CONESTOGA-ROVERS & ASSOCIATES

5900 Hollis Street, Suite A
Emeryville, California 94608
Telephone: (510) 420-0700 Fax: (510) 420-9170
www.CRAworld.com

TRANSMITTAL

DATE: February 17, 2009

REFERENCE NO.: 240612

PROJECT NAME: 1784 150th Avenue, San Leandro

TO: Jerry Wickham
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

RECEIVED
4:06 pm, Feb 23, 2009
Alameda County
Environmental Health

Please find enclosed:
- ☐ Draft
- ☐ Originals
- ☐ Prints
- ☒ Final
- ☐ Other

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- ☐ Same Day Courier
- ☒ Other GeoTracker and ACHCSA FTP uploads

QUANTITY	DESCRIPTION
1	Soil Vapor Probe Sampling Report

- ☐ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:
If you have any questions regarding the content of this document, please contact Peter Schaefer at (510) 420-3319.

Copy to: Denis Brown

Completed by: Peter Schaefer [Please Print] Signed: Aubrey Cool

Filing: **Correspondence File**

Denis L. Brown
Shell Oil Products US
HSE - Environmental Services
20945 S. Wilmington Ave.
Carson, CA 90810-1039
Tel (707) 865 0251
Fax (707) 865 2542
Email denis.l.brown@shell.com

Jerry Wickham
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Shell-branded Service Station
1784 150th Avenue
San Leandro, California
SAP Code 136019
Incident #98996068
Agency Site No. RO0000367

Dear Mr. Wickham:

The attached document is provided for your review and comment. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

If you have any questions or concerns, please call me at (707) 865-0251.

Sincerely,

Denis L. Brown
Project Manager

SOIL VAPOR PROBE SAMPLING REPORT

SHELL-BRANDED SERVICE STATION
1784 150TH AVENUE
SAN LEANDRO, CALIFORNIA

SAP CODE	136019
INCIDENT NO.	98996068
AGENCY NO.	RO0000367

Prepared by:
Conestoga-Rovers & Associates

5900 Hollis Street, Suite A
Emeryville, California
U.S.A. 94608

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FEBRUARY 17, 2009
REF. NO. 240612 (6)
This report is printed on recycled paper.

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1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) prepared this report on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell) to present the recent soil vapor probe sampling results. Alameda County Health Care Services Agency's (ACHCSA's) November 19, 2008 letter requested this sampling event.

The site is an operating Shell-branded service station located at the southern corner of the 150th Avenue and Freedom Avenue intersection in San Leandro, California (Figure 1). The area surrounding the site is mixed commercial and residential. The site layout (Figure 2) includes a station building, two dispenser islands, and three fuel underground storage tanks (USTs). One waste oil UST was removed from the site on May 25, 2006.

A summary of previous work performed at the site and additional background information was submitted in CRA's February 5, 2009 *Subsurface Investigation Report*, and is not repeated herein.

2.0 SOIL VAPOR PROBE SAMPLING PROCEDURES

2.1 PERSONNEL PRESENT

CRA Staff Geologist Erin Reinhart-Koylu sampled the soil vapor probes under the supervision of California Professional Geologist Peter Schaefer.

2.2 SOIL VAPOR SAMPLING

On January 17, 2009 CRA sampled soil vapor probes SVP-1 through SVP-3 and SVP-5 according to CRA's soil vapor probe sampling protocol, included as Appendix A. During the sampling event, SVP-4 could not be sampled because water was present in the probe's Teflon tubing. Several attempts were made to clear the water from SVP-4 without success. Soil vapor sampling and leak testing were performed following Department of Toxic Substances Control's January 28, 2003 *Advisory-Active Soil Gas Investigation* guidelines. Paper towels with shaving cream were placed at sample system connections for the leak test.

Purging and sampling of the probes was conducted at a rate of approximately 200 milliliters per minute (ml/min). As requested in ACHCSA's November 19, 2008 letter, an additional sample was collected from SVP-5 at a flow rate of 100 ml/min. Vapor samples were collected in 1-liter Summa™ canisters after removing approximately three purge volumes from the screen interval. Each sample was labeled, documented on a chain-of-custody, and submitted to Calscience Environmental Laboratories, Inc. of Garden Grove, California for analysis.

2.3 SOIL VAPOR SAMPLING ANALYSIS

Soil vapor samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by EPA Method TO-3 (modified) and benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tertiary-butyl ether (MTBE), and tracer compounds isobutane, butane, and propane (as tentatively identified compounds) by modified EPA Method TO-15. These tracer compounds were identified by EPA Method TO-15 as the most abundant compounds of the specific shaving cream analyzed and indicated by distinctive peaks on the petroleum hydrocarbon chromatograph, separate from TPH in the gasoline range. The laboratory analytical report is provided in Appendix B.

3.0 SOIL VAPOR PROBE SAMPLING RESULTS

Soil vapor samples collected on January 17, 2009 contained up to 51 micrograms per cubic meter ($\mu g/m^3$) MTBE. SVP-4 could not be sampled due to water in the sampling tubing. No other constituents of concern were detected.

