

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

			5		www.C	RAWOI	
			TF	RANS	MITT/	AL	
Date:	April 2	7, 2015			rence No ect Name	-	240894 1800½ Powell Street, Emeryville
То:	2	Vickham	nty Environmental			_	
	1131 H	arbor Ba	ay Parkway, Suite 2 fornia 94502-6577			-	<b>CEIVED</b> neda County Environmental Health 11:45 am, Apr 29, 201
Please find	enclose	d:	Draft Originals Prints		Final Other		
Sent via:			Mail Overnight Courier		Same Day Other		ier acker and Alameda County FTP
QUANT 1	ΓΙΤΥ	Groun	dwater Monitorinş	g Report	DESCR – First Qu		
	equested ′our Use		Fc	or Review	and Comm	nent	
	e any qi						lease call the CRA project manager Pineda at (425) 413-1164.
Copy to:		5	neda, Shell Oil Pro gy LLC (property		,	1.	y)
						4	pu Salafn
Completed	d by:	Peter Sc	haefer		_ Signed:	P	1 - ) -
Filing: C	Correspo	ndence F	lile			₹) 	



Mr. Jerry Wickham Alameda County Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577 Shell Oil Products US Soil and Groundwater Focus Delivery Group 20945 S. Wilmington Avenue Carson, CA 90810 Tel (425) 413 1164 Fax (425) 413 0988 Email perry.pineda@shell.com Internet http://www.shell.com

Re: 1800½ Powell Street Emeryville, California SAP Code 135266 Incident No. 98995349 ACEH Case No. RO0000254

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.

As always, please feel free to contact me directly at (425) 413-1164 with any questions or concerns.

Sincerely, Shell Oil Products US

BAN

Perry Pineda Senior Environmental Program Manager



# GROUNDWATER MONITORING REPORT – FIRST QUARTER 2015

SHELL-BRANDED SERVICE STATION 1800<sup>1</sup>/<sub>2</sub> POWELL STREET EMERYVILLE, CALIFORNIA

 SAP CODE
 135266

 INCIDENT NO.
 98995349

 AGENCY NO.
 RO0000254

Prepared by: Conestoga-Rovers & Associates

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

Office: (510) 420-0700 Fax: (510) 420-9170

web: http://www.CRAworld.com

APRIL 27, 2015 REF. NO. 240894 (10) 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).

# 1.1 <u>SITE INFORMATION</u>

Site Address	1800 <sup>1</sup> / <sub>2</sub> Powell Street, Emeryville
Site Use	Shell-branded Service Station
Shell Project Manager	Perry Pineda
CRA Project Manager	Peter Schaefer
Lead Agency and Contact	ACEH, Jerry Wickham
Agency Case No.	RO0000254
Shell SAP Code	135266
Shell Incident No.	98995349

Date of most recent agency correspondence was April 6, 2015.

# 2.0 <u>SITE ACTIVITIES, FINDINGS, AND DISCUSSION</u>

# 2.1 <u>CURRENT ACTIVITIES</u>

During station remodeling, on May 20, 2014, AU Energy, LLC (AU Energy) removed four underground storage tanks. During a November 13, 2014 meeting with CRA and Shell, Alameda County Environmental Health (ACEH) reported that AU Energy subsequently excavated the area of their September 2013 diesel release. Also during this meeting with ACEH, ACEH confirmed that AU Energy is now the primary responsible party for the site. We agreed that Shell would discontinue annual groundwater monitoring following this event and transfer wells to AU Energy that they need to monitor their diesel release.

Due to service station remodeling, Blaine Tech Services, Inc. (Blaine) could not gauge and sample the wells during fourth quarter 2014 according to the established monitoring program for this site. Available wells were gauged and sampled during the first quarter 2015. Well S-13 could not be located during the sampling event. As it was likely covered during the station remodel, we recommend that AU Energy locate the well and repair it, if needed.

CRA prepared a vicinity map (Figure 1), a groundwater contour and chemical concentration map (Figure 2), and a groundwater data table (Table 1). Blaine's field notes are presented in Appendix A, and the laboratory report is presented in Appendix B.

# 2.2 <u>CURRENT FINDINGS</u>

Groundwater Flow Direction	Variable
Hydraulic Gradient	Variable
Depth to Water	6.81 to 9.91 feet below top of well casing

# 2.3 <u>DISCUSSION</u>

Historical groundwater data indicate that total petroleum hydrocarbons as gasoline and fuel oxygenate concentrations in site wells are stable to declining. Following AU Energy's September 2013 diesel release, there has been no appreciable change in total petroleum hydrocarbons as diesel concentrations in groundwater samples; however, well S-13, located directly down gradient from the area of the diesel release, appears to have been paved over during station remodeling and could not be accessed for the first quarter 2015 sampling event.

Historically, well S-9 has contained up to 2.8 feet of separate-phase hydrocarbons, which consisted of 18 percent gasoline-range hydrocarbons with the remaining fraction of petroleum hydrocarbons in heavier fractions, which can include tar and other heavy residues. Since 1996, the screened interval in well S-9 has apparently been coated with a tar-like substance, which prevented the well from being used for monitoring. CRA attempted to reinstall the well in 2011, but was unable to due to underground utility conflicts. Additional delineation south of the subject site cannot be completed because the State of California Department of Parks and Recreation will not issue an encroachment permit for the area south of Powell Street.

A land use survey detailed in Geostrategies Inc.'s April 29, 1991 *Site Update* states that the site is built on fill. Filling began in 1884 on waterfront property owned by the Paraffine Company (Paraffine) and was terminated in 1969. Based on available log data,

the fill material at the subject site extends to an approximate depth of at least 12 to 15 feet below grade and appears to be continuous across the site. The fill materials reportedly include industrial refuse, rip-rap, concrete blocks, and imported clayey and sandy soil. Products manufactured by Paraffine included linoleum and other hard floor coverings, roofing and building materials, paints, varnishes, lacquers, and enamels. Paraffine's facilities included aboveground storage tanks that were removed when they closed the facility in the 1960s. These previous site uses are likely the source of the heavier hydrocarbons observed in groundwater.

## 2.4 **PROPOSED ACTIVITIES**

As discussed above, CRA will suspend the groundwater monitoring program on behalf of Shell. No further groundwater monitoring events are scheduled and no further reports will be submitted by CRA on behalf of Shell.

CRA requests that ACEH confirm no further action is required by Shell to address the previous release at the subject property. In their April 6, 2015 letter, ACEH notes that AU Energy is the sole responsible party for the September 2013 diesel fuel release, that Shell is not a responsible party for that release, and that AU Energy is responsible for implementing the investigation and cleanup associated with that release.

Shell offers to transfer the wells to AU to monitor groundwater conditions following the 2013 diesel release.

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

Jeth Scha

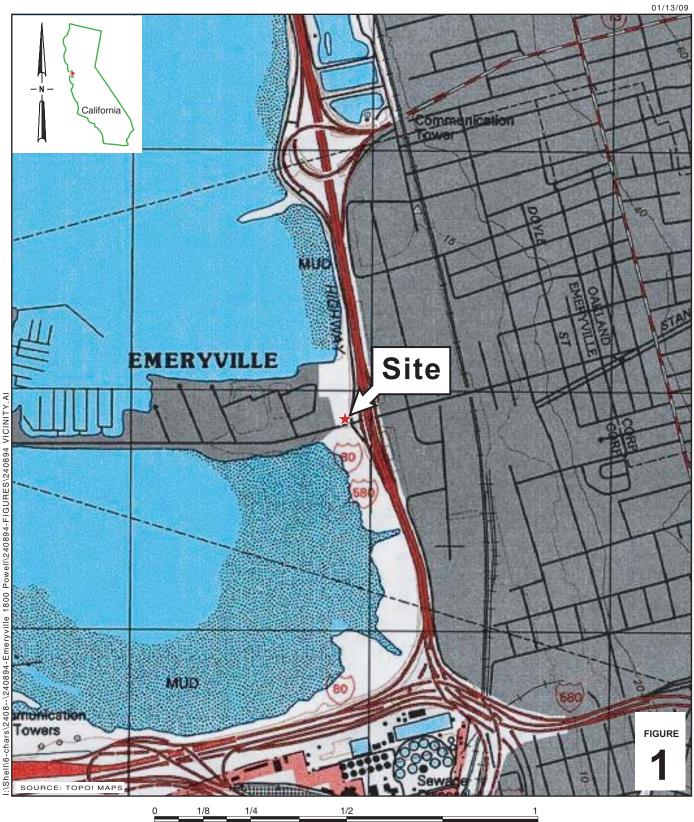
Peter Schaefer, CHG, CEG

Anney K Corl

Aubrey K. Cool, PG



FIGURES



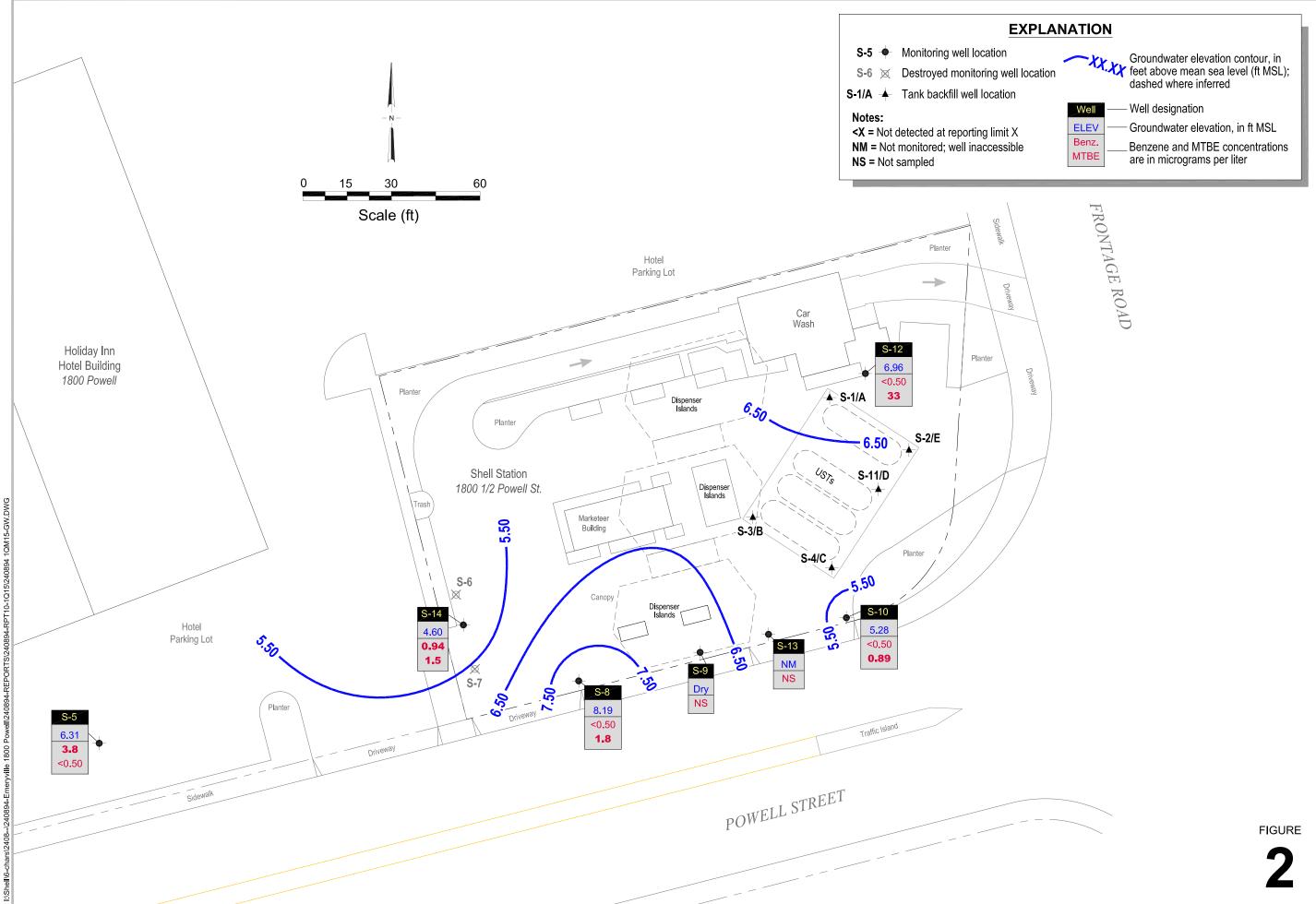
SCALE : 1" = 1/4 MILE

# Shell-branded Service Station

1800 1/2 Powell Street Emeryville, California



Vicinity Map





February 27, 2015





# Shell-branded Service Station 1800 1/2 Powell Street Emeryville, California

Well ID	Date	ТРНто	TPHd	TPHg	В	Т	Ε	X	MTBE 8020	MTBE 8260	TBA	DIPE	ETBE	TAME	тос	Depth to Water	SPH Thickness	GW Elevation
WentD	Dute	(μg/L)	(μg/L)	(μg/L)	μg/L)	(μg/L)	L (µg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(ft MSL)	(ft TOC)	(ft)	(ft MSL)
S-5	10/27/1988			3,000	660	20	20	70							11.72			
S-5	02/10/1989			2,800	740	20	20	140							11.72			
S-5	04/28/1989			4,300	750	10	20	<30							11.72			
S-5	07/07/1989			1,500	300	8.0	7.0	9.0							11.72			
S-5	10/25/1989			2,100	760	10	40	50							11.72			
S-5	01/04/1990			1,300	520	9.0	8.0	10							11.72			
S-5	07/06/1990			1,400	500	10	4.0	<10							11.72	8.36		3.36
S-5	10/19/1990			4,200	1,100	9.0	14	7.0							11.72			
S-5	01/14/1991		6,100	4,500	1,100	15	30	25							11.72			
S-5	04/23/1991			2,800	500	8.0	14	10							11.72			
S-5	07/08/1991			3,200	1,000	16	9.0	12							11.72	9.15		2.57
S-5	10/11/1991			1,700	16	5.7	5.2	8.9							11.72	9.67		2.05
S-5	02/12/1992			1,300	300	5.0	<5	<5							11.72	9.00		2.72
S-5	05/11/1992			1,900	490	< 0.5	<5	<5							11.72	8.61		3.11
S-5	09/01/1992			6,700	760	26	<25	<25							11.72	9.61		2.11
S-5	12/04/1992			2,900	890	5.3	7.3	13							11.72	9.47		2.25
S-5	02/17/1993			1,300	280	3.0	3.4	9.4							11.72	8.29		3.43
S-5	05/29/1993			460	130	< 0.5	< 0.5	2.9							11.72	9.16		2.56
S-5	08/11/1993			1,700	530	5.5	<5	5.8							11.72	9.30		2.42
S-5	11/12/1993														11.72	9.42		2.30
S-5	02/21/1994			1,000	250	<5	<5	<5							11.72	7.95		3.77
S-5 (D)	02/21/1994			1,300	220	<5	<5	11							11.72	7.95		3.77
S-5	05/16/1994			1,200	230	<5	<5	<5							11.72	8.00		3.72
S-5	08/09/1994	Well inacc	essible												11.72			
S-5	11/09/1994			1,600	220	3.2	1.8	5.0							11.72	8.32		3.40
S-5 (D)	11/09/1994			1,600	250	3.3	1.9	5.9							11.72	8.32		
S-5	02/22/1995														11.72			
S-5	05/02/1995														11.72			
S-5	05/10/1995			910	170	1.5	1.3	5.2							11.72			
S-5	08/24/1995			620	210	< 0.5	1.2	5.3							11.72	8.78		2.94
S-5	12/08/1995			1,600	510	3.3	1.5	6.6							11.72	9.78		1.94
S-5 (D)	12/08/1995			1,600	530	1.8	1.1	5.4							11.72	9.78		1.94
S-5	02/29/1996			1,900	470	5.8	<5.0	< 5.0	46						11.72	7.64		4.08
S-5 (D)	02/29/1996			1,700	440	5.4	<5.0	<5.0	40						11.72	7.64		4.08
S-5	05/22/1996			1,200	490	<10	<10	<10	<50						11.72	8.60		3.12
S-5	07/30/1996			1,100	400	<5.0	<5.0	6.9	<25						11.72	9.40		2.32
C	CRA 240894 (10)																	

