

Company/Address: 1401 Halyard Drive Ste 110, W. Sacramento, CA 95691

FAX #:

Project Number: [illegible]

P.O.#:

Project Name: Kingsby Terminals

Project Location: [illegible]

Sampler Signature:

ANALYSIS REQUEST

For Lab Use ONLY

Sample ID	Sampling DATE	Sampling TIME	Container (Type/Amount) VOA	SLEEVE	1L GLASS	1L PLASTIC	Method Preserved HCl	HNO_3	ICE	NONE	Matrix WATER	SOIL	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 - PCB's	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	LEAD(6010/7421/239.2)	Cd, Cr, Pb, Zn, Ni	W.E.T. (✓)	TOTAL (✓)	TAT 12 hour / 24 hour / 48 hour / 1 week / 2 weeks	WEST Lab Number
MW-3	10/14/16		3		2		X		X	X	X			X	X													
			3				X		X		X			X														
			2		2				X	X	X				X													
			3				X		X		X			X														
			2		2				X	X	X				X													

Relinquished by: [signature] Date 10/15 Time 1509 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

WEST LABORATORY

October 18, 1996
Sample Log 15755

Jaff Auchterlonie
Fluor Daniel GTI
1401 Halyard Dr., Suite 140
West Sacramento, CA 95691

Subject: Analytical Results for 3 Water Samples
Identified as: Ringsby Terminals (Proj. # 020700205.030504)
Received: 10/15/96

Dear Mr. Auchterlonie:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on October 18, 1996 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

RECEIVED
OCT 24

WEST LABORATORY

Sample Log 15755

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

From : Ringsby Terminals (Proj. # 020700205)
Sampled : 10/14/96
Received : 10/15/96
Matrix : Water

MTBE	(MRL) ug/L	Measured Value ug/L
MW-3	(5.0)	<5.0
MW-2	(5.0)	<5.0
MW-1	(5.0)	<5.0

Approved By:

Joel Kiff
Senior Chemist

WEST LABORATORY

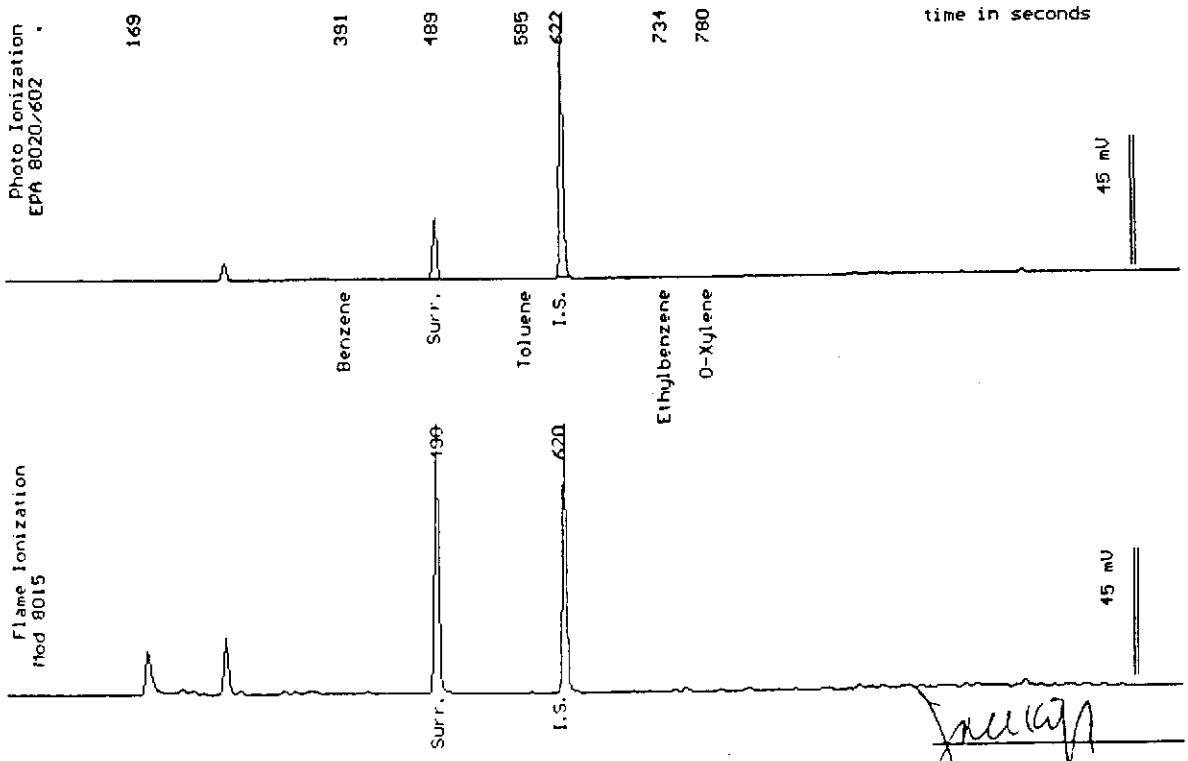
Sample Log 15755

15755-01

Sample: **MW-3**

From : Ringsby Terminals (Proj. # 020700205)
Sampled : 10/14/96
Dilution : 1:1 QC Batch : 4154J
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		101 %



Date Analyzed: 10-17-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

WEST LABORATORY

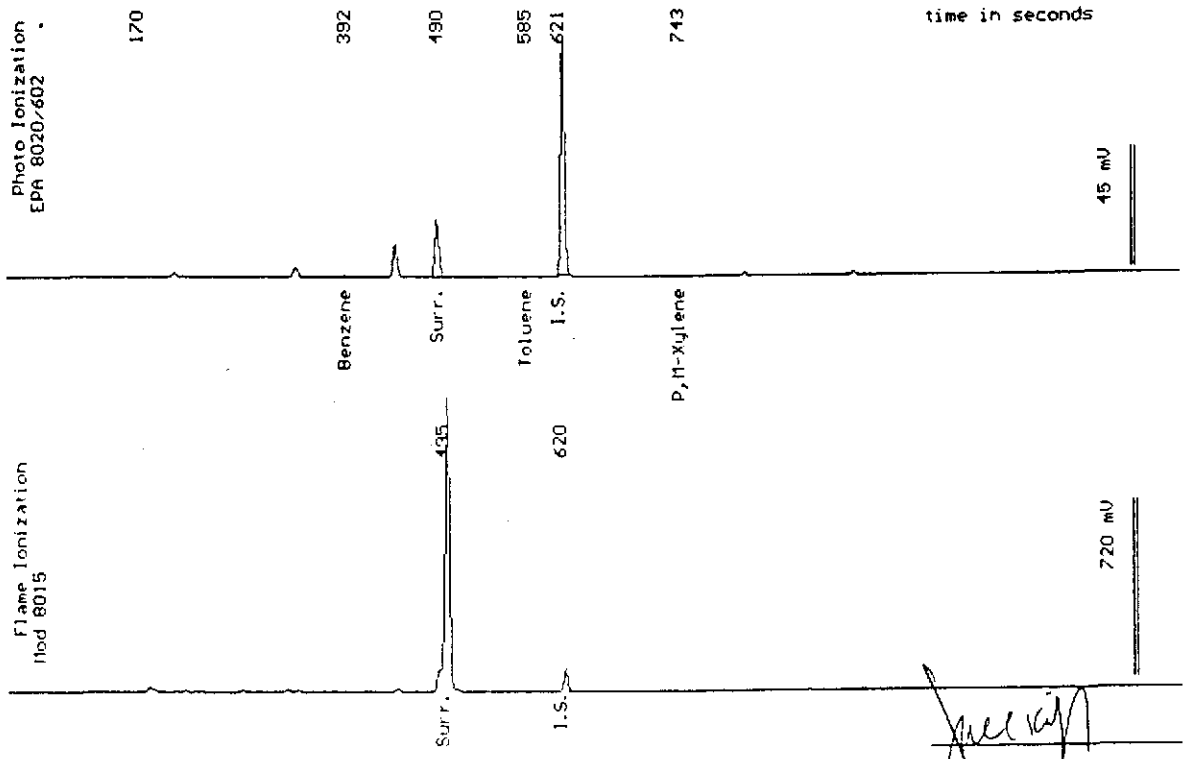
Sample Log 15755

15755-02

Sample: **MW-2**

From : Ringsby Terminals (Proj. # 020700205)
Sampled : 10/14/96
Dilution : 1:1 QC Batch : 4154J
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		101 %