As requested in ACHCSA's November 19, 2008 letter, CRA collected field measurements of carbon dioxide, methane, and oxygen concentrations before and after sampling, using a Landtec GEM 2000 portable gas analyzer.

Leak testing was performed during sampling using shaving cream to determine if ambient air was entering the Summa™ canisters during sampling. Isobutane was detected in the samples from SVP-2 and SVP-3. The highest concentration reported was 60 $\mu g/m^3$, an amount considered negligible when compared with the amount in the tracer gas compound (approximately 350,000 $\mu g/m^3$ in shaving cream).

Table 1 summarizes the soil vapor analytical data, and Table 2 presents soil vapor field data. TPHg, BTEX, and MTBE results are shown on Figure 2, and the laboratory analytical report is presented in Appendix B.

4.0 CONCLUSIONS AND RECOMMENDATIONS

This round of soil vapor sampling was conducted following a multi-phase extraction pilot test conducted during the first two weeks of November 2008. All soil vapor sample concentrations were below San Francisco Bay Regional Water Quality Control Board (RWQCB) environmental screening levels (ESLs) for residential and commercial land use.

Soil vapor sample concentrations in on-site probes have been below the residential land use RWQCB ESLs with the exception of TPHg in probes SVP-1 and SVP-4 during the September 2007 sampling event, and all constituent of concern concentrations have been below the commercial land use RWQCB ESLs during all five sampling events. Based on these results, no further on-site soil vapor monitoring is warranted.

In off-site probe SVP-5, TPHg concentrations exceeded residential and commercial land use RWQCB ESLs in two of the five events, ethylbenzene concentrations exceeded residential and commercial land use RWQCB ESLs during the September 15, 2008 event only, and benzene and xylenes concentrations exceeded residential land use RWQCB ESLs during the September 15, 2008 event only. SVP-5 could not be sampled during the May 20, 2008 event due to water in the sampling tubing.

CRA recommends one additional round of soil vapor sampling from SVP-5 to determine if the vapor concentrations rebound following the pilot testing. CRA proposes to collect the additional sample at a flow rate of 200 ml/min.

