



Re 19

PORT OF OAKLAND

August 19, 2002

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

**Subject: 801 Maritime Street UST Site
Oakland, California
STID #3780**

Dear Mr. Chan:

Please find enclosed a report prepared on the behalf of the Port of Oakland by Harding ESE titled, *Second Quarter 2002 Groundwater Monitoring Report, 801 Maritime Street, Oakland, California*. Should you have any questions, regarding the report, please contact the undersigned at (510) 627-1373.

Sincerely,

John Prall, R.G.
Associate Environmental Scientist

Enclosure

Cc: Jeff Jones



Harding ESE

A MACTEC COMPANY

Harding ESE, Inc.

600 Grand Avenue

Suite 300

Oakland, CA 94610

Telephone: 510/451-1001

Fax: 510/451-3165

Home Page: www.mactec.com

EMERGENCY
CALL
1-800-333-3331

July 30, 2002

54821.2

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

Second Quarter 2002 Groundwater Monitoring Report
801 Maritime Street
Oakland, California

Dear Mr. Prall:

Harding ESE, Inc. (Harding ESE), has prepared this Groundwater Monitoring and Sampling Report on behalf of the Port of Oakland for the groundwater monitoring and sampling performed on June 21, 2002 at the 801 Maritime Street site in Oakland, California. A site location map is shown on Plate 1.

The scope of work included 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).

GROUNDWATER SAMPLING

Harding ESE performed the monitoring and sampling on June 21, 2002. Prior to purging and sampling the monitoring well, Harding ESE measured the depth to groundwater below the top of the well casing with an electric water level indicator. After measuring the depth to water, Harding ESE purged the well using a PVC bailer. Conductivity, pH, and temperature were monitored periodically during purging. Harding ESE collected the groundwater samples after removing a minimum of three well-casing volumes of water and when the conductivity, pH, and temperature measurements had stabilized. The depths to groundwater and field parameter measurements were recorded on a Groundwater Sampling Form. The purge water was stored in the product recovery tank at the nearby 2277 7th Street facility.

Harding ESE collected groundwater samples from the monitoring well using a disposable bailer and then transferred the groundwater into laboratory-provided containers. Sample containers were labeled with

July 12, 2002
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Mr. John Prall
Associate Environmental Scientist
Port of Oakland
Page 2

the sample number, date and time of collection, and sampler's initials, then placed in an insulated cooler with ice. The samples were delivered under chain-of-custody protocol to STL San Francisco, a California certified analytical laboratory.

MONITORING WELL GROUNDWATER LEVEL

Depth to water data is summarized in Table 1. The top of casing elevation was re-surveyed after the retrofitting activities in April 2001. The groundwater elevation was 6.58 in June 2002, similar to the measured groundwater elevation in March 2002.

LABORATORY ANALYSIS GROUNDWATER SAMPLES

STL San Francisco performed the chemical analyses of the groundwater samples 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) in accordance with EPA Method 8020B.
- TPH as diesel (TPHd) in accordance with EPA Method 8015 modified following a silica-gel cleanup procedure.
- Total dissolved solids (TDS) by EPA method 160.1.

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

FINDINGS

The results of the June 21, 2002 groundwater monitoring and sampling of MW-1 are summarized below:

- TPHg was detected at a concentration of 120 µg/L.
- TPHd was not detected above the reporting limit of 50 µg/L.
- Benzene, toluene, ethylbenzene, and xylenes were detected at concentrations of 14 µg/L, 7.1 µg/L, 3.1 µg/L, and 13 µg/L, respectively.
- MTBE was not detected above the reporting limit of 5.0 µg/L.
- TDS was reported at a concentration of 2,000 mg/L.

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Mr. John Prall
Associate Environmental Scientist
Port of Oakland
Page 3

CLOSURE

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

Yours very truly,

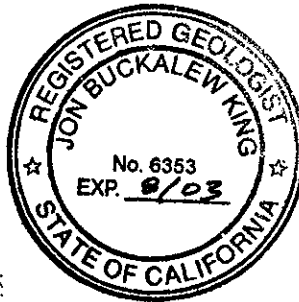
HARDING ESE, INC.



