CONESTOGA-ROVERS & ASSOCIATES

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

TRANSMITTAL

DATE: May 4, 2012

REFERENCE NO.: 240524

PROJECT NAME: 4255 MacArthur Boulevard, Oakland

TO: Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

RECEIVED
5:13 pm, May 07, 2012
Alameda County
Environmental Health

Please find enclosed:
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- ☐ Originals
- ☐ Prints
- ☒ Final
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- ☒ Other GeoTracker and Alameda County FTP

QUANTITY	DESCRIPTION
1	Subsurface Investigation Report

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

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

Copy to: Denis Brown, Shell Oil Products US (electronic copy)
Fidencio Mateo (electronic copy)
Michael R. Whitlock, Wells Fargo Bank (electronic copy)

Completed by: Peter Schaefer Signed: Peter Schaefer

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 Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Former Shell Service Station
4255 MacArthur Boulevard
Oakland, California
SAP Code 135701
Incident No. 98995758
ACEH Case No. RO0000486

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
Senior Program Manager

SUBSURFACE INVESTIGATION REPORT

FORMER SHELL SERVICE STATION
4255 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

SAP CODE	135701
INCIDENT NO.	98995758
AGENCY NO.	RO0000486

Prepared by:
Conestoga-Rovers & Associates

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

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web: http://www.CRAworld.com

MAY 4, 2012
REF. NO. 240524 (20)
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EXECUTIVE SUMMARY

- Four temporary soil vapor probes (SVP-9 through SVP-12) were installed and sampled.
- All constituent of concern detections were below RWQCB ESLs for residential land use in all soil vapor samples.

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) prepared this report on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell) to document the recent temporary soil vapor probe installation and sampling at the residential care facility located at 4240 Redding Street, Oakland. The purpose of the investigation was to assess the potential for soil gas migration to indoor air at the residential care facility. CRA followed the scope of work and procedures presented in our April 5, 2012 work plan, which was approved by Alameda County Environmental Health in their April 9, 2012 letter, with the following exceptions:

- Due to the shallow depth to groundwater (2.5 feet below grade [fbg]), we were unable to install and sample the soil vapor probes proposed at each location at 3 and 5 fbg, and
- Due to fine-grained soils (clay and silt), we could not obtain samples from our initial temporary soil vapor probes installed with post-run tubing using a direct-push drill rig. We subsequently installed the probes at 1 fbg using a hand auger and were able to obtain soil vapor samples.

The site is a former Shell Service Station located on the western corner of MacArthur Boulevard and High Street in Oakland, California (Figure 1). Currently the site is a vacant lot. The former site layout consisted of a kiosk, three underground storage tanks, and three dispenser islands (Figure 2). The area surrounding the site is of mixed commercial and residential use.

A summary of previous work performed at the site and additional background information is presented in CRA's April 5, 2012 work plan and is not repeated herein.

2.0 INVESTIGATION ACTIVITIES

2.1 PERMIT

CRA obtained a drilling permit from Alameda County Public Works Agency (Appendix A).

2.2 FIELD DATE

April 17, 2012.

2.3 DRILLING COMPANY

Vapor Tech Services.

2.4 CRA PERSONNEL

Geologist Belew Yifru directed the temporary probe installation working under the supervision of California Professional Geologist Peter Schaefer.

2.5 DRILLING METHOD

Hand auger.

2.6 NUMBER OF PROBES

CRA installed four temporary soil vapor probes (SVP-9 through SVP-12) on the residential care facility property located at 4240 Redding Street, Oakland (Figure 2). The soil types encountered are described on the boring logs contained in Appendix B.

2.7 VAPOR PROBE MATERIALS

CRA drilled one soil boring at each location to 1.25 fbg using a hand auger. After the borings were advanced, approximately 3 inches of #2/12 Monterey sand filter pack was placed in the bottom of the boring, and a ¼-inch diameter Teflon® tubing attached to 1-inch-length stainless steel screen was placed at approximately 1 fbg. Approximately 3 additional inches of #2/12 Monterey sand filter pack were placed on top of the screen and topped with bentonite slurry to grade. Following sampling, the probe materials were removed, and each boring was backfilled with neat cement.

2.8 SCREENED INTERVALS

1 fbg.

2.9 SOIL VAPOR SAMPLING PROCEDURE

Prior to sampling, CRA purged at least three tubing volumes of air from each temporary vapor probe using a vacuum pump. Immediately after purging, CRA collected a soil vapor sample using a laboratory-supplied Tedlar® bag. During sampling, CRA connected the Teflon® tubing for each vapor probe to a lung box containing the Tedlar® bag, and the lung box chamber was connected to the vacuum pump. CRA then drew the sample into the Tedlar® bag by reducing the pressure in the lung box with the vacuum pump. Each sample was labeled, documented on a chain-of-custody, and submitted to Calscience Environmental Laboratories, Inc. of Garden Grove, California for analysis within 72 hours.

To check the system for leaks, CRA placed a containment unit (or shroud) over the soil vapor probe surface casing and sampling manifold. Prior to soil vapor probe purging, CRA introduced helium into the containment unit to obtain a minimum 50 percent (%) helium content level. CRA confirmed the helium content within the containment unit using a helium meter. The helium meter readings are presented in Section 3.2. All samples were analyzed by the laboratory for helium, and CRA presents the results in Section 3.2 and on Table 1.