	Data	TDILuca	TPHd	TDUA	р	т	Г	v	MTBE 8020	MTBE 8260		סחנת	гтрг	TAME	TOC	Depth to	SPH Thielmees	GW Flanation
Well ID	Date	TPHmo (µg/L)	трна (µg/L)	TPHg (µg/L)	Β (µg/L)	Τ (µg/L)	Ε (μg/L)	X (µg/L)	8020 (μg/L)	8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Water (ft TOC)	Thickness (ft)	Elevation (ft MSL)
		_	-	(µg/L)	(μχ) Ε)	(µg/L)	(μχ) Ε)	(µg/L)	(μχ) Ε)	(μχ) L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		<i>yt</i> 100)	<i>((i)</i>	() t MOL)
S-5	11/11/1996														11.72			
S-5		Well inacc	essible												11.72			
S-5	11/06/1998			620	91	< 0.50	0.64	4.0	<2.5						11.72	8.25		3.47
S-5		Well inacc	essible												11.72			
S-5	11/02/2000			1,120	191	2.78	<2.50	3.56	<12.5						11.72	8.55		3.17
S-5	12/27/2001			760	110	2.4	< 0.50	5.8		<5.0					11.72	7.64		4.08
S-5	11/26/2002	Well inacc	essible												14.07			
S-5	12/06/2002			860	130	2.3	< 0.50	6.0		<5.0					14.07	8.62		5.45
S-5	11/25/2003			920	180	3.0	<1.0	6.2		<1.0					14.07	9.32		4.75
S-5	11/10/2004			530	2.4	0.68	< 0.50	6.3		< 0.50					14.07	9.35		4.72
S-5	11/23/2005			1,630	102	2.42	0.540	5.71		< 0.500	<10.0	< 0.500	< 0.500	< 0.500	14.07	9.62		4.45
S-5	11/21/2006			1,100	91	2.4	< 0.50	5.3		< 0.50	<5.0	<2.0	<2.0	<2.0	14.07	9.60		4.47
S-5	11/14/2007			1,700 m	92	2.9	0.33 n	6.2		<1.0	<10	<2.0	<2.0	<2.0	14.07	8.60		5.47
S-5	11/17/2008			810	30	1.6	<1.0	4.4		<1.0	<10	<2.0	<2.0	<2.0	14.07	8.10		5.97
S-5	11/12/2009			1,000	24	1.5	<1.0	3.8		<1.0	<10	<2.0	<2.0	<2.0	14.07	8.52		5.55
S-5	12/03/2010			790	16	<1.0	<1.0	4.2		<1.0	<10	<2.0	<2.0	<2.0	14.07	8.04		6.03
S-5	12/01/2011			280	< 0.500	< 0.500	< 0.500	2.23		< 0.500	<10.0	< 0.500	< 0.500	< 0.500	14.07	8.80		5.27
S-5	01/16/2012		7,3001												14.07	8.87		5.20
S-5	10/05/2012			550	14	< 0.50	< 0.50	4.4		< 0.50	<10	< 0.50	< 0.50	< 0.50	14.07	9.60		4.47
S-5	12/09/2013			690	7.4	< 0.50	< 0.50	2.8		< 0.50	<10	< 0.50	< 0.50	< 0.50	14.07	8.15		5.92
S-5	02/27/2015			510	3.8	<0.50	<0.50	2.2		<0.50	<10	<0.50	<0.50	<0.50	14.07	7.76		6.31
S-6	10/27/1988			6,000	1,700	50	80	420										
5-6 S-6	02/10/1989			8,000 2,800	740	20	20	420 140										
S-6	02/10/1989 04/28/1989			2,800 6,500	2,400	20 30	20 50	210										
S-6						30 34	55	210										
5-6 S-6	07/07/1989 10/25/1989			3,700 <50	1,700 23	34 <5.0	-55 -5.0	200 10										
S-6	11/10/1989	well aban	aonea															
S-7	10/27/1988			50	1.1	<1	<1	4.0										
S-7	02/10/1989				0.90	<1	<1	<3										
S-7	04/28/1989			<50	<1	<1	<1	<3										
S-7	07/07/1989			70	2.2	<1	<1	<3										
S-7	10/25/1989			6,200	2,200	130	190	660										
S-7	11/10/1989	Well aban	doned															

Well ID	Date	ТРНто	TPHd	TPHg	В	Т	Ε	X	MTBE 8020	MTBE 8260	TBA	DIPE	ETBE	TAME	тос	Depth to Water	SPH Thickness	GW Elevation
well ID	Dute	(μg/L)	11-11u (μg/L)	(μg/L)	ь (µg/L)	ι (μg/L)	L (µg/L)	л (µg/L)	(μg/L)	0200 (μg/L)	1 DA (μg/L)	μg/L)	LTBL (μg/L)	(μg/L)	(ft MSL)	(ft TOC)	(ft)	(ft MSL)
S-8	10/27/1988	-	-	1,000	610	9.0	1.0	42		-	-	-	-		12.76			2
5-8 S-8	02/10/1989			500	160	9.0 5.0	1.0 <2	42 17							12.76			
S-8	04/28/1989			2,700	1,500	20	10	40							12.76			
S-8	07/07/1989			440	180	5.0	2.0	12							12.76			
S-8	10/25/1989			2,000	1,100	17	5.0	70							12.76			
S-8	01/04/1990			1,900	1,300	20	<10	70							12.76			
S-8	07/06/1990			1,600	920	30	<10	60							12.76	9.50		3.26
S-8	10/19/1990			1,400	640	<10	<10	30							12.76			
S-8	01/14/1991	600	760	670	190	5.8	< 0.5	19							12.76			
S-8	04/23/1991			2,400	740	54	5.7	59							12.76			
S-8	07/08/1991			1,100	450	15	<2.5	42							12.76	10.45		2.31
S-8	10/11/1991			340	4.0	0.60	< 0.5	17							12.76	10.83		1.93
S-8	02/12/1992			<1,000	260	<10	<10	11							12.76	10.44		2.32
S-8	05/11/1992			1,800	700	14	<5	46							12.76	10.17		2.59
S-8	09/01/1992														12.76	10.81	а	1.95
S-8	12/04/1992			960	250	4.3	<2.5	14							12.76	10.81		1.95
S-8	02/17/1993			2,700	800	35	10	83							12.76	9.65		3.11
S-8	05/29/1993			960	710	25	84	80							12.76	10.46		2.30
S-8	08/11/1993			1,300	630	17	<5	46							12.76	10.59		2.17
S-8	11/12/1993			910	180	8.0	<2.5	15							12.76	10.29		2.47
S-8	02/21/1994			3,200	480	52	<5	130							12.76	9.52		3.24
S-8	05/16/1994			1,000	220	7.3	<5	28							12.76	9.49		3.27
S-8 (D)	05/16/1994			1,000	280	10	<5	29							12.76	9.49		3.27
S-8	08/09/1994			400	27	6.6	< 0.5	18							12.76	10.37		2.39
S-8	11/09/1994			650	170	5.3	<0.5	17							12.76	9.58		3.18
S-8	02/22/1995			650	210	10	1.2	22							12.76	9.02		3.74
S-8	05/02/1995			1,000	280	17	1.4	32							12.76	8.45		4.31
S-8	08/24/1995			480	180	11	1.0	19							12.76	10.02		2.74
S-8 (D)	08/24/1995			700	180	6.5	<0.5	17							12.76	10.02		2.74
S-8	12/08/1995			740	230	6.9	0.70	15							12.76	10.65		2.11
S-8	02/29/1996			740	260	8.1	<5.0	19	58						12.76	9.10		3.66
S-8	05/22/1996			1,200	350	10	<5.0	23	74						12.76	10.14		2.62
S-8	07/30/1996			530	220	20	6.3	36	69						12.76	10.51		2.25
S-8	11/11/1996			540	140	3.7	<2.0	17	42						12.76	10.23		2.53
S-8	11/03/1997			480	54	3.5	< 0.50	12	40						12.76	9.40		3.36
S-8	11/06/1998			740	110	10	2.8	26	31						12.76	9.78		2.98
C	CRA 240894 (10)																	

Well ID	Date	ТРНто	TPHd	TPHg	В	Т	Ε	X	MTBE 8020	MTBE 8260	TBA	DIPE	ETBE	TAME	тос	Depth to Water	SPH Thickness	GW Elevation
wen 1D	Dute	(μg/L)	1ΡΠu (μg/L)	(μg/L)	ь (µg/L)	ι (μg/L)	ь (µg/L)	л (µg/L)	8020 (μg/L)	0200 (μg/L)	1 bA (μg/L)	μg/L)	етве (µg/L)	ι ANIE (μg/L)	(ft MSL)	(ft TOC)	(ft)	(ft MSL)
		(48/2)	(µg 1)		-	-	-		-	(µg L)	(µg/1)	(µg/1)	(µg L)	(µg 1)			y c	
S-8	12/07/1999			770	270	16	<2.0	33	75						12.76	10.14		2.62
S-8	11/02/2000			436	75.8	6.18	0.549	14.9	81.5						12.76	9.45		3.31
S-8	12/27/2001			1,300	62	11	1.8	31		86					12.76	9.19		3.57
S-8	11/26/2002			970	58	3.8	0.51	15		35					15.00	10.10		4.90
S-8	11/25/2003			400	19	4.4	< 0.50	15		34					15.00	10.49		4.51
S-8	11/10/2004			430	28	3.4	< 0.50	11		25					15.00	10.45		4.55
S-8	11/23/2005			476	8.72	3.15	1.03	12.6		35.2	20.1	< 0.500	< 0.500	< 0.500	15.00	10.46		4.54
S-8	11/21/2006			280	5.9	1.9	4.9	7.9		27	47	<2.0	<2.0	<2.0	15.00	10.61		4.39
S-8	11/14/2007			520 m	2.2	0.66 n	<1.0	4.9		29	38	<2.0	<2.0	<2.0	15.00	10.01		4.99
S-8	11/17/2008			550	6.9	1.8	<1.0	8.0		36	23	<2.0	<2.0	<2.0	15.00	9.64		5.36
S-8	11/12/2009			640	8.1	3.5	<1.0	9.8		72	23	<2.0	<2.0	<2.0	15.00	10.00		5.00
S-8	12/03/2010			810	5.3	4.2	<1.0	14		37	23	<2.0	<2.0	<2.0	15.00	9.32		5.68
S-8	12/01/2011			150	1.05	< 0.500	< 0.500	3.94		24.7	<10.0	< 0.500	< 0.500	< 0.500	15.00	9.90		5.10
S-8	01/16/2012		1,400 l												15.00	8.34		6.66
S-8	10/05/2012			610	4.8	1.9	< 0.50	6.5		4.5	<10	< 0.50	< 0.50	< 0.50	15.00	10.39		4.61
S-8	12/09/2013			600	6.3	0.97	< 0.50	2.5		1.3	<10	< 0.50	< 0.50	< 0.50	15.00	5.85		9.15
S-8	02/27/2015			250	<0.50	<0.50	< 0.50	1.3		1.8	<10	<0.50	< 0.50	<0.50	15.00	6.81		8.19
S-9	10/27/1988														12.75		а	
S-9	02/10/1989														12.75		1.30	
S-9	04/28/1989														12.75		1.25	
S-9	07/07/1989														12.75		1.20	
S-9	10/25/1989														12.75		а	
S-9	01/04/1990														12.75		а	
S-9	04/12/1990														12.75		а	
S-9	07/06/1990														12.75	9.67	а	3.08
S-9	10/19/1990														12.75		а	
S-9	01/14/1991														12.75		а	
S-9	04/23/1991														12.75		а	
S-9	07/08/1991														12.75		а	
S-9	10/11/1991														12.75	22.30	а	-9.55
S-9	02/24/1994														12.75		a	
S-9	05/16/1994														12.75		1.50	
S-9	08/09/1994														12.75	11.80	2.00	
S-9	11/09/1994														12.75		a	
S-9	02/22/1995														12.75	11.40	2.38	
	,,,																	

#### GROUNDWATER DATA SHELL-BRANDED SERVICE STATION 1800½ POWELL STREET, EMERYVILLE, CALIFORNIA

Well ID	Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	В (µg/L)	Т (µg/L)	Е (µg/L)	X (µg/L)	МТВЕ 8020 (µg/L)	МТВЕ 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	SPH Thickness (ft)	GW Elevation (ft MSL)
S-9	05/02/1995														12.75	11.83	2.12	
S-9	12/08/1995														12.75	11.92	1.06	
S-9	02/29/1996	Tar-like su	bstance in	well, proba	bly from	previous la	ndfill acti	vities; not	gasoline.						12.75	12.10	2.79	2.88
S-9	05/22/1996			-		-			0						12.75	11.71	1.75	2.44
S-9	07/30/1996														12.75		а	
S-9	11/11/1996														12.75		9.00	
S-9	11/03/1997														12.75		а	
S-9	11/06/1998														12.75		а	
S-9	12/07/1999														12.75			
S-9	11/02/2000														12.75			
S-9	12/27/2001														12.75			
S-9	11/26/2002	Tar-like su	bstance in	well, proba	bly from	- previous la	ndfill acti	vities; not	gasoline.						14.83			
S-9	11/25/2003	Tar-like su	bstance in	well, proba	bly from	- previous la	ndfill acti	vities; not	gasoline.						14.83			
S-9	11/25/2003														14.98 i			
S-9	11/23/2005	Tar-like su	bstance in	well, proba	bly from	- previous la	ndfill acti	vities; not	gasoline.						14.98			
S-9	11/21/2006	Tar-like su	bstance in	well, proba	bly from	- previous la	ndfill acti	vities; not	gasoline.						14.98			
S-9	11/14/2007	Tar-like su	bstance in	well, proba	bly from	- previous la	ndfill acti	vities; not	gasoline.						14.98			
S-9	11/17/2008	Tar-like su	bstance in	well, proba	bly from	- previous la	ndfill acti	vities; not	gasoline.						14.98			
S-9	11/12/2009	Well dry													14.98			
S-9	12/03/2010	Well dry													14.98			
S-9	12/01/2011	Well dry													14.98			
S-9	10/05/2012	Well dry													14.98			
S-9	12/09/2013	Well dry													14.98			
S-9	02/27/2015	Well dry													14.98			
S-10	10/27/1988			700,000	37,000	100,000	20,000	110,000							12.58			
S-10	02/10/1989			6,500	480	700	100	1,800							12.58			
S-10	04/28/1989			13,000	1,300	500	600	3,700							12.58			
S-10	07/07/1989			14,000	1,300	310	270	2,400							12.58			
S-10	10/25/1989			4,200	580	34	4.0	440							12.58			
S-10	01/04/1990			1,700	360	10	7.8	170							12.58			
S-10	04/12/1990														12.58		0.01	
S-10	07/06/1990														12.58	9.16	0.01	3.42
S-10	10/19/1990														12.58		0.03	
S-10	01/14/1991														12.58		0.03	
S-10	04/23/1991														12.58		0.01	