All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

for:
Peter Schaefer, CEG, CHG

Aubrey K Cool
Aubrey K. Cool, PG

FIGURES

11/03/08

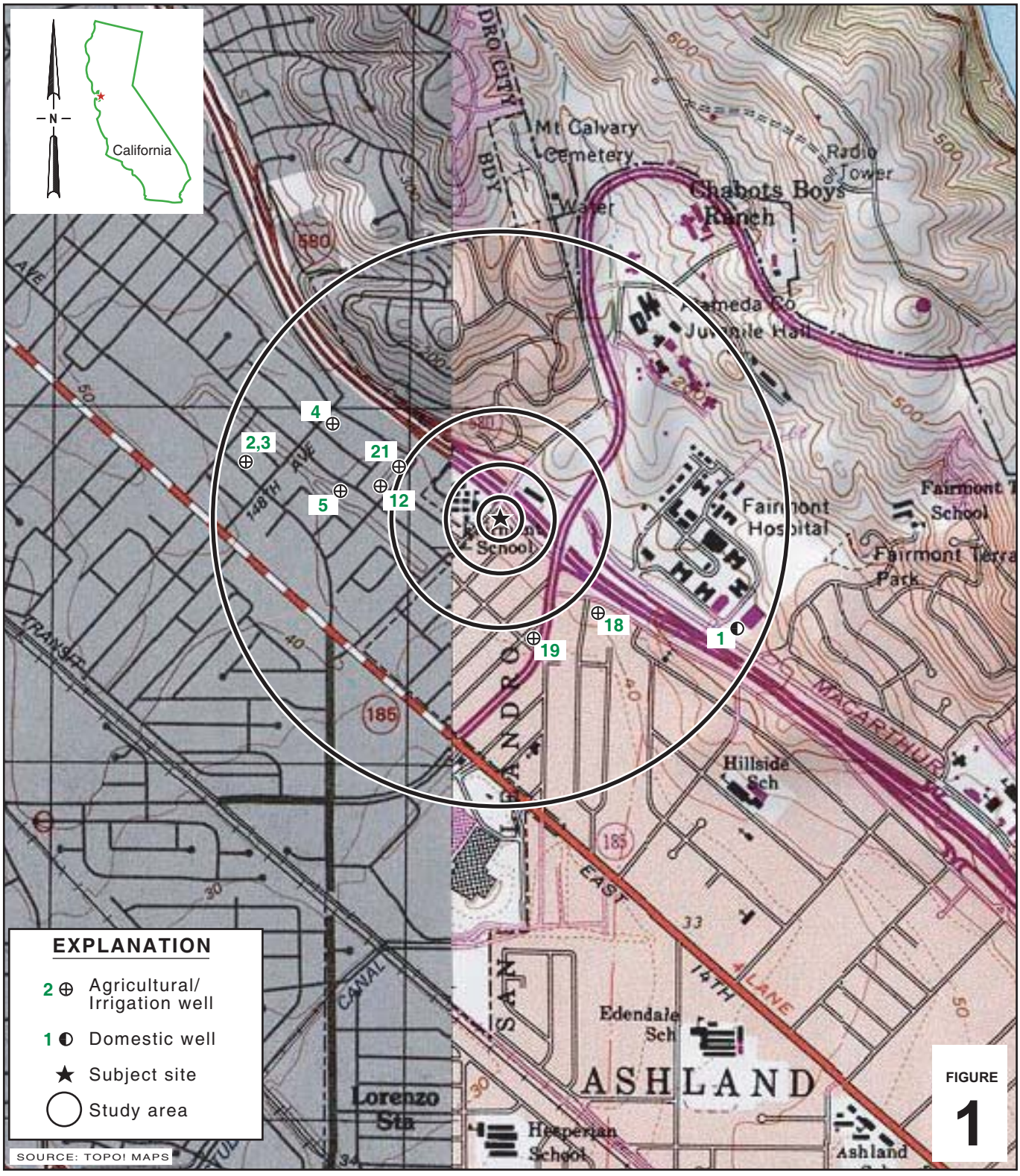

FIGURE 1

0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

I:\Shell\6-chars\2406-\240612-San Leandro 1784 150th\240612-FIGURES\240612 VICINITY.AI

Shell-branded Service Station

1784 150th Avenue

San Leandro, California

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

02/16/09

Soil Vapor Data Map

January 17, 2009

EXPLANATION

- **CPT-1** — CPT location (CRA, 8/29-30/07)
- **B-1** — Soil boring location (CRA, 9/14/07)
- **SVP-1** — Soil vapor probe location (CRA, 8/28/07)
- **WO-1-6.5** — Soil sample location (Cambria, 5/25/06)
- **S-19** — Soil boring location (Cambria, 5/23-25/06)
- **MW-4** — Monitoring well location
- **MW-6** — Monitoring well location
- **D-1-5.0** — Soil sample location (Cambria, 04/05/05)
- **D-1-3.5** — Soil sample location (Cambria, 03/22/05)
- **SB-17** — Soil boring location (Cambria, 9/04)
- **SB-10** — Soil boring location (Cambria, 6/03)
- **SB-9** — Soil boring location (Cambria, 10/02)
- **SVS-11** — Soil boring location (Cambria, 11/98)
- **SVS-1** — Soil boring location (Cambria, 7/96)
- **BH-7** — Soil boring location (Weiss, 3/95)
- **A** — Dispenser soil sample location (Weiss, 3/95)
- **BH-1** — Soil boring location (Weiss, 6/94)
- Dispenser number
- Product piping

SVP-1
TPHg
Benz.
Toluene
Ethyl.
Xylenes
MTBE

Soil Vapor Sample ID

Soil vapor TPHg, benzene, toluene, ethylbenzene, total xylenes, and MTBE concentrations, in micrograms per cubic meter

Notes:
NS = Not sampled
<X = Not detected at reporting limit X
ml/min = Milliliters per minute

I-580

I-580 OFF-RAMP

FREEDOM AVENUE

PORTOFINO CIRCLE

PORTOFINO DRIVE

150TH AVENUE

BH-1 located 215' SE

BH-6 located 360' SE

BH-4

BH-2

BH-5

BH-9

BH-3

BH-8

Shell Station
1784 150th Ave.

Former Dispenser Island

Station Building

Former W/O UST

air comp.

USTs

brick sound wall

parking lot

Denny's Restaurant
15015 Freedom Ave.

Residential

Residential (Townhouses)

Private (Gated Driveway)

MH

SB-10 SB-11 SB-12 SB-13 SB-14 SB-15 SB-16 SB-17 SB-18 SB-19 SB-20 SB-21 SB-22 SB-23 SB-24/MW-12 SB-25/MW-13

SVS-1 SVS-2 SVS-3 SVS-4 SVS-5 SVS-6 SVS-7 SVS-8 SVS-9 SVS-10 SVS-11 SVS-12 SVS-13 SVS-14 SVS-15 SVS-16

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-8 MW-9 MW-10 MW-11

CPT-1 CPT-2 CPT-3 CPT-5 CPT-6

B-1

SVP-1 SVP-2 SVP-3 SVP-4 SVP-5

P-1-2.5, P-1-5.0 P-2-3.5, P-2-5.0 P-3-3.0 P-4-2.5, P-4-5.0 D-1-3.5 D-1-5.0 D-2-3.5 D-2-5.0 D-3-3.5 D-4-3.5 D-4-5.0

A B C D W

SVP-5 (200 ml/m)	SVP-5 (100 ml/m)
<9,100	<9,100
<2.5	<2.5
<3.0	<3.0
<3.4	<3.4
<14	<14
36	51