2.10 SOIL VAPOR SAMPLING ANALYSES

Soil vapor samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg; carbon range C_6-C_{12}) by EPA Method TO-3 (modified); for benzene, toluene, ethylbenzene, and total xylenes (BTEX), and naphthalene by modified EPA Method 8260B; for oxygen and argon, carbon dioxide, and methane by ASTM D-1946; and for helium by ASTM D-1946 (M).

2.11 WASTE DISPOSAL

Soil and rinsate generated during field activities were stored on the former Shell Service Station site in 55-gallon drums, sampled, and profiled for disposal. Waste disposal confirmation documentation is pending and will be provided by CRA upon request.

3.0 FINDINGS

3.1 SOIL VAPOR

The soil vapor chemical analytical data are summarized in Table 1, and TPHg, BTEX, and naphthalene analytical results are presented on Figure 2. The laboratory analytical report is presented in Appendix C.

3.2 LEAK TESTING

CRA performed leak testing as described above, and up to 0.0132 percent by volume (%*v*) helium was detected in the samples. As shown in the following table, the detections are below 10% of the concentration detected in the shroud, and the samples are considered valid.

Probe ID	*Depth (fbg)*	*Helium concentration in sample (%v)*	*Helium detected in shroud (%v)*	*Maximum acceptable helium concentration in sample (%v)*
SVP-9	1	<0.0100	51	5.1
SVP-10	1	<0.0100	61	6.1
SVP-11	1	0.0132	69	6.9
SVP-12	1	<0.0100	70	7.0

The laboratory analytical report for helium is presented in Appendix C, and CRA includes the results on Table 1.

4.0 CONCLUSIONS AND RECOMMENDATIONS

TPHg, BTEX, and naphthalene detections from soil vapor probes SVP-9 through SVP-12 were below San Francisco Bay Regional Water Quality Control Board's environmental screening levels for residential land use[1]. No further soil vapor investigation at the residential care facility located at 4240 Redding Street, Oakland is warranted.

1 *Screening for Environmental Concerns at Site With Contaminated Soil and Groundwater,* California Regional Water Quality Control Board, Interim Final - November 2007 [Revised May 2008]

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

Peter Schaefer, CEG, CHG

Aubrey K. Cool, PG

FIGURES

12/16/08

I:\Shell\6-chars\2405--\240524-Oakland 4255 MacArthur\240524-FIGURES\240524 VICINITY.AI

FIGURE 1

0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

Former Shell Service Station
4255 MacArthur Boulevard
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

04/23/2012

EXPLANATION

- SVP-9 — Temporary soil vapor probe location
- SB-9 — Soil boring location (Shell)
- SVP-1 — Soil vapor probe location (Shell)
- MW-1 — Monitoring well location (Shell)
- MW-1B — Monitoring well location (ConocoPhillips)
- SVW-1 — Soil vapor well location (ConocoPhillips)
- TB-1 — Destroyed well location
- STM — Storm drain line (STM)
- SAN — Sanitary sewer line (SAN)
- W — Water line (W)

Sample ID	Sample Date	Sample Depth (fbg)	TPHg (µg/m³)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl-benzene (µg/m³)	Total Xylenes (µg/m³)	Naph-thalene (µg/m³)
SVP-9	4/17/2012	1	<3,800	2.0	35	3.0	15	<52

Notes:
Soil vapor sample ID, date, depth in feet below grade (fbg), and concentrations in micrograms per cubic meter (µg/m³)
TPHg = Total petroleum hydrocarbons as gasoline
<X = Not detected at reporting limit X

Sample ID	Sample Date	Sample Depth (fbg)	TPHg (µg/m³)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl-benzene (µg/m³)	Total Xylenes (µg/m³)	Naph-thalene (µg/m³)
SVP-12	4/17/2012	1	<3,800	1.9	38	3.0	15	<52

Sample ID	Sample Date	Sample Depth (fbg)	TPHg (µg/m³)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl-benzene (µg/m³)	Total Xylenes (µg/m³)	Naph-thalene (µg/m³)
SVP-11	4/17/2012	1	<3,800	0.92	36	1.9	10	<52

Sample ID	Sample Date	Sample Depth (fbg)	TPHg (µg/m³)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl-benzene (µg/m³)	Total Xylenes (µg/m³)	Naph-thalene (µg/m³)
SVP-10	4/17/2012	1	<3,800	1.7	46	2.7	12	<52

Sample ID	Sample Date	Sample Depth (fbg)	TPHg (µg/m³)	Benzene (µg/m³)	Toluene (µg/m³)	Ethyl-benzene (µg/m³)	Total Xylenes (µg/m³)	Naph-thalene (µg/m³)
SVP-9	4/17/2012	1	<3,800	2.0	35	3.0	15	<52

MACARTHUR BOULEVARD
REDDING STREET
HIGH STREET
HIGHWAY 580
580 ON-RAMP
Fenceline
Parking
Foot Clinic
Church Structures
Residence
4240 Redding
Mobile Home Park
Former Storage Building
Former Dispenser Island (removed,1/03)
Former Dispenser Island (removed 11/95)
Former Dispenser Island (removed 1/03)
Former USTs
Pharmacy
Building
Driveway
Dispenser
USTs
Steep Embankment
Former Shell
4255 MacArthur
76 Station #1156
4276 MacArthur