#### GROUNDWATER DATA SHELL-BRANDED SERVICE STATION 1800½ POWELL STREET, EMERYVILLE, CALIFORNIA

Well ID	Date	ТРНто	TPHd	TPHg	В	Т	Е	X	MTBE 8020	MTBE 8260	TBA	DIPE	ETBE	TAME	тос	Depth to Water	SPH Thickness	GW Elevation
well ID	Dute	(μg/L)	1ΡΠu (μg/L)	(μg/L)	ь (µg/L)	ι (μg/L)	ь (µg/L)	л (µg/L)	8020 (μg/L)	0200 (μg/L)	1 bA (μg/L)	DIPE (μg/L)	ΕТВЕ (μg/L)	ι Alvie (μg/L)	(ft MSL)	(ft TOC)	(ft)	(ft MSL)
C 10	07/00/1001	-		-	-	-	-	-	-	-	-		-	-		2	2	
S-10 S-10	07/08/1991 10/11/1991														12.58 12.58	9.41 7.77	0.03 a	3.17 4.81
S-10 S-10	02/12/1991			1,200	470	16	 <5	14							12.58	6.41		4.81 6.17
S-10 S-10	02/12/1992 05/11/1992			1,200	470 100	6.0	<5 4.0	14 19							12.58	9.04		8.17 3.54
S-10 S-10	09/01/1992					0.0	4.0								12.58	9.04 9.38	0.01	3.34 3.20
S-10	12/04/1992														12.58	9.38 6.89	0.01 a	5.69
S-10	02/17/1993			530	89	8.5	1.6	4.5							12.58	7.34	a 	5.24
S-10	05/29/1993			240	65	8.5 3.8	2.2	4.5 8.6							12.58	6.60		5.24 5.98
S-10	08/11/1993			240 250	23	4.1	<1	6.4							12.58	9.09		3.49
S-10	11/12/1993			320	1.6	1.3	1.4	6.2							12.58	6.58		6.00
S-10	02/21/1994			1,400	190	9.9	<2.5	19							12.58	8.32		4.26
S-10	05/16/1994			300	45	8.6	6.2	19							12.58	8.35		4.23
S-10	08/08/1994			700	57	14	< 0.5	9.3							12.58	8.66		3.92
S-10	11/09/1994			640	130	2.0	1.6	4.1							12.58	6.68		5.90
S-10	02/22/1995			500	65	5.9	1.0	8.2							12.58	9.12		3.46
S-10	05/02/1995			530	59	2.3	0.80	8.2							12.58	9.50		3.08
S-10	08/24/1995			350	35	4.6	< 0.5	6.7							12.58	10.06		2.52
S-10	12/08/1995			690	28	4.6	0.90	8.6							12.58	10.08		2.50
S-10	02/29/1996			430	32	1.8	0.50	5.8	16						12.58	5.32		7.26
S-10	05/22/1996		1,200	100	19	0.63	< 0.5	1.4	5.3						12.58	6.04		6.54
S-10	07/30/1996		13,000	240	17	<1.2	<1.2	7.8	11						12.58	10.48		2.10
S-10	11/11/1996		4,800	370	16	1.1	< 0.5	7.0	94						12.58	10.31		2.27
S-10	11/03/1997		1,100	340	6.7	2.1	< 0.50	3.3	19						12.58	9.53		3.05
S-10 (D)	11/03/1997		1,100	310	7.8	1.3	< 0.50	3.1	19						12.58	9.53		3.05
S-10	11/06/1998		2,000	<250	<2.5	<2.5	<2.5	6.5	900						12.58	5.12		7.46
S-10	12/07/1999		2,230	400	47	33	10	29	90						12.58	7.95		4.63
S-10	11/02/2000		14,500	536	32.0	3.08	< 0.500	2.98	42.3						12.58	7.05		5.53
S-10	12/27/2001		6,600	870	61	4.9	2.5	15		26					12.58	7.43		5.15
S-10	11/26/2002		9,800	720	56	3.5	< 0.50	8.4		52					15.11	9.75		5.36
S-10	11/25/2003		530 k	550	29	2.7	< 0.50	8.4		49					15.11	9.00		6.11
S-10	11/10/2004		1,500 k	660	64	5.0	0.61	14		54					14.93 i	9.50		5.43
S-10	11/23/2005			866	47.0	3.44	0.600	12.6		61.9	<10.0	< 0.500	< 0.500	< 0.500	14.93	10.23		4.70
S-10	11/21/2006		12,000	490	21	2.3	5.8	9.6		48	34	<2.0	<2.0	<2.0	14.93	10.04		4.89
S-10	11/14/2007		1,300 k,l	740 m	19	2.1	<1.0	8.0		44	20	<2.0	<2.0	<2.0	14.93	9.49		5.44
S-10	11/17/2008		2,000 1	630	7.3	1.0	<1.0	7.0		32	11	<2.0	<2.0	<2.0	14.93	10.03		4.90
S-10	11/12/2009		2,100 l	600	7.9	1.1	<1.0	5.7		23	12	<2.0	<2.0	<2.0	14.93	10.31		4.62
0	CD A 240804 (10)																	

#### GROUNDWATER DATA SHELL-BRANDED SERVICE STATION 1800½ POWELL STREET, EMERYVILLE, CALIFORNIA

Well ID	Date	ТРНто	TPHd	TPHg	В	Т	Е	X	MTBE 8020	MTBE 8260	ТВА	DIPE	ETBE	TAME	тос	Depth to Water	SPH Thickness	GW Elevation
well ID	Dute	1ΡΠ <i>m</i> υ (μg/L)	1ΡΗu (µg/L)	(μg/L)	ь (µg/L)	ι (μg/L)	ь (µg/L)	л (µg/L)	8020 (μg/L)	8200 (μg/L)	1 ΒΑ (μg/L)	DIPE (μg/L)	етве (µg/L)	ι ANIE (μg/L)	(ft MSL)	(ft TOC)	(ft)	(ft MSL)
		(µg/L)			-	-	-		(μχ) Ε)				-			, v	<i>yt)</i>	2
S-10	12/03/2010		9001	740	6.0	1.3	<1.0	9.3		19	12	<2.0	<2.0	<2.0	14.93	9.60		5.33
S-10	12/01/2011		10,100 h,l	430	2.87	0.680	< 0.500	6.85		22.0	<10.0	< 0.500	< 0.500	< 0.500	14.93	10.60		4.33
S-10	01/16/2012		5,7001												14.93	9.96		4.97
S-10	10/05/2012		5101	890	10	2.9	< 0.50	19		31	13	< 0.50	< 0.50	1.6	14.93	10.19		4.74
S-10	12/09/2013		2,1001	550	2.0	0.61	< 0.50	6.0		7.4	<10	< 0.50	< 0.50	< 0.50	14.93	8.14		6.79
S-10	02/27/2015		2,100	140	<0.50	<0.50	<0.50	<1.0		0.89	<10	<0.50	<0.50	<0.50	14.93	9.65		5.28
S-12	07/07/1989		2,200	<250	0.71	< 0.5	< 0.5	<3.6							12.84	8.22		
S-12	11/17/1989		1,400	<250	18	<2	<2	<5							12.84			
S-12	01/04/1990			<250	24	2.0	<2	<5							12.84			
S-12	07/06/1990			80	15	0.70	< 0.5	2.0							12.84	8.27		4.57
S-12	10/19/1990			150	12	9.0	< 0.5	3.6							12.84			
S-12	01/14/1991	600	1,000	120	3.6	0.80	< 0.5	2.9							12.84			
S-12	04/23/1991	800	820	100	3.7	3.8	0.80	11							12.84			
S-12	07/08/1991			70	2.5	0.80	< 0.5	2.4							12.84	9.50		3.34
S-12	10/11/1991	5,100	2,500	220	2.1	0.70	< 0.5	1.2							12.84	9.90		2.94
S-12	02/12/1992	1,400	2,500	110	0.80	< 0.5	< 0.5	1.3							12.84	9.43		3.41
S-12	05/11/1992		3,800 b	140	0.80	0.80	< 0.5	2.5							12.84	8.65		4.19
S-12	09/01/1992		2,600 b	190	3.0	15	0.50	4.5							12.84	9.86		2.98
S-12	12/04/1992		3,900 b	180	1.2	1.0	1.0	7.7							12.84	9.93		2.91
S-12	02/17/1993		2,100 b	350 k	0.60	< 0.5	0.50	5.5							12.84	8.08		4.76
S-12	05/29/1993		2,200	290	2.0	1.6	4.4	6.0							12.84	9.08		3.76
S-12	08/11/1993		720	240	0.70	< 0.5	< 0.5	1.1							12.84	9.35		3.49
S-12	11/12/1993		4,100	210 k	0.70	0.50	< 0.5	3.4							12.84	9.28		3.56
S-12	02/21/1994		2,200 c	240 o	0.70	< 0.5	< 0.5	3.6							12.84	8.22		4.62
S-12	05/16/1994		2,200	96	1.5	< 0.5	< 0.5	2.0							12.84	8.92		3.92
S-12	08/08/1994		3,500 e	110 d	< 0.5	< 0.5	< 0.5	< 0.5							12.84			0.00
S-12	11/09/1994		5,400 e	80	80	< 0.5	< 0.5	0.60							12.84	7.56		5.28
S-12	02/22/1995		2,900 e,f	110	0.70	< 0.5	< 0.5	3.7							12.84	7.98		4.86
S-12 (D)	02/22/1995		3,400 e,f	110	4.8	7.1	< 0.5	2.1							12.84	7.98		4.86
S-12	05/02/1995		2,800	140	2.4	1.1	0.80	4.3							12.84	8.44		4.40
S-12	08/24/1995		1,600	200	19	12	5.6	24							12.84	9.00		3.84
S-12	12/08/1995		2,700	170	2.2	0.70	0.90	3.6							12.84	9.62		3.22
S-12	02/29/1996		2,200	1,700	<5.0	<5.0	<5.0	<5.0	5,600						12.84	7.64		5.20
S-12	05/22/1996		5,700	<1,000	<10	<10	<10	<10	2,400						12.84	8.94		3.90
S-12	07/30/1996		3,200	<500	<5.0	<5.0	<5.0	<5.0	1,500						12.84	9.71		3.13

#### GROUNDWATER DATA SHELL-BRANDED SERVICE STATION 1800½ POWELL STREET, EMERYVILLE, CALIFORNIA

Well ID	Date	ТРНто	TPHd	TPHg	В	Т	Ε	X	MTBE 8020	MTBE 8260	TBA	DIPE	ETBE	TAME	тос	Depth to Water	SPH Thickness	GW Elevation
well ID	Dute	(μg/L)	1ΡΠα (μg/L)	(μg/L)	ь (µg/L)	ι (μg/L)	ь (µg/L)	л (µg/L)	0020 (μg/L)	8200 (μg/L)	1 bA (μg/L)	μg/L)	етве (µg/L)	ι AME (μg/L)	(ft MSL)	(ft TOC)	(ft)	(ft MSL)
		(µg/L)	(µg/L)	(µg/L)	(µg·L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(μχ.L)	(µg/L)	(µg/L)	(µy L)	( <i>t</i> 1/13L)	<i>yi</i> 100)	<i>(11)</i>	(JI MOL)
S-12 (D)	07/30/1996		2,900	<500	<5.0	<5.0	<5.0	<5.0		2,000					12.84	9.71		3.13
S-12	11/11/1996		6,900	<500	<5.0	<5.0	<5.0	<5.0	1,400						12.84	9.65		3.19
S-12	11/03/1997		2,800	110	2.1	< 0.50	< 0.50	1.3							12.84	8.73		4.11
S-12	11/06/1998		2,900	<500	<5.0	<5.0	<5.0	<5.0	2,700						12.84	8.85		3.99
S-12	12/07/1999		2,800	<500	<5.0	<5.0	<5.0	<5.0	1,900						12.84	8.32		4.52
S-12	11/02/2000		4,000	132	0.642	< 0.500	< 0.500	1.07	1,900	2,230 h					12.84	7.50		5.34
S-12	12/27/2001		2,700	230	<2.0	<2.0	<2.0	<2.0		760					12.84	7.00		5.84
S-12	11/26/2002		540	180	<1.0	<1.0	<1.0	1.7		390					14.87	8.35		6.52
S-12	11/25/2003		2,600 k	<250	<2.5	<2.5	<2.5	<5.0		310					14.87	6.04		8.83
S-12	11/10/2004		1,000 k	290	<1.0	1.2	<1.0	5.0		140					14.87	7.80		7.07
S-12	11/23/2005			<50.0	< 0.500	< 0.500	< 0.500	2.63		93.3	398	< 0.500	< 0.500	< 0.500	14.87	7.22		7.65
S-12	11/21/2006		220	280	<1.0	<1.0	<1.0	<2.0		110	600	<4.0	<4.0	<4.0	14.87	8.53		6.34
S-12	11/14/2007		660 k,l	360 m	0.23 n	<1.0	<1.0	0.51 n		83	830	<2.0	<2.0	<2.0	14.87	7.40		7.47
S-12	11/17/2008		2,6001	390	< 0.50	<1.0	<1.0	<1.0		44	350	<2.0	<2.0	<2.0	14.87	6.80		8.07
S-12	11/12/2009		6901	200	< 0.50	<1.0	<1.0	<1.0		61	370	<2.0	<2.0	<2.0	14.87	8.00		6.87
S-12	12/03/2010		480 k,l	330	< 0.50	<1.0	<1.0	<1.0		31	280	<2.0	<2.0	<2.0	14.87	7.47		7.40
S-12	12/01/2011		15,600 h,l	200	< 0.500	< 0.500	< 0.500	0.970		54.3	<10.0	< 0.500	< 0.500	< 0.500	14.87	8.60		6.27
S-12	01/16/2012		1,800 l,o												14.87	8.56		6.31
S-12	10/05/2012		2801	250	< 0.50	< 0.50	< 0.50	<1.0		37	290	< 0.50	< 0.50	< 0.50	14.87	8.58		6.29
S-12	12/09/2013		2501	410	< 0.50	< 0.50	< 0.50	<1.0		33	240	< 0.50	< 0.50	< 0.50	14.87	8.52		6.35
S-12	02/27/2015		630	250	<0.50	<0.50	<0.50	<1.0		33	260	0.59	<0.50	<0.50	14.87	7.91		6.96
S-13	07/07/1989		3,600	700	200	<5	<5	45							12.59	9.26		
S-13	11/17/1989	5,000	2,000	1,900	700	160	70	340							12.59			
S-13	01/04/1990			2,800	1,400	130	10	540 500							12.59			
S-13	07/06/1990			3,100	1,400	60	40	270							12.59	9.47		3.12
S-13	10/24/1990			3,400	1,500	28	28	250							12.59			
S-13	01/14/1991	1,600	900	1,900	830	15	<10	99							12.59			
S-13	04/23/1991	640	770 f	2,900 k	1,100	20	30	140							12.59			
S-13	07/08/1991			1,500 K	880	10	6.0	160							12.59	10.38		2.21
S-13	10/11/1991	4,900	2,400	480	830	15	< 0.5	120							12.59	10.78		1.81
S-13	02/12/1992	1,300	1,300	1,300	510	<10	<0.5 <10	86							12.59	10.76		2.11
S-13	05/11/1992		1,300 b	1,000	470	<0.5	<10 <5	50							12.59	9.48		3.11
S-13	09/01/1992														12.59	10.74	a	1.85
S-13	12/04/1992		2,400 b	900	290	4.6	<2.5	20							12.59	10.74	a 	2.29
S-13	02/17/1993		2,400 b 1,200 b	900 840 k	290 310	4.0 3.5	<2.5	20 27							12.59	7.60		4.99
5-15	52/17/1995		1,200 0	N UFU	510	5.5	-2.5	<i>∠1</i>							12.09	7.00		ユ.ノク

