## RECEIVED



3:31 pm, Feb 09, 2009

Alameda County Environmental Health **Stacie H. Frerichs** Team Lead Marketing Business Unit Chevron Environmental Management Company 6001 Bollinger Canyon Road San Ramon, CA 94583 Tel (925) 842-9655 Fax (925) 842-8370

February 5, 2009 (date)

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

Re: Chevron Facility #\_9-2029\_\_\_\_

Address: 890 West MacArthur Boulevard, Oakland, California\_

I have reviewed the attached report titled *Fourth Quarter 2008 Groundwater Monitoring Report*\_\_\_\_\_\_ and dated February 5, 2009.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga-Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

SHFrencho

Stacie H. Frerichs Project Manager

Enclosure: Report



2000 Opportunity Dr, Suite 110, Roseville, California 95678 Telephone: 916-677-3407, ext. 100 Facsimile: 916-677-3687 www.CRAworld.com

February 5, 2009

Reference No. 611974

Mr. . Steven Plunkett Alameda County Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

Re: Fourth Quarter 2008 Groundwater Monitoring Report Former Chevron Service Station 9-2029 890 West MacArthur Boulevard Oakland, California LOP Case #RO0002438

Dear Mr. Plunkett:

Conestoga-Rovers & Associates (CRA) is submitting the attached *Groundwater Monitoring and Sampling Report* (report) on behalf of Chevron Environmental Management Company (Chevron) for the referenced site. The report (prepared by Gettler-Ryan Inc. and dated December 29, 2008) presents the results of the monitoring and sampling of offsite wells MW-5 through MW-8 performed during fourth quarter 2008. Wells MW-5 through MW-8 (installed in August 2008) are monitored and sampled on a quarterly basis. Also attached are Figure 1 (Vicinity Map) showing the site location, and Figure 2 (Concentration Map) presenting the fourth quarter 2008 analytical results along with a rose diagram. The monitoring results during 2008 are discussed below.

During the fourth quarter 2008 event, elevated concentrations of total petroleum hydrocarbons as gasoline (TPHg) (14,000 micrograms per liter [µg/L]), benzene (1,000 µg/L), and methyl tertiary butyl ether (MTBE) (300  $\mu$ g/L) were detected in well MW-6; toluene (15  $\mu$ g/L), ethylbenzene (1,300  $\mu$ g/L), and xylenes (550  $\mu$ g/L) were also detected. These concentrations were generally greater than those detected in this well during third quarter 2008. Lower concentrations of TPHg, benzene, and MTBE were detected in wells MW-5 (6,000 µg/L, 93 µg/L, and 8 µg/L, respectively) and MW-7 (1,100 µg/L, 80 µg/L, and 6 µg/L, respectively) during fourth quarter 2008. The TPHg and benzene concentrations detected in wells MW-5 and MW-7 during fourth quarter 2008 significantly increased from those observed during third quarter 2008, while the MTBE concentrations remained similar. Low concentrations of toluene (up to 6  $\mu$ g/L), ethylbenzene (up to 65  $\mu$ g/L), and xylenes (up to 6  $\mu$ g/L) were also detected in wells MW-5 and MW-7 during 2008. TPHg, benzene, toluene, ethylbenzene, and xylenes (BTEX), and MTBE were not detected in well MW-8 during fourth quarter 2008; and only low concentrations of toluene  $(0.7 \,\mu g/L)$  and xylenes  $(0.6 \,\mu g/L)$  were detected during third quarter 2008. Tertiary butyl alcohol (TBA) was detected in wells MW-5 (up to 4 µg/L), MW-6 (up to  $390 \,\mu\text{g/L}$ ), and MW-7 (5  $\mu\text{g/L}$ ) during 2008; other fuel oxygenates (except MTBE) generally

> Equal Employment Opportunity Employer



February 5, 2009

2

were not detected. As TBA is a breakdown product of MTBE, the detections of TBA may indicate natural biodegradation of MTBE in the subsurface.

Based on the analytical results, impacted groundwater is present downgradient of the site in the area of wells MW-5, MW-6, and MW-7. With the exception of MTBE, concentrations generally increased in these wells from third to fourth quarter 2008. The increases may be due to typical seasonal fluctuations; however, more data is needed. CRA recommends continued monitoring and sampling to further evaluate groundwater quality and concentration trends.

Please contact Mr. James Kiernan at (916) 751-4102 if you have any questions or require additional information.

Sincerely,

**CONESTOGA-ROVERS & ASSOCIATES** 

Christopher J. Benedict

James P. Kiernan, P.E. #C68498



CB/kw/3 Encl.

Attachment A Fourth Quarter 2008 Groundwater Monitoring and Sampling Report

cc: Ms. Stacie Frerichs, Chevron Environmental Management Company Mr. Stephen O'Kane

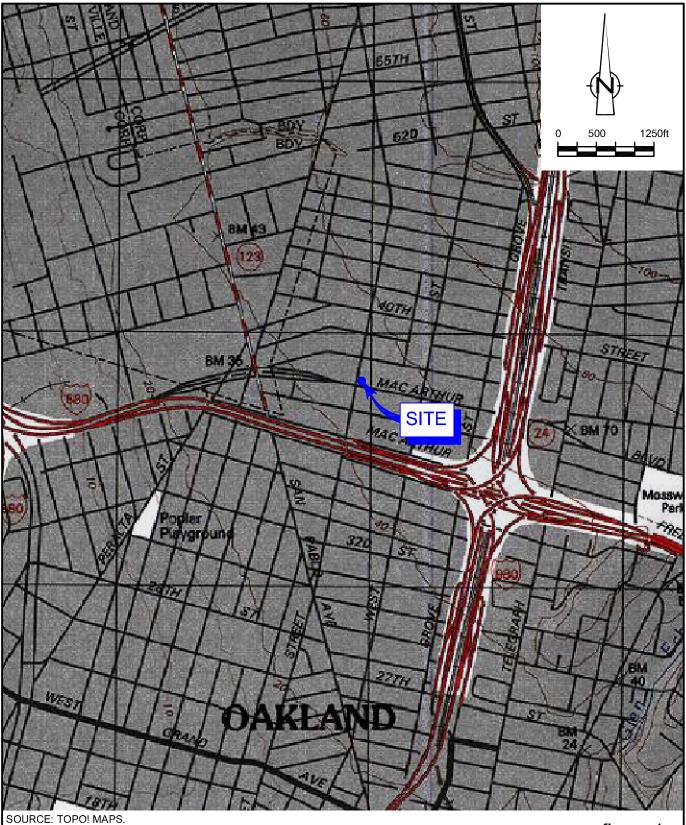
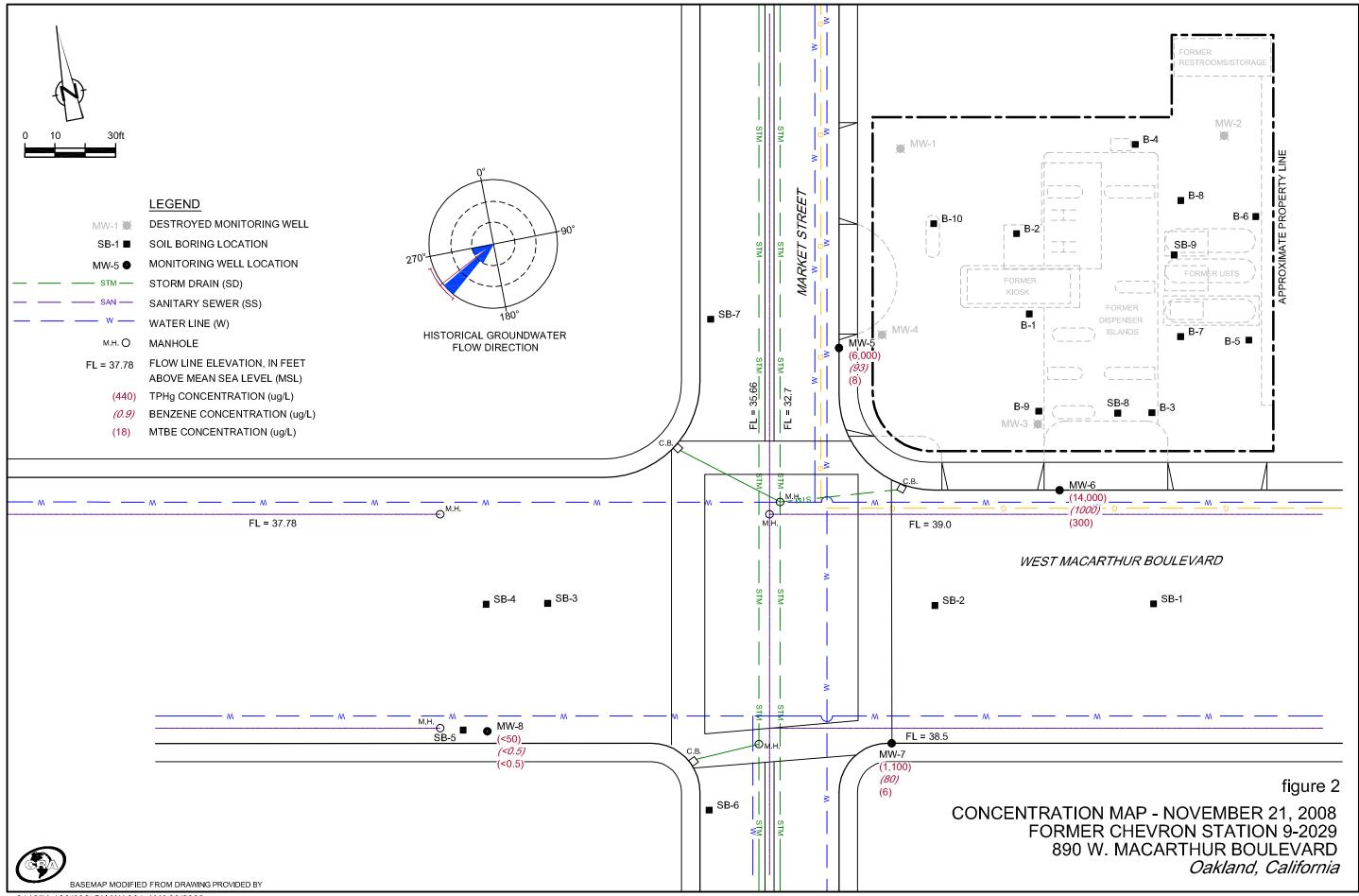