SVP-1, SVP-2, SVP-3, SVP-4, SVP-5, SVP-6, SVP-7, SVP-8, SVP-9, SVP-10, SVP-11, SVP-12
SVW-1, SVW-2, SVW-3, SVW-4, SVW-5, SVW-6
MW-1, MW-1B, MW-2, MW-2B, MW-3, MW-3B, MW-4, MW-4B, MW-5, MW-6, MW-7, MW-8, MW-9
MW-3 (BH-C), MW-2 (BH-B), MW-4 (BH-F), MW-1 (BH-A)
SB-9, SB-10, SB-11, SB-12, SB-13, SB-14, SB-15, SB-16
TB-1, TB-2

N

0 20 40 80
Scale (ft)

I:\Shell\6-chars\2405--\240524-Oakland 4255 MacArthur\240524-FIGURES\240524 SITE PLAN (F2, SOIL VAPOR).DWG

Soil Vapor Concentration Map

April 17, 2012

CONESTOGA-ROVERS & ASSOCIATES

Former Shell Service Station
4255 MacArthur Boulevard
Oakland, California

FIGURE
2

TABLE

TABLE 1

SOIL VAPOR ANALYTICAL DATA
FORMER SHELL SERVICE STATION
4255 MACARTHUR BOULEVARD, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TPHg ($\mu g/m^3$)*	*B ($\mu g/m^3$)*	*T ($\mu g/m^3$)*	*E ($\mu g/m^3$)*	*X ($\mu g/m^3$)*	*Naphthalene ($\mu g/m^3$)*	*Methane (%v)*	*Carbon Dioxide (%v)*	*Oxygen + Argon (%v)*	*Helium (%v)*
SVP-9	4/17/2012	1	<3,800	2.0 a	35	3.0 a	15 a	<52	<0.500	1.87	19.9	<0.0100
SVP-10	4/17/2012	1	<3,800	1.7 a	46	2.7 a	12 a	<52	<0.500	<0.500	21.9	<0.0100
SVP-11	4/17/2012	1	<3,800	0.92 a	36	1.9 a	10 a	<52	<0.500	1.01	21.0	0.0132
SVP-12	4/17/2012	1	<3,800	1.9 a	38	3.0 a	15 a	<52	<0.500	<0.500	21.5	<0.0100
Residential land use ESLs [b]:			***10,000***	***84***	***63,000***	***980***	***21,000***	***72***	***NA***	***NA***	***NA***	***NA***

Notes:
TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method TO-3M
BTEX = Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260B (M)
Naphthalene analyzed by EPA Method 8260B (M)
Methane, carbon dioxide, and oxygen + argon analyzed by ASTM D-1946
Helium analyzed by ASTM D-1946 (M)
fbg = Feet below grade
$\mu g/m^3$ = Micrograms per cubic meter
%v = Percent by volume
<x = Not detected at reporting limit x
ESL = Environmental screening level
NA = No applicable ESL

a = Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.

b = San Francisco Bay Regional Water Quality Control Board (RWQCB) shallow soil gas screening level for evaluation of potential vapor intrusion concerns - residential land use from RWQCB's *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater*, California Regional Water Quality Control Board, Interim Final - November 2007 (Revised May 2008).

APPENDIX A

PERMIT

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 04/02/2012 By jamesy

Permit Numbers: W2012-0204
Permits Valid from 04/09/2012 to 04/13/2012

Application Id:	1332800402112	**City of Project Site:** Oakland
Site Location:	4255 Macarthur Boulevard	
Project Start Date:	04/09/2012	**Completion Date:** 04/13/2012
Assigned Inspector:	Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org	
Applicant:	Conestoga Rovers & Associates - Belew Yifru 5900 Hollis Street Suite A, Emeryville, CA 94608	**Phone:** 510-420-3356 x156
Property Owner:	Ronald Malone P.O.Box 2744, Castro Valley, CA 94546	**Phone:** 510-537-3891
Client:	Denis Brown (Shell Oil Products US) 20945 S. Willmington Ave., Carson, CA 90810	**Phone:** 707-865-0251
Contact:	Belew Yifru	**Phone:** 510-420-3356 x156 **Cell:** 510-385-0307

	Total Due:	$265.00
Receipt Number: WR2012-0093	**Total Amount Paid:**	$265.00
Payer Name : Conestoga Rovers & Associates	Paid By: CHECK	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 4 Boreholes
Driller: TEG-Northern California, Inc. - Lic #: 706568 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2012-0204	04/02/2012	07/08/2012	4	3.00 in.	5.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit

application on site shall result in a fine of $500.00.

6. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

7. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

APPENDIX B

BORING LOGS

Boring/Well Log Legend

KEY TO SYMBOLS/ABBREVIATIONS

- First encountered groundwater
- Static groundwater
- Soils logged by hand-auger or air-knife cuttings
- Soils logged by drill cuttings or disturbed sample
- Undisturbed soil sample interval
- Soil sample retained for submittal to analytical laboratory
- No recovery within interval
- Hydropunch or vapor sample screen interval

PID = Photo-ionization detector or organic vapor meter reading in parts per million (ppm)

fbg = Feet below grade

Blow Counts = Number of blows required to drive a California-modified split-spoon sampler using a 140-pound hammer falling freely 30 inches, recorded per 6-inch interval of a total 18-inch sample interval

(10YR 4/4) = Soil color according to Munsell Soil Color Charts

msl = Mean sea level

Soils logged according to the USCS.

