PORT OF OAKLAND

May 15, 2001

Mr. Larry Seto
Sr. Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Protection (LOP)
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

MAY 17 2001

SUBJECT: 801 Maritime Street,
Oakland, California
STID #3780

Dear Mr. Seto:

Please find enclosed a document titled, *Groundwater Monitoring and Sampling Report, 801 Maritime Street, Oakland, California*, prepared on the behalf of the Port of Oakland (Port) by Harding ESE, and dated May 11, 2001. This document was prepared following your April 27, 2000 request that the Port continue quarterly monitoring and sampling activities at the 801 Maritime site. These activities were delayed because the single well as this site was temporarily lost to view because of recent paving work. Fortunately, because of a past survey, the well head was relocated and subsequently readjusted to the current pavement surface. Following a resurvey of the well casing reference point, the April 17th sampling event groundwater surface elevation will be sent to you.

Should you have any questions about the enclosed report or the site in general, please contact me at 627-1373 or by e-mail at jprall@portoakland.com.

Sincerely,

John Prall, R.G.
Associate Environmental Scientist

Enclosure

CC: Jeff Jones

530 Water Street ■ Jack London Square ■ P.O. Box 2064 ■ Oakland, California 94604-2064
Telephone (510) 272-1100 ■ Fax (510) 272-1172 ■ TDD (510) 763-5703 ■ Cable address, PORTOFOAK, Oakland

Harding ESE
A MACTEC COMPANY

Harding ESE, Inc.
383 Fourth Street
Suite 300
Oakland, CA 94607
Telephone: 510/451-1001
Fax: 510/451-3165
Home Page www.mactec.com

May 11, 2001

50841.1

Mr. John Prall
Associate Environmental Scientist
Port of Oakland
530 Water Street
Oakland, California 94607

Groundwater Monitoring and Sampling Report
801 Maritime Street
Oakland, California

Dear Mr. Prall:

Harding ESE, Inc. has prepared this Groundwater Monitoring and Sampling Report on behalf of the Port of Oakland for groundwater monitoring and sampling performed on April 17, 2001 at the 801 Maritime Street site in Oakland, California. A site location map is shown on Plate 1.

The scope of work included retrofitting monitoring well MW-1, collecting a groundwater sample from MW-1 and testing the groundwater sample for Total Petroleum Hydrocarbons as gasoline (TPH-g) and diesel (TPH-d), benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl t-butyl ether (MTBE), and total dissolved solids (TDS).

Monitoring well MW-1 is located in the vicinity of three former underground storage tanks (USTs) removed from the site in February 1989. The USTs included two 10,000-gallon tanks (CF-06 and CF-35) and one 20,000-gallon tank (CF-07).

MONITORING WELL RETROFITTING

On April 17, 2001, Harding contracted with Gregg Drilling (Gregg) of Concord, California to uncover and retrofit the Christy Box for MW-1. As a result of several re-paving activities at the site, MW-1 was covered over with asphalt. Gregg uncovered the well and replaced the old well cover with a new heavy-duty traffic rated Christy Box. The well casing was extended to a new elevation and will be re-surveyed by the Port before the next sampling event.

GROUNDWATER SAMPLING

Harding performed the monitoring and sampling on April 17, 2001. The monitoring well was initially gauged for depth to water and checked for the presence of separate phase hydrocarbons. No separate phase hydrocarbons were observed in the monitoring well. The depth to water measurement was recorded on a Groundwater Sampling Form. After the depth to water measurement was recorded, the monitoring well was purged using a bailer. Approximately three

casing volumes of water were removed, until pH, conductivity, and temperature readings stabilized.

A groundwater sample was collected form the monitoring well using a disposable bailer and transferred into laboratory provided containers. The sample containers were properly labeled with the sample number, date and time of collection, and the sampler's initials, and were placed on ice in an insulated cooler. Purge water was discharged to the Port of Oakland product recovery system tank at the nearby 2277 7th Street facility.

MONITORING WELL GROUNDWATER LEVEL

Depth to water data is summarized in Table 1, however, due to the retrofitting activities and lack of survey data, the groundwater elevation was not calculated during this sampling event.