figure 1



VICINITY MAP CHEVRON SERVICE STATION 9-2029 890 WEST MACARTHUR BOULEVARD *Oakland, California* 

611974-2007(PRES001)GN-WA002 NOV 06/2008



611974-120(003)GN-WA001 JAN 08/2009

ATTACHMENT A

FOURTH QUARTER 2008 GROUNDWATER MONITORING AND SAMPLING REPORT



## TRANSMITTAL

December 31, 2008 G-R #386911

TO: Mr. James Kiernan Conestoga-Rovers & Associates 2000 Opportunity Drive, Suite 110 Roseville, California 95678

FROM: Deanna L. Harding Project Coordinator Gettler-Ryan Inc. 6747 Sierra Court, Suite J Dublin, California 94568 RE: Former Chevron Service Station #9-2029 (MTI) 890 West MacArthur Blvd. Oakland, California RO 0002438

### WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
2	December 29, 2008	Groundwater Monitoring and Sampling Report Fourth Quarter Event of November 21, 2008

### COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced report for <u>your use</u> and distribution to the following:

Ms. Stacie Hartung-Frerichs, Chevron Environmental Management Company, 6111 Bollinger Canyon Road, Room 3596, San Ramon, CA 94583

Please provide any comments/changes and propose any groundwater monitoring modifications for the next event prior to *January 14, 2009* at which time the final report will be distributed to the following:

cc: Mr. Steven Plunkett, Alameda County Health Care Services, Dept. of Environmental Health, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577 (No Hard Copy-UPLOAD TO ALAMEDA CO.)

Enclosures



Stacie H. Frerichs Team Lead Marketing Business Unit Chevron Environmental Management Company 6001 Bollinger Canyon Road San Ramon, CA 94583 Tel (925) 842-9655 Fax (925) 842-8370

December 31, 2008

Alameda County Health Care Services 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Re: Chevron Facility #9-2029

Address: 890 W. MacArthur Blvd., Oakland, California

I have reviewed the attached routine groundwater monitoring report dated December 31, 2008.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Gettler-Ryan, lnc., upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

8H Frencho

Stacie H. Frerichs Project Manager

Enclosure: Report

## WELL CONDITION STATUS SHEET

Client/Facility #:	Chevron	#9-2029					Job #	386911			
Site Address:	890 Wes	t Macarth	nur Blvd.			•	Event Date:		1-08		
City:	Oakland	, CA					Sampler:	5	it		
WELL ID	Vault Frame Condition	Gasket/ O-Ring (M)missing	BOLTS (M) Missing (R) Replaced	<b>Bolt Flanges</b> B= Broken S= Stripped R=Retap	APRON Condition C=Cracked B=Broken G=Gone	<b>Grout Seal</b> (Deficient) inches from TOC	<b>Casing</b> (Condition prevents tight cap seal)	REPLACE LOCK Y / N	REPLACE CAP Y / N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Yes / No
MW-5	OK								ĺ. Ĵ	morrison/6"/2	
MW-6	OK								>	1	
MW-7	OK .						······································				
MW-8	OF									> 1/	
									. P.		
											·····

Comments



December 29, 2008 G-R Job #386911

Ms. Stacie Hartung-Frerichs Chevron Environmental Management Company 6111 Bollinger Canyon Road, Room 3596 San Ramon, CA 94583

#### RE: Fourth Quarter Event of November 21, 2008 Groundwater Monitoring & Sampling Report Former Chevron Service Station #9-2029 890 West MacArthur Boulevard Oakland, California

Dear Ms. Hartung-Frerichs:

This report documents the most recent groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure - Groundwater Sampling (attached).

Static groundwater levels were measured and the wells were checked for the presence of separate-phase hydrocarbons. Static water level data, groundwater elevations, and separate-phase hydrocarbon thickness (if any) are presented in the attached Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells and submitted to a state certified laboratory for analyses. The field data sheets for this event are attached. Analytical results are presented in the table(s) listed below. The chain of custody document and laboratory analytical report are also attached. All groundwater and decontamination water generated during sampling activities was removed from the site, per the Standard Operating Procedure.

Please call if you have any questions or comments regarding this report. Thank you.

Sincerely,

-FOF

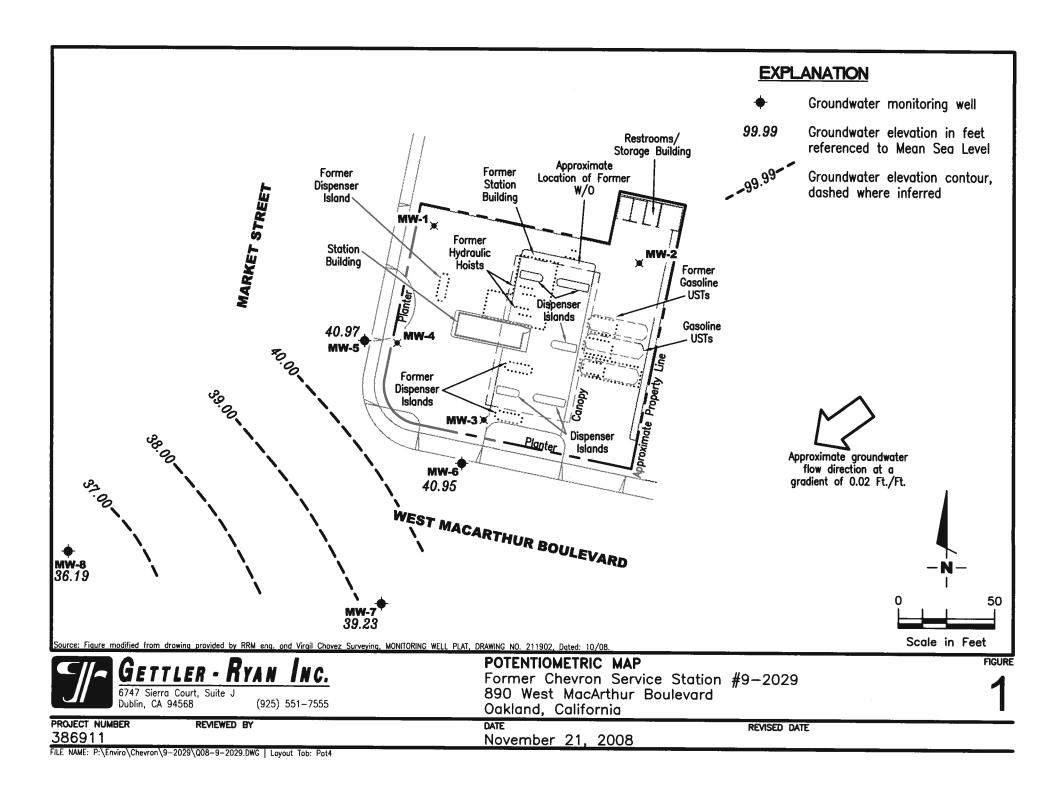
Deanna L. Harding Project Coordinator

Douglas J Lee Senior Geologist, P.G. No. 6882

No. 6882

Figure 1: Table 1: Table 2: Attachments:

Potentiometric Map Groundwater Monitoring Data and Analytical Results Groundwater Analytical Results - Oxygenate Compounds Standard Operating Procedure - Groundwater Sampling Field Data Sheets Chain of Custody Document and Laboratory Analytical Reports



890 West MacArthur Blvd.

#### Oakland, California

					land, California				
WELL ID/	TOC*	DTW	GWE	TPH-G	В	Ť	Ē	X	МТВЕ
DATE	(fi.)	(ft.)	(msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-5									
08/22/08 <sup>1</sup>	49.39	9.97	39.42			5 <del>77</del> 2			
08/27/08 <sup>3</sup>	49.39	10.03	39.36	54	0.5	0.8	<0.5	0.7	10
11/21/08 <sup>3</sup>	49.39	8.42	40.97	6,000	93	6	37	6	8
MW-6									
08/22/08 <sup>1</sup>	49.07	8.98	40.09						
08/27/08 <sup>3</sup>	49.07	8.98	40.09	6,000	990	4	350	530	440
11/21/08 <sup>3</sup>	49.07	8.12	40.95	14,000	1,000	15	1,300	550	300
MW-7									
08/22/08 <sup>1</sup>	48.74	10.20	38.54						
08/27/08 <sup>3</sup>	48.74	10.19	38.55	<50	<0.5	0.6	<0.5	0.7	6
11/21/08 <sup>3</sup>	48.74	9.51	39.23	1,100	80	<0.5	65	0.7	6
									Ū
MW-8									
08/22/08 <sup>1</sup>	47.61	12.41	35.20						
08/27/08 <sup>3</sup>	47.61	12.42	35.19	<50	<0.5	0.7	<0.5	0.6	<0.5
11/21/08 <sup>3</sup>	47.61	11.42	36.19	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1	50 51								
03/12/02 <sup>1</sup>	50.71	6.50	44.21	<50	<0.50	<0.50	<0.50	<1.5	<2.5/<2 <sup>2</sup>
06/07/02 09/13/02	50.71	8.69	42.02	<50	<0.50	<0.50	<0.50	<1.5	<2.5/<2 <sup>2</sup>
12/13/02	50.71	9.28	41.43	<50	<0.50	<0.50	<0.50	<1.5	<2.5/<2 <sup>2</sup>
03/01/03	50.71	8.48	42.23	<50	<0.50	<0.50	<0.50	<1.5	<2.5/<2 <sup>2</sup>
06/27/03 <sup>3</sup>	50.71	7.34	43.37	<50	<0.50	<0.50	<0.50	<1.5	<2.5/<0.5 <sup>2</sup>
	50.71	9.29	41.42	<50	<0.5	0.6	<0.5	<0.5	<0.5
09/30/03 <sup>3</sup>	50.71	10.17	40.54	<50	<0.5	0.6	<0.5	<0.5	<0.5
$12/03/03^{3}$	50.71	7.82	42.89	<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/10/04 <sup>3</sup>	50.71	6.57	44.14	<50	<0.5	<0.5	<0.5	<0.5	<0.5
06/30/04 <sup>3</sup>	50.71	9.78	40.93	<50	<0.5	<0.5	<0.5	<0.5	<0.5
09/30/04 <sup>3</sup>	50.71	9.91	40.80	<50	<0.5	<0.5	<0.5	<0.5	<0.5
12/29/04 <sup>3</sup>	50.71	2.90	47.81	<50	<0.5	<0.5	<0.5	<0.5	<0.5

890 West MacArthur Blvd. Oakland, California

The second s					land, California				
WELL ID/	TOC*	DTW	GWE	TPH-G	В	T	E	X	MTBE
DATE	(fi.)	(fi.)	(msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-1 (cont)									
03/23/05 <sup>3</sup>	50.71	2.90	47.81	<50	<0.5	<0.5	< 0.5	<0.5	<0.5
06/22/05 <sup>3</sup>	50.71	8.59	42.12	<50	< 0.5	<0.5	<0.5	<0.5	<0.5
09/02/05 <sup>3</sup>	50.71	9.38	41.33	<50	< 0.5	<0.5	<0.5	<0.5	<0.5
12/02/05	50.71	8.44	42.27					-0.5	
03/20/06	50.71	3.05	47.66						
06/01/06	50.71	6.77	43.94	3					
09/11/06	50.71	9.18	41.53						
DESTROYED									
MW-2									
03/12/02 <sup>1</sup>	52.57	6.09	46.48	<50	<0.50	<0.50	<0.50	<1.5	<2.5/3 <sup>2</sup>
06/07/02	52.57	8.65	43.92	<50	<0.50	<0.50	< 0.50	<1.5	$<2.5/<2^{2}$
09/13/02	52.57	9.58	42.99	<50	< 0.50	< 0.50	<0.50	<1.5	<2.5/<2 <sup>2</sup>
12/13/02	52.57	8.50	44.07	<50	<0.50	< 0.50	<0.50	<1.5	<2.5/<2 <sup>2</sup>
03/01/03	52.57	7.00	45.57	<50	< 0.50	< 0.50	< 0.50	<1.5	<2.5/<0.5 <sup>2</sup>
06/27/03 <sup>3</sup>	52.57	9.59	42.98	<50	<0.5	<0.5	<0.5	<0.5	<0.5
09/30/03 <sup>3</sup>	52.57	10.64	41.93	<50	<0.5	<0.5	<0.5	<0.5	0.7
12/03/03 <sup>3</sup>	52.57	7.54	45.03	<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/10/04 <sup>3</sup>	52.57	6.05	46.52	<50	<0.5	< 0.5	<0.5	<0.5	<0.5
06/30/04 <sup>3</sup>	52.57	10.15	42.42	<50	<0.5	<0.5	<0.5	<0.5	<0.5
09/30/04 <sup>3</sup>	52.57	10.14	42.43	<50	<0.5	<0.5	<0.5	<0.5	<0.5
12/29/04 <sup>3</sup>	52.57	2.29	50.28	<50	<0.5	<0.5	<0.5	<0.5	<0.5
03/23/05 <sup>3</sup>	52.57	2.44	50.13	<50	<0.5	<0.5	<0.5	<0.5	<0.5
06/22/05 <sup>3</sup>	52.57	8.99	43.58	<50	<0.5	<0.5	<0.5	<0.5	<0.5
09/02/05 <sup>3</sup>	52.57	10.17	42.40	<50	<0.5	<0.5	<0.5	<0.5	<0.5
12/02/05	52.57	8.99	43.58						
03/20/06	52.57	2.70	49.87						
06/01/06	51.57	6.51	45.06						
09/11/06	51.57	10.06	41.51						
DESTROYED									
MW-3									
03/12/02 <sup>1</sup>	50.31	6.50	43.81	12,000	600	8.5	1,100	370	700/650 <sup>2</sup>
06/07/02	50.31	7.74	42.57	14,000	630	8.8	1,200	160	520/490 <sup>2</sup>
09/13/02	50.31	9.73	40.58	3,000	270	3.2	200	11	600/640 <sup>2</sup>
12/13/02	50.31	8.60	41.71	24,000	1,100	14	2,400	220	650/540 <sup>2</sup>