UNIFIED SOILS CLASSIFICATION SYSTEM (USCS) SUMMARY

Major Divisions			Graphic	Group Symbol	Typical Description
Coarse-Grained Soils (>50% Sands and/or Gravels)	Gravel and Gravelly Soils	Clean Gravels (≤5% fines)		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
				GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		Gravels with Fines (≥15% fines)		GM	Silty gravels, gravel-sand-silt mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils	Clean Sands (≤5% fines)		SW	Well-graded sands, gravelly sands, little or no fines
				SP	Poorly-graded sands, gravelly sand, little or no fines
		Sands with Fines (≥15% fines)		SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
Fine-Grained Soils (>50% Silts and/or Clays)	Silts and Clays			ML	Inorganic silts, very fine sands, silty or clayey fine sands, clayey silts with slight plasticity
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays			MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils
				CH	Inorganic clays of high plasticity
				OH	Organic clays of medium to high plasticity, organic silts
Highly Organic Soils				PT	Peat, humus, swamp soils with high organic contents

M:\Templates & Forms\Boring Logs\Boring Log Legend

CONESTOGA-ROVERS & ASSOCIATES

Conestoga - Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608
Telephone: 510-420-0700
Fax: 510-420-9170

BORING / WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	SVP-9
JOB/SITE NAME	Former Shell service station	**DRILLING STARTED**	17-Apr-12
LOCATION	4255 MacArthur Boulevard, Oakland, California	**DRILLING COMPLETED**	17-Apr-12
PROJECT NUMBER	240524	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vapor Tech Services	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hand Auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2.5"	**SCREENED INTERVALS**	NA
LOGGED BY	Belew Yifru	**DEPTH TO WATER (First Encountered)**	4.50 fbg (17-Apr-12) ▽
REVIEWED BY	P. Schaefer PG#5612	**DEPTH TO WATER (Static)**	2.50 fbg ▼
REMARKS	Temporary soil vapor probe SVP-9 installed to 1 foot below grade adjacent to this hole.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							CONCRETE	0.3	
0							**CLAY**; Dark gray (2.5YR 4/1); moist; 55% clay, 40% silt, 5% fine-medium sand; medium plasticity; with brick pieces.		
					CL				Portland Type I/II Cement
0									
							@ 4.5 fbg color changes to light gray (5YR 7/1).		
0				5				5.0	Bottom of Boring @ 5 fbg

WELL LOG (PID) I:\SHELL\6-CHARS\2405-\240524-1\244DE7~114255.GPJ DEFAULT.GDT 4/25/12

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BORING / WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	SVP-10
JOB/SITE NAME	Former Shell service station	**DRILLING STARTED**	17-Apr-12
LOCATION	4255 MacArthur Boulevard, Oakland, California	**DRILLING COMPLETED**	17-Apr-12
PROJECT NUMBER	240524	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vapor Tech Services	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hand Auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2.5"	**SCREENED INTERVALS**	NA
LOGGED BY	Belew Yifru	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	P. Schaefer PG#5612	**DEPTH TO WATER (Static)**	NA
REMARKS	Temporary soil vapor probe SVP-10 installed to 1 foot below grade.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							CONCRETE	0.3	Portland Type I/II Cement
0					CL		**CLAY**; Dark gray (2.5YR 4/1); moist; 55% clay, 40% silt, 5% fine-medium sand; medium plasticity; with brick pieces.	1.0	
				5					Bottom of Boring @ 5 fbg

WELL LOG (PID) I:\SHELL\6-CHARS\2405--\240524-1\244DE7~1\4255.GPJ DEFAULT.GDT 4/25/12

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5900 Hollis Street, Suite A
Emeryville, CA 94608
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BORING / WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	SVP-11
JOB/SITE NAME	Former Shell service station	**DRILLING STARTED**	17-Apr-12
LOCATION	4255 MacArthur Boulevard, Oakland, California	**DRILLING COMPLETED**	17-Apr-12
PROJECT NUMBER	240524	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vapor Tech Services	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hand Auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2.5"	**SCREENED INTERVALS**	NA
LOGGED BY	Belew Yifru	**DEPTH TO WATER (First Encountered)**	NA ▽
REVIEWED BY	P. Schaefer PG#5612	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Temporary soil vapor probe SVP-11 installed to 1 foot below grade.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
0							**CONCRETE**	0.3	Portland Type I/II Cement
					CL		**CLAY**; Dark gray (2.5YR 4/1); moist; 55% clay, 40% silt, 5% fine-medium sand; medium plasticity; with brick pieces.	1.0	
				5					Bottom of Boring @ 5 fbg

WELL LOG (PID) I:\SHELL\6-CHARS\2405--\240524--1\244DE7~1\4255.GPJ DEFAULT.GDT 4/25/12

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Emeryville, CA 94608
Telephone: 510-420-0700
Fax: 510-420-9170