LABORATORY ANALYSIS OF GROUNDWATER SAMPLE

The samples were sent under chain-of-custody to Curtis and Tompkins, Ltd. in Berkeley, California, a Port of Oakland contract laboratory. The sample was analyzed using the following analytical methods:

- Total Petroleum Hydrocarbons as gasoline (TPHg) in accordance with EPA method 8015 modified.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) and methyl t-butyl ether (MTBE) by EPA method 8020B.
- TPH as diesel (TPHd) by EPA method 8015 modified following a silica-gel cleanup procedure.
- Total dissolved solids (TDS) by EPA method 160.1
- MTBE confirmation by EPA method 8260

The laboratory results for the groundwater samples are summarized in Table 2, and are shown in Plate 2. Copies of the laboratory results, chromatograms, and chain-of-custody are provided in Appendix A.

FINDINGS

The results of the April 17, 2001 groundwater monitoring and sampling of MW-1 are summarized below:

- TPH-g was detected at a concentration of 160 µg/L.

- Benzene, toluene, and ethylbenzene were detected at concentrations of 11 µg/L, 6.2 µg/L, and 2.6 µg/L. m,p-Xylenes were detected at a concentration of 6.8 µg/L, and o-xylenes were detected at a concentration of 4.4 µg/L.
- MTBE was not detected above the reporting limit of 2.0 µg/L.
- TPH-d was detected at a concentration of 59 µg/L.
- TDS was reported at a concentration of 1,860 mg/L.

CLOSURE

We trust that this provides the information required at this time. If you have any questions or need additional information, please contact either of the undersigned at (510) 451-1001.

Very truly yours,

HARDING ESE, INC.

Trish Eliasson
Staff Engineer

Luis A. Fraticelli, R.G.
Associate Geologist

REGISTERED GEOLOGIST
LUIS A. FRATICELLI
No. 6521
Exp. 04/03
STATE OF CALIFORNIA

Attachments: Table 1 – Groundwater Elevations
Table 2 – Summary of Laboratory Results
Plate 1 – Site Location Map
Plate 2 – Laboratory Results, April 17, 2001
Appendix A – Laboratory Report

TABLES

Table 1. Groundwater Elevations
801 Maritime Street
Oakland, California

Monitoring Well ID	Elevation of Top of Casing (feet)	Date of Monitoring	Measured Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (feet)	Note
MW-1	13.81	7/10/1996	7.36	-	6.45 (3.25)	1,2
	(10.61)	12/27/1996	7.55	-	6.26 (3.06)	2,4
		3/25/1997	7.31	-	6.50 (3.30)	2,4
		6/23/1997	7.55	-	6.26 (3.06)	2,4
	13.55	9/30/1997	7.46	-	6.09	3,4
		12/31/1997	7.17	-	6.38	4
	NA	4/17/2001	7.59	-	NA	5

Notes:

1 Data from Table 2, Summary of Results of Groundwater Sampling, Port of Oakland Tanks CF-06, CF-07, and CF-35, 801 Maritime Street, Oakland, California, dated August 7, 1996, by Alisto Engineering Group.

2 Elevation data corrected relative to Port of Oakland datum: elevation data in parentheses referenced to mean sea level.

3 Top of casing cut and resurveyed on September 30, 1997 relative to Port of Oakland datum.

4 Data from Table 2, Summary of Laboratory Results, 801 Maritime Street, Oakland, California, dated March 3, 1998 by Innovative Technical Solutions, Inc.

5 Top of casing elevation changed due to retrofitting activities on April 17, 2001.

Table 2. Summary of Laboratory Results
801 Maritime Street
Oakland, California

Monitoring Well ID	Date of Sampling	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TPHd (µg/L)	TDS (mg/L)	Note
MW-1	7/10/1996	180	27	14	5.4	23	-	7,100	-	1
	12/27/1996	180	30	15	5.8	26	-	670	-	2
	3/25/1997	180	21	11	4	17	-	19	1,840	2
	6/23/1997	170	20	11	4.1	18	-	3,000	1,320	2
	9/30/1997	190	35	17	5.2	22	-	830	2,020	2, 3
	12/31/1997	130	26	14	4.3	18	-	<48	1,880	2, 3
	4/17/2001	160	11	6.2	2.6	6.8 (m,p-) 4.4 (o-)	ND(2.0)	59	1,860	4,5

Notes:

TPHg = Total petroleum hydrocarbons (TPH) as gasoline
MTBE= Methyl t-butyl ether
TPHd = TPH as diesel
TDS = Total dissolved solids
ND= Not Detected above reporting limit shown in parentheses.