890 West MacArthur Blvd.

### Oakland, California

WELL ID/	TOC*	DTW	GWE	TPH-G	В	T	E	x	MTBE
DATE	(ft.)	(ft.)	(msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-3 (cont)									
03/01/03	50.31	6.75	43.56	16,000	500	9.0	1,200	130	460/330 <sup>2</sup>
06/27/03 <sup>3</sup>	50.31	9.25	41.06	9,500	390	6	450	30	400/330
09/30/03 <sup>3</sup>	50.31	10.31	40.00	2,000	110	ĩ	100	3	710
12/03/03 <sup>3</sup>	50.31	8.18	42.13	19,000	970	8	2,100	85	420
03/10/04 <sup>3</sup>	50.31	6.10	44.21	15,000	550	6	960	95	220
06/30/04 <sup>3</sup>	50.31	9.80	40.51	3,200	150	1	100	3	660
09/30/04 <sup>3</sup>	50.31	10.18	40.13	1,900	66	0.8	84	4	690
12/29/04 <sup>3</sup>	50.31	4.58	45.73	16,000	470	7	820	47	170
03/23/05 <sup>3</sup>	50.31	5.07	45.24	18,000	380	6	960	58	140
06/22/05 <sup>3</sup>	50.31	8.12	42.19	16,000	700	6	950	62	300
09/02/05 <sup>3</sup>	50.31	9.41	40.90	8,400	380	4	510	41	440
12/02/05 <sup>3</sup>	50.31	7.97	42.34	16,000	490	6	1,200	32	170
03/20/06 <sup>3</sup>	50.31	5.32	44.99	4,200	79	0.8	2	10	34
06/01/06 <sup>3</sup>	50.31	7.07	43.24	5,400	67	1	26	3	28
09/11/06 <sup>3</sup>	50.31	9.07	41.24	14,000	270	5	240	38	97
DESTROYED									214
MW-4									
03/12/021	49.93	5.34	44.59	9,700	360	5.3	1,100	150	170/170 <sup>2</sup>
06/07/02	49.93	8.52	41.41	7,300	170	2.7	280	21	200/120 <sup>2</sup>
09/13/02	49.93	9.86	40.07	5,800	92	4.5	80	14	190/120 <sup>2</sup>
12/13/02	49.93	9.42	40.51	10,000	250	2.2	330	19	$190/100^{2}$
03/01/03	49.93	7.33	42.60	12,000	300	4.6	900	110	$1/0/200^{2}$
06/27/03 <sup>3</sup>	49.93	9.62	40.31	7,500	110	2	200	58	130
09/30/03 <sup>3</sup>	49.93	11.13	38.80	3,600	18	- <1	16	7	520
12/03/03 <sup>3</sup>	49.93	7.80	42.13	16,000	1,000	6	720	52	73
03/10/04 <sup>3</sup>	49.93	6.69	43.24	2,200	230	3	610	71	55
06/30/04 <sup>3</sup>	49.93	10.33	39.60	7,700	59	<1	78	17	110
09/30/04 <sup>3</sup>	49.93	10.75	39.18	4,800	100	1	33	10	400
12/29/04 <sup>3</sup>	49.93	3.34	46.59	13,000	250	3	480	27	400
03/23/05 <sup>3</sup>	49.93	4.24	45.69	12,000	130	2	280	16	24
06/22/05 <sup>3</sup>	49.93	7.95	41.98	6,400	290	2	11	11	18

890 West MacArthur Blvd. Oakland, California

WELL ID/	TOC*	DTW	GWE	TPH-G	B	T	E	x	мтві
DATE	(ft.)	(ft.)	(msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
WW-4 (cont)									<u></u>
09/02/05 <sup>3</sup>	49.93	9.46	40.47	3,700	180	1	13	7	18
2/02/053	49.93	7.60	42.33	11,000	840	5	480	24	34
03/20/06 <sup>3</sup>	49.93	4.50	45.43	790	14	<0.5	1	0.6	2
)6/01/06 <sup>3</sup>	49.93	7.30	42.63	5,100	48	0.8	42	4	2
9/11/06 <sup>3</sup>	49.93	9.38	40.55	6,700	64	3	44	3	4
DESTROYED						5		5	4
RIP BLANK									
<u>A</u>									
3/12/02	3 <del>77</del>	2 <b></b> 2		<50	<0.50	< 0.50	<0.50	<1.5	<2.5
6/07/02		5. <b></b> ).		<50	<0.50	<0.50	<0.50	<1.5	<2.5
9/13/02	3 <b></b>			<50	<0.50	<0.50	< 0.50	<1.5	<2.5
2/13/02		10000		<50	< 0.50	<0.50	< 0.50	<1.5	<2.5
3/01/03				<50	<0.50	<0.50	< 0.50	<1.5	<2.5
6/27/03 <sup>3</sup>		3 <b></b> -		<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/30/03 <sup>3</sup>			1 - 1 - 1 1 - 1 - 1	<50	<0.5	<0.5	<0.5	<0.5	<0.5
2/03/03 <sup>3</sup>		8		<50	<0.5	<0.5	<0.5	<0.5	<0.5
3/10/04 <sup>3</sup>				<50	<0.5	<0.5	<0.5	<0.5	<0.5
6/30/04 <sup>3</sup>		5 <b></b> 10		<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/30/04 <sup>3</sup>			27.7 C	<50	<0.5	<0.7	<0.8	<0.8	<0.5
2/29/04 <sup>3</sup>		0 <del>73</del> 0		<50	<0.5	<0.5	<0.5	<0.5	<0.5
3/23/05 <sup>3</sup>				<50	<0.5	<0.5	<0.5	<0.5	<0.5
$6/22/05^{3}$				<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/02/05 <sup>3</sup>		- <del></del>		<50	<0.5	14	<0.5	14	<0.5
2/02/05 <sup>3</sup>				<50	<0.5	<0.5	<0.5	<0.5	<0.5
3/20/06 <sup>3</sup>		( <b></b> )		<50	<0.5	<0.5	<0.5	<0.5	<0.5
6/01/06 <sup>3</sup>		1444		<50	<0.5	<0.5	<0.5	<0.5	<0.5
9/11/06 <sup>3</sup>				<50	<0.5	<0.5	<0.5	<0.5	<0.5
8/27/08 <sup>3</sup>				<50	<0.5	<0.5	<0.5	<0.5	<0.5
1/21/08 <sup>3</sup>		-		<50	<0.5	<0.5	<0.5	<0.5	_

#### **EXPLANATIONS:**

TOC = Top of Casing	TPH-G = Total Petroleum Hydrocarbons as Gasoline	MTBE = Methyl Tertiary Butyl Ether
(ft.) = Feet	B = Benzene	$(\mu g/L) =$ Micrograms per liter
DTW = Depth to Water	T = Toluene	= Not Measured/Not Analyzed
GWE = Groundwater Elevation	E = Ethylbenzene	QA = Quality Assurance/Trip Blank
(msl) = Mean sea level	X = Xylenes	

TOC elevations were surveyed on October 1, 2008 by CRA. The benchmark for this survey was a USGS bronze disk located near the north end of the curb return at the Northwest corner of 38th Street and Broadway, (Benchmark Elevation = 85.41 feet, NGVD29).
 TOC elevations were surveyed on March 14, 2002, by Virgil Chavez Land Surveying. The benchmark for this survey was a USGS bronze disk located near the north end of the curb return at the Northwest corner of 38th Street and Broadway, (Benchmark Elevation = 85.41 feet, NGVD29).

<sup>1</sup> Well development performed.

- <sup>2</sup> MTBE by EPA method 8260.
- <sup>3</sup> BTEX and MTBE by EPA Method 8260.
- <sup>4</sup> Analytical result confirmed.

## Table 2 Groundwater Analytical Results - Oxygenate Compounds Former Chevron Service Station #9-2029

890 West MacArthur Blvd. Oakland, California

				Oa	akland, California				
WELL ID	DATE	ETHANOL	ТВА	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-5	08/27/08		2	10	<0.5	<0.5	<0.5	s <b></b> s	
	11/21/08		4	8	<0.5	<0.5	<0.5		
							-010		
MW-6	08/27/08		390	440	<0.5	<0.5	6		
	11/21/08	( <del>-</del> -)	320	300	<13	<13	<13	_	
<b>MW-</b> 7	08/27/08		<2	6	<0.5	<0.5	<0.5		
	11/21/08	-	5	6	<0.5	< <b>0.5</b>	<0.5 <0.5	-	
A 433 / O	00/05/00		_						
MW-8	08/27/08		<2	<0.5	<0.5	<0.5	<0.5		
	11/21/08	-	<2	<0.5	<0.5	<0.5	<0.5	-	-
MW-1	03/12/02	-	<100	<2	<2	<2	<2	<2	<2
	06/07/02		<100	<2	<2	<2	<2	<2	<2
	09/13/02		<100	<2	<2	<2	<2	<2	<2
	12/13/02		<100	<2	<2	<2	<2	<2	<2
	03/01/03		<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06/27/03		<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/30/03	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/03/03	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/10/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06/30/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/30/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/31/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/23/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06/22/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/02/05 DESTROYED	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1W-2	03/12/02		<100	2	~			-	
	06/07/02		<100 <100	3 <2	<2	<2	<2	<2	<2
	09/13/02		<100 <100	<2 <2	<2	<2	<2	<2	<2
					<2	<2	<2	<2	<2 <2
	12/13/02	<del></del>	<100	<2	<2	<2	<2	<2	