SVP-1
<9,800
<2.7
<3.2
<3.7
<15
<12

SVP-2
<9,400
<2.6
<3.1
<3.6
<14
<12

SVP-3
<9,200
<2.6
<3.0
<3.5
<14
<12

SVP-4
NS

0 20 40 80

Scale (ft)

FIGURE

2

Shell-branded Service Station
1784 150th Avenue
San Leandro, California

CONESTOGA-ROVERS & ASSOCIATES

I:\Shell\6-chars\2406--\240612-San Leandro 1784 150th\240612-REPORTS\240612-RPT6-SVM\240612 SOIL VAPOR DATA 1-09.DWG

TABLES

TABLE 1

SOIL VAPOR ANALYTICAL DATA
SHELL-BRANDED SERVICE STATION
1784 150TH AVENUE, SAN LEANDRO, CALIFORNIA

Sample ID	*Date*	*TPHg* $\mu g/m^3$	*Benzene* $\mu g/m^3$	*Toluene* $\mu g/m^3$	*Ethylbenzene* $\mu g/m^3$	*Total Xylenes* $\mu g/m^3$	*MTBE* $\mu g/m^3$	*Butane* [a] $\mu g/m^3$	*Isobutane* [a] $\mu g/m^3$	*Propane* [a] $\mu g/m^3$
SVP-1	9/25/2007	**12,000**	<17	7,000	120	300	<19	67	ND	ND
SVP-1	3/5/2008	<17,000	8.2	1,300	41	95	<10	ND	70.12	ND
SVP-1 DUP [c]	3/5/2008	<18,000	7.9	400	32	65	<11	ND	62.99	ND
SVP-1	5/20/2008	620	<3.9	<4.6	<5.2	<5.2	<4.4	ND	ND	ND
SVP-1	9/17/2008	<270	<4.2	5.7	<5.7	<5.7	<4.8	ND	ND	ND
SVP-1	1/17/2009	<9,800	<2.7	<3.2	<3.7	<15	<12	<20	<20	<46
SVP-2	9/25/2007	760	11	90	14	56	24	ND	ND	ND
SVP-2	3/5/2008	<19,000	<2.7	<3.1	<3.6	<7.3	<12	ND	ND	ND
SVP-2	5/20/2008	830	<6.4	<7.6	<8.8	<8.8	<7.3	ND	ND	ND
SVP-2	9/17/2008	<240	<3.8	<4.5	<5.2	<5.2	<4.3	ND	ND	ND
SVP-2 DUP [c]	9/17/2008	<230	<3.6	<4.3	<5.0	<5.0	<4.1	ND	ND	ND
SVP-2	1/17/2009	<9,400	<2.6	<3.1	<3.6	<14	<12	<19	25	<44
SVP-3	9/25/2007	300	<4.4	<5.2	<6.0	<6.0	<5.0	ND	ND	ND
SVP-3 DUP [c]	9/25/2007	<260	<4.1	<4.9	<5.6	<5.6	<4.6	ND	ND	ND
SVP-3	3/5/2008	<20,000	3.9	32	7.8	38	13	ND	ND	ND
SVP-3	5/20/2008	380	<3.9	<4.6	<5.4	<5.4	<4.4	ND	ND	ND
SVP-3	9/17/2008	<340	<5.4	<6.3	<7.3	<7.3	<6.1	ND	ND	ND
SVP-3	1/17/2009	<9,200	<2.6	<3.0	<3.5	<14	<12	<19	60	<43
SVP-4	9/25/2007	**12,000**	<3.9	13	6.3	31	<4.4	713	ND	ND
SVP-5	9/25/2007	**70,000**	<56	<66	<76	<76	<63	ND	ND	ND
SVP-5	3/5/2008	<17,000	<2.3	2.7	<3.1	<6.3	<10	ND	22.11	ND
SVP-5	9/17/2008	**280,000**	**260**	780	**14,000**	**48,000**	290	8,600 [b]	880 [b]	ND
SVP-5 (200 ml/min flow)	1/17/2009	<9,100	<2.5	<3.0	<3.4	<14	36	<19	<19	<43
SVP-5 (100 ml/min flow)	1/17/2009	<9,100	<2.5	<3.0	<3.4	<14	51	<19	<19	<43
SVP-5 DUP[c] (200 ml/min flow)	1/17/2009	<9,000	<2.5	<3.0	<3.4	<14	59	<19	<19	<42
Residential Land Use ESL[d]:		**10,000**	**84**	**63,000**	**980**	**21,000**	**9,400**	**---**	**---**	**---**
Commercial/Industrial Land Use ESL [d]:		**29,000**	**280**	**180,000**	**3,300**	**58,000**	**31,000**	**---**	**---**	**---**