1 Data from Table 2, Summary of Results of Groundwater Sampling, Port of Oakland Tanks CF-06, CF-07, and CF-35. 801 Maritime Street, Oakland, California, dated August 7, 1996, by Alisto Engineering Group.

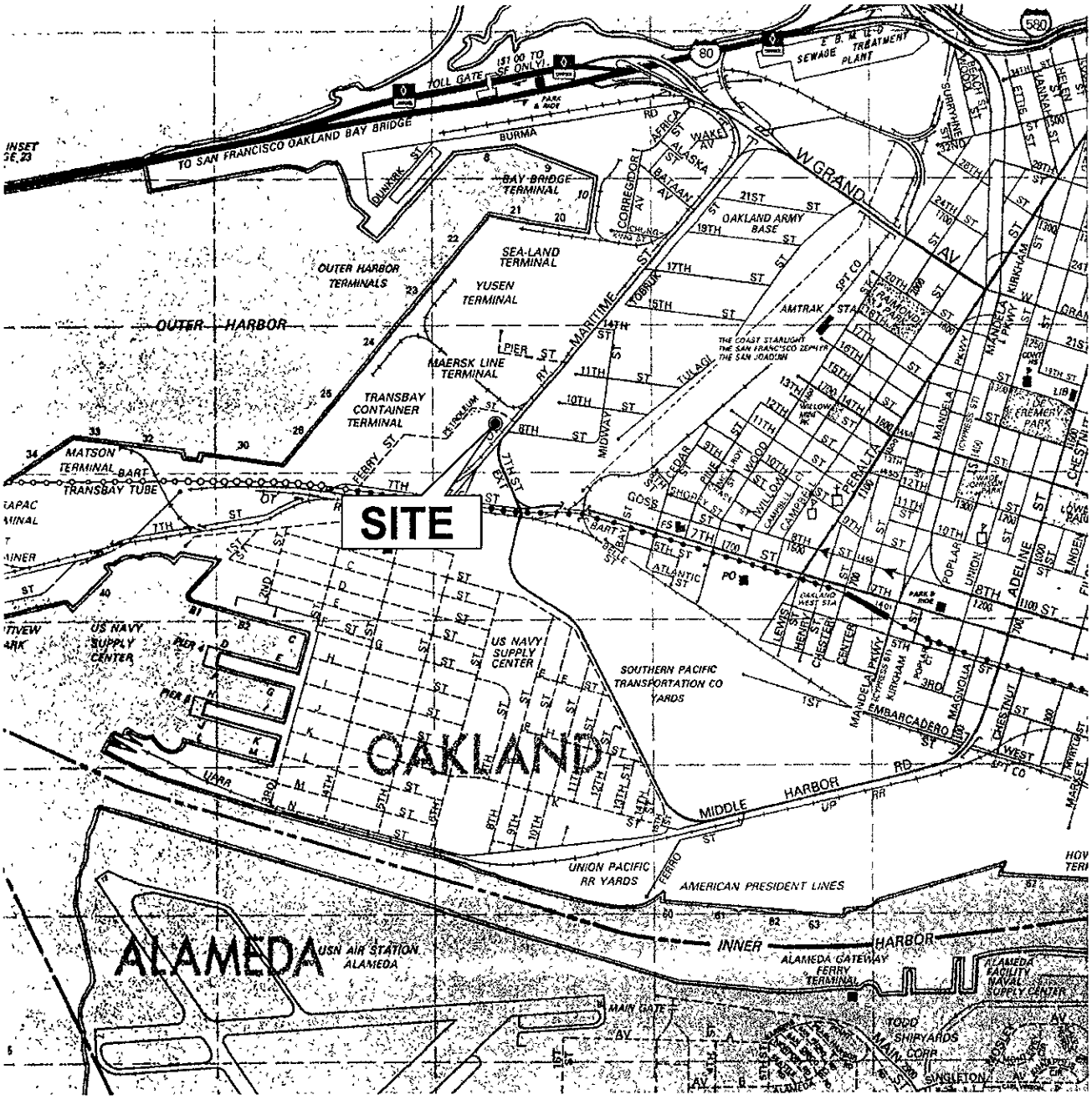
2 Data from Table 2, Summary of Laboratory Results, 801 Maritime Street, Oakland, California, dated March 3, 1998 by Innovative

3 Laboratory results represent the highest concentrations reported for either the sample or field duplicate sample (QC-1).