Well ID	Date	ТРНто	TPHd	TPHg	В	Т	Е	X	MTBE 8020	MTBE 8260	TBA	DIPE	ETBE	TAME	тос	Depth to Water	SPH Thickness	GW Elevation
wen ID	Dute	(μg/L)	11 Πu (μg/L)	(μg/L)	ы (µg/L)	1 (μg/L)	L (µg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	μg/L)	LTDL (μg/L)	(μg/L)	(ft MSL)	(ft TOC)	(ft)	(ft MSL)
6 10	05 /00 /1000	-	-	-	-	-	-			-		-	-		,	,		
S-13 S-13	05/29/1993 08/11/1993		4,600 2,300	2,100 900	1,100 230	19 16	50 6.9	350 65							12.59 12.59	10.60 10.58		1.99 2.01
S-13 S-13	11/12/1993		2,300	2,800	230 200	16 15	8.9 8.6	58							12.59	10.58 9.84		2.01
S-13	02/21/1993		2,800 1,800 o	2,800 700	200	15 <5	8.0 <5	58 45							12.59	9.84 9.26		3.33
S-13	02/21/1994 05/16/1994		1,700	650	200 180	2.5	<2.5	43 21							12.59	9.20		2.97
S-13	08/08/1994		2,600 e	470	12	1.5	0.50	14							12.59	10.32		2.27
S-13	11/09/1994		,												12.59			
S-13	02/22/1995		2,400 e,f	550	190	4.0	< 0.5	17							12.59	8.92		3.67
S-13	05/02/1995		2,100	790	250	6.9	1.2	22							12.59	9.52		3.07
S-13	08/24/1995		1,500	330	93	< 0.5	< 0.5	2.0							12.59	10.02		2.57
S-13	12/08/1995		2,400	440	110	2.2	0.80	23							12.59	10.75		1.84
S-13	02/29/1996		2,500	560	130	<5.0	<5.0	30	30						12.59	9.02		3.57
S-13	05/22/1996		3,700	430	55	1.6	310	27	<5.0						12.59	10.20		2.39
S-13	07/30/1996		1,600	230	30	2.0	1.4	17	15						12.59	10.42		2.17
S-13	11/11/1996		2,700	320	19	1.1	< 0.5	14	3.5						12.59	10.28		2.31
S-13 (D)	11/11/1996		2,400	360	24	1.3	< 0.5	15	4.5						12.59	10.28		2.31
S-13	11/03/1997		1,900	300	25	1.4	0.63	12	5.0						12.59	9.36		3.23
S-13	11/06/1998		1,300	390	53	2.9	1.1	13	17						12.59	9.85		2.74
S-13	12/07/1999		1,430	420	15	6.2	2.6	15	42						12.59	9.72		2.87
S-13	11/02/2000		4,240	257	4.89	1.92	< 0.500	5.17	45.1						12.59	7.15		5.44
S-13	12/27/2001		6,400	300	7.2	0.84	< 0.50	6.0		34					12.59	9.35		3.24
S-13	11/26/2002		850	160	< 0.50	< 0.50	< 0.50	2.6		23					14.47	9.80		4.67
S-13	11/25/2003		5,100 k	180	0.57	0.55	< 0.50	3.0		26					14.47	9.94		4.53
S-13	11/10/2004		1,900 k	220	< 0.50	0.71	< 0.50	2.8		26					14.47	10.05		4.42
S-13	11/23/2005			<50.0	4.33	1.24	0.700	5.40		27.2	30.3	< 0.500	< 0.500	< 0.500	14.47	10.02		4.45
S-13	11/21/2006		840	370	19	2.3	0.60	4.9		77	73	<2.0	<2.0	5.1	14.47	10.30		4.17
S-13	11/14/2007		590 k,l	650 m	8.0	1.8	<1.0	4.7		32	13	<2.0	<2.0	1.8 n	14.47	9.60		4.87
S-13	11/17/2008		1,500 1	510	3.0	1.1	<1.0	4.2		25	13	<2.0	<2.0	<2.0	14.47	9.24		5.23
S-13	11/12/2009		1,000 1	410	2.6	1.0	<1.0	2.1		32	17	<2.0	<2.0	<2.0	14.47	9.82		4.65
S-13	12/03/2010		650 k,l	690	3.8	1.6	<1.0	6.3		44	22	<2.0	<2.0	3.8	14.47	9.30		5.17
S-13	12/01/2011		9,100 h,l	580	4.20	1.02	< 0.500	5.80		67.0	<10.0	< 0.500	< 0.500	< 0.500	14.47	10.02		4.45
S-13	01/16/2012		1,2001							100					14.47	9.80		4.67
S-13	10/05/2012		990 1 640 1	950 600	23	6.4	0.91	16 5 2		120	36	<0.50	<0.50	11	14.47	10.02		4.45 5.20
S-13	12/09/2013	 U	640 l	690	14	1.4	< 0.50	5.2		27	27	< 0.50	< 0.50	1.8	14.47	9.08		5.39
S-13	02/27/2015	Unable to	locate												14.47			

#### GROUNDWATER DATA SHELL-BRANDED SERVICE STATION 1800½ POWELL STREET, EMERYVILLE, CALIFORNIA

Well ID	Date	ТРНто	TPHd	TPHg	В	Т	Е	X	MTBE 8020	MTBE 8260	ТВА	DIPE	ETBE	TAME	тос	Depth to Water	SPH Thickness	GW Elevation
wen ID	Dute	(μg/L)	1ΡΠ <i>μ</i> (μg/L)	(μg/L)	ь (µg/L)	ι (μg/L)	ь (µg/L)	л (µg/L)	8020 (μg/L)	0200 (μg/L)	1 ΒΑ (μg/L)	DIFE (μg/L)	етве (µg/L)	ι Alvie (μg/L)	(ft MSL)	(ft TOC)	(ft)	(ft MSL)
0.44	44 /4 = /4000	-			-	-	-		-			-			y ,	y ,		2
S-14	11/17/1989	3,000	<400	<250	3.0	<2	<2	<5							12.69			
S-14	01/04/1990			<250	3.0	2.0	<2	<5							12.69			
S-14	04/23/1991	<5,000	18,000	1,200	7.4	2.7	15	110							12.69			
S-14	07/08/1991			190	6.5	0.60	1.9	26							12.69	10.32		2.37
S-14	10/11/1991	<500	21,000	4,900	7.0	1.2	< 0.5	25							12.69	10.77		1.92
S-14	02/12/1992	2,500	12,000 k	370	4.6	<2.5	<2.5	26							12.69	10.40		2.29
S-14	05/11/1992		2,200 b	660	2.9	<2.5	<2.5	24							12.69	9.66		3.03
S-14	09/01/1992		7,900	700	3.2	<2.5	<2.5	15							12.69	10.74		1.95
S-14	12/04/1992		11,000 b	210	<0.5	<0.5	0.80	6.8							12.69	10.69		2.00
S-14	02/17/1993		5,700 b	130 k	<0.5	<0.5	<0.5	4.4							12.69	9.69		3.00
S-14	05/29/1993		5,200	770	<0.5	<0.5	<0.5	4.5							12.69	10.42		2.27
S-14	08/11/1993		8,800	920	<1	<1	1.6	17							12.69	10.54		2.15
S-14	11/12/1993		28,000	710	20	57	25	69							12.69	9.91		2.78
S-14	02/21/1994		3,600	2,800	<5	<5	<5	14							12.69	9.30		3.09
S-14	02/21/1994		3,600 c	2,300 o	<5.0	<5	<5	14							12.69	9.30		3.39
S-14	05/16/1994		6,700	310	<2.5	<2.5	<2.5	3.1							12.69	9.54		3.15
S-14	08/08/1994		2,900	480 g	< 0.5	0.60	< 0.5	0.8							12.69	10.29		2.40
S-14 (D)	08/08/1994		2,900	590 g	< 0.5	0.60	< 0.5	1.5							12.69	10.29		2.40
S-14	11/09/1994		6,400 e	170 g	0.70	< 0.5	< 0.5	2.7							12.69	9.52		3.07
S-14	02/22/1995		7,000 e,f	550	< 0.5	< 0.5	< 0.5	1.6							12.69	9.18		3.51
S-14	05/02/1995		2,300	210	1.0	0.90	1.1	6.3							12.69	9.49		3.20
S-14 (D)	05/02/1995		2,600	160	0.60	0.60	0.70	3.8							12.69	9.49		3.20
S-14	08/24/1995		3,700	180	0.50	< 0.5	< 0.5	1.3							12.69	9.94		2.75
S-14	12/08/1995		4,900	190	1.0	< 0.5	0.60	4.6							12.69	10.65		2.04
S-14	02/29/1996		11,000	200	< 0.5	< 0.5	< 0.5	2.0	3.0						12.69	8.90		3.79
S-14	05/22/1996		3,800	93	< 0.5	< 0.5	< 0.5	1.6	<2.5						12.69	10.10		2.59
S-14 (D)	05/22/1996		3,900	150	< 0.5	< 0.5	< 0.5	1.8	<2.5						12.69	10.10		2.59
S-14	07/30/1996		2,500	<50	< 0.5	< 0.5	< 0.5	0.89	<2.5						12.69	10.37		2.32
S-14	11/11/1996		27,000	2,600	<2.5	<2.5	<2.5	3.9	<12						12.69	10.29		2.40
S-14	11/03/1997		1,800	430	< 0.50	< 0.50	< 0.50	1.7	<2.5						12.69	9.52		3.17
S-14		Well inacc													12.69			
S-14	12/07/1999		5,920	970	1.0	1.1	0.59	3.5	2.6						12.69	9.73		2.96
S-14	11/02/2000		535,000	273	< 0.500	< 0.500	< 0.500	1.59	<2.50						12.69	9.98		2.71
S-14	12/27/2001		20,000	68	< 0.50	< 0.50	< 0.50	1.3		<5.0					12.69	9.33		3.36
S-14 S-14	12/27/2001		20,000	<50	<0.50	<0.50 <0.50	<0.50	0.91		<5.0					12.09	9.33 9.70		4.81
S-14 S-14	11/25/2002		2,400 4,400 k	<50 78 k	<0.50 <0.50	<0.50 <0.50	<0.50 <0.50	1.2		<5.0 1.6					14.51 14.51	9.70 9.99		4.81
	11/25/2005		4,400 K	70 K	NU.30	NU.00	NU.00	1.4		1.0					14.01	7.77		4.52

#### GROUNDWATER DATA SHELL-BRANDED SERVICE STATION 1800½ POWELL STREET, EMERYVILLE, CALIFORNIA

Well ID	Date	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	Β (μg/L)	Т (µg/L)	E (µg/L)	X (µg/L)	MTBE 8020 (μg/L)	МТВЕ 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	TOC (ft MSL)	Depth to Water (ft TOC)	SPH Thickness (ft)	GW Elevation (ft MSL)
S-14	11/10/2004		2,500 k	74 k	< 0.50	< 0.50	< 0.50	<1.0		1.9					14.51	10.05		4.46
S-14	11/23/2005			<50.0	< 0.500	< 0.500	< 0.500	< 0.500		1.02	<10.0	< 0.500	< 0.500	< 0.500	14.51	9.92		4.59
S-14	11/21/2006		5,000	62 j	<0.50 j	<0.50 j	<0.50 j	<1.0 j		1.9 j	<5.0 j	<2.0 j	<2.0 j	<2.0 j	14.51	10.26		4.25
S-14	11/14/2007		550 k,l	120 m	0.98	<1.0	<1.0	0.23 n		2.2	<10	<2.0	<2.0	<2.0	14.51	9.63		4.88
S-14	11/17/2008		1,7001	<50	< 0.50	<1.0	<1.0	<1.0		1.4	<10	<2.0	<2.0	<2.0	14.51	9.25		5.26
S-14	11/12/2009		1,200 l	<50	< 0.50	<1.0	<1.0	<1.0		1.2	<10	<2.0	<2.0	<2.0	14.51	9.67		4.84
S-14	12/03/2010		5401	58	< 0.50	<1.0	<1.0	<1.0		1.1	<10	<2.0	<2.0	<2.0	14.51	9.12		5.39
S-14	12/01/2011		7,610 h,l	120	< 0.500	< 0.500	< 0.500	< 0.500		1.46	<10.0	< 0.500	< 0.500	< 0.500	14.51	9.88		4.63
S-14	01/16/2012		1,4001												14.51	9.69		4.82
S-14	10/05/2012		1,3001	82	< 0.50	< 0.50	< 0.50	<1.0		1.7	<10	< 0.50	< 0.50	< 0.50	14.51	9.92		4.59
S-14	12/09/2013	Well inacc	essible												14.51			
S-14	02/27/2015		770	97	0.94	0.55	<0.50	<1.0		1.5	<10	<0.50	<0.50	<0.50	14.51	9.91		4.60

#### Notes:

TPHmo = Total petroleum hydrocarbons as motor oil analyzed by modified EPA Method 8015

TPHd = Total petroleum hydrocarbons as diesel analyzed by modified EPA Method 8015

TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8260B; prior to December 27, 2001, analyzed by EPA Method 8015 unless otherwise noted.

BTEX = Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B; prior to December 27, 2001, analyzed by EPA Method 8020.

MTBE = Methyl tertiary-butyl ether analyzed by method noted

TBA = Tertiary-butyl alcohol analyzed by EPA Method 8260B

DIPE = Di-isopropyl ether analyzed by EPA Method 8260B

ETBE = Ethyl tertiary-butyl ether analyzed by EPA Method 8260B

TAME = Tertiary-amyl methyl ether analyzed by EPA Method 8260B

TOC = Top of casing elevation, in feet relative to mean sea level

SPH = Separate-phase hydrocarbon

GW = Groundwater

 $\mu g/L = Micrograms per liter$ 

ft = Feet

MSL = Mean sea level

<x = Not detected at reporting limit x

--- = Not analyzed or available

(D) = Duplicate sample

a = SPH present but not measured

b = Compounds detected within the chromatographic range appear to be weathered diesel.

c = The concentration reported as diesel is due to the presence of a combination of diesel and a heavier petroleum product of hydrocarbon range C18 - C36, possibly motor oil. CRA 240894 (10)

									MTBE	MTBE						Depth to	SPH	GW
Well ID	Date	ТРНто	TPHd	TPHg	В	Т	Ε	X	8020	8260	TBA	DIPE	ETBE	TAME	TOC	Water	Thickness	Elevation
		(µg/L)	(ft MSL)	(ft TOC)	(ft)	(ft MSL)												

d = The result for gasoline is an unknown hydrocarbon which consists of several peaks.

e = The positive result appears to be a heavier hydrocarbon than diesel.

f = Compounds detected within the chromatographic range of diesel appear to include gasoline compounds.

g = The positive result appears to be a heavier hydrocarbon than gasoline.

h = Sample analyzed outside of EPA recommended holding time.

i = TOC altered due to wellhead maintenance.

j = The sample, as received, was not preserved in accordance to the referenced analytical method.

k = Sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

l = The sample extract was subjected to silica gel treatment prior to analysis.

m = Analyzed by EPA Method 8015B (M).