## Table 2 Groundwater Analytical Results - Oxygenate Compounds Former Chevron Service Station #9-2029

890 West MacArthur Blvd.

### Oakland, California

	DATE	ETHANOL	ТВА	мтве	kland, California DIPE				
WELL ID		(µg/L)	1ΒΑ (μg/L)	***************************************		ETBE	TAME	1,2-DCA	EDB
		(AB'L)	225	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-2 (cont)	03/01/03		<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06/27/03	23 <b>44</b> 1	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/30/03	<50	<5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5
	12/03/03	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/10/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06/30/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/30/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/31/04	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	03/23/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	06/22/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	09/02/05	<50	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	DESTROYED								1000 <b>- 10</b> 00
MW-3	03/12/02		<100	650	<2	<2	18	<2	<2
	06/07/02		230	490	<5.0	<5.0	11	<5.0	<5.0
	09/13/02		170	640	<2	<2	8	<2	<2
	12/13/02		240	540	<2	<2	29	31	<2
	03/01/03		160	330	<0.5	<0.5	10	<0.5	<0.5
	06/27/03		200	470	< 0.5	<0.5	11	<0.5	<0.5
	09/30/03	<50	120	710	<0.5	<0.5	6	0.7	<0.5
	12/03/03	<250	200	420	<3	<3	14	<3	<3
	03/10/04	<50	140	220	<0.5	<0.5	5	<0.5	<0.5
	06/30/04	<50	100	660	<0.5	<0.5	5	<0.5	<0.5
	09/30/04	<50	72	690	<0.5	<0.5	4	0.5	<0.5
	12/31/04	<50	77	170	<0.5	<0.5	5	<0.5	<0.5
	03/23/05	<50	<5	140	<0.5	<0.5	4	<0.5	3
	06/22/05	<250	150	300	<3	<3	6	<3	<3
	09/02/05	<100	99	440	<1	<1	<1	<1	<1
	12/02/05	<100	66	170	<1	<1	5	<1	<1
	03/20/06	<50	14	34	<0.5	<0.5	<0.5	<0.5	<0.5
	06/01/06	<50	12	28	<0.5	<0.5	0.8	<0.5	<0.5
	09/11/06	<50	47	97	<0.5	<0.5	2	<0.5	<0.5
	DESTROYED								0.5
MW-4	03/12/02		<100	170	<2	<2	13	<2	<2
	06/07/02		<100	120	<2	<2	14	<2	<2
	09/13/02	2 <u>111</u>	<100	160	<2	<2	14	<2	~4

## Table 2 Groundwater Analytical Results - Oxygenate Compounds Former Chevron Service Station #9-2029

890 West MacArthur Blvd.

					kland, California				
WELL ID	DATE	ETHANOL	ТВА	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB
	arean	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(pg/L)	(µg/L)	(µg/L)	(µg/L)
MW-4 (cont)	12/13/02		<100	200	<2	<2	17	<2	<2
	03/01/03		19	100	<0.5	<0.5	8	<0.5	<0.5
	06/27/03		22	130	<0.5	<0.5	11	<0.5	<0.5
	09/30/03	<100	<10	520	<1	<1	9	<1	<1
	12/03/03	<50	18	73	<0.5	<0.5	5	<0.5	<0.5
	03/10/04	<50	11	55	<0.5	<0.5	4	<0.5	<0.5
	06/30/04	<100	<10	110	<1	<1	6	<1	<1
	09/30/04	<50	17	400	<0.5	<0.5	7	<0.5	<0.5
	12/31/04	<50	11	42	<0.5	<0.5	2	<0.5	<0.5
	03/23/05	<50	<5	24	<0.5	<0.5	1	<0.5	0.9
	06/22/05	<50	15	18	<0.5	<0.5	1	<0.5	<0.5
	09/02/05	<50	6	18	<0.5	<0.5	<0.5	<0.5	<0.5
	12/02/05	<50	11	34	<0.5	<0.5	1	<0.5	<0.5
	03/20/06	<50	<5	2	<0.5	<0.5	<0.5	<0.5	<0.5
	06/01/06	<50	<5	2	<0.5	<0.5	<0.5	<0.5	<0.5
	09/11/06	<50	<5	4	<0.5	<0.5	<0.5	<0.5	<0.5
Ι	DESTROYED								

#### **EXPLANATIONS:**

#### **ANALYTICAL METHOD:**

EPA Method 8260 for Oxygenate Compounds

TBA = t-Butyl alcohol MTBE = Methyl Tertiary Butyl Ether DIPE = Di-Isopropyl ether ETBE = Ethyl t-butyl ether TAME = t-Amyl methyl ether 1,2-DCA = 1,2-Dichloroethane EDB = 1,2-Dibromoethane  $(\mu g/L) =$  Micrograms per liter -- = Not Analyzed

## STANDARD OPERATING PROCEDURE -GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Chevron Environmental Management Company, the purge water and decontamination water generated during sampling activities is transported by IWM to Chemical Waste Management located in Kettleman Hills, California.



Client/Facility#:	Chevron #9-2029	Job Number:	386911	
Site Address:	890 West Macarthur I	Blvd. Event Date:	11-21-08	(inclusive)
City:	Oakland, CA		5/4	
Well ID	MW	Date Monitored:	11-21-07	
Well Diameter	<b>2</b> in.	Volume 3/4"= 0.02	1"= 0.04 2"= 0.17 3"= 0.	38
Total Depth	<u>_24-99 ft.</u>	Factor (VF) 4"= 0.66	5"= 1.02 6"= 1.50 12"= 5.	80
Depth to Water		eck if water column is less then 0.50 f		J
Depth to Water v Purge Equipment: Disposable Bailer Stainless Steel Bailer Stack Pump Suction Pump Grundfos Peristattic Pump QED Bladder Pump Other:	v/ 80% Recharge [(Height of Wa San Disp Pres Disc Peri QEL	x3 case volume = E         atter Column x 0.20) + DTW]:         y         y         anpling Equipment:         bosable Bailer         ssure Bailer         crete Bailer         static Pump         D Bladder Pump		(2400 hrs) ft ft ft n: ft n: ft n: ft gal gal
Approx. Flow Rate	e:gpm. e:gpm. ?lf yes, Time:	Weather Conditions: Water Color: <u>Class</u> Sediment Description: Volume: ga Conductivity Temperature (Conductivity Temperature 596 (6.5 596 (6.3 596 (6.3 596 (6.3)	Clean Ddor F N I. DTW @ Sampling: D.O. ORP (mg/L) (mV)	2-3.7

			ABORATORY IN	FORMATION	
SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW- 5</u>	x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX(8260)/ 5 OXYS(8260)

### COMMENTS:

Add/Replaced Lock: \_\_\_\_\_

Add/Replaced	Plug:	
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Add/Replaced Bolt: \_\_\_\_\_



Client/Facility#:	Chevron #9-2029		Job Number:	386911	
Site Address:	890 West Macarthur I	Blvd.	Event Date:	11-21-08	(inclusive)
City:	Oakland, CA		Sampler:	Sit	
Well ID	MW-6	D	ate Monitored:	11-21-08	
Well Diameter	<u>2</u> in.	Volume		1"= 0.04 2"= 0.17	3"= 0.38
Total Depth	<u>24.97 ft.</u>	Factor (			12"= 5.80
Depth to Water		eck if water column			
Depth to Water w	// 80% Recharge [(Height of Wa	$\mathbf{Z} = \underline{2.86}$ ter Column x 0.20) +	x3 case volume = E DTW]: <u>11.49</u>	-	9 gal. (2400 hrs)
Purge Equipment:	San	pling Equipment:		Time Completed:	(2400 hrs)
Disposable Bailer		osable Bailer	X	Depth to Product:	ft
Stainless Steel Bailer		ssure Bailer		Depth to Water: Hydrocarbon Thickne	
Stack Pump		rete Bailer		escription:	
Suction Pump Grundfos		staltic Pump		Skimmer / Absorbant	Sack (circle and)
Peristaltic Pump		) Bladder Pump er:		Amt Removed from S	kimmer: gal
QED Bladder Pump	Oli	sı		Amt Removed from W	/ell: gal
Other:				Water Removed: Product Transferred to	<u></u>
Start Time (purge)	1057	Weather Cond	ditions:	Clear	
	: 1/20111-21-08		Clar		
Approx. Flow Rate			cription:		
Did well de-water?	/ If yes, Time:				972
Time (2400 hr.)	Volume (gal.) pH (	Conductivity µmhos/cm - µ	Temperature		DRP mV)
1100	3 7.31	523	17.3		
	<u> </u>		17.8		
1106	_97-11_	562	17.8		
<u> </u>					