Date Analyzed: 10-17-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

WEST LABORATORY

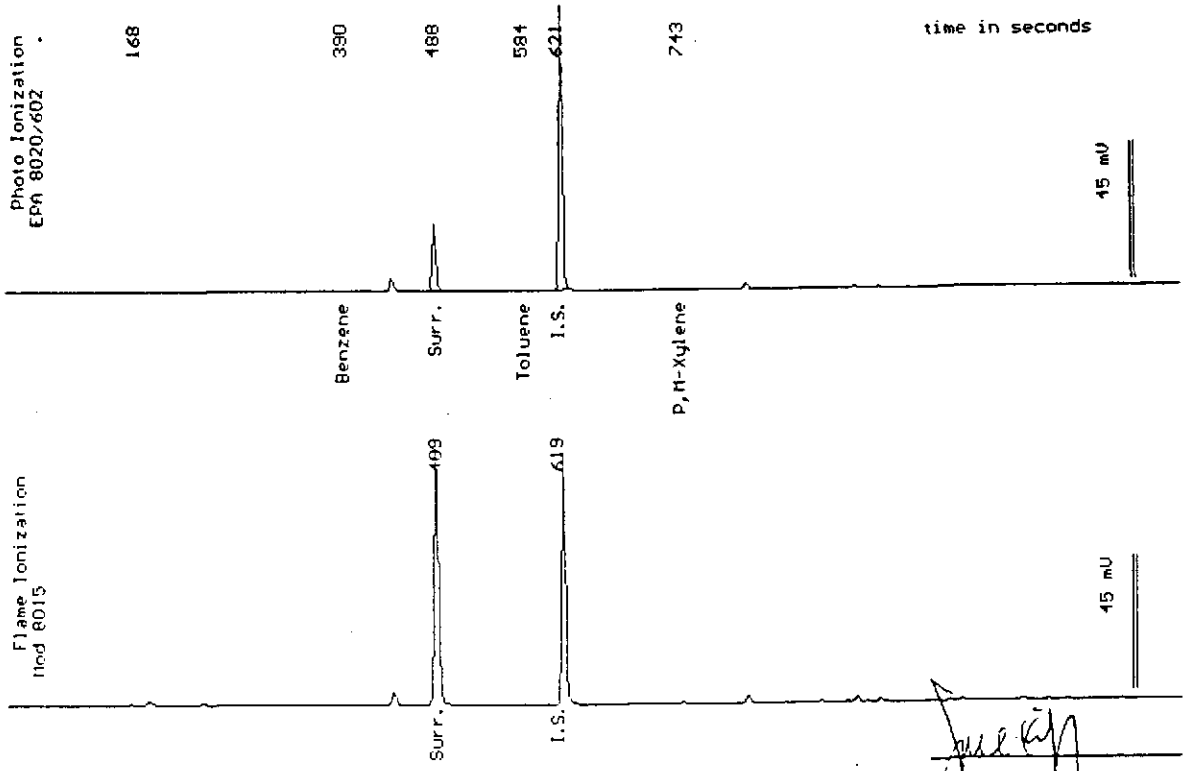
Sample Log 15755

15755-03

Sample: **MW-1**

From : Ringsby Terminals (Proj. # 020700205)
Sampled : 10/14/96
Dilution : 1:1 QC Batch : 4154J
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		99 %



Date Analyzed: 10-17-96
Column : 0.53mm ID X 60m Restek Rtx-1701

Joel Kiff
Senior Chemist

WEST LABORATORY

October 18, 1996
Sample Log 15755

QC Report for EPA 602 & Modified EPA 8015
Run Log : 4154J
From : Ringsby Terminals (Proj. # 020700205)
Sample(s) Received : 10/15/96

Parameter	Matrix Spike % Recovery	Matrix Spike Duplicate % Recovery	RPD *
Benzene	87	94	8
Ethylbenzene	86	94	9
TPH as Gasoline	105	111	6

* RPD = Relative Percent Difference

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

WEST LABORATORY

October 16, 1996
Sample Log 15755

QC Report
TPH Diesel/Motor Oil by 8015 Mod

From : Ringsby Terminals (Project # 020700205)