TABLE 1

SOIL VAPOR ANALYTICAL DATA
SHELL-BRANDED SERVICE STATION
1784 150TH AVENUE, SAN LEANDRO, CALIFORNIA

Notes:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method TO-3 GC/FID
Benzene, toluene, ethylbenzene and total xylenes by modified EPA Method TO-15 GC/FID Full Scan
MTBE = Methyl tertiary-butyl ether by modified EPA Method TO-15 GC/FID Full Scan
Butane, isobutane, and propane by modified EPA Method TO-15 GC/FID Full Scan
$\mu g/m^3$ = Micrograms per cubic meter
ND = Not detected; no reporting limit provided.
--- = No applicable ESL
ESL = Environmental screening level

a = Compounds not listed in Regional Water Quality Control Board (RWQCB) ESLs; detected quantities estimated by laboratory for 2007 and 2008 samples.
b = The identification is based on presumptive evidence; estimated value
c = Field duplicate
d = San Francisco Bay RWQCB ESLs for shallow soil gas (Table E)

TABLE 2

SOIL VAPOR ANALYTICAL FIELD DATA
SHELL-BRANDED SERVICE STATION
1784 150TH AVENUE, SAN LEANDRO, CALIFORNIA

Sample ID	*Date*		*Dioxide* %	*Oxygen* %	*Methane* %	*Balance* %
SVP-1	1/17/2009	pre-sampling	0.4	14.7	0.0	**84.8**
SVP-1	1/17/2009	post-sampling	0.3	18.7	0.0	**81.0**
SVP-2	1/17/2009	pre-sampling	1.4	19.7	0.0	**78.9**
SVP-2	1/17/2009	post-sampling	1.4	20.5	0.0	**78.1**
SVP-3	1/17/2009	pre-sampling	0.5	21.4	0.0	**78.1**
SVP-3	1/17/2009	post-sampling	0.5	20.9	0.0	**78.6**
SVP-5 (200 ml/min flow)	1/17/2009	pre-sampling	0.0	21.1	0.0	**78.9**
SVP-5 (200 ml/min flow)	1/17/2009	post-sampling	0.0	21.2	0.1	**78.8**
SVP-5 (100 ml/min flow)	1/17/2009	pre-sampling	0.0	21.2	0.1	**78.8**
SVP-5 (100 ml/min flow)	1/17/2009	post-sampling	0.3	21.8	0.1	**77.8**

Notes:

Field measurements collected using Landtec GEM 2000 portable gas analyzer
ml/min = Milliliters per minute

APPENDIX A

STANDARD OPERATING PROCEDURES

Conestoga-Rovers & Associates

STANDARD FIELD PROCEDURES FOR SOIL VAPOR PROBE INSTALLATION AND SAMPLING

VAPOR POINT METHODS

This document describes Conestoga-Rovers & Associates' standard field methods for soil vapor sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil vapor samples are collected and analyzed to assess whether vapor-phase subsurface contaminants pose a threat to human health or the environment.

Shallow Soil Vapor Point Method for Soil Vapor Sampling

The shallow soil vapor point method for soil vapor sampling utilizes a hand auger or drill rig to advance a boring for the installation of a soil vapor sampling point. Once the boring is hand augered to the final depth, a probe, connected with Swagelok fittings to nylon or Teflon tubing of ¼-inch outer-diameter, is placed within 12-inches of number 2/16 filter sand (Figure A). A 12-inch layer of dry granular bentonite is placed on top of the filter pack. Pre-hydrated granular bentonite is then poured to fill the borehole. The tube is coiled and placed within a wellbox finished flush to the surface. Soil vapor samples will be collected no sooner than 48 hours after installation of the soil vapor points to allow adequate time for representative soil vapors to accumulate. Soil vapor sample collection will not be scheduled until after a minimum of three consecutive precipitation-free days and irrigation onsite has ceased. Figure B shows the soil vapor sampling apparatus. A measured volume of air will be purged from the tubing using a different Summa purge canister. Immediately after purging, soil vapor samples will be collected using the appropriate size Summa canister with attached flow regulator and sediment filter. The soil vapor points will be preserved until they are no longer needed for risk evaluation purposes. At that time, they will be destroyed by extracting the tubing, hand augering to remove the sand and bentonite, and backfilling the boring with neat cement. The boring will be patched with asphalt or concrete, as appropriate.

Vapor Sample Storage, Handling, and Transport

Samples are stored and transported under chain-of-custody to a state-certified analytic laboratory. Samples should never be cooled due to the possibility of condensation within the canister.

APPENDIX B

LABORATORY ANALYTICAL REPORT

Calscience
Environmental
Laboratories, Inc.