Trish A. Eliasson
Senior Staff Engineer



Buck King, RG, CHG
Senior Project Hydrogeologist



Llv-BK/TAE/P:/wpdata/54821/038104R.doc

Attachments: Table 1 – Groundwater Elevations
Table 2 – Summary of Laboratory Results
Plate 1 – Site Location Map
Plate 2 – Laboratory Results, June 20, 2002
Appendix A - Laboratory Reports

TABLES

**Table 1. Groundwater Elevations
801 Maritime Street
Oakland, California**

Monitoring Well ID	Date of Monitoring	Top of Casing Elevation (feet)	Measured Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-1	7/10/1996 ¹	13.81 ²	7.36	-	6.45 (3.25)
	12/27/1996 ⁴	(10.61) ²	7.55	-	6.26 (3.06)
	3/25/1997 ⁴	(10.61) ²	7.31	-	6.50 (3.30)
	6/23/1997 ⁴	(10.61) ²	7.55	-	6.26 (3.06)
	9/30/1997 ⁴	13.55 ³	7.46	-	6.09
	12/31/1997 ⁴	13.55	7.17	-	6.38
	4/17/01	14.18 ⁵	7.59	-	6.59
	7/26/01	14.18 ⁶	7.65	-	6.53
	10/21/01	14.18	7.71	-	6.47
	3/13/02	14.18	7.52	-	6.66
	6/21/02	14.18	7.6	-	6.58