LABORATORY INFORMATION								
SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES			
MW- Ø	Cox voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX(8260)/ 5 OXYS(8260)			
1								

#### COMMENTS:

Add/Replaced Lock: \_\_\_\_\_



Client/Facility#:	Chevron #9-2029	Job Number:	386911	
Site Address:	890 West Macarthur Blvd.	Event Date:	11-21-08	 (inclusive)
City:	Oakland, CA	Sampler:	51+	
Well ID	<u>7</u>	Date Monitored:	11-21-08	
Well Diameter	2 in.	Volume 3/4"= 0.02		
Total Depth	<u>24.98 ft</u>	Factor (VF) 4"= 0.66		0
Depth to Water		ter column is less then 0.50 $2 c 2$		
Dopth to Mater	15.47 xVF	$\times$ (0) x3 case volume = 1	Estimated Purge Volume:	gal.
Depth to water	w/ 80% Recharge [(Height of Water Colum	nn x 0.20) + DTW]: _/C	Z Time Started:	(2400 hrs)
Purge Equipment:	Sampling Ec	puipment:	Time Completed:	(2400 hrs)
Disposable Bailer	Disposable B		Depth to Product:	
Stainless Steel Baile			Depth to Water: Hydrocarbon Thickness:	ftft
Stack Pump	Discrete Baile	er	Visual Confirmation/Description	
Suction Pump	Peristaltic Pu	mp		
Grundfos	QED Bladder	· · · · · · · · · · · · · · · · · · ·	Skimmer / Absorbant Sock (circ Amt Removed from Skimmer:_	cle one)
Peristaltic Pump	Other:	· · · · · · · · · · · · · · · · · · ·	Amt Removed from Well:	gal
QED Bladder Pump Other:			Water Removed:	
			Product Transferred to:	
Start Time (purse				
Start Time (purge			Clear	
			Odor: Y / B	
Approx. Flow Rat		ment Description:	light	
Did well de-water	If yes, Time:	Volume: g	al. DTW @ Sampling:	2-2/
Time (2400 hr.)	Volume (gal.) pH Conduc (µmhos/cr		D.O. ORP (mg/L) (mV)	
1139		42 (72		
1142		33 [7.]		
	87.1568	30 17-3		

LABORATORY INFORMATION								
SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES			
MW- 7	x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX(8260)/ 5 OXYS(8260)			
		·····						
					· · · · · · · · · · · · · · · · · · ·			

#### COMMENTS:

Add/Replaced Lock: \_\_\_\_\_ A

Add/Replaced	Plug:	
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Add/Replaced Bolt: \_\_\_\_\_



Client/Facility#:	Chevron #9-2029		Job Nur	nber:	386911			
Site Address:	890 West Macarthu	390 West Macarthur Blvd.			11-21-	-08	(inclusive)	
City:	Oakland, CA		Sampler		514		(	
Well ID	MW-S		Date Monit	ored:	(1-2	21-07		
Well Diameter	<u>2</u> in.			/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38	]
Total Depth	<u>_24-98 ft.</u>			4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80	
Depth to Water		Check if water co					7	
Depth to Mistere	13-56 xVF					e Volume:	<u> </u>	gal.
Depth to Water w	v/ 80% Recharge [(Height of	Water Column x 0.2				rted:		(2400 hrs)
Purge Equipment:		Sampling Equipme	ent:	4.13	Time Co	mpleted:		(2400 hrs)
Disposable Bailer		Disposable Bailer	$\checkmark$		Depth to Depth to			ft
Stainless Steel Bailer		Pressure Bailer		Hydrocarbon Thickness:				ftft
Stack Pump		Discrete Bailer			escription:	······································		
Suction Pump Grundfos		Peristaltic Pump	<u> </u>		Skimmer	/ Absorbant	Sock (single	
Peristaltic Pump		QED Bladder Pump	<u> </u>		Amt Rem	oved from Si	sock (circle kimmer:	gal
QED Bladder Pump		Other:			Amt Rem	oved from W	/ell:	gal
Other:					Water Re	moved: ransferred to		I
							·····	
Start Time (purge)	: 1208	Weather	Conditions:	6	lear			
Sample Time/Date	e: 1230 / 11-21-0	🗞 🛛 Water Co	lor: Clea		Odor: Y / J	6		
Approx. Flow Rate	e: gpm.	Sediment	Description:		1.4.00			<u> </u>
Did well de-water?	? If yes, Time	e: Vo	olume:	ga	I. DTW @	Sampling	12	.92
Time (2400 hr.)	Volume (gal.) pH	Conductivity	- Jonoperatu		D.O. (mg/L)	C	DRP mV)	
1212	2.5 6.43	457	16.4	7				
1215	5 6.91	463	17.					
[218				3				

	LABORATORY INFORMATION									
SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES					
MW- 3	G x voa vial	YES	HCL	LANCASTER	TPH-G(8015)/BTEX(8260)/ 5 OXYS(8260)					
			······							
				······································						
I										

### COMMENTS:

Add/Replaced Lock: \_\_\_\_\_

Add/Replaced Bolt: \_\_\_\_\_

C	Chevro	on Co	alifo	orn	ia	Re	29	io	n,	Ar	na	lys	sis	Re	əα	Ue	əsi	ł/(	Chain	of Ci	isto
AN Innerctor	1249	48 - X	15		ļ	Acct. a	#:	120										-	only Group 4	<u>009</u>	134
35#9-2029 G-R#380911 Glob			ITI Pi	ojec	t#. 6	51-19	974				A	nalya	<b>38</b> 5	Requ	este	d			יי א 👔	2179	<i><b>ī</b>9</i>
-acility #:890 WEST MACARTHUR BLVF	D., OAKLAN	ND, CA		_	Matri	x		H	H			rese H	rvat	lon C	ode	8	T	T		rvative Co	
		AKJ	0456		1	┯┥	Ø			Cleanup									$H = HCI$ $N = HNO_3$ $S = H_2SO_4$	<b>T</b> = Thi <b>B</b> = Na <b>O</b> = Otl	OH
onsultant/Office:	mna@grinc	.com)		_	Potable		ntainen	۵ آق		Silica Gel Cleanup		260							J value rep	lowest dete	ction limi
	925- Fax #:	551-7899	192				of Cor	8260 🗙 8021 🗆	ę	о В		6331	Method -	Method -					possible fo 8021 MTBE	ir 8260 com	pounds
ampler: <i>SH</i>				osite		1	umber	8	MOD GI	NOD DI	can	<u>S</u>							Confirm hi	ghest hit by	8260
	Date Collected	Time Collected	Grab	Soil	Water	Oil 🗆 Air	Total Number of Containers	BTEX +	TPH 8015 MOD GRO		8260 full scan	S S	Total Lead	Dissolved Lead					Run     Run	oxy's on hig	hest hit
QA Mw-5	11-21-08	1040	XX		X	$\left  \right $	2	X	X X		-		7				-		Comments		
<u>MW-6</u> MW-7		1120	X		X		66	X	Ŷ			3	-	+-	+		1				
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Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

#### ANALYTICAL RESULTS

Prepared for:

Chevron c/o CRA Suite 110 2000 Opportunity Drive Roseville CA 95678

916-677-3407

Prepared by:

Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17605-2425



DECI 0 2008

## GETTLER-RYAN INC. GENERAL CONTRACTORS

SAMPLE GROUP

The sample group for this submittal is 1121799. Samples arrived at the laboratory on Tuesday, November 25, 2008. The PO# for this group is 92029 and the release number is MTI.