January 28, 2009

Peter Schaefer
Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Subject: **Calscience Work Order No.: 09-01-1419**
Client Reference: 1784 150th Ave., San Leandro, CA

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 1/17/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Philip Sanelle for

Calscience Environmental
Laboratories, Inc.
Jessie Kim
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Date Received: 01/17/09
Work Order No: 09-01-1419
Preparation: N/A
Method: EPA TO-3M

Project: 1784 150th Ave., San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	09-01-1419-1-A	01/15/09 10:25	Air	GC 13	N/A	01/17/09 13:39	090117L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	9800	1.7		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-2	09-01-1419-2-A	01/15/09 11:12	Air	GC 13	N/A	01/17/09 13:48	090117L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	9400	1.64		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-3	09-01-1419-3-A	01/15/09 12:02	Air	GC 13	N/A	01/17/09 13:58	090117L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	9200	1.6		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-5 (200ml/m flow)	09-01-1419-4-A	01/15/09 13:46	Air	GC 13	N/A	01/17/09 14:07	090117L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	9100	1.58		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-5 (100ml/m flow)	09-01-1419-5-A	01/15/09 14:30	Air	GC 13	N/A	01/17/09 14:27	090117L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	9100	1.58		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-5 DUP	09-01-1419-6-A	01/15/09 13:54	Air	GC 13	N/A	01/17/09 14:41	090117L01

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	9000	1.57		ug/m3

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates		Date Received:	01/17/09
5900 Hollis Street, Suite A		Work Order No:	09-01-1419
Emeryville, CA 94608-2008		Preparation:	N/A
		Method:	EPA TO-3M

Project: 1784 150th Ave., San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blank	**09-01-1419-7-A**	**01/15/09 14:00**	**Air**	**GC 13**	**N/A**	**01/17/09 13:29**	**090117L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	5700	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**098-01-005-1,647**	**N/A**	**Air**	**GC 13**	**N/A**	**01/17/09 09:30**	**090117L01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	5700	1		ug/m3

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Date Received: 01/17/09
Work Order No: 09-01-1419
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: 1784 150th Ave., San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-1	09-01-1419-1-A	01/15/09 10:25	Air	GC/MS K	N/A	01/18/09 15:42	090118L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.7	1.7		Toluene	ND	3.2	1.7	
Ethylbenzene	ND	3.7	1.7		Propane	ND	46	1.7	
Methyl-t-Butyl Ether (MTBE)	ND	12	1.7		Butane	ND	20	1.7	
Xylenes (total)	ND	15	1.7		Isobutane	ND	20	1.7	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	97	57-129			1,2-Dichloroethane-d4	96	47-137		
Toluene-d8	100	78-156							

SVP-2	09-01-1419-2-A	01/15/09 11:12	Air	GC/MS K	N/A	01/18/09 16:29	090118L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.6	1.64		Toluene	ND	3.1	1.64	
Ethylbenzene	ND	3.6	1.64		Propane	ND	44	1.64	
Methyl-t-Butyl Ether (MTBE)	ND	12	1.64		Butane	ND	19	1.64	
Xylenes (total)	ND	14	1.64		Isobutane	25	19	1.64	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	96	57-129			1,2-Dichloroethane-d4	95	47-137		
Toluene-d8	100	78-156							

SVP-3	09-01-1419-3-A	01/15/09 12:02	Air	GC/MS K	N/A	01/18/09 17:15	090118L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.6	1.6		Toluene	ND	3.0	1.6	
Ethylbenzene	ND	3.5	1.6		Propane	ND	43	1.6	
Methyl-t-Butyl Ether (MTBE)	ND	12	1.6		Butane	ND	19	1.6	
Xylenes (total)	ND	14	1.6		Isobutane	60	19	1.6	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	96	57-129			1,2-Dichloroethane-d4	95	47-137		
Toluene-d8	100	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Date Received: 01/17/09
Work Order No: 09-01-1419
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: 1784 150th Ave., San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-5 (200ml/m flow)	09-01-1419-4-A	01/15/09 13:46	Air	GC/MS K	N/A	01/18/09 18:01	090118L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.5	1.58		Toluene	ND	3.0	1.58	
Ethylbenzene	ND	3.4	1.58		Propane	ND	43	1.58	
Methyl-t-Butyl Ether (MTBE)	36	11	1.58		Butane	ND	19	1.58	
Xylenes (total)	ND	14	1.58		Isobutane	ND	19	1.58	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	92	57-129			1,2-Dichloroethane-d4	92	47-137		
Toluene-d8	79	78-156							

SVP-5 (100ml/m flow)	09-01-1419-5-A	01/15/09 14:30	Air	GC/MS K	N/A	01/19/09 15:52	090119L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.5	1.58		Toluene	ND	3.0	1.58	
Ethylbenzene	ND	3.4	1.58		Propane	ND	43	1.58	
Methyl-t-Butyl Ether (MTBE)	51	11	1.58		Butane	ND	19	1.58	
Xylenes (total)	ND	14	1.58		Isobutane	ND	19	1.58	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	97	57-129			1,2-Dichloroethane-d4	91	47-137		
Toluene-d8	102	78-156							

SVP-5 DUP	09-01-1419-6-A	01/15/09 13:54	Air	GC/MS K	N/A	01/18/09 19:31	090118L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	2.5	1.57		Toluene	ND	3.0	1.57	
Ethylbenzene	ND	3.4	1.57		Propane	ND	42	1.57	
Methyl-t-Butyl Ether (MTBE)	59	11	1.57		Butane	ND	19	1.57	
Xylenes (total)	ND	14	1.57		Isobutane	ND	19	1.57	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	93	57-129			1,2-Dichloroethane-d4	93	47-137		
Toluene-d8	100	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Date Received: 01/17/09
Work Order No: 09-01-1419
Preparation: N/A
Method: EPA TO-15
Units: ug/m3