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.
- 6 Elevation remeasured in 2001 after retrofitting activities on April 17, 2001. Relative to Port of Oakland datum.

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

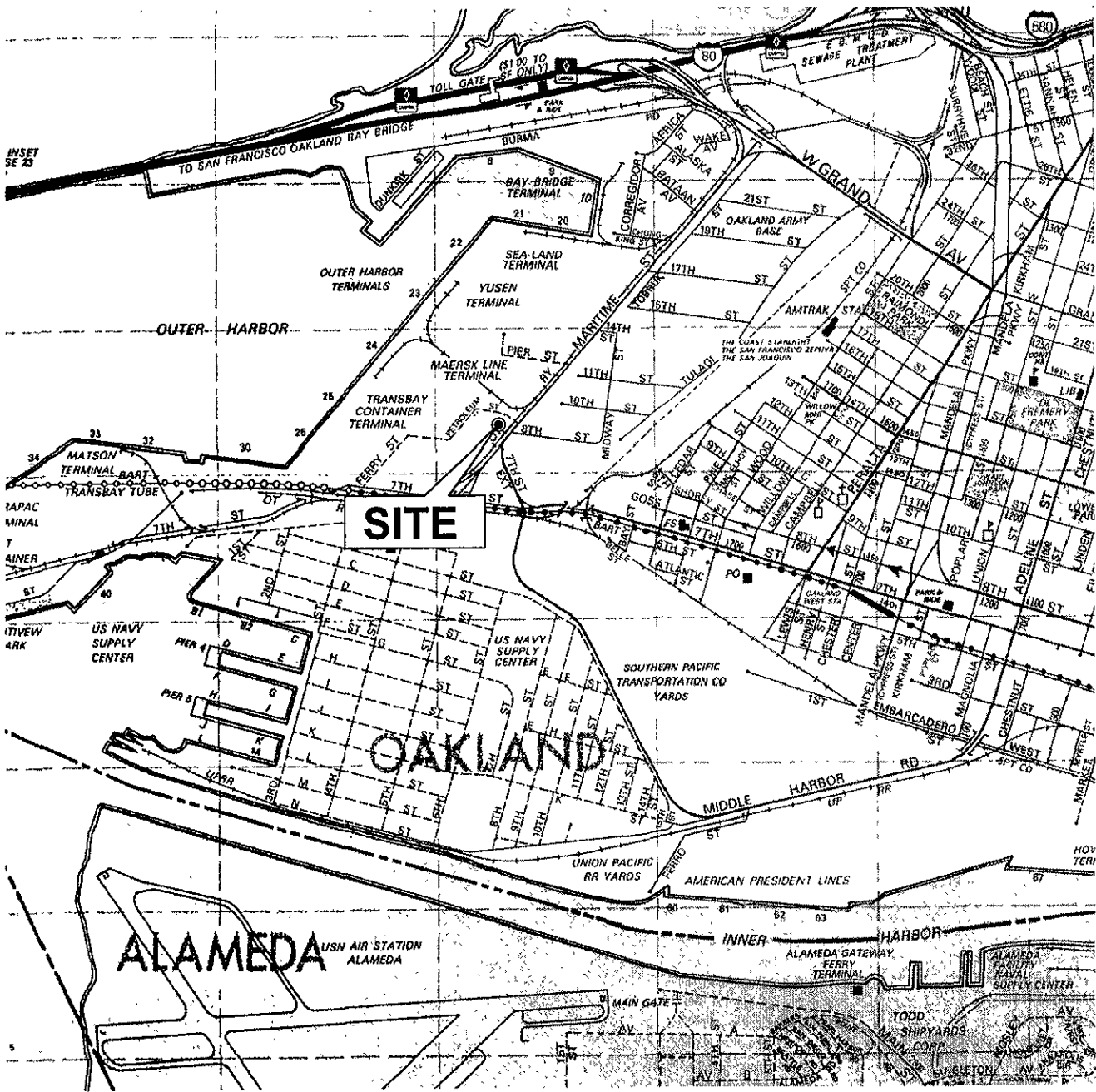
Monitoring Well ID	Date of Sampling	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TPHd (µg/L)	TDS (mg/L)
MW-1	7/10/1996 ¹	180	27	14	5.4	23	-	7,100	-
	12/27/1996 ²	180	30	15	5.8	26	-	670	-
	3/25/1997 ²	180	21	11	4	17	-	19	1,840
	6/23/1997 ²	170	20	11	4.1	18	-	3,000	1,320
	9/30/1997 ^{2,3}	190	35	17	5.2	22	-	830	2,020
	12/31/1997 ^{2,3}	130	26	14	4.3	18	-	<48	1,880
	4/17/01	160	11	6.2	2.6	6.8 (m,p-) 4.4 (o-)	ND(2.0)	59 ⁴	1,860
	7/26/01	130	17	8.7	3.2	8.7 (m,p-) 5.5 (o-)	ND(2.0)	ND(50)	1,880
	12/21/01	160	14	6.9	2.6	7.3 (m,p-) 4.2 (o-)	ND(2.0)	ND(100)	1,860
	3/13/02	100	8.5	4.2	1.3	7.3	ND(5.0)	ND(50)	1100
	6/21/02	120	14	7.1	3.1	13	ND(5.0)	ND(50)	2000