BORING / WELL LOG

CLIENT NAME	Shell Oil Products US	**BORING/WELL NAME**	SVP-12
JOB/SITE NAME	Former Shell service station	**DRILLING STARTED**	17-Apr-12
LOCATION	4255 MacArthur Boulevard, Oakland, California	**DRILLING COMPLETED**	17-Apr-12
PROJECT NUMBER	240524	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vapor Tech Services	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hand Auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2.5"	**SCREENED INTERVALS**	NA
LOGGED BY	Belew Yifru	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	P. Schaefer PG#5612	**DEPTH TO WATER (Static)**	NA
REMARKS	Temporary soil vapor probe SVP-12 installed to 1 foot below grade.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							CONCRETE	0.3	Portland Type I/II Cement
0					CL		**CLAY**; Dark gray (2.5YR 4/1); moist; 55% clay, 40% silt, 5% fine-medium sand; medium plasticity; with brick pieces.	1.0	
				5					Bottom of Boring @ 5 fbg

WELL LOG (PID) I:\SHELL\6-CHARS\2405--\240524--\1244DE7~1\14255.GPJ DEFAULT.GDT 4/25/12

APPENDIX C

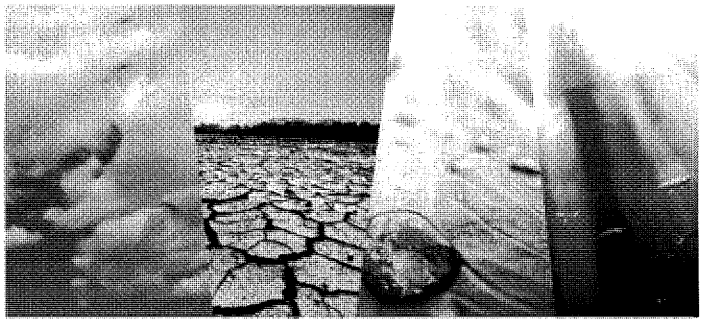
CALSCIENCE ENVIRONMENTAL LABORATORIES, INC. - ANALYTICAL REPORT

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 12-04-1085

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Conestoga-Rovers & Associates

Client Project Name: 4255 Mac Arthur Blvd., Oakland, CA

Attention: Peter Schaefer
5900 Hollis Street, Suite A
Emeryville, CA 94608-2008

Approved for release on 04/19/2012 by:
Xuan Dang
Project Manager

ResultLink ▸

Email your PM ▸

Calscience Environmental Laboratories, Inc.

Contents

Client Project Name: 4255 Mac Arthur Blvd., Oakland, CA
Work Order Number: 12-04-1085

Calscience Environmental Laboratories, Inc.

Case Narrative

Work Order # 12-04-1085

Modified EPA 8260 in Air

This method is used to determine the concentration of BTEX/Oxygenates/Naphthalene having a vapor pressure greater than 10^{-1} torr at 25°C at standard pressure in an air matrix. The method is similar to EPA TO-15 and uses air standards for calibration. Method specifics are listed in the table below. A known volume of sample is directed from the container (Summa® canister or Tedlar™ bag) through a solid multi-module (glass beads, tenex, cryofocuser) concentrator. Following concentration, the VOCs are thermally desorbed onto a gas chromatographic column for separation and then detected on a mass selective detector.

Comparison of CalscienceTO-15(Modified) versus EPA 8260 (Modified) in Air

Requirement	Calscience TO-15(M)	Calscience EPA 8260(M) in Air
BFB Acceptance Criteria	SW846 Protocol	SW846 Protocol
Initial Calibration	Allowable % RSD for each Target Analyte <= 30%, 10% of analytes allowed <=40%	Allowable % RSD for each Target Analyte <= 30%, 10% of analytes allowed <= 40%
Initial Calibration Verification (ICV) - Second Source Standard (LCS)	Analytes contained in the LCS standard evaluated against historical control limits for the LCS	BTEX and MTBE only - <= 30%D
Daily Calibration Verification (CCV)	**Full List Analysis:** Allowable % Difference for each CCC analyte is <= 30%	BTEX and MTBE only - <= 30%D
	Target List Analysis: Allowable % Difference for each target analytes is <= 30%	
Daily Calibration Verification (CCV) - Internal Standard Area Response	Allowable +/- 50% (Range: 50% to 150%)	Allowable +/- 50% (Range: 50% to 150%)
Method Blank, Laboratory Control Sample and Sample - Internal Standard Area Response	Allowable +/- 50% of the mean area response of most recent Calibration Verification (Range: 50% to 150%)	Allowable +/- 50% of the mean area response of the most recent Calibration Verification (Range: 50% to 150%)
Surrogates	1,4-Bromoflurobenzene, 1,2-Dichloroethane-d4 and Toluene-d8 - % Recoveries based upon historical control limits +/-3S	1,4-Bromoflurobenzene, 1,2-Dichloroethane-d4 and Toluene-d8 - % Recoveries based upon historical control limits +/-3S

Calscience Environmental Laboratories, Inc.