4 Results for m,p-Xylenes and o-Xylenes are shown separately.

5 Diesel results exhibit fuel pattern not resembling standard

PLATES



SOURCE: THOMAS BROTHERS ALAMEDA/CONTRA COSTA COUNTIES STREET GUIDE; 1995

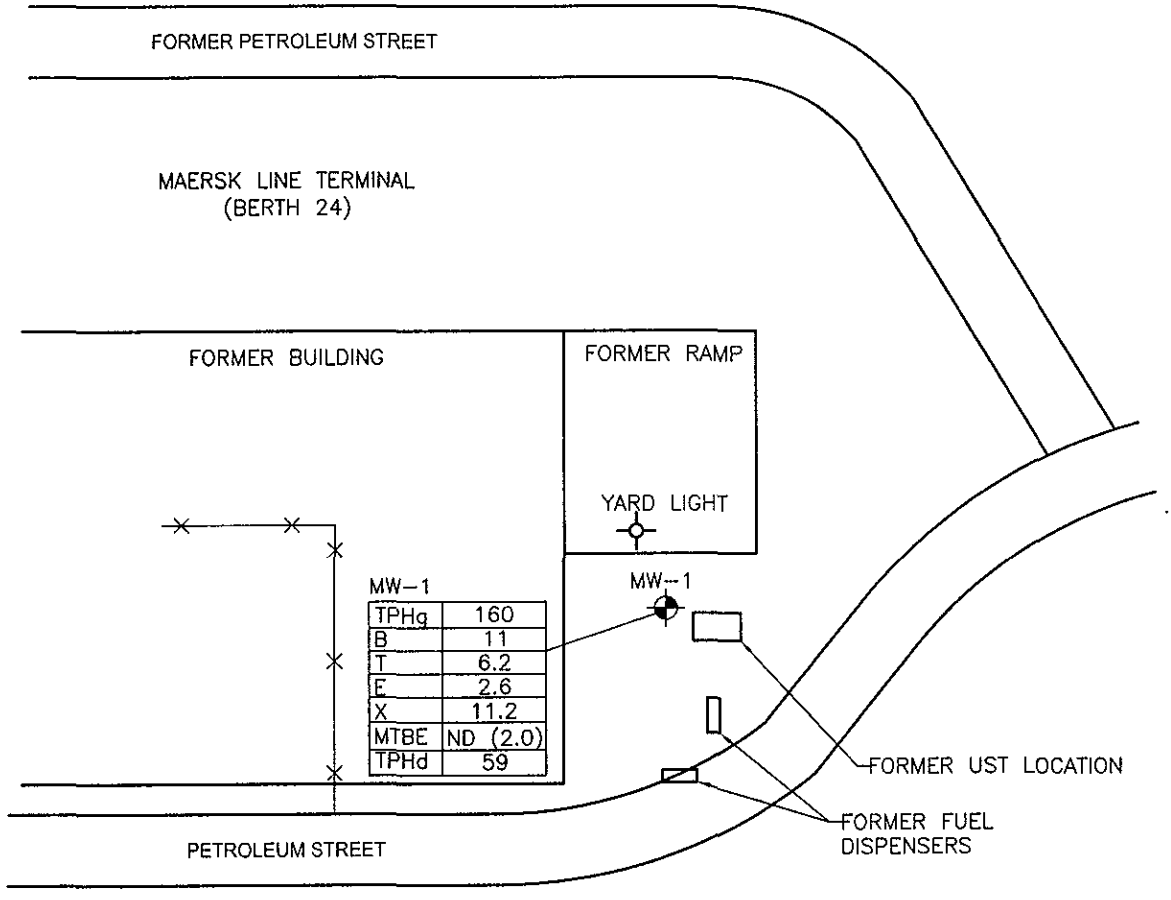
50841001.DWG 1.0
20010508.1011

Harding ESE

Vicinity Map
801 Maritime Street
Oakland, California
Port of Oakland

PLATE
1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	50841 1		5/2001	



LEGEND

MW-1 ⊕	MONITORING WELL
TPHg	TPH AS GASOLINE (in µg/L)
B	BENZENE (in µg/L)
T	TOULENE (in µg/L)
E	ETHYLBENZENE (in µg/L)
X	XYLENES (in µg/L)
MTBE	METHYL T-BUYTL ETHER (in µg/L)
TPHd	TPH AS DIESEL (in µg/L)