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

o = Hydrocarbon result partly due to individual peak(s) in quantitation range

Beginning November 26, 2002, depth to water referenced to TOC instead of top of well box. Active wells surveyed on February 12, 2002 by Virgil Chavez Land Surveying

# APPENDIX A

BLAINE TECH SERVICES, INC. – FIELD NOTES

# WELL GAUGING DATA

Project # _	150227-BWI	Date	2/27	-115 (	Client	shell	
				1	さんもんち イインス		

# Site 1800 Powell St. Everyville

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (fl.)		Immiscibles Removed	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
5-5	0959	8					7.76	12.09		
5-8	0938	3					6.81	17.68		
5-9	1015	3	ODOR	Check Well	w Disp Dru	Bailer	DRY			
5-10	1005	6					9.65	19.23		
5-12	0952	3					7.91	25.72		
5-13	×	Una	ble	76 lc	cate					
등 김 사람이 집을 통하는 것	Ŷ731	3					9.91	21.65	J	

		•	•			
BTS #:	150227	-Bw)	·	Site: 9899	5349	
Sampler:	BW			Date: 2/27	/15	
Well I.D.:	5-5			Well Diameter	: 2 3 4	6 8
Total Well	Depth (TD	): 12.	.09	Depth to Water	r (DTW): 7	76
Depth to Fr	ee Product	•	Чм <sub>и</sub> ,	Thickness of F	ree Product (fee	et):
Referenced	to:	PVQ	Grade	D.O. Meter (if	req'd):	YSI HACH
DTW with	80% Rech	arge [(H	leight of Water	Column x 0.20)	)+DTW]: 중,	63
	Disposable B Positive Air I Electric Subm Gals.) X	Displaceme nersible / 3	Other	Gals.	Sampling Method: Other: <u>r Multiplier Well I</u> 0.04 4" 0.16 6" 0.37 Othe	Disposable Bailer Extraction Port Dedicated Tubing Diameter Multiplier 0.65 9 <sup>11</sup> - 7.60
1 Case Volume	Speci	fied Volum				
Time	Temp (°F)	pН	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1209	63.4	6.95	1337	. 52	11.3	
1217	63.9	6.82	1308	30	22.6	
1225	64.0	6.75	1325	21	33.9	
						· · ·
Did well de	water?	Yes (	N6)	Gallons actuall	y evacuated:	33.9
Sampling D	ate: 2/27	lis	Sampling Time	e: 1230	Depth to Wate	r: 7,78
Sample I.D.	: 5-5			Laboratory:	Test America	Other
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other: See (	CoC
EB I.D. (if a	applicable)	):	@ Tíme	Duplicate I.D.	(if applicable):	
Analyzed for	or: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	
D.O. (if req	d): Pi	e-purge:		<sup>mg</sup> / <sub>L</sub> P	ost-purge:	mg/L
O.R.P. (if re	eq'd): Pi	e-purge:		mV P	ost-purge:	mV

# SHELL/WELL MONITORING DATA SHEET

#### BTS #: 9899 5349 150227-BW1 Site: Sampler: BW Date: 2/27/15 Well I.D.: 5-8 Well Diameter: 2 (3)4 6 8 Total Well Depth (TD): 17.6 % Depth to Water (DTW): 6.81 Depth to Free Product: Referenced to: PVC) D.O. Meter (if req'd): Grade YSI HACH DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 8.98 $imes_{Bailer}$ Purge Method: Bailer Waterra Sampling Method: **Disposable Bailer** Peristaltic **Disposable Bailer** Positive Air Displacement Extraction Pump Extraction Port Electric Submersible Other Dedicated Tubing Other: Well Diameter Multiplier Well Diameter Multiplier 1" 0.04 4" 0.65 3 4.0 12,0 2" 6" (Gals.) X 0.16 1.47 Gals. 3" 0.37 Other radius<sup>2</sup> \* 0.163 Specified Volumes 1 Case Volume Calculated Volume Cond. Turbidity (mS or (uS)) Temp (°F) Time pН (NTUs) Gals. Removed Observations 69.6 7,20 1056 9142 87 4. D 3451 1059 69.7 6.68 57 8.0 69.1 6.63 3281 1102 22 12.0 Nd Did well dewater? Yes Gallons actually evacuated: 17.0 Sampling Date: 2/27/15Sampling Time: 1105 Depth to Water: +,72Sample I.D.: 58 Laboratory: Test America Other (OC Analyzed for: TPH-G BTEX See MTBE Oxygenates (5) Other: TPH-D a) EB I.D. (if applicable): Duplicate I.D. (if applicable): Time Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: mg/I mg/I D.O. (if req'd): Pre-purge: Post-purge: O.R.P. (if req'd): mV Pre-purge: Post-purge: m۱

# SHELL WELL MONITORING DATA SHEET

·····			·					•
BTS #:	150227	- Bu	>1	Site:	980	195349		
Sampler:	BW	-	•	Date:		27/15		
Well I.D.:	BX 5-0	7		Well I	Diameter	<u> </u>	4	68
Total Well	Depth (TI	)):		Depth	to Wate	r (DTW):	DR	:4
Depth to Fr	ee Produc			Thickr	ess of F	ree Produc	t (fee	et):
Referenced	to:	PVC	) Grade	D.O. N	leter (if	req'd):	······	YSI HACH
DTW with	80% Rech	arge [(F	leight of Water	Colum	n x 0.20	)+DTW]:		**************************************
Purge Method:	Bailer Disposable B Positive Air I Electric Subn	ailer Displaceme		Waterra Peristaltic tion Pump	······································	Sampling M	Other:	Bailer Disposable Bailer Extraction Port Dedicated Tubing Diameter Multiplier
(( 1 Case Volume	Gals.) X Speci	fied Volun	nes Calculated Vo	_ Gals. lume	1" 2" 3"	0.04 0.16 0.37	4" 6" Other	0.65 1.47
Time	Temp (°F)	pH	Cond. (mS or µS)	[	oidity TUs)	Gals. Rem	oved	Observations
X. Check X No	well Sample	1 /	Disp Bailer Ilected.	, Wel	1 Dr	y. Tar	on	bailer
	1	•						
		<u>.</u>			-			
Did well de	water?	Yes	No	Gallon	s actuall	y evacuate	d:	
Sampling D	ate:		Sampling Time	<b>):</b>		Depth to V	Vater	•
Sample I.D.	•	and the second sec		Labora	tory:	Test America	1 (	Dther
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygena	ates (5)	Other:	and the second sec	<del>ykan</del>
EB I.D. (if a	pplicable)		@ Time	Duplica	ate I.D. (	(if applicat	ole):	
Analyzed fo	er: TPH-G	BTEX	MTBE TPH-D	Oxygena	ates (5)	Other:		
D.O. (if req'	d): Pi	e-purge:		<sup>mg</sup> /L	Р	ost-purge:		mg/L
O.R.P. (if re	eq'd): Pi	e-purge:		· mV	Р	ost-purge:	A CONTRACTOR	mV
				9				

# SHELL WELL MONITORING DATA SHEET

# SHELL/WELL MONITORING DATA SHEET

BTS #:	1502	27-13	jw1	Site:	9	8995349	
Sampler:	BLC	>		Date:	2	127/15	
Well I.D.:	5-11	0		Well D	ameter		6 8
Total Well I	Depth (TD	): 19.	23.	Depth	to Wate	r (DTW): 9.	65
Depth to Fre	ee Product	ه. در بروی د		Thickn	ess of F	ree Product (fe	et): —
Referenced	to:	PVC	Grade	D.O. M	leter (if	req'd):	YSI HACH
DTW with 8	30% Recha	arge [(H	leight of Water	Colum	1 x 0.20)	) + DTW]: [\	.57
Purge Method:	Bailer Disposable Ba Positive Air I Electric Subm	Displaceme		Waterra Peristaltic tion Pump	Well Diamete	Sampling Method: Other:	Disposable Bailer Extraction Port Dedicated Tubing
14.1 (( 1 Case Volume	Gals.) X Specif	<u>S</u> fied Volum	$= \frac{42.3}{\text{Calculated Vo}}$	_Gals. lume	1" 2" 3"	0.04 4" 0.16 6" 0.37 Othe	0.65 1.47
Time	Temp (°F)	pH	Cond. (mS or (µS))		oidity TUs)	Gals. Removed	Observations
1248	63.5	6.95	1410	. 71	000	14.1	Debuis in water
L.	Dewater	20	14,5 gallon	5			DTW-18.74
1450	64.1	6.88	1381	710	00	**************************************	Very nuchdy
* Well -	Dewate	ref d	ury Sanpli	n.F	illed 3	NOA WHEL +	1 x 1 C Amber Uoia
				J			
Did well de	water?	Yes	No	Gallon	s actuall	y evacuated:	14.5
Sampling D	ate: $\mathbb{Z}[z \neq 1]$	5	Sampling Time	: 145	Ô	Depth to Wate	r: 18,56
Sample I.D.	: 5-10	>		Labora	tory:	Test America	Other
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygena	ates (5)	Other: See	$C \sim C$
EB I.D. (if a	pplicable)	r *	@ Time	Duplic	ate I.D. (	(if applicable):	
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygena	ates (5)	Other:	
D.O. (if req'	d): Pr	e-purge:		<sup>mg</sup> /L	· P	ost-purge:	mg/L
O.R.P. (if re	q'd): Pr	e-purge:		mV	· P	ost-purge:	mV

~ *				IVER OTHER T		
BTS #:	150227	-Bust		Site: 98	995349	
Sampler:	BW			Date: $2/2$	7/15	· · · · · ·
Well I.D.:	5-12			Well Diamete	r: 2 3 4	6 8
Total Well	Depth (TD	): Z	3.72 .	Depth to Wate	er (DTW): 7.9	and the second sec
Depth to Fr	ee Product			Thickness of	Free Product (fee	et):
Referenced	to:	(PVC)	Grade	D.O. Meter (i	f req'd):	YSI HACH
DTW with	80% Rech	arge [(H	leight of Water	Column x 0.20	0) + DTW]:	1,07
Purge Method:		ailer Displaceme		Waterra Peristaltic stion Pump	Sampling Method:	Disposable Bailer Extraction Port Dedicated Tubing
5.9 (( 1 Case Volume	Jais.) A	3 fied Volum	$\frac{17.7}{\text{Calculated Vo}}$	Gals. 1"	0.04 4" 0.16 6" 0.37 Othe	0.65
Time	Temp (°F)	pH	Cond. (mS or (LS))	Turbidity (NTUs)	Gals. Removed	Observations
1135	65.3	6.70	2952	104	5.9	
1140	65.5	6.54	4095	61	11.8	
1145	65.5	4.56	4021	50	17.7	
		- 				
Did well de	water?	Yes (	No	Gallons actua	lly evacuated:	(7.7
Sampling D	ate: 2/27	15	Sampling Time	e: (156	Depth to Wate	r: 9,25
Sample I.D.	: 5-	12		Laboratory:	Test America	Other
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other: $S_{ee}$	COC
EB I.D. (if a	applicable)	:	@ Time	Duplicate I.D.	. (if applicable):	
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	
D.O. (if req	d): Pi	e-purge:		<sup>mg</sup> /L	Post-purge:	mg/L
O.R.P. (if re	eq'd): Pi	e-purge:		mV	Post-purge:	mV

# SHELL/WELL MONITORING DATA SHEET

- <i>,</i>		SHEI	LL WELL MO	NITO	RING D	ATA SH	EET				
BTS #:	150227	-Bu	<b>)</b>	Site:	980	195349		n an			
Sampler:	BW	-	、 	Date:	2/2	27/15					
Well I.D.:	5-13			Well I	Diameter	: 2 3	4	68			
Total Well	Depth (TD	):		Depth	to Wate	r (DTW):					
Depth to Fr	ee Product	•		Thickn	less of F	ree Produ	ıct (fe	et):			
Referenced	to: (	PVC	Grade	D.O. N	leter (if	req'd):		YSI HACH			
DTW with	80% Rech	arge [(H	leight of Water	r Column x 0.20) + DTW]:							
Purge Method:	Bailer Disposable B Positive Air I Electric Subn	Displaceme tersible		Waterra Peristaltic tion Pump	Well Diamete	Sampling r Multiplier	Other:	Disposable Bailer Extraction Port Dedicated Tubing			
(C 1 Case Volume	Gals.) X Speci	fied Volum	es Calculated Vol	_ Gals. lume	1* 2* 3*	0.04 0.16 0.37	4" 6" Othe	0.65 1.47			
Time	Temp (°F)	pH	Cond. (mS or μS)	(N)	oidity TUs)	Gals. Rer	noved	Observations			
* Unabl * Wo	e to la Sample	ocate Coll	well. P ecfed	aved	over	·					
		·			· · · · · · · · · · · · · · · · · · ·						
Did well dev	wotow	¥7		<u> </u>							
		Yes			s actuall	y evacuat	ed:				
Sampling D	ate:		Sampling Time	<b>:</b>	<u> </u>	Depth to	Water	<b>r.</b>			
Sample I.D.	:/		·····	Labora	tory:	Test Ameri	ca (	Other			
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygena	ites (5)	Other:					
EB I.D. (if a	pplicable)	*	@ Time	Duplica	ate I.D. (	(if applica	able):				
Analyzed fo	r: TPH-G	BTEX	MTBE TPH-D	Oxygena	ites (5)	Other:	<u></u>				
D.O. (if req'	d): Pr	e-purge:		<sup>mg</sup> /L	Р	ost-purge:		mg/L			
O.R.P. (if re	q'd): Pr	e-purge:		mV Post-purge: mV							

. (° - )

BTS #:	150227	-BWI		Site: 9	8995349	
Sampler:	BW				127/15	
Well I.D.:	5-14			Well Diamete	er: 2 (3) 4	68
Total Well I	Depth (TD	): 2(	.65	Depth to Wat	er (DTW): 9.91	
Depth to Fre	ee Product	:		Thickness of	Free Product (fee	et):
Referenced	to:	(PVC)	Grade	D.O. Meter (i	f req'd):	YSI HACH
DTW with 8	80% Recha	arge [(H	eight of Water	Column x 0.2	0) + DTW]: [2	.26
Purge Method:	Bailer Disposable Ba Positive Air E Electric Subm	Displaceme	nt Extrac Other		Sampling Method: Other:	Disposable Bailer Extraction Port Dedicated Tubing
<u>4, 3</u> (0 1 Case Volume	Gals.) X Speci	3 fied Volum	$= \frac{17.9}{\text{Calculated Vo}}$	Gals. Jume	leter         Multiplier         Well           0.04         4"           0.16         6"           0.37         Other	Diameter Multiplier 0.65 1.47 r radius <sup>2</sup> * 0.163
Time	Temp (°F)	pH	Cond. (mS) or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1027	68.9	7.07	20.16	102	4.3	
1030	69.0	7.15	6.901	74	8.6	
1033	69.1	7,20	6.725	38	12.9	
					3	
	~					
Did well de	water?	Yes (	Ng	Gallons actua	Illy evacuated:	12.9
Sampling D	ate: 2/2	7/15	Sampling Tim	e: 1040	Depth to Wate	r: 12.04
Sample I.D.	: 5-14			Laboratory:	Test America	Other
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other: See	CoC
EB I.D. (if a	applicable)	:	@ Time	Duplicate I.D	. (if applicable):	
Analyzed for	or: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	
D.O. (if req'	d): Pr	e-purge:		<sup>mg</sup> /L	Post-purge:	<sup>mg</sup> /L
O.R.P. (if re	eq'd): Pr	e-purge:		mV	Post-purge:	mV

 $\mathcal{F}_{i}^{t}$ 

# SHELL WELL MONITORING DATA SHEET

**INCIDENT #** 

#### ENVIRONMENTAL WELL, REMEDIATION COMPOUND, AND SITE INSPECTION FORM

Page of /

DATE:

2/27/15

98995349

ADDRESS 1800 Powell St. CITY& STATE Every Wille, CA

		Observations Upon Arrival																
Well ID	Manway Cover, Type, Condition & Size					Well Labeled / Painted Properly*		Well Cap (Gripper) Condition		Well l	.ock Co	ndition	Well Pad / Surface Condition		Note Repairs Made Detailed Explanation of Maintenance Recommended and Performed		ios of Iell Jition	Repair Date and PM Initials
5-5	Standpipe	Flush	G	Р	Size (inch)	$\bigcirc$	N	G	R	G	R	NL	G	P		Y	N	
5-5	Standpipe	Flush	G	P	Size (inch)	Ì	N	6	R	G	R	NL.	G	Р	NO Tag	Y	N	
5-9	Standpipe	Flush	G	P	Size (inch)	$\bigcirc$	N	٢	R	٩	R	NL	$\bigcirc$	Р	2/2 Tabs Broken, Rim Broken	$(\mathbf{\hat{S}})$	N	
5-10	Standpipe	Flush	٢	P	Size (inch)	$\odot$	N	G	R	6	R	NL	6	Р		Y	N	
512	Standpipe	Flush	٩	р	Size (inch)	Ì	N	$\langle \! \!                                 $	R	G	R	NL	$\bigcirc$	Р	Replace Capt Lock, Well very in box	Y	N	
5-13	Standpipe	Flush	G	Р	Size (inch)	Ŷ	N	G	R	G	R	NL	G	р	Replace Capt Lock, Well, very 1000 in box * Unable to locate	Y	N	
6-14	Standpipe	Flush	$\langle \circ \rangle$	P	Size (inch)	$\odot$	N	6	R	Ø	R	NL	Ì	р		Y	N	
	Standpipe	Flush	G	Р	Size (inch)	Ŷ	N	G	R	G	R	NL	G	Р		Y	N	
	Standpipe	Flush	G	P	Size (inch)	Y	N	G	R	G	я	NL.	G	Р		Y	N	
	Standpipe	Flush	G	P	Size (inch)	Y	N	G	R	G	R	NL	G	Р		Y	N	
	Standpipe	Flush	G	P	Size (inch)	Y	N	G	R	G	R	NL	G	P		Y	N	
TOTAL # CAPS REPLACED = = TOTAL # OF LOCKS REPLACED																		
Condition of Soil Boring Patches of G P N/A If POOR, Borings/Well IDs Abandoned Monitoring Wells: G P								ings/Well	IDs or Lo	or Location Description:						Y	N	
Remediation Compound Type (Check boxes that apply)					deb de taxea de	on of Area Enclosure	et al service de la companya de la c	Com	Compound Security			ency Cont Visible	act info	Cleaning / Repairs Recommended and Conducted	Phot Conc	os of lition	Repair Date and PM Initials	
NA Buildin Building w/ Fer Fenced Corr Traile	nce Comp. npound		G	P	N/A	G	Ρ	N/A	G	ę	N/A	Y	N	N/A		Y	N	
Number of Drums On-site			s the Label Reveal the urce of the Contents		Labeled Correctly Writing Legib				m Condition		Confirm Drums Related to Environmental		Drums Located to Business Interfere		Detailed Explanation of Any Issues Resolved	Phote Dri Cond	im	Date Drums Removed from Site and PM Initiats
0	Y	N	N/A	Ŷ	N	N/A	G	Р	N/A	Y	N	Y	N	N/A		Y	N	

R = Replaced G = Good (Acceptable)

P = Poor (needs attention) NL = No Lock Required

Note: All repairs other than locks and grippers require Shell PM approval prior to repair.

\* = Groundwater monitoring well covers must be painted and labeled in accordance with applicable regulations. Version 2.4, March 2008

All environmental wells and the remediation compound were in good condition, locked, and secured upon my departure (unless otherwise noted above).

Brian Weeks Blane Teh Serves Print or type Name of Field Personnel & Consultant Company

APPENDIX B

TESTAMERICA LABORATORIES, INC. – ANALYTICAL REPORT



THE LEADER IN ENVIRONMENTAL TESTING

## **ANALYTICAL REPORT**

#### TestAmerica Laboratories, Inc.

TestAmerica Irvine 17461 Derian Ave Suite 100 Irvine, CA 92614-5817 Tel: (949)261-1022

TestAmerica Job ID: 440-103494-1 Client Project/Site: 1800 1/2 Powell St. Emeri

Client Project/Site: 1800 1/2 Powell St., Emeryville

#### For:

Conestoga-Rovers & Associates, Inc. 5900 Hollis Street Suite A Emeryville, California 94608

#### Attn: Peter Schaefer

eather ( lark

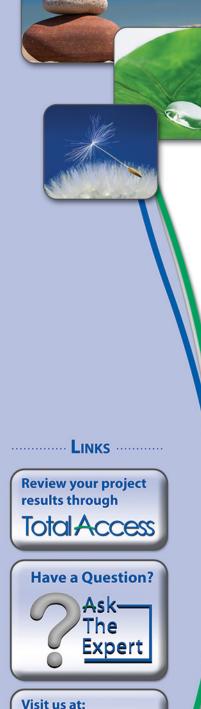
Authorized for release by: 3/10/2015 10:47:10 AM

Heather Clark, Project Manager I (949)261-1022 heather.clark@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



www.testamericainc.com

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#### Sample Summary

Client: Conestoga-Rovers & Associates, Inc. Project/Site: 1800 1/2 Powell St., Emeryville TestAmerica Job ID: 440-103494-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-103494-1	S-5	Ground Water	02/27/15 12:30	03/03/15 09:35
440-103494-2	S-8	Ground Water	02/27/15 11:05	03/03/15 09:35
440-103494-3	S-10	Ground Water	02/27/15 14:50	03/03/15 09:35
440-103494-4	S-12	Ground Water	02/27/15 11:50	03/03/15 09:35
440-103494-5	S-14	Ground Water	02/27/15 10:40	03/03/15 09:35

#### Job ID: 440-103494-1

#### Laboratory: TestAmerica Irvine

#### Narrative

Job Narrative 440-103494-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 3/3/2015 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

#### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### GC Semi VOA

Method(s) 8015B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 240636. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch. (LCS 440-240636/2-A)

Method(s) 8015B: Surrogate recovery for the following sample(s) was outside control limits: S-10 (440-103494-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **Organic Prep**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Lab Sample ID: 440-103494-1

**Matrix: Ground Water** 

5

## **Client Sample ID: S-5**

Date Collected: 02/27/15 12:30 Date Received: 03/03/15 09:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Volatile Fuel Hydrocarbons	510		50		ug/L			03/06/15 16:55	1
(C4-C12)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	91		76 - 132			-		03/06/15 16:55	1
4-Bromofluorobenzene (Surr)	102		80 - 120					03/06/15 16:55	1
Toluene-d8 (Surr)	118		80 - 128					03/06/15 16:55	1
Matheads 0000D Malatile Origin									
Method: 8260B - Volatile Orgai Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	3.8		0.50		ug/L			03/06/15 16:55	1
Toluene	ND		0.50		ug/L			03/06/15 16:55	1
Ethylbenzene	ND		0.50		ug/L			03/06/15 16:55	1
Xylenes, Total	2.2		1.0		ug/L			03/06/15 16:55	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50		ug/L			03/06/15 16:55	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			03/06/15 16:55	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			03/06/15 16:55	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			03/06/15 16:55	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			03/06/15 16:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120			-		03/06/15 16:55	1
Dibromofluoromethane (Surr)	91		76 - 132					03/06/15 16:55	1
Toluene-d8 (Surr)	118		80 - 128					03/06/15 16:55	1

#### Client Sample ID: S-8

#### Date Collected: 02/27/15 11:05

Date Received: 03/03/15 09:35

#### Lab Sample ID: 440-103494-2

Matrix: Ground Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Volatile Fuel Hydrocarbons (C4-C12)	250		50		ug/L			03/06/15 17:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	95		76 - 132			-		03/06/15 17:25	1
4-Bromofluorobenzene (Surr)	109		80 - 120					03/06/15 17:25	1
Toluene-d8 (Surr)	118		80 - 128					03/06/15 17:25	1

method. 0200D Tolatile organi							
Analyte	Result Qua	alifier RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	0.50	ug/L			03/06/15 17:25	1
Toluene	ND	0.50	ug/L			03/06/15 17:25	1
Ethylbenzene	ND	0.50	ug/L			03/06/15 17:25	1
Xylenes, Total	1.3	1.0	ug/L			03/06/15 17:25	1
Methyl-t-Butyl Ether (MTBE)	1.8	0.50	ug/L			03/06/15 17:25	1
tert-Butyl alcohol (TBA)	ND	10	ug/L			03/06/15 17:25	1
Isopropyl Ether (DIPE)	ND	0.50	ug/L			03/06/15 17:25	1
Ethyl-t-butyl ether (ETBE)	ND	0.50	ug/L			03/06/15 17:25	1
Tert-amyl-methyl ether (TAME)	ND	0.50	ug/L			03/06/15 17:25	1
•							

Limits

80 - 120

76 - 132

80 - 128

%Recovery Qualifier

109

95

118

TestAmerica Job ID: 440-103494-1

Lab Sample ID: 440-103494-2

Analyzed

03/06/15 17:25

03/06/15 17:25

03/06/15 17:25

Lab Sample ID: 440-103494-3

Prepared

Matrix: Ground Water

Matrix: Ground Water

5

Dil Fac

1

1

1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Volatile Fuel Hydrocarbons (C4-C12)	140		50		ug/L			03/06/15 18:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	92		76 - 132					03/06/15 18:04	1
4-Bromofluorobenzene (Surr)	105		80 - 120					03/06/15 18:04	1
Toluene-d8 (Surr)	118		80 - 128					03/06/15 18:04	1
- Method: 8260B - Volatile Orga	nic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			03/06/15 18:04	1
Toluene	ND		0.50		ug/L			03/06/15 18:04	1
Ethylbenzene	ND		0.50		ug/L			03/06/15 18:04	1
Xylenes, Total	ND		1.0		ug/L			03/06/15 18:04	1
Methyl-t-Butyl Ether (MTBE)	0.89		0.50		ug/L			03/06/15 18:04	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			03/06/15 18:04	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			03/06/15 18:04	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			03/06/15 18:04	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			03/06/15 18:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					03/06/15 18:04	1
Dibromofluoromethane (Surr)	92		76 - 132					03/06/15 18:04	1
Toluene-d8 (Surr)	118		80 - 128					03/06/15 18:04	1
 Method: 8015B - Diesel Range			Level - Silica G		-				
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	2100		47		ug/L		03/05/15 09:57	03/06/15 00:30	1
Surrogate	%Recovery		Limits				Prepared	Analyzed	Dil Fac
n-Octacosane 	16	X	45 - 120				03/05/15 09:57	03/06/15 00:30	1
Client Sample ID: S-12							Lab Samp	le ID: 440-10	3494-4
Date Collected: 02/27/15 11:50 Date Received: 03/03/15 09:35								Matrix: Groun	d Water
_ Method: 8260B/CA_LUFTMS -	Volatile Organic	Compound	Is by GC/MS						
 Analyte	-	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Volatile Fuel Hydrocarbons	250		50		ug/L			03/06/15 18:33	1

#### Client: Conestoga-Rovers & Associates, Inc. Project/Site: 1800 1/2 Powell St., Emeryville

**Client Sample ID: S-8** Date Collected: 02/27/15 11:05

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

**Client Sample ID: S-10** 

Date Collected: 02/27/15 14:50

Date Received: 03/03/15 09:35

Surrogate

(C4-C12)

Toluene-d8 (Surr)

Date	Received:	03/03/15	09:35

Volatile Fuel Hydrocarbons	140		50		ug/L			03/06/15 18:04	1
(C4-C12)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	92		76 - 132					03/06/15 18:04	1
4-Bromofluorobenzene (Surr)	105		80 - 120					03/06/15 18:04	1
Toluene-d8 (Surr)	118		80 - 128					03/06/15 18:04	1
Method: 8260B - Volatile Organio									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			03/06/15 18:04	1
Toluene	ND		0.50		ug/L			03/06/15 18:04	1
Ethylbenzene	ND		0.50		ug/L			03/06/15 18:04	1
Xylenes, Total	ND		1.0		ug/L			03/06/15 18:04	1
Methyl-t-Butyl Ether (MTBE)	0.89		0.50		ug/L			03/06/15 18:04	1
tert-Butyl alcohol (TBA)	ND		10		ug/L			03/06/15 18:04	1
Isopropyl Ether (DIPE)	ND		0.50		ug/L			03/06/15 18:04	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			03/06/15 18:04	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			03/06/15 18:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					03/06/15 18:04	1
Dibromofluoromethane (Surr)	92		76 - 132					03/06/15 18:04	1
Toluene-d8 (Surr)	118		80 - 128					03/06/15 18:04	1
- Method: 8015B - Diesel Range O	rganics (DRO)	(GC) Low	Level - Silica G	el Cleani	qu				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	2100		47		ug/L		03/05/15 09:57	03/06/15 00:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	16	X	45 - 120				03/05/15 09:57	03/06/15 00:30	1
Client Sample ID: S-12							Lab Samp	le ID: 440-10	3494-4
Date Collected: 02/27/15 11:50							•	Matrix: Groun	
Date Received: 03/03/15 09:35									a mator
_ Method: 8260B/CA_LUFTMS - Vo	latile Organic	Compound	s by GC/MS						
Analyte	-	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

#### Lab Sample ID: 440-103494-4 Matrix: Ground Water

03/05/15 09:57 03/05/15 23:26

Lab Sample ID: 440-103494-5

**Matrix: Ground Water** 

5

1

Date Collected: 02/27/15 11:50 Date Received: 03/03/15 09:35

Client Sample ID: S-12

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	90		76 - 132					03/06/15 18:33	1
4-Bromofluorobenzene (Surr)	108		80 - 120					03/06/15 18:33	1
Toluene-d8 (Surr)	122		80 - 128					03/06/15 18:33	1
– Method: 8260B - Volatile Orga	nic Compounds (	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			03/06/15 18:33	1
Toluene	ND		0.50		ug/L			03/06/15 18:33	1
Ethylbenzene	ND		0.50		ug/L			03/06/15 18:33	1
Xylenes, Total	ND		1.0		ug/L			03/06/15 18:33	1
Methyl-t-Butyl Ether (MTBE)	33		0.50		ug/L			03/06/15 18:33	1
tert-Butyl alcohol (TBA)	260		10		ug/L			03/06/15 18:33	1
Isopropyl Ether (DIPE)	0.59		0.50		ug/L			03/06/15 18:33	1
Ethyl-t-butyl ether (ETBE)	ND		0.50		ug/L			03/06/15 18:33	1
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			03/06/15 18:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		80 - 120					03/06/15 18:33	1
Dibromofluoromethane (Surr)	90		76 - 132					03/06/15 18:33	1
Toluene-d8 (Surr)	122		80 - 128					03/06/15 18:33	1
_ Method: 8015B - Diesel Range	Organice (DPO)		Lovol - Silica G		un.				
Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	630		49		ug/L	<u> </u>	03/05/15 09:57	03/05/15 23:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surrogate	%Recovery Qualifie	er Limits
n-Octacosane	60	45 - 120