Notes:

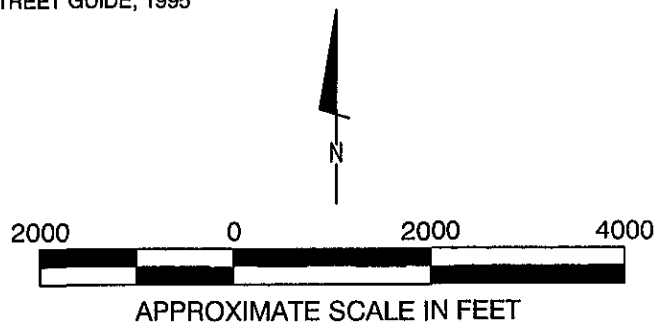
- TPHg = Total petroleum hydrocarbons (TPH) as gasoline
- MTBE= Methyl t-butyl ether
- TPHd = TPH as diesel
- TDS = Total dissolved solids
- ND= Not Detected above reporting limit shown in parentheses.
- (m,p-) = m,p-Xylenes
- (o-) = o-Xylenes

- 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 exhibit fuel pattern not resembling standard

PLATES



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



Vicinity Map
 801 Maritime Street
 Oakland, California
 Port of Oakland

PLATE

1

DRAWN
 SS

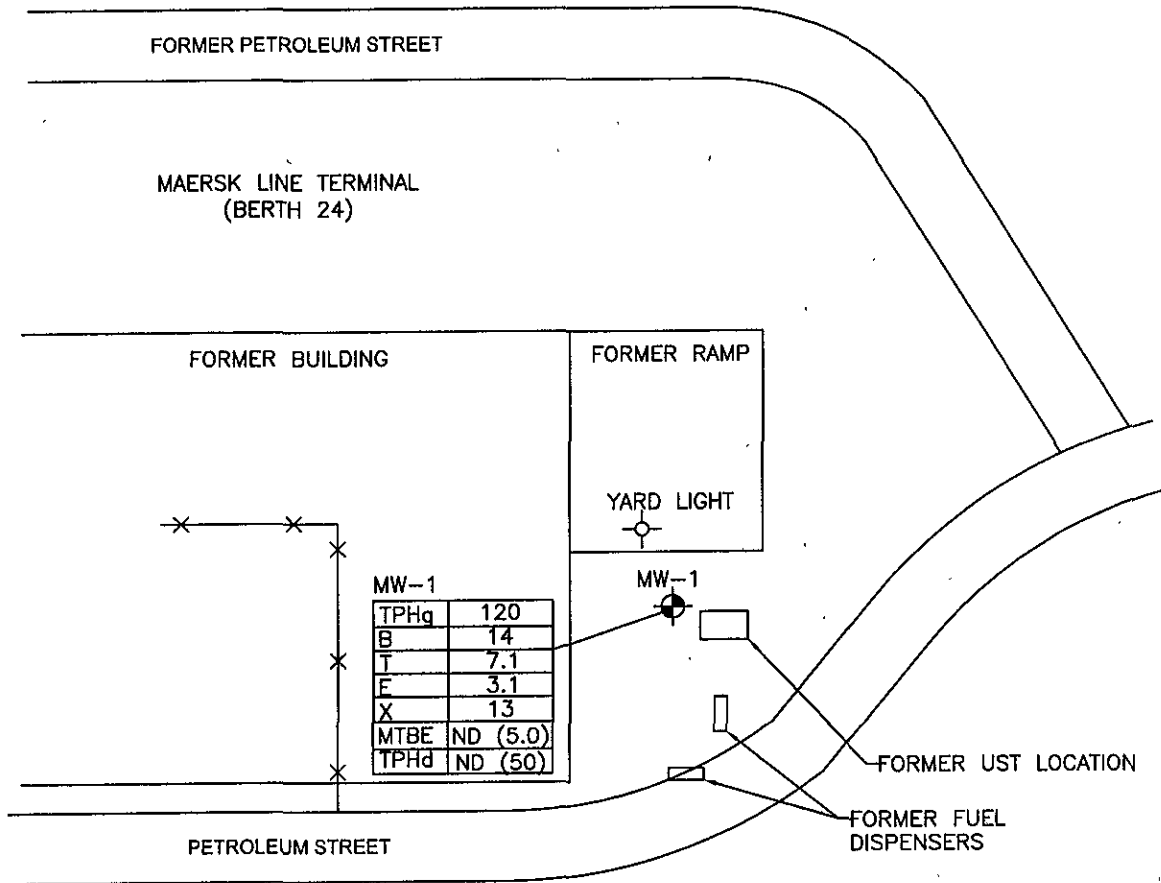
JOB NUMBER
 54821.2

APPROVED

DATE
 06/02

REVISED DATE

1.0
 54821001.DWG
 20020701.1619



LEGEND

- MW-1 MONITORING WELL
- TPHg TPH AS GASOLINE (in µg/L)
- B BENZENE (in µg/L)
- T TOUENE (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)



54821008.DWG 1.0
20020701.1620



Laboratory Results for Petroleum Hydrocarbons
 June 20, 2002
 801 Maritime Street
 Oakland, California
 Port of Oakland

PLATE

2

APPENDIX A
LABORATORY REPORT

Submission #: 2002-06-0416

Date: June 28, 2002



Harding ESE, Inc.

600 Grand Ave, Suite 300
Oakland, CA 94607

Attn: Trish Eliasson

Project: 54821.2
Port of Oakland-801 Maritime

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel 925 484 1919
Fax 925 484 1096
www.stl-inc.com
www.chromalab.com
CA DHS ELAP#2496

Attached is our report for your samples received on Friday June 21, 2002
This report has been reviewed and approved for release. Reproduction of this report
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after
August 5, 2002 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,
please call me at (925) 484-1919.

You can also contact me via email. My email address is: ssidhu@chromalab.com

Sincerely,

A handwritten signature in cursive script that reads "Surinder Sidhu".

Surinder Sidhu
Project Manager

Submission #: 2002-06-0416

Diesel with Silica Gel Clean-up

Harding ESE, Inc.

Attn.: Trish Eliasson

600 Grand Ave, Suite 300

Oakland, CA 94607

Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.2

Port of Oakland-801 Maritime

Received: 06/21/2002 17:41

SEVERN

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STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel: (925) 484-1919

Fax: (925) 484-1096

www.stl-inc.com

www.chromalab.com

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	06/21/2002 10:00	Water	1

Submission #: 2002-06-0416

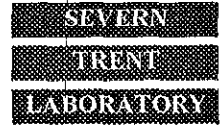
Diesel with Silica Gel Clean-up

Harding ESE, Inc.