N

100 0 100 200

APPROXIMATE SCALE IN FEET

50841002.DWG 1.0
20010510.1544

Harding ESE

Laboratory Results for Petroleum Hydrocarbons
April 17, 2001
801 Maritime Street
Oakland, California
Port of Oakland

PLATE **2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
SS	50841 1		5/2001	

APPENDIX
LABORATORY REPORTS

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Harding Lawson Associates
383 Fourth Street
Third Floor
Oakland, CA 94607

Date: 07-MAY-01
Lab Job Number: 151501
Project ID: 50841
Location: 801 Maritime

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by: _____
Project Manager

Reviewed by: _____
Operations Manager

Curtis & Tompkins, Ltd.

Laboratory Numbers: **151501**
Client: **Harding Lawson Associates**
Location: **801 Maritime**
Project ID: **50841**

Sampled Date: **04/17/01**
Received Date: **04/17/01**

CASE NARRATIVE

This hardcopy data package contains sample and QC results for one water sample, which was received from the site referenced above on March 17, 2001. The sample was received cold and intact.

TEH (EPA 8015M):
The extract was treated with silica gel prior to analysis, to remove potential biogenic interferences. No analytical problems were encountered.

TVH (EPA 8015M):
No analytical problems were encountered.

General Chemistry:
No analytical problems were encountered

19150

No 2759

Harding Lawson Associates
383 Fourth Street, Third Floor
Oakland, California 94607
(510) 451-1001 - Phone
(510) 451-3165 - Fax

SBd

CHAIN OF CUSTODY FORM

Lab: C&T

Job Number: 50841

Name/Location: 801 Maritime

Project Manager: Luis Fraticelli

Samplers: Trish Eliasson

Recorder: Trish Eliasson (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	# CONTAINERS & PRESERV.: Unpres	H_2SO_4	HNO_3	HCL	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Day	Time	STATION DESCRIPTION/ NOTES	EPA 8010	EPA 8020	EPA 8260 confirm MTBE ONLY	EPA 8270	METALS	EPA 8015M/TPHG	EPA 8020/BTEX+MTBE	EPA 8015M/TPHd*	TDS
	X				2			4		MW-1			01	04	17	1342 (45)				X			X	X	X	X

Received ☒ On Ice
☒ Cold ☐ Ambient ☒ Intact

Preservation Correct?
☒ Yes ☐ No ☐ N/A

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						* Silica gel cleanup on TPHdiesel
						Standard TAT

CHAIN OF CUSTODY RECORD

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Trish Eliasson	4/17/01 2:20pm	Pat Flynn	4/17/01 2:20pm
RELINQUISHED BY (Signature)		RECEIVED BY (Signature)	DATE/TIME
RELINQUISHED BY (Signature)		RECEIVED BY (Signature)	DATE/TIME
RELINQUISHED BY (Signature)		RECEIVED BY (Signature)	DATE/TIME
DISPATCHED BY (Signature)	DATE/TIME	RECEIVED FOR LAB BY (Signature)	DATE/TIME

METHOD OF SHIPMENT

SAMPLE CONDITION WHEN RECEIVED BY THE LABORATORY

Lab Copy White · Project Office Copy Yellow · Field or Office Copy Pink

Gasoline by GC/FID CA LUFT

Lab #:	151501	Location:	801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	50841	Analysis:	EPA 8015M
Field ID:	MW-1	Batch#:	63162
Matrix:	Water	Sampled:	04/17/01
Units:	ug/L	Received:	04/17/01
Diln Fac:	1.000	Analyzed:	04/22/01

Type: SAMPLE Lab ID: 151501-001

Analyte	Result	RL
Gasoline C7-C12	160	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	59-135
Bromofluorobenzene (FID)	107	60-140

Type: BLANK Lab ID: QC143694

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	59-135
Bromofluorobenzene (FID)	103	60-140

ND= Not Detected
RL= Reporting Limit

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	151501	Location:	801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	50841	Analysis:	EPA 8021B
Field ID:	MW-1	Batch#:	63162
Matrix:	Water	Sampled:	04/17/01
Units:	ug/L	Received:	04/17/01
Diln Fac:	1.000	Analyzed:	04/22/01

Type: SAMPLE Lab ID: 151501-001

Analyte	Result	RL
MTBE	ND	2.0
Benzene	11	0.50
Toluene	6.2	0.50
Ethylbenzene	2.6	0.50
m,p-Xylenes	6.8	0.50
o-Xylene	4.4	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	106	56-142
Bromofluorobenzene (PID)	104	55-149