#### Client Sample ID: S-14 Date Collected: 02/27/15 10:40

Date Received: 03/03/15 09:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Volatile Fuel Hydrocarbons	97		50		ug/L			03/08/15 20:35	1
(C4-C12)									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	92		76 - 132			-		03/08/15 20:35	1
4-Bromofluorobenzene (Surr)	108		80 - 120					03/08/15 20:35	1
Toluene-d8 (Surr)	120		80 - 128					03/08/15 20:35	1
Method: 8260B - Volatile Orga						_	<b>_</b> .		
-			ы	MDI	Unit	P	Bronorod	Applyrod	Dil Eso
Analyte	Result	(GC/MS) Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Analyte Benzene	Result		0.50	MDL	ug/L	D	Prepared	03/08/15 20:35	Dil Fac
Analyte	Result			MDL		D	Prepared		Dil Fac
Analyte Benzene	Result		0.50	MDL	ug/L	D	Prepared	03/08/15 20:35	Dil Fac 1 1 1
Analyte Benzene Toluene	Result 0.94 0.55		0.50	MDL	ug/L ug/L	<u>D</u>	Prepared	03/08/15 20:35 03/08/15 20:35	Dil Fac 1 1 1 1
Analyte Benzene Toluene Ethylbenzene	Result 0.94 0.55 ND		0.50 0.50 0.50	MDL	ug/L ug/L ug/L	<u> </u>	Prepared	03/08/15 20:35 03/08/15 20:35 03/08/15 20:35	Dil Fac 1 1 1 1 1 1
Analyte Benzene Toluene Ethylbenzene Xylenes, Total	Result 0.94 0.55 ND ND		0.50 0.50 0.50 1.0	MDL	ug/L ug/L ug/L ug/L	D	Prepared	03/08/15 20:35 03/08/15 20:35 03/08/15 20:35 03/08/15 20:35	Dil Fac 1 1 1 1 1 1 1 1
Analyte Benzene Toluene Ethylbenzene Xylenes, Total Methyl-t-Butyl Ether (MTBE)	Result 0.94 0.55 ND ND 1.5		0.50 0.50 0.50 1.0 0.50	MDL	ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared	03/08/15 20:35 03/08/15 20:35 03/08/15 20:35 03/08/15 20:35 03/08/15 20:35	Dil Fac 1 1 1 1 1 1 1 1 1

Client: Conestoga-Rovers & Associates, Inc. Project/Site: 1800 1/2 Powell St., Emeryville

#### Lab Sample ID: 440-103494-5 Matrix: Ground Water

5

Date Collected: 02/27/15 10:40 Date Received: 03/03/15 09:35

Client Sample ID: S-14

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tert-amyl-methyl ether (TAME)	ND		0.50		ug/L			03/08/15 20:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		80 - 120					03/08/15 20:35	1
Dibromofluoromethane (Surr)	92		76 - 132					03/08/15 20:35	1
Toluene-d8 (Surr)	120		80 - 128					03/08/15 20:35	1
- Method: 8015B - Diesel Range	e Organics (DRO)	(GC) Low	Level - Silica Ge	el Cleanu	р				
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	770		48		ug/L		03/05/15 09:57	03/06/15 01:33	1
DRO (C10-C28)	110								
DRO (C10-C28) Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

#### Client: Conestoga-Rovers & Associates, Inc. Project/Site: 1800 1/2 Powell St., Emeryville

Method Description

Volatile Organic Compounds (GC/MS) Volatile Organic Compounds by GC/MS

Diesel Range Organics (DRO) (GC) Low Level

Method

8260B

8015B

S

8260B/CA\_LUFTM

**Protocol References:** 

Laboratory References:

Protocol SW846

SW846

SW846

Laboratory

TAL IRV

TAL IRV

TAL IRV

5
6
D
7
7 8

Initial

Amount

10 mL

10 mL

Final

Amount

10 mL

10 mL

Batch

Number

240885

240886

Dil

1

1

Factor

Run

Batch

Туре

Analysis

Analysis

Batch

Method

8260B/CA\_LUFTM

8260B

S

Lab Sample ID: 440-103494-1

Analyst

HR

HR

Prepared

or Analyzed

03/06/15 16:55

03/06/15 16:55

Matrix: Ground Water

Lab

TAL IRV

TAL IRV

## 2 3 4 5 6 7 8 9 10

#### Lab Sample ID: 440-103494-2 Matrix: Ground Water

Date Collected: 02/27/15 11:05 Date Received: 03/03/15 09:35

**Client Sample ID: S-8** 

**Client Sample ID: S-5** 

Prep Type

Total/NA

Total/NA

Date Collected: 02/27/15 12:30

Date Received: 03/03/15 09:35

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	240885	03/06/15 17:25	HR	TAL IRV
Total/NA	Analysis	8260B/CA_LUFTM S		1	10 mL	10 mL	240886	03/06/15 17:25	HR	TAL IRV

#### Client Sample ID: S-10 Date Collected: 02/27/15 14:50 Date Received: 03/03/15 09:35

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	240885	03/06/15 18:04	HR	TAL IRV
Total/NA	Analysis	8260B/CA_LUFTM S		1	10 mL	10 mL	240886	03/06/15 18:04	HR	TAL IRV
Silica Gel Cleanup	Prep	3510C SGC			1060 mL	1 mL	240636	03/05/15 09:57	AP	TAL IRV
Silica Gel Cleanup	Analysis	8015B		1	1060 mL	1 mL	240670	03/06/15 00:30	CN	TAL IRV

#### Client Sample ID: S-12 Date Collected: 02/27/15 11:50 Date Received: 03/03/15 09:35

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	240885	03/06/15 18:33	HR	TAL IRV
Total/NA	Analysis	8260B/CA_LUFTM S		1	10 mL	10 mL	240886	03/06/15 18:33	HR	TAL IRV
Silica Gel Cleanup	Prep	3510C SGC			1015 mL	1 mL	240636	03/05/15 09:57	AP	TAL IRV
Silica Gel Cleanup	Analysis	8015B		1	1015 mL	1 mL	240670	03/05/15 23:26	CN	TAL IRV

#### Client Sample ID: S-14 Date Collected: 02/27/15 10:40 Date Received: 03/03/15 09:35

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	241193	03/08/15 20:35	MM1	TAL IRV
Total/NA	Analysis	8260B/CA_LUFTM S		1	10 mL	10 mL	241194	03/08/15 20:35	MM1	TAL IRV

#### Lab Sample ID: 440-103494-3 Matrix: Ground Water

Lab Sample ID: 440-103494-4

Lab Sample ID: 440-103494-5

Matrix: Ground Water

Matrix: Ground Water

Lab Sample ID: 440-103494-5

Matrix: Ground Water

#### Client Sample ID: S-14 Date Collected: 02/27/15 10:40

Date	<b>Received:</b>	03/03/15 09:35	

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Silica Gel Cleanup	Prep	3510C SGC			1035 mL	1 mL	240636	03/05/15 09:57	AP	TAL IRV
Silica Gel Cleanup	Analysis	8015B		1	1035 mL	1 mL	240670	03/06/15 01:33	CN	TAL IRV

#### Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

RL

0.50

0.50

0.50

1.0

0.50

0.50

0.50

0.50

Limits

80 - 120

76 - 132

80 - 128

10

MDL Unit

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

D

Prepared

Prepared

Lab Sample ID: MB 440-240885/4

Matrix: Water

Analyte

Benzene

Toluene

Ethylbenzene

Xylenes, Total

Surrogate

Toluene-d8 (Surr)

Analysis Batch: 240885

Methyl-t-Butyl Ether (MTBE)

tert-Butyl alcohol (TBA)

Isopropyl Ether (DIPE)

Ethyl-t-butyl ether (ETBE)

Tert-amyl-methyl ether (TAME)

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

MB MB

ND

ND

ND

ND

ND

ND

ND

ND

ND

109

93

121

%Recovery

MB MB

Qualifier

Result Qualifier

**Client Sample ID: Method Blank** 

Analyzed

03/06/15 08:45

03/06/15 08:45

03/06/15 08:45

03/06/15 08:45

03/06/15 08:45

03/06/15 08:45

03/06/15 08:45

03/06/15 08:45

03/06/15 08:45

Analyzed

03/06/15 08:45

03/06/15 08:45

03/06/15 08:45

Prep Type: Total/NA

Dil Fac

1

1

1

1

1

1

1

1

1

## 2 3 4 5

#### Lab Sample ID: LCS 440-240885/5 Matrix: Water

#### Analysis Batch: 240885

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	25.0	25.7		ug/L		103	68 - 130	
Toluene	25.0	25.5		ug/L		102	70 - 130	
Ethylbenzene	25.0	23.7		ug/L		95	70 - 130	
Methyl-t-Butyl Ether (MTBE)	25.0	22.7		ug/L		91	63 - 131	
tert-Butyl alcohol (TBA)	250	259		ug/L		103	70 - 130	
Isopropyl Ether (DIPE)	25.0	27.0		ug/L		108	58 _ 139	
Ethyl-t-butyl ether (ETBE)	25.0	23.2		ug/L		93	60 - 136	
Tert-amyl-methyl ether (TAME)	25.0	23.1		ug/L		93	57 <sub>-</sub> 139	
m,p-Xylene	25.0	25.9		ug/L		104	70 <sub>-</sub> 130	
o-Xylene	25.0	24.7		ug/L		99	70 - 130	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		80 - 120
Dibromofluoromethane (Surr)	92		76 - 132
Toluene-d8 (Surr)	114		80 - 128

#### Lab Sample ID: 440-103467-B-14 MS Matrix: Water Analysis Batch: 240885

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	33		250	291		ug/L		103	66 - 130	·
Toluene	ND		250	258		ug/L		102	70 - 130	
Ethylbenzene	31		250	261		ug/L		92	70 - 130	
Methyl-t-Butyl Ether (MTBE)	450		250	654		ug/L		83	70 - 130	
tert-Butyl alcohol (TBA)	ND		2500	2750		ug/L		106	70 - 130	
Isopropyl Ether (DIPE)	ND		250	286		ug/L		114	64 - 138	

**TestAmerica** Irvine

**Client Sample ID: Matrix Spike** 

Prep Type: Total/NA

Client Sample ID: Lab Control Sample Prep Type: Total/NA

**Client Sample ID: Matrix Spike** 

Prep Type: Total/NA

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

#### Lab Sample ID: 440-103467-B-14 MS Matrix: Water

#### Analysis Batch: 240885

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethyl-t-butyl ether (ETBE)	ND		250	239		ug/L		96	70 - 130	
Tert-amyl-methyl ether (TAME)	ND		250	245		ug/L		98	68 <sub>-</sub> 133	
m,p-Xylene	40		250	287		ug/L		99	70 - 133	
o-Xylene	12		250	261		ug/L		100	70 <sub>-</sub> 133	

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		80 - 120
Dibromofluoromethane (Surr)	94		76 - 132
Toluene-d8 (Surr)	114		80 - 128

## Lab Sample ID: 440-103467-B-14 MSD Matrix: Water

#### Analysis Batch: 240885

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	33		250	293		ug/L		104	66 - 130	1	20
Toluene	ND		250	258		ug/L		102	70 - 130	0	20
Ethylbenzene	31		250	258		ug/L		91	70 - 130	1	20
Methyl-t-Butyl Ether (MTBE)	450		250	637		ug/L		75	70 - 130	3	25
tert-Butyl alcohol (TBA)	ND		2500	2710		ug/L		104	70 - 130	2	25
Isopropyl Ether (DIPE)	ND		250	285		ug/L		114	64 - 138	0	25
Ethyl-t-butyl ether (ETBE)	ND		250	245		ug/L		98	70 - 130	2	25
Tert-amyl-methyl ether (TAME)	ND		250	240		ug/L		96	68 - 133	2	30
m,p-Xylene	40		250	287		ug/L		99	70 - 133	0	25
o-Xylene	12		250	259		ug/L		99	70 - 133	1	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132
Toluene-d8 (Surr)	114		80 - 128

#### Lab Sample ID: MB 440-241193/4 Matrix: Water

#### Analysis Batch: 241193

MB	MB							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ND		0.50		ug/L			03/08/15 10:42	1
ND		0.50		ug/L			03/08/15 10:42	1
ND		0.50		ug/L			03/08/15 10:42	1
ND		1.0		ug/L			03/08/15 10:42	1
ND		0.50		ug/L			03/08/15 10:42	1
ND		10		ug/L			03/08/15 10:42	1
ND		0.50		ug/L			03/08/15 10:42	1
ND		0.50		ug/L			03/08/15 10:42	1
ND		0.50		ug/L			03/08/15 10:42	1
	Result ND ND ND ND ND ND ND	Result     Qualifier       ND     ND       ND     ND	Result         Qualifier         RL           ND         0.50           ND         0.50	Result         Qualifier         RL         MDL           ND         0.50            ND         0.50            ND         0.50            ND         0.50            ND         0.50            ND         1.0            ND         0.50            ND         0.50            ND         0.50            ND         0.50	Result         Qualifier         RL         MDL         Unit           ND         0.50         ug/L         ug/L           ND         0.50         ug/L           ND         0.50         ug/L           ND         0.50         ug/L           ND         1.0         ug/L           ND         0.50         ug/L	Result         Qualifier         RL         MDL         Unit         D           ND         0.50         ug/L         ug/	Result         Qualifier         RL         MDL         Unit         D         Prepared           ND         0.50         ug/L         ug/L <td< td=""><td>Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed           ND         0.50         ug/L         03/08/15 10:42         03/08/15 10:42           ND         0.50         ug/L         03/08/15 10:42           ND         0.50         ug/L         03/08/15 10:42           ND         0.50         ug/L         03/08/15 10:42           ND         1.0         ug/L         03/08/15 10:42           ND         0.50         ug/L         03/08/15 10:42</td></td<>	Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed           ND         0.50         ug/L         03/08/15 10:42         03/08/15 10:42           ND         0.50         ug/L         03/08/15 10:42           ND         0.50         ug/L         03/08/15 10:42           ND         0.50         ug/L         03/08/15 10:42           ND         1.0         ug/L         03/08/15 10:42           ND         0.50         ug/L         03/08/15 10:42

#### Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

TestAmerica Irvine

Client Sample ID: Method Blank Prep Type: Total/NA

**Client Sample ID: Method Blank** 

Analyzed

03/08/15 10:42

03/08/15 10:42

Prepared

8

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

#### Lab Sample ID: MB 440-241193/4 Matrix: Water Analysis Batch: 241193

	MB		
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		80 - 120
Dibromofluoromethane (Surr)	93		76 - 132
Toluene-d8 (Surr)	121		80 - 128

#### Lab Sample ID: LCS 440-241193/5 Matrix: Water

#### Analysis Batch: 241193

· ······	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	25.0	23.7		ug/L		95	68 - 130
Toluene	25.0	23.9		ug/L		96	70 - 130
Ethylbenzene	25.0	22.0		ug/L		88	70 - 130
Methyl-t-Butyl Ether (MTBE)	25.0	20.7		ug/L		83	63 - 131
ert-Butyl alcohol (TBA)	250	230		ug/L		92	70 - 130
sopropyl Ether (DIPE)	25.0	25.0		ug/L		100	58 - 139
thyl-t-butyl ether (ETBE)	25.0	20.2		ug/L		81	60 - 136
ert-amyl-methyl ether (TAME)	25.0	20.1		ug/L		81	57 _ 139
n,p-Xylene	25.0	23.5		ug/L		94	70 - 130
p-Xylene	25.0	22.8		ug/L		91	70 - 130

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		80 - 120
Dibromofluoromethane (Surr)	93		76 - 132
Toluene-d8 (Surr)	116		80 - 128