Attn.: Trish Eliasson
600 Grand Ave, Suite 300
Oakland, CA 94607
Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.2
Port of Oakland-801 Maritime

Received: 06/21/2002 17:41



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1220 Quarry Lane
Pleasanton, CA 94566

Tel: (925) 484-1919
Fax: (925) 484-1096
www.stl-inc.com
www.chromalab.com

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	MW-1	Lab ID:	2002-06-0416 - 1
Sampled:	06/21/2002 10:00	Extracted:	6/26/2002 07:28
Matrix:	Water	QC Batch#:	2002/06/26-03/10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	06/26/2002 14:51	
Surrogates(s) o-Terphenyl	91.7	60-130	%	1.00	06/26/2002 14:51	

Submission #: 2002-06-0416

Diesel with Silica Gel Clean-up

Harding ESE, Inc.

Attn.: Trish Eliasson

600 Grand Ave, Suite 300

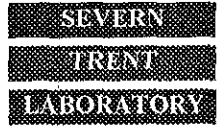
Oakland, CA 94607

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Project: 54821.2

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www.chromalab.com

Batch QC Report		
Prep(s): 3510/8015M		Test(s): 8015M
Method: Blank	Water	QC Batch # 2002/06/26-03_10
MB: 2002/06/26-03_10-001		Date Extracted: 06/26/2002 07:28

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	06/26/2002 12:54	
Surrogates(s) o-Terphenyl	95.1	60-130	%	06/26/2002 12:54	

Submission #: 2002-06-0416

Diesel with Silica Gel Clean-up

Harding ESE, Inc.

Attn.: Trish Eliasson

600 Grand Ave, Suite 300

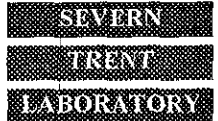
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www.chromalab.com

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2002/06/26-03.10

LCS 2002/06/26-03.10-002

Extracted: 06/26/2002

Analyzed: 06/26/2002 11:34

LCSD 2002/06/26-03.10-003

Extracted: 06/26/2002

Analyzed: 06/26/2002 12:14

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Diesel	783	808	1250	62.6	64.6	3.1	60-130	25		
Surrogates(s) o-Terphenyl	18.9	19.4	20.0	94.7	97.0		60-130	0		

Submission #: 2002-06-0416

Total Dissolved Solids (TDS)

Harding ESE, Inc.

Attn.: Trish Eliasson

600 Grand Ave, Suite 300

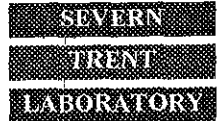
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www.chromalab.com

CA DHS ELAP# 2496

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	06/21/2002 10:00	Water	1

Submission #: 2002-06-0416

Total Dissolved Solids (TDS)

Harding ESE, Inc.

Attn.: Trish Eliasson

600 Grand Ave, Suite 300

Oakland, CA 94607

Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.2

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Pleasanton, CA 94566

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www.chromalab.com

CA DHS ELAP# 2496

Prep(s):	160.1	Test(s):	160.1
Sample ID:	MW-1	Lab ID:	2002-06-0416-1
Sampled:	06/21/2002 10:00	Extracted:	6/24/2002 00:00
Matrix:	Water	QC Batch#:	2002/06/24-01-28

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
TDS	2000	10	mg/L	1.00	06/25/2002 09:26	

Submission #: 2002-06-0416

Total Dissolved Solids (TDS)

Harding ESE, Inc.

Attn.: Trish Eliasson

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Project: 54821.2

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www.chromalab.com

CA DHS ELAP# 2496

Batch QC Report			
Prep(s): 160.1			Test(s): 160.1
Method Blank	Water		QC Batch # 2002/06/24-01-28
MB: 2002/06/24-01-28-001			Date Extracted: 06/24/2002 10:20

Compound	Conc.	RL	Unit	Analyzed	Flag
TDS	ND	10	mg/L	06/25/2002 08:52	

Submission #: 2002-06-0416

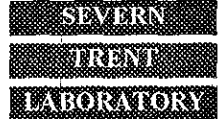
Total Dissolved Solids (TDS)

Harding ESE, Inc.

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 160.1

Test(s): 160.1

Laboratory Control Spike

Water

QC Batch # 2002/06/24-01.28

LCS 2002/06/24-01.28-002

Extracted: 06/24/2002

Analyzed: 06/25/2002 08:58

LCSD 2002/06/24-01.28-003

Extracted: 06/24/2002

Analyzed: 06/25/2002 08:58

Compound	Conc. mg/L		Exp. Conc.	Recovery		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
TDS	999	991	1000	99.9	99.1	0.8	80-120	20		

Submission #: 2002-06-0416

Gas/BTEX Compounds by 8015M/8021

Harding ESE, Inc.