Client:	Conestoga-Rovers & Associates	Work Order:	12-04-1085
	5900 Hollis Street, Suite A	Project Name:	4255 Mac Arthur Blvd., Oakland, CA
	Emeryville, CA 94608-2008	Received:	04/18/12 07:55
Attn:	Peter Schaefer		

DETECTIONS SUMMARY

Client Sample ID / Analyte	Result	Qualifiers	Reporting Limit	Units	Method	Extraction
SVP-9-1						
Carbon Dioxide	**1.87**		0.500	%v	ASTM D-1946	N/A
Oxygen + Argon	**19.9**		0.500	%v	ASTM D-1946	N/A
Benzene	**2.0**	J	0.30*	ug/m3	EPA 8260B (M)	N/A
Toluene	**35**		19	ug/m3	EPA 8260B (M)	N/A
Ethylbenzene	**3.0**	J	0.49*	ug/m3	EPA 8260B (M)	N/A
Xylenes (total)	**15**	J	3.3*	ug/m3	EPA 8260B (M)	N/A
SVP-10-1						
Oxygen + Argon	**21.9**		0.500	%v	ASTM D-1946	N/A
Benzene	**1.7**	J	0.30*	ug/m3	EPA 8260B (M)	N/A
Toluene	**46**		19	ug/m3	EPA 8260B (M)	N/A
Ethylbenzene	**2.7**	J	0.49*	ug/m3	EPA 8260B (M)	N/A
Xylenes (total)	**12**	J	3.3*	ug/m3	EPA 8260B (M)	N/A
SVP-11-1						
Carbon Dioxide	**1.01**		0.500	%v	ASTM D-1946	N/A
Oxygen + Argon	**21.0**		0.500	%v	ASTM D-1946	N/A
Helium	**0.0132**		0.0100	%v	ASTM D-1946 (M)	N/A
Benzene	**0.92**	J	0.30*	ug/m3	EPA 8260B (M)	N/A
Toluene	**36**		19	ug/m3	EPA 8260B (M)	N/A
Ethylbenzene	**1.9**	J	0.49*	ug/m3	EPA 8260B (M)	N/A
Xylenes (total)	**10**	J	3.3*	ug/m3	EPA 8260B (M)	N/A
SVP-12-1						
Oxygen + Argon	**21.5**		0.500	%v	ASTM D-1946	N/A
Benzene	**1.9**	J	0.30*	ug/m3	EPA 8260B (M)	N/A
Toluene	**38**		19	ug/m3	EPA 8260B (M)	N/A
Ethylbenzene	**3.0**	J	0.49*	ug/m3	EPA 8260B (M)	N/A
Xylenes (total)	**15**	J	3.3*	ug/m3	EPA 8260B (M)	N/A

Subcontracted analyses, if any, are not included in this summary.

*MDL is shown.

Calscience Environmental Laboratories, Inc.

Analytical Report

Conestoga-Rovers & Associates	Date Received:	04/18/12
5900 Hollis Street, Suite A	Work Order No:	12-04-1085
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	ASTM D-1946
	Units:	%v

Project: 4255 Mac Arthur Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-9-1	**12-04-1085-1-A**	**04/17/12 13:30**	**Air**	**GC 36**	**N/A**	**04/18/12 11:44**	**120418L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	19.9	0.500	1	
Carbon Dioxide	1.87	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-10-1	**12-04-1085-2-A**	**04/17/12 14:10**	**Air**	**GC 36**	**N/A**	**04/18/12 12:00**	**120418L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	21.9	0.500	1	
Carbon Dioxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-11-1	**12-04-1085-3-A**	**04/17/12 14:30**	**Air**	**GC 36**	**N/A**	**04/18/12 12:38**	**120418L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	21.0	0.500	1	
Carbon Dioxide	1.01	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-12-1	**12-04-1085-4-A**	**04/17/12 14:50**	**Air**	**GC 36**	**N/A**	**04/18/12 12:55**	**120418L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	21.5	0.500	1	
Carbon Dioxide	ND	0.500	1						

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-03-002-1,535**	**N/A**	**Air**	**GC 36**	**N/A**	**04/18/12 11:30**	**120418L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Methane	ND	0.500	1		Oxygen + Argon	ND	0.500	1	
Carbon Dioxide	ND	0.500	1		Nitrogen	ND	0.500	1	
Carbon Monoxide	ND	0.500	1						

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

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

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

Date Received: 04/18/12
Work Order No: 12-04-1085
Preparation: N/A
Method: ASTM D-1946 (M)

Project: 4255 Mac Arthur Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-9-1	**12-04-1085-1-A**	**04/17/12 13:30**	**Air**	**GC 55**	**N/A**	**04/18/12 16:49**	**120418L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-10-1	**12-04-1085-2-A**	**04/17/12 14:10**	**Air**	**GC 55**	**N/A**	**04/18/12 12:12**	**120418L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-11-1	**12-04-1085-3-A**	**04/17/12 14:30**	**Air**	**GC 55**	**N/A**	**04/18/12 12:34**	**120418L01**

Parameter	Result	RL	DF	Qual	Units
Helium	0.0132	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-12-1	**12-04-1085-4-A**	**04/17/12 14:50**	**Air**	**GC 55**	**N/A**	**04/18/12 12:57**	**120418L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-872-255-A**	**N/A**	**Air**	**GC 55**	**N/A**	**04/18/12 11:22**	**120418L01**

Parameter	Result	RL	DF	Qual	Units
Helium	ND	0.0100	1		%v
Hydrogen	ND	0.0100	1		%v

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

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

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

Date Received: 04/18/12
Work Order No: 12-04-1085
Preparation: N/A
Method: EPA 8260B (M)
Units: ug/m3

Project: 4255 Mac Arthur Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-9-1	**12-04-1085-1-A**	**04/17/12 13:30**	**Air**	**GC/MS HH**	**N/A**	**04/18/12 15:54**	**120418L01**