#### Lab Sample ID: 440-103621-E-10 MS Matrix: Water Analysis Batch: 241193

	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	ND		25.0	26.7		ug/L		107	66 - 130
oluene	ND		25.0	26.2		ug/L		105	70 - 130
thylbenzene	ND		25.0	24.1		ug/L		96	70 - 130
lethyl-t-Butyl Ether (MTBE)	ND		25.0	24.2		ug/L		97	70 - 130
ert-Butyl alcohol (TBA)	ND		250	269		ug/L		108	70 - 130
sopropyl Ether (DIPE)	ND		25.0	28.8		ug/L		115	64 - 138
thyl-t-butyl ether (ETBE)	ND		25.0	23.2		ug/L		93	70 - 130
ert-amyl-methyl ether (TAME)	ND		25.0	23.2		ug/L		93	68 - 133
ı,p-Xylene	ND		25.0	26.0		ug/L		104	70 - 133
o-Xylene	ND		25.0	25.6		ug/L		102	70 - 133
	MS	MS							
Curre moto	0/ Deservery	Qualifian	l insite						

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	94		76 _ 132
Toluene-d8 (Surr)	112		80 - 128

#### **Client Sample ID: Matrix Spike** Prep Type: Total/NA

### 03/08/15 10:42 **Client Sample ID: Lab Control Sample**

Prep Type: Total/NA

Dil Fac

1

1

1

Prep Type: Total/NA

8

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

#### Lab Sample ID: 440-103621-E-10 MSD Client Sample ID: Matrix Spike Duplicate Matrix: Water Prep Type: Total/NA Analysis Batch: 241193 Sample Sample Spike MSD MSD %Rec. RPD Result Qualifier Result Qualifier RPD Limit Analyte Added %Rec Limits Unit D Benzene ND 25.0 26.5 ug/L 106 66 - 130 1 20 ug/L ND 25.0 Toluene 25.9 104 70 - 130 20 1 ND 25.0 Ethylbenzene 23.5 ug/L 94 70 - 130 2 20 Methyl-t-Butyl Ether (MTBE) ND 25 25.0 24.0 ug/L 96 70 - 130 1 tert-Butyl alcohol (TBA) ND 250 256 ug/L 102 70 - 130 5 25 Isopropyl Ether (DIPE) ND 25.0 28.7 ug/L 115 64 - 138 0 25 Ethyl-t-butyl ether (ETBE) ND 25.0 23.1 ug/L 92 70 - 130 25 1 Tert-amyl-methyl ether (TAME) ND 25.0 23.3 68 - 133 30 ug/L 93 0 25.3 101 25 ND 25.0 70 - 133 m,p-Xylene ug/L 3 o-Xylene ND 25.0 24.7 ug/L 99 70 - 133 3 20 MSD MSD Surrogate %Recovery Qualifier Limits 80 - 120 4-Bromofluorobenzene (Surr) 106 Dibromofluoromethane (Surr) 95 76 - 132 113 80 - 128 Toluene-d8 (Surr)

#### Method: 8260B/CA\_LUFTMS - Volatile Organic Compounds by GC/MS

Matrix: Water	5/4									onone o	ample ID: Metho Prep Type: 1	
Analysis Batch: 240886											1100 1900.1	
,	M	в мв										
Analyte	Resu	t Qualifier	RL		MDL	Unit		D	Pr	repared	Analyzed	Dil Fac
Volatile Fuel Hydrocarbons (C4-C12)	N	5	50			ug/L					03/06/15 08:45	
	M	8 <i>MB</i>										
Surrogate	%Recover	y Qualifier	Limits						Pı	repared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	9	3	76 - 132					-			03/06/15 08:45	1
4-Bromofluorobenzene (Surr)	10	9	80 - 120								03/06/15 08:45	1
Toluene-d8 (Surr)	12	1	80 - 128								03/06/15 08:45	1
	86/6							Cli	ient	Sample	ID: Lab Control	
Lab Sample ID: LCS 440-24088 Matrix: Water Analysis Batch: 240886	86/6							Cli	ient	Sample	ID: Lab Control Prep Type: 1	
	36/6		Spike	LCS	LCS			Cli	ient	Sample		
Matrix: Water	86/6		Spike Added	LCS Result		fier	Unit	Cli	ient D	Sample %Rec	Prep Type: 1	
Matrix: Water Analysis Batch: 240886			•			fier	Unit ug/L	Cli		-	Prep Type: 1 %Rec.	
Matrix: Water Analysis Batch: 240886 Analyte			Added	Result		fier		CI		%Rec	Prep Type: 1 %Rec. Limits	
Matrix: Water Analysis Batch: 240886 Analyte Volatile Fuel Hydrocarbons	16/6 		Added	Result		fier				%Rec	Prep Type: 1 %Rec. Limits	
Matrix: Water Analysis Batch: 240886 Analyte Volatile Fuel Hydrocarbons			Added	Result		fier		Cli		%Rec	Prep Type: 1 %Rec. Limits	
Matrix: Water Analysis Batch: 240886 Analyte Volatile Fuel Hydrocarbons (C4-C12) Surrogate			Added	Result		fier				%Rec	Prep Type: 1 %Rec. Limits	
Matrix: Water Analysis Batch: 240886 Analyte Volatile Fuel Hydrocarbons (C4-C12)	LCS LC %Recovery Qu		Added	Result		fier		CI		%Rec	Prep Type: 1 %Rec. Limits	

Spike

Added

17300

Limits

76 - 132

80 - 120

80 - 128

MS MS

17700

Result Qualifier

Method: 8260B/CA\_LUFTMS - Volatile Organic Compounds by GC/MS (Continued)

Sample Sample

MS MS

%Recovery Qualifier

94

107

114

MB MB

1200

Result Qualifier

Lab Sample ID: 440-103467-B-14 MS

Lab Sample ID: 440-103467-B-14 MSD

Matrix: Water

Analyte

(C4-C12)

Surrogate

Toluene-d8 (Surr)

Matrix: Water

Analysis Batch: 240886

Volatile Fuel Hydrocarbons

Dibromofluoromethane (Surr)

4-Bromofluorobenzene (Surr)

**Client Sample ID: Matrix Spike** 

%Rec.

Limits

50 - 145

D

Unit

ug/L

%Rec

95

Prep Type: Total/NA

## 2 3 4 5 6 7

8 9 10

Client Sample ID: Matrix Spike Duplicate	
Prep Type: Total/NA	

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Volatile Fuel Hydrocarbons	1200		17300	17700		ug/L		95	50 - 145	0	20
(C4-C12)											
	MSD	MSD									

Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	96		76 - 132
4-Bromofluorobenzene (Surr)	108		80 - 120
Toluene-d8 (Surr)	114		80 - 128

#### Lab Sample ID: MB 440-241194/4 Matrix: Water

#### Analysis Batch: 241194

Analyte Volatile Fuel Hydrocarbons (C4-C12)	_ Result	Qualifier	RL 50	MDL	Unit ug/L	D	Prepared	Analyzed 03/08/15 10:42	Dil Fac
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	93		76 - 132			-		03/08/15 10:42	1
4-Bromofluorobenzene (Surr)	108		80 - 120					03/08/15 10:42	1
Toluene-d8 (Surr)	121		80 - 128					03/08/15 10:42	1

#### Lab Sample ID: LCS 440-241194/6 Matrix: Water

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Volatile Fuel Hydrocarbons	500	431		ug/L		86	55 _ 130	
(C4-C12)								

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	92		76 - 132
4-Bromofluorobenzene (Surr)	107		80 - 120
Toluene-d8 (Surr)	118		80 - 128

## 03/08/15 10:42 1

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

#### Client Sample ID: Lab Control Sample Prep Type: Total/NA

MS MS

1740

Result Qualifier

Spike

Added

1730

Limits

76 - 132

80 - 120

80 - 128

Method: 8260B/CA\_LUFTMS - Volatile Organic Compounds by GC/MS (Continued)

Sample Sample

MS MS

%Recovery Qualifier

94 105

112

ND

Result Qualifier

Lab Sample ID: 440-103621-E-10 MS

Lab Sample ID: 440-103621-E-10 MSD

Matrix: Water

Analyte

(C4-C12)

Surrogate

Toluene-d8 (Surr)

Matrix: Water

Analysis Batch: 241194

Volatile Fuel Hydrocarbons

Dibromofluoromethane (Surr)

4-Bromofluorobenzene (Surr)

# **Client Sample ID: Matrix Spike** Prep Type: Total/NA

#### Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

%Rec.

Limits

50 - 145

D

Unit

ug/L

%Rec

101

Analysis Batch: 241194												
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Volatile Fuel Hydrocarbons	ND		1730	1700		ug/L		99	50 - 145	2	20	
(C4-C12)												
	MSD	MSD										
Surrogate	%Recovery	Qualifier	Limits									
Dibromofluoromethane (Surr)	95		76 - 132									
4-Bromofluorobenzene (Surr)	106		80 - 120									
Toluene-d8 (Surr)	113		80 - 128									

#### Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Lab Sample ID: MB 440-24063	6/1-A										ample ID: Metho	
Matrix: Water										Prep T	ype: Silica Gel (	Cleanup
Analysis Batch: 240670											Prep Batch:	240636
	ME	MB										
Analyte	Resul	t Qualifier	RL		MDL	Unit		D	Р	repared	Analyzed	Dil Fac
DRO (C10-C28)	NE	)	50			ug/L			03/0	5/15 09:57	03/05/15 18:48	1
	МЕ	B MB										
Surrogate	%Recovery	Qualifier	Limits						P	repared	Analyzed	Dil Fac
n-Octacosane	65	)	45 - 120						03/0	5/15 09:57	03/05/15 18:48	1
- Lab Sample ID: LCS 440-2406	36/2-A							С	lient	Sample	ID: Lab Control	Sample
Matrix: Water										Prep T	ype: Silica Gel (	Cleanup
Analysis Batch: 240670											Prep Batch:	
			Spike	LCS	LCS						%Rec.	
Analyte			Added	Result	Qual	lifier	Unit		D	%Rec	Limits	
DRO (C10-C28)			1000	525			ug/L			52	40 _ 115	
	LCS LC	s										
Surrogate	%Recovery Qu	alifier	Limits									
n-Octacosane	64		45 - 120									

#### Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level (Continued)

Lab Sample ID: LCSD 440-24 Matrix: Water	0636/3-A					Clie	ent Sam	nple ID:   Prep <sup>-</sup>	l Sampl a Gel Clo		
Analysis Batch: 240670									Prep I	Batch: 2	40636
			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
DRO (C10-C28)	·		1000	545		ug/L		55	40 _ 115	4	25
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
n-Octacosane	66		45 - 120								

Prep Type

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Total/NA

Matrix

Water

Water

Water

Water

Ground Water

Ground Water

Ground Water

Ground Water

**Client Sample ID** 

Matrix Spike Duplicate

Lab Control Sample

Method Blank

Matrix Spike

S-5

S-8

S-10

S-12

Method

8260B

8260B

8260B

8260B

8260B

8260B

8260B

8260B

Prep Batch

#### 440-103494-4 LCS 440-240885/5

**GC/MS VOA** 

Lab Sample ID

440-103494-1

440-103494-2

440-103494-3

MB 440-240885/4

440-103467-B-14 MS

440-103467-B-14 MSD

Analysis Batch: 240885

Ana	lvsis	Batch:	240886

ab Sample ID.	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
40-103467-B-14 MS	Matrix Spike	Total/NA	Water	8260B/CA_LUFT	
				MS	
40-103467-B-14 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/CA_LUFT	
				MS	
40-103494-1	S-5	Total/NA	Ground Water	8260B/CA_LUFT	
				MS	
40-103494-2	S-8	Total/NA	Ground Water	8260B/CA_LUFT	
				MS	
40-103494-3	S-10	Total/NA	Ground Water	8260B/CA_LUFT	
				MS	
10-103494-4	S-12	Total/NA	Ground Water	8260B/CA_LUFT	
				MS	
CS 440-240886/6	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
				MS	
B 440-240886/4	Method Blank	Total/NA	Water	8260B/CA_LUFT	
				MS	

#### Analysis Batch: 241193

Lab Sample	ID Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-103494	-5 S-14	Total/NA	Ground Water	8260B	
440-103621	-E-10 MS Matrix Spike	Total/NA	Water	8260B	
440-103621	-E-10 MSD Matrix Spike Duplicate	Total/NA	Water	8260B	
LCS 440-24	1193/5 Lab Control Sample	Total/NA	Water	8260B	
MB 440-241	193/4 Method Blank	Total/NA	Water	8260B	

#### Analysis Batch: 241194

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-103494-5	S-14	Total/NA	Ground Water	8260B/CA_LUFT MS	
440-103621-E-10 MS	Matrix Spike	Total/NA	Water	8260B/CA_LUFT MS	
440-103621-E-10 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B/CA_LUFT MS	
LCS 440-241194/6	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
MB 440-241194/4	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

#### GC Semi VOA

#### Prep Batch: 240636

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-103494-3	S-10	Silica Gel Cleanup	Ground Water	3510C SGC	

#### GC Semi VOA (Continued)

#### Prep Batch: 240636 (Continued)

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-103494-4	S-12	Silica Gel Cleanup	Ground Water	3510C SGC	
440-103494-5	S-14	Silica Gel Cleanup	Ground Water	3510C SGC	
LCS 440-240636/2-A	Lab Control Sample	Silica Gel Cleanup	Water	3510C SGC	
LCSD 440-240636/3-A	Lab Control Sample Dup	Silica Gel Cleanup	Water	3510C SGC	
MB 440-240636/1-A	Method Blank	Silica Gel Cleanup	Water	3510C SGC	

#### Analysis Batch: 240670

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
440-103494-3	S-10	Silica Gel Cleanup	Ground Water	8015B	240636
440-103494-4	S-12	Silica Gel Cleanup	Ground Water	8015B	240636
440-103494-5	S-14	Silica Gel Cleanup	Ground Water	8015B	240636
LCS 440-240636/2-A	Lab Control Sample	Silica Gel Cleanup	Water	8015B	240636
LCSD 440-240636/3-A	Lab Control Sample Dup	Silica Gel Cleanup	Water	8015B	240636
MB 440-240636/1-A	Method Blank	Silica Gel Cleanup	Water	8015B	240636

Client: Conestoga-Rovers & Associates, Inc. Project/Site: 1800 1/2 Powell St., Emeryville

#### Qualifiers

#### GC Semi VOA

Qualifier	Qualifier Description
x	Surrogate is outside control limits

#### Glossary

Qualifier	Quaimer Description	
x	Surrogate is outside control limits	5
Glossary		6
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	8
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	9
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	10
DLC	Decision level concentration	
MDA	Minimum detectable activity	11
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	

TEQ Toxicity Equivalent Quotient (Dioxin)

#### **Certification Summary**

Client: Conestoga-Rovers & Associates, Inc. Project/Site: 1800 1/2 Powell St., Emeryville TestAmerica Job ID: 440-103494-1

#### Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-15
Arizona	State Program	9	AZ0671	10-13-15
California	LA Cty Sanitation Districts	9	10256	01-31-16 *
California	State Program	9	2706	06-30-16
Guam	State Program	9	Cert. No. 12.002r	01-23-16
Hawaii	State Program	9	N/A	01-29-16
Nevada	State Program	9	CA015312007A	07-31-15
New Mexico	State Program	6	N/A	01-29-15 *
Northern Mariana Islands	State Program	9	MP0002	01-29-15 *
Oregon	NELAP	10	4005	01-29-16
USDA	Federal		P330-09-00080	06-06-15

\* Certification renewal pending - certification considered valid.

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Client: Conestoga-Rovers & Associates, Inc.

#### Login Number: 103494 List Number: 1 Crostor: Skinnor Alma

Creator:	Skinner, Alma	

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

13

Job Number: 440-103494-1

List Source: TestAmerica Irvine