Client Description QA-T-081121 NA Water MW-5-W-081121 Grab Water MW-6-W-081121 Grab Water MW-7-W-081121 Grab Water MW-8-W-081121 Grab Water

ELECTRONIC Gettler-Ryan, Inc. COPY TO

Lancaster Labs Number 5540157 5540158 5540159 5540160 5540161

Attn: Cheryl Hansen





Questions? Contact your Client Services Representative Jill M Parker at (717) 656-2300

Respectfully Submitted,

Sarah Gell Sarah Snyder Specialist





Page 1 of 1

#### Lancaster Laboratories Sample No. WW5540157 QA-T-081121 NA Water Facility# 92029 Job# 386911 MTI# 61-1974 GRD 890 W Macarthur-Oakland T0600173887 QA Collected:11/21/2008

Submitted: 11/25/2008 09:55 Reported: 12/09/2008 at 11:15 Discard: 01/09/2009

2029Q

Group No. 1121799

Account Number: 12099

Chevron c/o CRA Suite 110 2000 Opportunity Drive Roseville CA 95678

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	ug/l	1
06053	BTEX by 8260B					
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT		_		Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B modified	1	12/05/2008 12:11	Jennifer B Werner	1
06053	BTEX by 8260B	SW-846 8260B	1	12/02/2008 22:01	Michael A Ziegler	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/05/2008 12:11	Jennifer B Werner	-
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/02/2008 22:01	Michael A Ziegler	1





Page 1 of 1

## Lancaster Laboratories Sample No. WW5540158

MW-5-W-081121 Grab Water Facility# 92029 Job# 386911 MTI# 61-1974 GRD 890 W Macarthur-Oakland T0600173887 MW-5 Collected:11/21/2008 10:40 by SH

Submitted: 11/25/2008 09:55 Reported: 12/09/2008 at 11:15 Discard: 01/09/2009 Group No. 1121799

Account Number: 12099

Chevron c/o CRA Suite 110 2000 Opportunity Drive Roseville CA 95678

<b>CAT</b> <b>No.</b> 01728	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01/28	TPH-GRO N. CA water C6-C12	n.a.	6,000	250	ug/l	5
06056	BTEX+5 Oxygenates by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	8	0.5	ug/l	1
02011	di-Isopropyl ether	108-20-3	N.D.	0.5	ug/l	1
02013	Ethyl t-butyl ether	637-92-3	N.D.	0.5	ug/l	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.5	ug/l	1
02015	t-Butyl alcohol	75-65-0	4	2	ug/l	1
05401	Benzene	71-43-2	93	0.5	ug/l	1
05407	Toluene	108-88-3	6	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	37	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	6	0.5	ug/l	1

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

		Langerader	0111 Q.			
CAT				Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B modified	1	12/05/2008 23:35	Jennifer B Werner	5
06056	BTEX+5 Oxygenates by 8260B	SW-846 8260B	1	12/03/2008 11:16	Ginelle L Feister	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/05/2008 23:35	Jennifer B Werner	5
01163	GC/MS VOA Water Prep	SW-846 5030B	l	12/03/2008 11:16	Ginelle L Feister	1





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## Lancaster Laboratories Sample No. WW5540159

MW-6-W-081121 Grab Water Facility# 92029 Job# 386911 MTI# 61-1974 GRD 890 W Macarthur-Oakland T0600173887 MW-6 Collected:11/21/2008 11:20 by SH

Submitted: 11/25/2008 09:55 Reported: 12/09/2008 at 11:16 Discard: 01/09/2009

20296

Group No. 1121799

Account Number: 12099

Chevron c/o CRA Suite 110 2000 Opportunity Drive Roseville CA 95678

CAT			As Received	As Received Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
01728	TPH-GRO N. CA water C6-C12	n.a.	14,000	500	ug/l	10
06056	BTEX+5 Oxygenates by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	300	13	ug/l	25
02011	di-Isopropyl ether	108-20-3	N.D.	13	ug/l	25
02013	Ethyl t-butyl ether	637-92-3	N.D.	13	ug/l	25
02014	t-Amyl methyl ether	994-05-8	N.D.	13	uq/l	25
02015	t-Butyl alcohol	75-65-0	320	50	ug/l	25
05401	Benzene	71-43-2	1,000	13	ug/l	25
05407	Toluene	108-88-3	15	13	ug/l	25
05415	Ethylbenzene	100-41-4	1,300	13	ug/l	25
06310	Xylene (Total)	1330-20-7	550	13	ug/l	25

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

		Haboratory	CITT O	TITCIC		
CAT				Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B modified	1	12/06/2008 00:05	Jennifer B Werner	10
06056	BTEX+5 Oxygenates by 8260B	SW-846 8260B	1	12/03/2008 11:41	Ginelle L Feister	25
01146	GC VOA Water Prep	SW-846 5030B	1	12/06/2008 00:05	Jennifer B Werner	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/03/2008 11:41	Ginelle L Feister	25





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## Lancaster Laboratories Sample No. WW5540160 MW-7-W-081121 Grab Water Facility# 92029 Job# 386911 MTI# 61-1974 GRD 890 W Macarthur-Oakland T0600173887 MW-7 Collected:11/21/2008 11:55 by SH Ac

Submitted: 11/25/2008 09:55 Reported: 12/09/2008 at 11:16 Discard: 01/09/2009

Group No. 1121799

Account Number: 12099

Chevron c/o CRA Suite 110 2000 Opportunity Drive Roseville CA 95678

20297

				As Received		
CAT			As Received	Method		Dilution
No.	Analysis Name	CAS Number	Result	Detection Limit	Units	Factor
01728	TPH-GRO N. CA water C6-C12	n.a.	1,100	50	ug/l	1
06056	BTEX+5 Oxygenates by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	6	0.5	ug/l	1
02011	di-Isopropyl ether	108-20-3	N.D.	0.5	ug/l	1
02013	Ethyl t-butyl ether	637-92-3	N.D.	0.5	uq/l	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.5	uq/l	1
02015	t-Butyl alcohol	75-65-0	5	2	ug/l	1
05401	Benzene	71-43-2	80	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	65	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	0.7	0.5	ug/l	1

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle								
CAT				Analysis		Dilution		
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor		
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B modified	1	12/05/2008 20:07	Jennifer B Werner	1		
06056	BTEX+5 Oxygenates by 8260B	SW-846 8260B	1	12/04/2008 21:32	Michael A Ziegler	1		
01146	GC VOA Water Prep	SW-846 5030B	1	12/05/2008 20:07	Jennifer B Werner	1		
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/04/2008 21:32	Michael A Ziegler	1		





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### Lancaster Laboratories Sample No. WW5540161

MW-8-W-081121 Grab Water Facility# 92029 Job# 386911 MTI# 61-1974 GRD 890 W Macarthur-Oakland T0600173887 MW-8 Collected:11/21/2008 12:30 by SH

Submitted: 11/25/2008 09:55 Reported: 12/09/2008 at 11:16 Discard: 01/09/2009 Group No. 1121799

Account Number: 12099

Chevron c/o CRA Suite 110 2000 Opportunity Drive Roseville CA 95678

2029	98
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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection	Units	Dilution Factor
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	Limit 50	ug/l	1
06056	BTEX+5 Oxygenates by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	ug/l	1
02011	di-Isopropyl ether	108-20-3	N.D.	0.5	ug/1	1
02013	Ethyl t-butyl ether	637-92-3	N.D.	0.5	ug/1	1
02014	t-Amyl methyl ether	994-05-8	N.D.	0.5	ug/1	1
02015	t-Butyl alcohol	75-65-0	N.D.	2	ug/1	1
05401	Benzene	71-43-2	N.D.	0.5	ug/1	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	-
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/1	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

		Laboratory	Chro	nicle		
CAT		_		Analysis		Dilution
No.	Analysis Name	Method	Trial#	Date and Time	Analyst	Factor
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B modified	1	12/05/2008 20:37	Jennifer B Werner	1
06056	BTEX+5 Oxygenates by 8260B	SW-846 8260B	1	12/03/2008 10:01	Ginelle L Feister	1
01146	GC VOA Water Prep	SW-846 5030B	1	12/05/2008 20:37	Jennifer B Werner	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	12/03/2008 10:01	Ginelle L Feister	1