Comment(s): -Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	2.0	16	0.30	1	J	Xylenes (total)	15	43	3.3	1	J
Toluene	35	19	0.44	1		Naphthalene	ND	52	11	1	
Ethylbenzene	3.0	22	0.49	1	J						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	93	47-156		1,2-Dichloroethane-d4	98	47-156	
Toluene-d8	98	47-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-10-1	**12-04-1085-2-A**	**04/17/12 14:10**	**Air**	**GC/MS HH**	**N/A**	**04/18/12 16:45**	**120418L01**

Comment(s): -Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	1.7	16	0.30	1	J	Xylenes (total)	12	43	3.3	1	J
Toluene	46	19	0.44	1		Naphthalene	ND	52	11	1	
Ethylbenzene	2.7	22	0.49	1	J						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	94	47-156		1,2-Dichloroethane-d4	98	47-156	
Toluene-d8	99	47-156					

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-11-1	**12-04-1085-3-A**	**04/17/12 14:30**	**Air**	**GC/MS HH**	**N/A**	**04/18/12 17:36**	**120418L01**

Comment(s): -Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	0.92	16	0.30	1	J	Xylenes (total)	10	43	3.3	1	J
Toluene	36	19	0.44	1		Naphthalene	ND	52	11	1	
Ethylbenzene	1.9	22	0.49	1	J						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	94	47-156		1,2-Dichloroethane-d4	97	47-156	
Toluene-d8	97	47-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

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

Date Received: 04/18/12
Work Order No: 12-04-1085
Preparation: N/A
Method: EPA 8260B (M)
Units: ug/m3

Project: 4255 Mac Arthur Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-12-1	**12-04-1085-4-A**	**04/17/12 14:50**	**Air**	**GC/MS HH**	**N/A**	**04/18/12 18:27**	**120418L01**

Comment(s): -Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	1.9	16	0.30	1	J	Xylenes (total)	15	43	3.3	1	J
Toluene	38	19	0.44	1		Naphthalene	ND	52	11	1	
Ethylbenzene	3.0	22	0.49	1	J						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	94	47-156		1,2-Dichloroethane-d4	98	47-156	
Toluene-d8	96	47-156					

Method Blank	**099-13-041-852**	**N/A**	**Air**	**GC/MS HH**	**N/A**	**04/18/12 15:02**	**120418L01**

Comment(s): -Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	ND	16	0.30	1		Xylenes (total)	ND	43	3.3	1	
Toluene	ND	19	0.44	1		Naphthalene	ND	52	11	1	
Ethylbenzene	ND	22	0.49	1							

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	113	47-156		1,2-Dichloroethane-d4	98	47-156	
Toluene-d8	98	47-156					

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

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

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

Date Received: 04/18/12
Work Order No: 12-04-1085
Preparation: N/A
Method: EPA TO-3M

Project: 4255 Mac Arthur Blvd., Oakland, CA

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-9-1	**12-04-1085-1-A**	**04/17/12 13:30**	**Air**	**GC 38**	**N/A**	**04/19/12 12:15**	**120419L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-10-1	**12-04-1085-2-A**	**04/17/12 14:10**	**Air**	**GC 38**	**N/A**	**04/19/12 12:53**	**120419L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-11-1	**12-04-1085-3-A**	**04/17/12 14:30**	**Air**	**GC 38**	**N/A**	**04/19/12 13:31**	**120419L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SVP-12-1	**12-04-1085-4-A**	**04/17/12 14:50**	**Air**	**GC 38**	**N/A**	**04/19/12 14:13**	**120419L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-14-431-42**	**N/A**	**Air**	**GC 38**	**N/A**	**04/19/12 11:38**	**120419L01**

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	3800	1		ug/m3

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

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates		Date Received:	04/18/12
5900 Hollis Street, Suite A		Work Order No:	12-04-1085
Emeryville, CA 94608-2008		Preparation:	N/A
		Method:	EPA TO-3M

Project: 4255 Mac Arthur Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
SVP-12-1	**Air**	**GC 38**	**N/A**	**04/19/12**	**120419D01**

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	ND	ND	NA	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates	Date Received:	N/A
5900 Hollis Street, Suite A	Work Order No:	12-04-1085
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	ASTM D-1946

Project: 4255 Mac Arthur Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-03-002-1,535	**Air**	**GC 36**	**N/A**	**04/18/12**	**120418L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Methane	10.12	93	92	80-120	1	0-30	
Carbon Dioxide	10.07	103	100	80-120	3	0-30	
Carbon Monoxide	9.930	104	100	80-120	3	0-30	
Oxygen + Argon	3.500	96	94	80-120	3	0-30	
Nitrogen	10.02	99	97	80-120	3	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates	Date Received:	N/A
5900 Hollis Street, Suite A	Work Order No:	12-04-1085
Emeryville, CA 94608-2008	Preparation:	N/A
	Method:	ASTM D-1946 (M)

Project: 4255 Mac Arthur Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-872-255	**Air**	**GC 55**	**N/A**	**04/18/12**	**120418L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Helium	1.000	94	96	80-120	1	0-30	
Hydrogen	1.000	95	96	80-120	1	0-30	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Conestoga-Rovers & Associates		Date Received:	N/A
5900 Hollis Street, Suite A		Work Order No:	12-04-1085
Emeryville, CA 94608-2008		Preparation:	N/A
		Method:	EPA 8260B (M)