QC Batch DW961006 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	83	82	1

Method Blank

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

P Podolsky

Stewart Podolsky
Senior Chemist

WEST LABORATORY

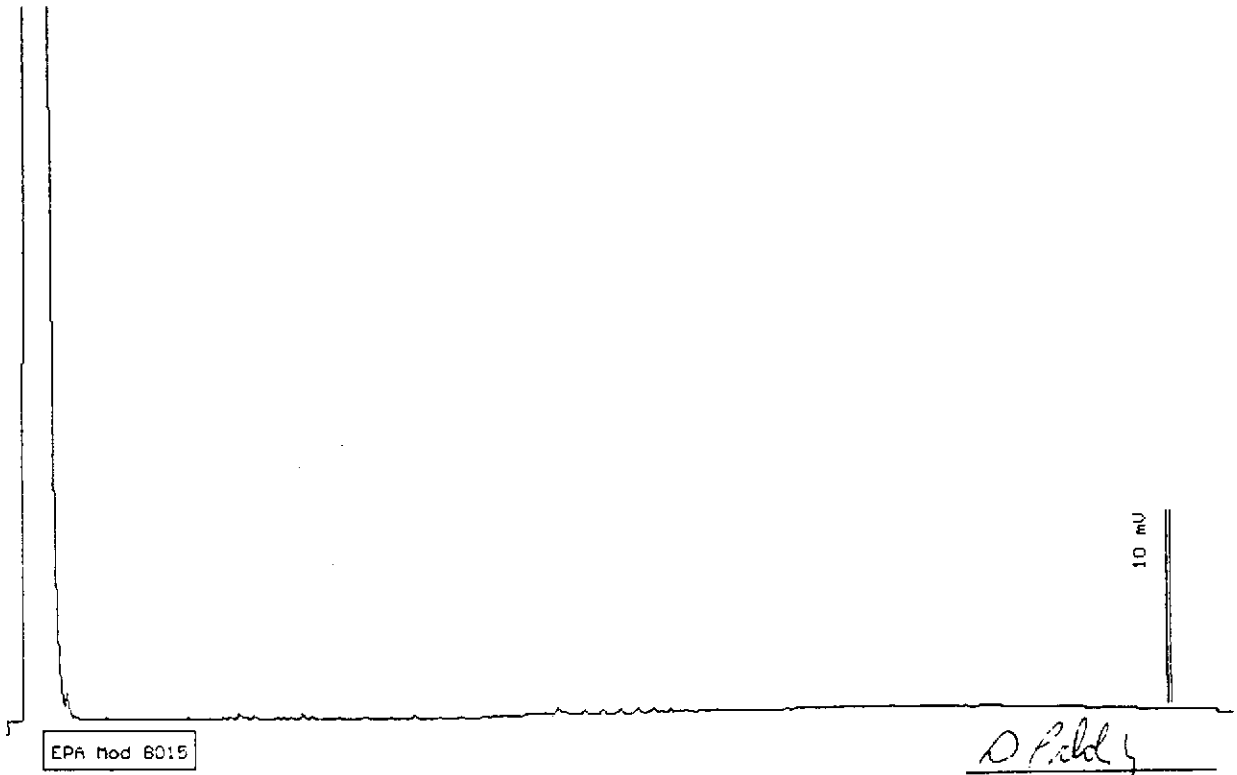
Sample Log 15755

15755-01

Sample: **MW-3**

From : Ringsby Terminals (Proj. # 020700205)
Sampled : 10/14/96
Extracted: 10/15/96 QC Batch : DW961006
Dilution : 1:1 Run Log : 7352C
Matrix : Water

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



Date: 10-16-96 Time: 02:40:39
Column : 0.53mm ID X 15m Rtx-1 (Restek Corporation)