Type: BLANK Lab ID: QC143694

Analyte	Result	RL
MTBE	ND	2.0
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
m,p-Xylenes	ND	0.50
o-Xylene	ND	0.50

Surrogate	%REC	Limits
Trifluorotoluene (PID)	104	56-142
Bromofluorobenzene (PID)	101	55-149

D= Not Detected
L= Reporting Limit

Gasoline by GC/FID CA LUFT

Lab #:	151501	Location:	801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	50841	Analysis:	EPA 8015M
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC143695	Batch#:	63162
Matrix:	Water	Analyzed:	04/21/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,930	97	73-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	126	59-135
Bromofluorobenzene (FID)	108	60-140

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	151501	Location:	801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 5030
Project#:	50841	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC143698	Batch#:	63162
Matrix:	Water	Analyzed:	04/21/01
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.64	103	51-125
Benzene	20.00	22.14	111	67-117
Toluene	20.00	21.89	109	69-117
Ethylbenzene	20.00	22.07	110	68-124
m,p-Xylenes	40.00	48.42	121	70-125
o-Xylene	20.00	23.09	115	65-129

Surrogate	%REC	Limits
Trifluorotoluene (PID)	104	56-142
Bromofluorobenzene (PID)	103	55-149

Curtis & Tompkins, Ltd

Total Extractable Hydrocarbons

Lab #:	151501	Location:	801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 3520
Project#:	50841	Analysis:	EPA 8015M
Field ID:	MW-1	Batch#:	63127
Matrix:	Water	Sampled:	04/17/01
Units:	ug/L	Received:	04/17/01
Diln Fac:	1.000	Prepared:	04/19/01

Type:	SAMPLE	Analyzed:	04/25/01
Lab ID:	151501-001	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	59 Y	50

Surrogate	%REC	Limits
Hexacosane	77	44-121

Type:	BLANK	Analyzed:	04/24/01
Lab ID:	QC143533	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50

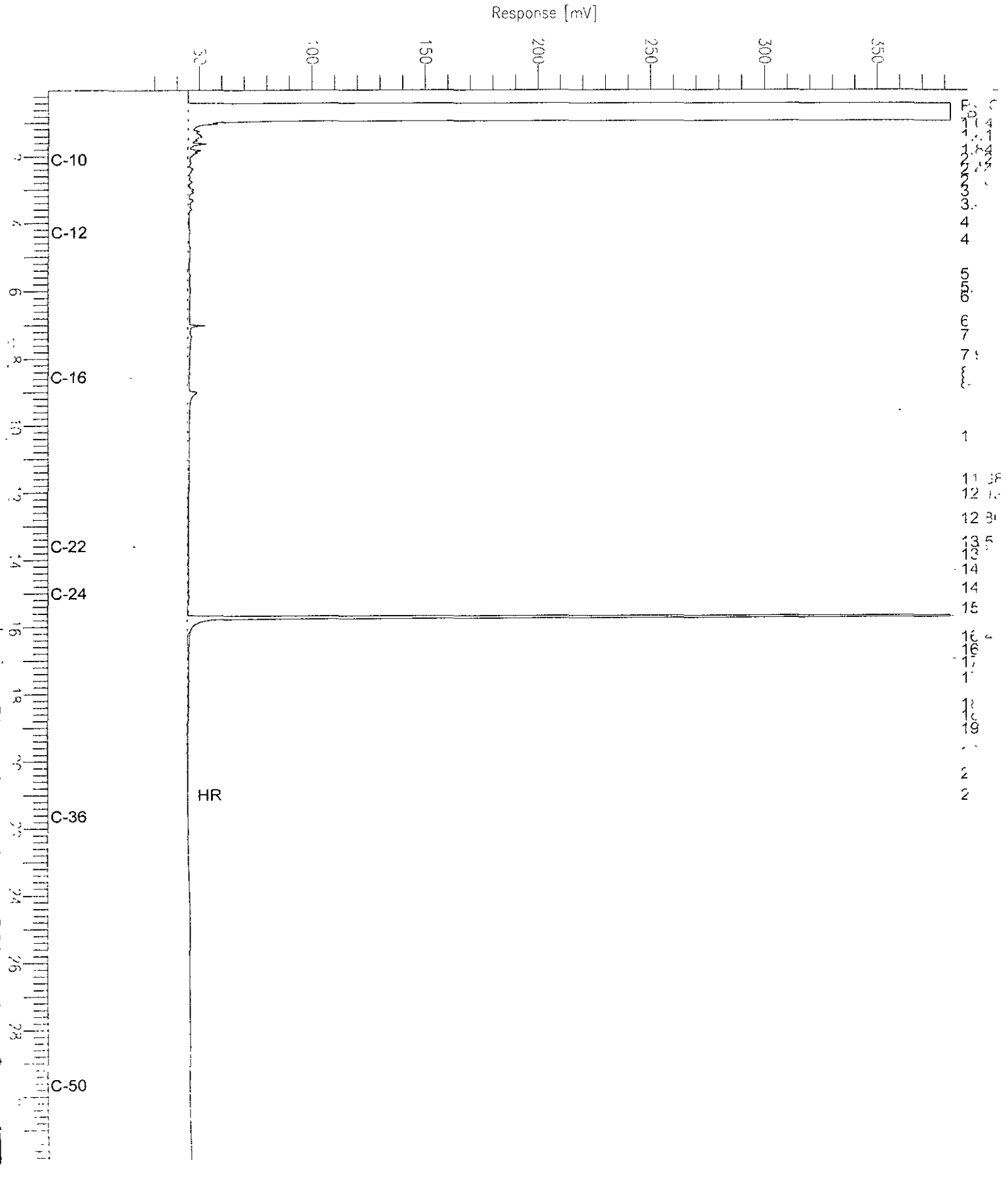
Surrogate	%REC	Limits
Hexacosane	69	44-121