Project: 1784 150th Ave., San Leandro, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Trip Blank	09-01-1419-7-A	01/15/09 14:00	Air	GC/MS K	N/A	01/18/09 21:02	090118L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	1.6	1		Toluene	ND	1.9	1	
Ethylbenzene	ND	2.2	1		Propane	ND	27	1	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1		Butane	ND	12	1	
Xylenes (total)	ND	8.7	1		Isobutane	ND	12	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	95	57-129			1,2-Dichloroethane-d4	93	47-137		
Toluene-d8	97	78-156							

Method Blank	095-01-021-7,125	N/A	Air	GC/MS K	N/A	01/18/09 08:44	090118L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	1.6	1		Toluene	ND	1.9	1	
Ethylbenzene	ND	2.2	1		Propane	ND	27	1	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1		Butane	ND	12	1	
Xylenes (total)	ND	8.7	1		Isobutane	ND	12	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	94	57-129			1,2-Dichloroethane-d4	92	47-137		
Toluene-d8	99	78-156							

Method Blank	095-01-021-7,126	N/A	Air	GC/MS K	N/A	01/19/09 13:34	090119L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	1.6	1		Toluene	ND	1.9	1	
Ethylbenzene	ND	2.2	1		Propane	ND	27	1	
Methyl-t-Butyl Ether (MTBE)	ND	7.2	1		Butane	ND	12	1	
Xylenes (total)	ND	8.7	1		Isobutane	ND	12	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	96	57-129			1,2-Dichloroethane-d4	93	47-137		
Toluene-d8	101	78-156							

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Conestoga-Rovers & Associates		Date Received:	01/17/09
5900 Hollis Street, Suite A		Work Order No:	09-01-1419
Emeryville, CA 94608-2008		Preparation:	N/A
		Method:	EPA TO-3M

Project: 1784 150th Ave., San Leandro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
09-01-1408-1	Air	GC 13	N/A	01/17/09	090117D01

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
TPH as Gasoline	130000	130000	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Date Received: N/A
Work Order No: 09-01-1419
Preparation: N/A
Method: EPA TO-15

Project: 1784 150th Ave., San Leandro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-7,125	Air	GC/MS K	N/A	01/18/09	090118L01

Parameter	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	108	106	60-156	44-172	1	0-40	
Carbon Tetrachloride	106	103	64-154	49-169	3	0-32	
1,2-Dibromoethane	104	104	54-144	39-159	0	0-36	
1,2-Dichlorobenzene	98	98	34-160	13-181	0	0-47	
1,2-Dichloroethane	107	105	69-153	55-167	1	0-30	
1,2-Dichloropropane	111	111	67-157	52-172	0	0-35	
1,4-Dichlorobenzene	97	97	36-156	16-176	0	0-47	
c-1,3-Dichloropropene	117	115	61-157	45-173	1	0-35	
Ethylbenzene	107	108	52-154	35-171	0	0-38	
o-Xylene	105	106	52-148	36-164	1	0-38	
p/m-Xylene	104	104	42-156	23-175	1	0-41	
Tetrachloroethene	105	104	56-152	40-168	1	0-40	
Toluene	105	105	56-146	41-161	1	0-43	
Trichloroethene	109	107	63-159	47-175	2	0-34	
1,1,2-Trichloroethane	111	110	65-149	51-163	1	0-37	
Vinyl Chloride	107	104	45-177	23-199	2	0-36	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Conestoga-Rovers & Associates		Date Received:	N/A
5900 Hollis Street, Suite A		Work Order No:	09-01-1419
Emeryville, CA 94608-2008		Preparation:	N/A
		Method:	EPA TO-15

Project: 1784 150th Ave., San Leandro, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-021-7,126	Air	GC/MS K	N/A	01/19/09	090119L01

Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	105	104	60-156	44-172	1	0-40	
Carbon Tetrachloride	103	100	64-154	49-169	3	0-32	
1,2-Dibromoethane	104	101	54-144	39-159	3	0-36	
1,2-Dichlorobenzene	100	97	34-160	13-181	4	0-47	
1,2-Dichloroethane	105	100	69-153	55-167	5	0-30	
1,2-Dichloropropane	110	108	67-157	52-172	2	0-35	
1,4-Dichlorobenzene	99	95	36-156	16-176	4	0-47	
c-1,3-Dichloropropene	116	113	61-157	45-173	2	0-35	
Ethylbenzene	107	104	52-154	35-171	3	0-38	
o-Xylene	106	103	52-148	36-164	3	0-38	
p/m-Xylene	104	100	42-156	23-175	4	0-41	
Tetrachloroethene	102	100	56-152	40-168	2	0-40	
Toluene	103	102	56-146	41-161	2	0-43	
Trichloroethene	106	104	63-159	47-175	2	0-34	
1,1,2-Trichloroethane	110	108	65-149	51-163	2	0-37	
Vinyl Chloride	102	100	45-177	23-199	2	0-36	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 09-01-1419