Attn.: Trish Eliasson

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www.chromalab.com

CA DHS ELAP# 2496

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	06/21/2002 10:00	Water	1

Submission #: 2002-06-0416

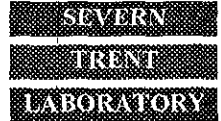
Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Prep(s):	5030 5030	Test(s):	8021B 8015M
Sample ID:	MW-1	Lab ID:	2002-06-0416-1
Sampled:	06/21/2002 10:00	Extracted:	6/25/2002 14:01
Matrix:	Water	QC Batch#:	2002/06/25-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	120	50	ug/L	1.00	06/25/2002 14:01	
Benzene	14	0.50	ug/L	1.00	06/25/2002 14:01	
Toluene	7.1	0.50	ug/L	1.00	06/25/2002 14:01	
Ethyl benzene	3.1	0.50	ug/L	1.00	06/25/2002 14:01	
Xylene(s)	13	0.50	ug/L	1.00	06/25/2002 14:01	
MTBE	ND	5.0	ug/L	1.00	06/25/2002 14:01	
Surrogates(s)						
Trifluorotoluene	103.2	58-124	%	1.00	06/25/2002 14:01	
4-Bromofluorobenzene-FID	63.8	50-150	%	1.00	06/25/2002 14:01	

Submission #: 2002-06-0416

Gas/BTEX Compounds by 8015M/8021

Harding ESE, Inc.

Attn.: Trish Eliasson
600 Grand Ave, Suite 300
Oakland, CA 94607
Phone: (510) 628-3240 Fax: (510) 451-3165

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Port of Oakland-801 Maritime

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Pleasanton, CA 94566

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www.stl-inc.com
www.chromalab.com

CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030
Method Blank
MB: 2002/06/25-01 05-008

Water

Test(s): 8015M
QC Batch # 2002/06/25-01 05
Date Extracted: 06/25/2002 11:14

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	06/25/2002 11:14	
Benzene	ND	0.5	ug/L	06/25/2002 11:14	
Toluene	ND	0.5	ug/L	06/25/2002 11:14	
Ethyl benzene	ND	0.5	ug/L	06/25/2002 11:14	
Xylene(s)	ND	0.5	ug/L	06/25/2002 11:14	
MTBE	ND	5.0	ug/L	06/25/2002 11:14	
Surrogates(s)					
Trifluorotoluene	109.1	58-124	%	06/25/2002 11:14	
4-Bromofluorobenzene-FID	67.0	50-150	%	06/25/2002 11:14	

Submission #: 2002-06-0416

Gas/BTEX Compounds by 8015M/8021

Harding ESE, Inc.

Attn.: Trish Eliasson
600 Grand Ave, Suite 300
Oakland, CA 94607
Phone: (510) 628-3240 Fax: (510) 451-3165

Project: 54821.2
Port of Oakland-801 Maritime

Received: 06/21/2002 17:41

SEVERN
TRENT
LABORATORY

STL San Francisco
1220 Quarry Lane
Pleasanton, CA 94566

Tel: (925) 484-1919
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www.stl-inc.com
www.chromalab.com

CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030 Test(s): 8021B

Laboratory Control Spike Water QC Batch # 2002/06/25-01.05

LCS 2002/06/25-01.05-004 Extracted: 06/25/2002 Analyzed: 06/25/2002 09:05

LCSD 2002/06/25-01.05-005 Extracted: 06/25/2002 Analyzed: 06/25/2002 09:37

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	109	108	100.0	109.0	108.0	0.9	77-123	20		
Toluene	110	108	100.0	110.0	108.0	1.8	78-122	20		
Ethyl benzene	106	103	100.0	106.0	103.0	2.9	70-130	20		
Xylene(s)	318	309	300	106.0	103.0	2.9	75-125	20		
Surrogates(s)										
Trifluorotoluene	552	543	500	110.4	108.6		58-124			

Submission #: 2002-06-0416

Gas/BTEX Compounds by 8015M/8021

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CA DHS ELAP# 2496

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2002/06/25-01.05

LCS: 2002/06/25-01.05-006

Extracted: 06/25/2002

Analyzed: 06/25/2002 10:09

LCSD: 2002/06/25-01.05-007

Extracted: 06/25/2002

Analyzed: 06/25/2002 10:41

Compound	Conc. ug/L		Exp. Conc.	Recovery		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Gasoline	410	482	500	82.0	96.4	16.1	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	351	419	500	70.2	83.8		50-150			