Y= Sample exhibits fuel pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Chromatogram

Sample Name : 151501-001sg,63127
FileName : G:\GC11\CHA\112A062.RAW
Method : ATEH097.MTH
Start Time : 0.01 min End Time : 31.91 min
Scale Factor: 0.0 Plot Offset: 23 mV

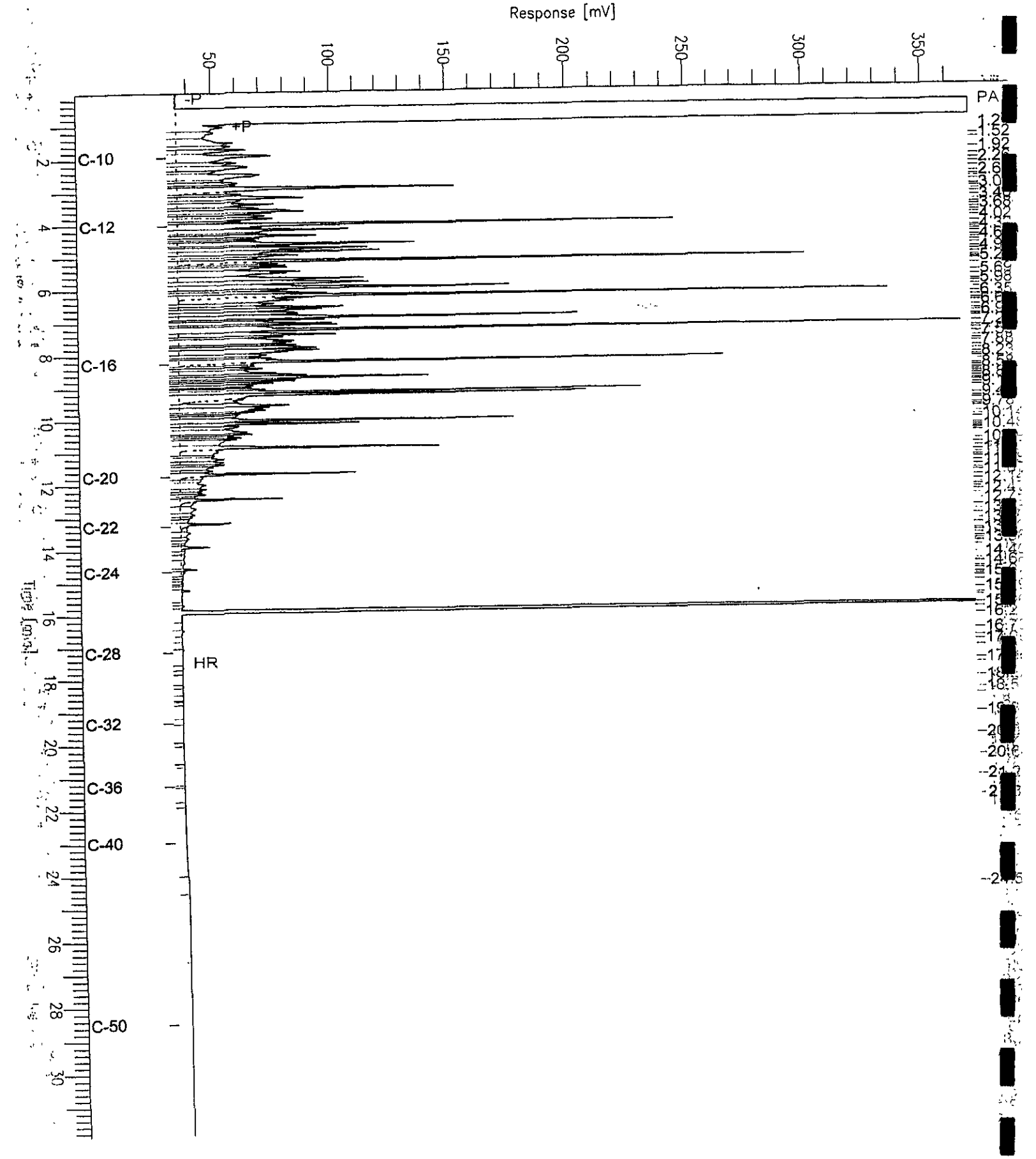
Sample #: 63127 Page 1 of 1
Date : 4/25/01 09:41 AM
Time of Injection: 4/25/01 01:02 AM
Low Point : 23.08 mV High Point : 382.57 mV
Plot Scale: 359.5 mV