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Shell Oil Products Chain Of Custody Record

LAB (LOCATION)

- ☑ CALSCIENCE ( )
- ☐ SPL ( )
- ☐ XENCO ( )
- ☐ TEST AMERICA ( )
- ☐ OTHER ( )

Please Check Appropriate Box:

- ☑ ENV. SERVICES
- ☐ MOTIVA RETAIL
- ☐ SHELL RETAIL
- ☐ MOTIVA SD&CM
- ☐ CONSULTANT
- ☐ LUBES
- ☐ SHELL PIPELINE
- ☐ OTHER

Print Bill To Contact Name: Denis Brown

INCIDENT # (ENV SERVICES): 9 8 9 9 6 0 6 8

☐ CHECK IF NO INCIDENT # APPLIES

PO #:

SAP #: 1 3 6 0 1 9

DATE: 1/15/2009

PAGE: 1 of 1

SAMPLING COMPANY	Conestoga-Rovers & Associates
LOG CODE	CRAW
SITE ADDRESS: Street and City	1784 150th Ave, San Leandro
State	CA
GLOBAL ID NO.	TO 600101230
ADDRESS	5900 Hollis Street, Suite A, Emeryville, CA 94608
EDF DELIVERABLE TO (Name, Company, Office Location)	Brenda Carter, CRA, Emeryville
PHONE NO.	510-420-3343
E-MAIL	shell.em.edf@craworld.com
CONSULTANT PROJECT NO.	240612-2008-6
PROJECT CONTACT (Hardcopy or PDF Report to)	Peter Schaefer
SAMPLER NAME(S) (Print)	Erin Reinhart-Koylu
TELEPHONE	510-420-3319
FAX	510-420-9170
E-MAIL	pschaefer@craworld.com
LAB USE ONLY	09-01-1419

TURNAROUND TIME (CALENDAR DAYS): ☑ STANDARD (14 DAY) ☐ 5 DAYS ☐ 3 DAYS ☐ 2 DAYS ☐ 24 HOURS ☐ RESULTS NEEDED ON WEEKEND

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY:

SPECIAL INSTRUCTIONS OR NOTES :

please report results in μg/m[3]

- ☑ SHELL CONTRACT RATE APPLIES
- ☐ STATE REIMBURSEMENT RATE APPLIES
- ☐ EDD NOT NEEDED
- ☑ RECEIPT VERIFICATION REQUESTED

REQUESTED ANALYSIS

TEMPERATURE ON RECEIPT C°

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	PRESERVATIVE HCL	HNO3	H2SO4	NONE	OTHER	NO. OF CONT.	TPHg (TO-3)	BTEX by EPA Method (TO-15)	MTBE by EPA Method (TO-15)	Isobutane, butane, & propane (TO-15, GC/MS)	Container PID Readings or Laboratory Notes
1	SVP-1	1/15/2009	10:25	air				x		1	x	x	x	x	Summa ID # LC 293
2	SVP-2	1/15/2009	11:12	air				x		1	x	x	x	x	Summa ID # LC 105
3	SVP-3	1/15/2009	12:02	air				x		1	x	x	x	x	Summa ID # LC 343
[redacted]															
4	SVP-5 (200ml/m flow)	1/15/2009	13:46	air				x		1	x	x	x	x	Summa ID # LC 309
5	SVP-5 (100ml/m flow)	1/15/2009	14:30	air				x		1	x	x	x	x	Summa ID # LC084
6	SVP-5 DUP	1/15/2009	13:54	air				x		1	x	x	x	x	Summa ID # LC-398
7	Trip Blank	1/15/2009	14:00	air				x		1	x	x	x	x	Summa ID # LC-169

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Erin Reinhart-	Secure Location	1/15/09	15:00
[signature]	Tom O'Malley CEL	1/16/09	1036
Tom O'Malley TO GSO 1/17/09 1730	Wobaton CEL	1/17/09	1000

GSO 511104034

05/2/06 Revision

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-01-1419

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: CRA

DATE: 1/17/09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature ____.____ °C - 0.2 °C (CF) = ____.____ °C ☐ **Blank** ☐ **Sample**

☐ Sample(s) outside temperature criteria (PM/APM contacted by:_____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☑ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** WB

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☑ N/A **Initial:** WB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** WB

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☐	☐	☑
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOAh ☐VOAna_2 ☐125AGB ☐125AGBh ☐125AGBpo_4 ☐1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGBs ☐250CGB ☐250CGBs ☐1PB ☐500PB ☐500PBna ☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PBsterile ☐100PBna_2 ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☑Summa® ☐_____

Checked/Labeled by: WB

Reviewed by: _____

Scanned by: WB

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle

Preservative: h:HCL n:HNO_3 na_2:$Na_2S_2O_3$ na:NaOH po_4:H_3PO_4 s:H_2SO_4 znna:$ZnAc_2$+NaOH