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## Quality Control Summary

Client Name: Chevron c/o CRA Reported: 12/09/08 at 11:16 AM

Group Number: 1121799

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	Blank <u>Result</u>	Blank MDL	Report Units	LCS <u>%REC</u>	LCSD %REC	LCS/LCSD Limits	<u>RPD</u>	<u>RPD Max</u>
Batch number: 08339B08A TPH-GRO N. CA water C6-C12	Sample n N.D.	umber(s): 50.	5540157-55 ug/l	40161 100	109	75-135	9	30
Batch number: D083373AA		umber(s):	5540157					
Benzene	N.D.	0.5	ug/l	90		78-119		
Toluene	N.D.	0.5	ug/l	94		85-115		
Ethylbenzene	N.D.	0.5	ug/l	91		82-119		
Xylene (Total)	N.D.	0.5	ug/l	95		83-113		
Batch number: D083393AA	Sample n	umber(s):	5540160					
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	106		73-119		
di-Isopropyl ether	N.D.	0.5	ug/l	98		70-123		
Ethyl t-butyl ether	N.D.	0.5	ug/l	99		74-120		
t-Amyl methyl ether	N.D.	0.5	ug/l	102		79-113		
t-Butyl alcohol	N.D.	2.	ug/l	97		74-117		
Benzene	N.D.	0.5	ug/l	94		78-119		
Toluene	N.D.	0.5	ug/l	95		85-115		
Ethylbenzene	N.D.	0.5	ug/l	94		82-119		
Xylene (Total)	N.D.	0.5	ug/l	95		83-113		
Batch number: Z083382AA	Sample nu	umber(s):	5540158-554	10159,554	0161			
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	98		73-119		
di-Isopropyl ether	N.D.	0.5	ug/l	96		70-123		
Ethyl t-butyl ether	N.D.	0.5	ug/l	97		74-120		
t-Amyl methyl ether	N.D.	0.5	ug/l	101		79-113		
t-Butyl alcohol	N.D.	2.	ug/l	85		74-117		
Benzene	N.D.	0.5	ug/l	97		78-119		
Toluene	N.D.	0.5	ug/l	106		85-115		
Ethylbenzene	N.D.	0.5	ug/l	104		82-119		
Xylene (Total)	N.D.	0.5	ug/l	103		83-113		

#### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS <u>%REC</u>	MSD <u>%REC</u>	MS/MSD <u>Limits</u>	RPD	RPD <u>MAX</u>	BKG <u>Conc</u>	DUP <u>Conc</u>	DUP RPD	Dup RPD <u>Max</u>
Batch number: 08339B08A TPH-GRO N. CA water C6-C12	Sample r 128	number(s)	: 5540157 63-154	-554010	51 UNSPE	K: P540148			
Batch number: D083373AA Benzene	Sample r 87	number(s) 87	: 5540157 83-128	UNSPK:	: P54030 30	8			

\*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.





Page 2 of 3

## Quality Control Summary

Client Name: Chevron c/o CRA Reported: 12/09/08 at 11:16 AM

Group Number: 1121799

### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u> Toluene Ethylbenzene Xylene (Total)	<b>MS</b> <u>%REC</u> 88 87 87	<b>MSD</b> <u>%REC</u> 88 88 88	<b>MS/MSD</b> Limits 83-127 82-129 82-130	<b>RPD</b> 0 2 2	<b>RPD</b> <u>MAX</u> 30 30 30	BKG <u>Conc</u>	DUP Conc	DUP RPD	Dup RPD <u>Max</u>
Batch number: D083393AA	Sample	number(s)	: 5540160	IINS DK.	D5416	12			
Methyl Tertiary Butyl Ether	108	88	69-127	20	30	12			
di-Isopropyl ether	99	84	68-129	17	30				
Ethyl t-butyl ether	101	84	78-119	18	30				
t-Amyl methyl ether	104	83	72-125	21	30				
t-Butyl alcohol	97	78	70-121	20	30				
Benzene	100	83	83-128	6	30				
Toluene	102	84	83-127	20	30				
Ethylbenzene	101	82	82-129	21	30				
Xylene (Total)	102	82	82-130	20	30				
Batch number: Z083382AA	Sample	number(s)	: 5540158	-554015	9.55401	61 INGOR	. 5540161		
Methyl Tertiary Butyl Ether	100	104	69-127	4	30	OI ONDER			
di-Isopropyl ether	97	98	68-129	2	30				
Ethyl t-butyl ether	97	100	78-119	3	30				
t-Amyl methyl ether	100	103	72-125	2	30				
t-Butyl alcohol	114	75	70-121	41*	30				
Benzene	103	103	83-128	0	30				
Toluene	110	111	83-127	0	30				
Ethylbenzene	110	110	82-129	0	30				
Xylene (Total)	108	108	82-130	0	30				

#### Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TPH-GRO N. CA water C6-C12 Batch number: 08339B08A Trifluorotoluene-F

Limits:	63-135	 	 	· · · · · · · · · · · · · · · · · · ·	
IS	123				
LCSD	119				
LCS	117				
Blank	111				
5540161	108				
5540160	121				
5540159	114				
5540158	124				
540157	109		 		

Analysis Name: BTEX by 8260B Batch number: D083373AA Dibromofluoromethane

1,2-Dichloroethane-d4 Toluene-d8

4-Bromofluorobenzene

\*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.





Page 3 of 3

### Quality Control Summary

Client Name: Chevron c/o CRA Reported: 12/09/08 at 11:16 AM

Group Number: 1121799

### Surrogate Quality Control

	88	96	94	94	
Blank	87	98	96	96	
LCS	89	100	96	97	
MS	89	99	95	97	
MSD	91	100	96	99	
Limits:	80-116	77-113	80-113	78-113	
Analysis i Batch numi	Name: BTEX+5 Oxygenates by per: D083393AA	8260B			
	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzen	
5540160	91	95	91	98	
Blank	90 96		93	95	
LCS	94 101		95	101	
MS	92	99	93	99	
MSD	92	98	92	98	
Limits:	80-116	77-113	80-113	78-113	
Analysis 1	Name: BTEX+5 Oxygenates by		80-113	78-113	
Analysis M Batch numb			80-113 Toluene-d8	78-113 4-Bromofluorobenzen	
Analysis M Batch numb 5540158	Name: BTEX+5 Oxygenates by per: Z083382AA Dibromofluoromethane 97	8260B 1,2-Dichloroethane-d4 92		4-Bromofluorobenzen	
Analysis M Batch numb 5540158 5540159	Jame: BTEX+5 Oxygenates by Der: Z083382AA Dibromofluoromethane 97 98	8260B 1,2-Dichloroethane-d4 92 95	Toluene-d8		
Analysis M Batch numb 5540158 5540159 5540161	Name: BTEX+5 Oxygenates by Der: Z083382AA Dibromofluoromethane 97 98 100	8260B 1,2-Dichloroethane-d4 92 95 96	Toluene-d8	4-Bromofluorobenzen	
Analysis 1 Batch numb 5540158 5540159 5540161 Blank	Name: BTEX+5 Oxygenates by Der: Z083382AA Dibromofluoromethane 97 98 100 101	8260B 1,2-Dichloroethane-d4 92 95 96 97	Toluene-d8	4-Bromofluorobenzen 95 95	
Analysis 1 Batch numb 5540158 5540159 5540161 Blank LCS	Name: BTEX+5 Oxygenates by Der: Z083382AA Dibromofluoromethane 97 98 100 101	8260B 1,2-Dichloroethane-d4 92 95 96 97 97	Toluene-d8 111 106 109	4-Bromofluorobenzen 95 95 93	
Analysis M Batch numb 5540158 5540159 5540161 Blank LCS MS	Name: BTEX+5 Oxygenates by Der: Z083382AA Dibromofluoromethane 97 98 100 101 101 100	8260B 1,2-Dichloroethane-d4 92 95 96 97	Toluene-d8 111 106 109 107	4-Bromofluorobenzen 95 95 93 95 99	
Analysis 1	Name: BTEX+5 Oxygenates by Der: Z083382AA Dibromofluoromethane 97 98 100 101	8260B 1,2-Dichloroethane-d4 92 95 96 97 97	Toluene-d8 111 106 109 107 107	4-Bromofluorobenzen 95 95 93 95	

\*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

## Lancaster Laboratories **Explanation of Symbols and Abbreviations**

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
C	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	Ib.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	i	liter(s)
ug	milliliter(s)	ul	microliter(s)
		ו ul fib >5 um/ml	

less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can < be reliably determined using this specific test.

> greater than

parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. ppm For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

**Dry weight** Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. basis

U.S. EPA data qualifiers:

#### **Organic Qualifiers**

- Α TIC is a possible aldol-condensation product
- В Analyte was also detected in the blank
- С Pesticide result confirmed by GC/MS
- D Compound quatitated on a diluted sample
- Ε Concentration exceeds the calibration range of the instrument
- J Estimated value
- Ν Presumptive evidence of a compound (TICs only)
- Ρ Concentration difference between primary and confirmation columns >25%
- U Compound was not detected
- X.Y.Z Defined in case narrative

## **Inorganic Qualifiers**

- В Value is <CRDL, but ≥IDL
- Ε Estimated due to interference
- М Duplicate injection precision not met
- Ν Spike amount not within control limits
- S Method of standard additions (MSA) used for calculation
- U Compound was not detected
- W Post digestion spike out of control limits
  - Duplicate analysis not within control limits
- Correlation coefficient for MSA < 0.995 +

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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