Chromatogram

Sample Name : ccv,01ws0904,dsl
FileName : G:\GC13\CHB\108B002.RAW
Method : BTEH108.MTH
Start Time : 0.01 min
Scale Factor: 0.0
End Time : 31.91 min
Plot Offset: 32 mV

Sample #: 500mg/L
Date : 04/19/2001 08:42 AM
Time of Injection: 04/18/2001 05:07 PM
Low Point : 31.94 mV
High Point : 369.81 mV
Plot Scale: 337.9 mV



Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	151501	Location:	801 Maritime
Client:	Harding Lawson Associates	Prep:	EPA 3520
Project#:	50841	Analysis:	EPA 8015M
Matrix:	Water	Batch#:	63127
Units:	ug/L	Prepared:	04/19/01
Dil'n Fac:	1.000		

Type:	BS	Analyzed:	04/24/01
Lab ID:	QC143534	Cleanup Method:	EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,339	1,443	62	45-110

Surrogate	%REC	Limits
Hexacosane	75	44-121

Type:	BSD	Analyzed:	04/25/01
Lab ID:	QC143535	Cleanup Method:	EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,339	1,478	63	45-110	2	22

Surrogate	%REC	Limits
Hexacosane	77	44-121

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Dissolved Solids (TDS)

Lab #:	151501	Location:	801 Maritime
Client:	Harding Lawson Associates	Prep:	METHOD
Project#:	50841	Analysis:	EPA 160.1
Analyte:	Total Dissolved Solids	Batch#:	63128
Field ID:	MW-1	Sampled:	04/17/01
Matrix:	Water	Received:	04/17/01
Units:	mg/L	Analyzed:	04/18/01

Type	Lab ID	Result	RL	Dil'n Fac
SAMPLE	151501-001	1,860	17	1.700
BLANK	QC143538	ND	10	1.000

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Dissolved Solids (TDS)

Lab #:	151501	Location:	801 Maritime
Client:	Harding Lawson Associates	Prep:	METHOD
Project#:	50841	Analysis:	EPA 160.1
Analyte:	Total Dissolved Solids	Batch#:	63128
Field ID:	ZZZZZZZZZZ	Sampled:	04/11/01
MSS Lab ID:	151376-001	Received:	04/11/01
Matrix:	Water	Analyzed:	04/18/01
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim	Dil'n Fac
BS	QC143539		10,000	9,660		97	80-120			1.000
BSD	QC143540		10,000	9,640		96	80-120	0	20	1.000
SDUP	QC143541	16,680		16,080	100			4	20	10.00
MS	QC143542	16,680	10,000	26,700		100	70-130			10.00

RL= Reporting Limit
RPD= Relative Percent Difference