Project: 4255 Mac Arthur Blvd., Oakland, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-13-041-852	**Air**	**GC/MS HH**	**N/A**	**04/18/12**	**120418L01**

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	79.87	119	112	60-156	44-172	5	0-40	
Toluene	94.21	119	112	56-146	41-161	7	0-43	
Ethylbenzene	108.6	119	111	52-154	35-171	7	0-38	
Xylenes (total)	325.7	118	110	42-156	23-175	8	0-41	
Methyl-t-Butyl Ether (MTBE)	90.13	120	116	45-147	28-164	3	0-25	
Tert-Butyl Alcohol (TBA)	151.6	115	113	60-140	47-153	2	0-35	
Diisopropyl Ether (DIPE)	104.5	104	100	60-140	47-153	4	0-35	
Ethyl-t-Butyl Ether (ETBE)	104.5	123	119	60-140	47-153	4	0-35	
Tert-Amyl-Methyl Ether (TAME)	104.5	123	116	60-140	47-153	5	0-35	
Naphthalene	131.1	99	92	60-140	47-153	7	0-30	
Ethanol	188.4	92	88	47-137	32-152	5	0-35	
1,1-Difluoroethane	67.54	118	115	78-156	65-169	3	0-35	
Isopropanol	61.45	83	133	78-156	65-169	47	0-35	X

Total number of LCS compounds : 13
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: 12-04-1085

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
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 or PES/PESD 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 without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
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.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

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: Peter Schaefer

PO #

INCIDENT # (ENV SERVICES) 9 8 9 9 5 7 5 8

SAP # 1 3 5 7 0 1

☐ CHECK IF NO INCIDENT # APPLIES

DATE: 4/17/2012

PAGE: ______ of ______

SAMPLING COMPANY: Conestoga-Rovers & Associates	LOG CODE: CRAW
ADDRESS: 5900 Hollis Street, Suite A, Emeryville, CA 94608	
PROJECT CONTACT (Hardcopy or PDF Report to): Peter Schaefer	
TELEPHONE: 510-420-3319	FAX: 510-420-9170
E-MAIL: pschaefer@craworld.com	

SITE ADDRESS: Street and City: 4255 Macarthur Blvd. Oakland, CA	State: CA
GLOBAL ID NO.: TO600101261	
EDF DELIVERABLE TO (Name, Company, Office Location): Brenda Carter, CRA, Emeryville	PHONE NO.: 510-420-3343
E-MAIL: shelledf@craworld.com	CONSULTANT PROJECT NO.: 240524-95-12.02
SAMPLER NAME(S) (Print): Belew Yifru	LAB USE ONLY: 12-04-1085

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 :

Copy final report to Shell.Lab.Billing@craworld.com

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

Please report results in μg/m^3 for 8260. Needed detection limit of below 8 μg/m3 for benzene

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	HCL	HNO3	H2SO4	NONE	Ice OTHER	NO. OF CONT.	TPHg (C_6-C_{12}) (8260B)	BTEX & Naphthalele (8260B)	Oxygen, Carbon Dioxide, & Methane Method ASTM D1946	Helium ASTM D1946 (M)	Container PID Readings or Laboratory Notes
1	SVP-9-1	4/17/12	1330	Vapor				X			X	X	X	X	
2	SVP-10-1	4/17/12	1410	Vapor				X			X	X	X	X	
3	SVP-11-1	4/17/12	1430	Vapor				X			X	X	X	X	
4	SVP-12-1	4/17/12	1450	Vapor				X			X	X	X	X	
	~~SVP~~			~~Vapor~~				~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	
	~~SVP~~			~~Vapor~~				~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	
	~~SVP~~			~~Vapor~~				~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	
	~~SVP~~			~~Vapor~~				~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	
	~~SVP~~			~~Vapor~~				~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	
	~~SVP~~			~~Vapor~~				~~X~~			~~X~~	~~X~~	~~X~~	~~X~~	

TEMPERATURE ON RECEIPT C°

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	[signature] CEL	4/17/30	1525
[signature] TO GSO 4/17/12 1730	Wdbatin CEL	4/18/12	0755

05/2/06 Revision

GSO
GOLDEN STATE OVERNIGHT

< WebShip > > > > >

800-322-5555 www.gso.com

1085

Ship From:
ALAN KEMP
CAL SCIENCE- CONCORD
5063 COMMERCIAL CIRCLE #H
CONCORD, CA 94520

Ship To:
SAMPLE RECEIVING
CEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:
CRA, SIERRA, ERI

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 518915206

EPS

ORC

A

GARDEN GROVE

D92841A

479048

Print Date : 04/17/12 16:45 PM

Package 1 of 1

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-04-1085

SAMPLE RECEIPT FORM

Box 1 of 1

CLIENT: CWA

DATE: 04/18/12

TEMPERATURE: Thermometer ID: SC3 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature _____.____ °C - 0.3 °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 **Initial:** WB

CUSTODY SEALS INTACT:

☐ Box ☐_____ ☐ 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	☐	☑	☐
☑ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☐	☑
Proper preservation noted on COC or sample container	☐	☐	☑
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☑	☐	☐

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** WB

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** ____

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** ____