Stewart Podolsky
Senior Chemist

WEST LABORATORY

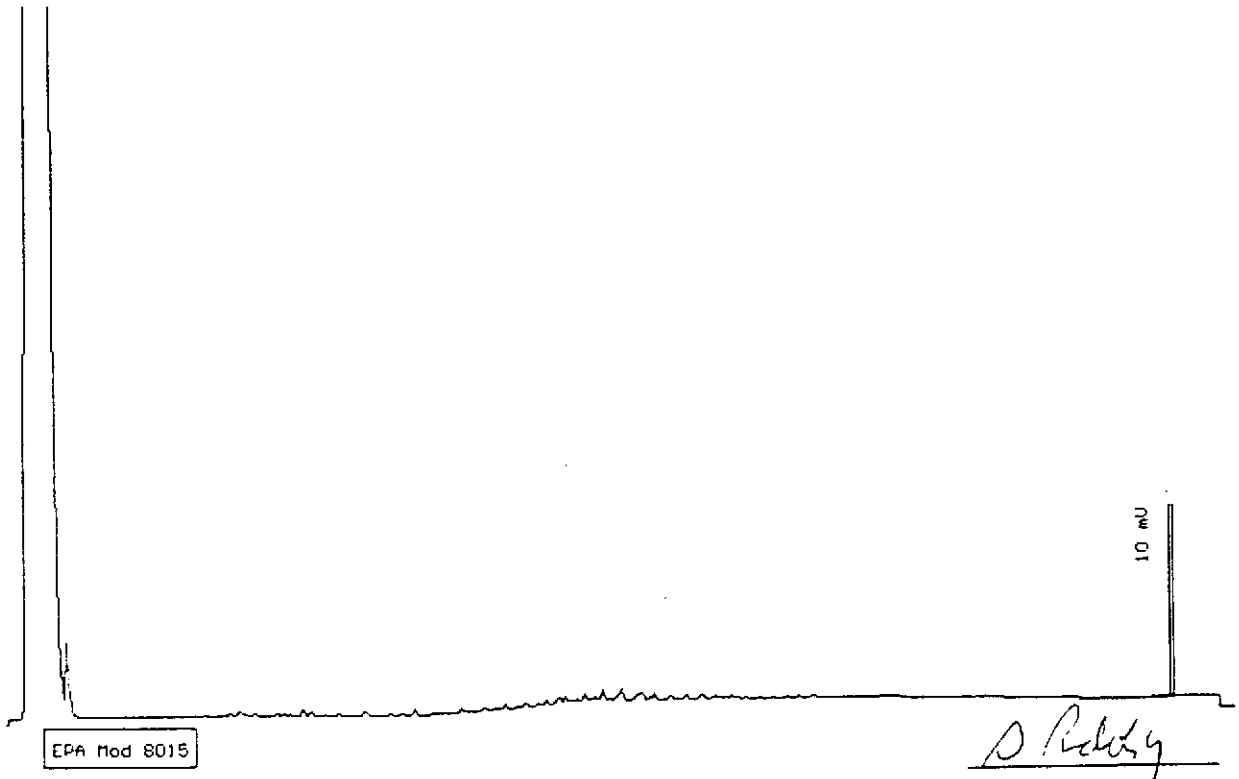
Sample Log 15755

15755-02

Sample: **MW-2**

From : Ringsby Terminals (Proj. # 020700205)
Sampled : 10/14/96
Extracted: 10/15/96 QC Batch : DW961006
Dilution : 1:1 Run Log : 7352C
Matrix : Water

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



Date: 10-16-96 Time: 03:48:35
Column : 0.53mm ID X 15m Rtx-1 (Restek Corporation)

Steuart Podolsky
Senior Chemist

WEST LABORATORY

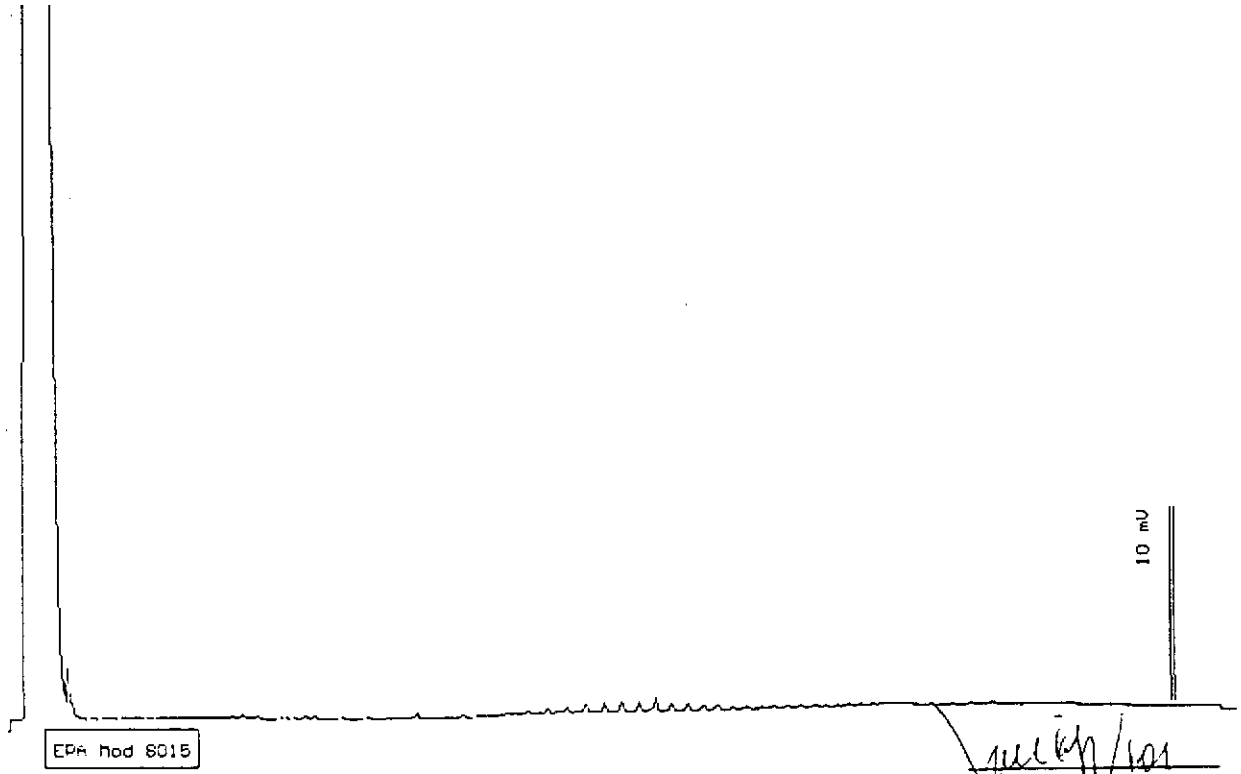
Sample Log 15755

15755-03

Sample: **MW-1**

From : Ringsby Terminals (Proj. # 020700205)
Sampled : 10/14/96
Extracted: 10/15/96 QC Batch : DW961006
Dilution : 1:1 Run Log : 7352C
Matrix : Water

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



Date: 10-16-96 Time: 04:22:46
Column : 0.53mm ID X 15m Rtx-1 (Restek Corporation)

Steuart Podolsky
Senior Chemist

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Western Environmental Science & Technology

1046 Olive Drive, Suite 2
Davis, CA 95616

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

Project Manager: Jaff Auchterlonie

Phone #: (916) 372-4780

Company/Address: 1401 Halyard Drive Ste 140, W. Sacramento, CA 95691

FAX #:

Project Number: 020700205.030504

P.O.#:

Project Name: Ringsby Terminals

Project Location: 2235 7th Street Oakland CA

Sampler Signature:

ANALYSIS REQUEST

For Lab Use ONLY

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

Sample ID	Sampling: DATE	Sampling: TIME	Container (Type/Amount): VOA	SLEEVE	1L GLASS	1L PLASTIC	Method Preserved: HCl	HNO_3	ICE	NONE	Matrix: WATER	SOIL	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 - PCB's	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	LEAD(6010/7421/239.2)	W.E.T.	TOTAL	Cd, Cr, Pb, Zn, Ni	WEST Lab Number
MW-3	10/14/96		3				X		X		X			X													15755 01
3					2				X	X	X				X												
2			3				X		X		X			X													02
2					2				X	X	X				X												
1			3				X		X		X			X													03
1					2				X	X	X				X												

10/15/96 1420

0°

SW

Relinquished by: — Date 10/15 — Time 1509 — Received by:

Relinquished by: — Date 10/15/96 — Time 1420 — Received by:

Relinquished by: — Date 10/15/96 — Time 1420 — Received by Laboratory:

Remarks: 1 broken VOA upon receipt in Lab: MW-1

Bill To: