

Holly Park  
Seattle

**SAIC**

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TCP-NWRO

November 30, 2011

Mr. Mark Horne  
Chevron Environmental Management Company  
6101 Bollinger Canyon Road  
San Ramon, California 94583

**Subject: Third Quarter 2011 Groundwater Monitoring and Sampling Report  
Former Tidewater Service Station No. 30-3189  
7301 Martin Luther King Jr. Way South  
Seattle, Washington**

Dear Mr. Horne:

SAIC Energy, Environment & Infrastructure, LLC (SAIC), on behalf of Chevron Environmental Management Company (CEMC), prepared this letter summarizing the third quarter 2011 groundwater monitoring and sampling event at former Tidewater Service Station No. 30-3189 (the site) in Seattle, Washington (Figure 1).

#### FIELD ACTIVITIES

Gettler-Ryan Inc. (Gettler-Ryan) conducted the groundwater monitoring and sampling field event on August 18, 2011. They collected depth-to-groundwater measurements and checked for the presence of separate-phase hydrocarbons (SPH) in three monitoring wells on site.

Groundwater samples were collected from two of the three monitoring wells. Monitoring well MW-2 was not sampled due the presence of SPH. Samples were submitted to Lancaster Laboratories, Inc. in Pennsylvania for the following analyses:

- Total petroleum hydrocarbons (TPH) as gasoline-range organics (TPH-GRO) by Washington State Department of Ecology (Ecology) Method NWTPH-Gx;
- TPH as diesel-range organics (TPH-DRO) and TPH as heavy oil-range organics by Ecology Method NWTPH-Dx extended with silica-gel cleanup; and
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by United States Environmental Protection Agency Method 8260B.

A laboratory-supplied trip blank (QA) was submitted to the laboratory and analyzed for TPH-GRO, BTEX, and MTBE to provide quality assurance. Field data sheets are



provided in the Gettler-Ryan groundwater monitoring and sampling data package (Attachment A).

### FINDINGS

During this event, groundwater elevations ranged from 95.62 feet in monitoring well MW-3 to 90.83 feet in monitoring well MW-2, based on an arbitrary benchmark elevation of 100.00 feet. Groundwater flows toward the north-northeast at a gradient of approximately 0.07 feet per foot (Figure 2). Groundwater elevations decreased an average of 1.85 feet since the previous quarterly monitoring event in May 2011.

SPH were detected in monitoring well MW-2 at a thickness of 0.1 foot.

The following analyte was detected at concentrations exceeding its Model Toxics Control Act Method A cleanup level:

- TPH-DRO in monitoring well MW-1.

Historical groundwater elevation data and laboratory analytical results are summarized in Table 1. The laboratory analysis report is provided as Attachment B.

### DISCUSSION

Groundwater elevations and potential flow direction are consistent with historical data reported at the site.

SPH were detected in monitoring well MW-2 for the first time since sampling began in August of 2007. However, product residue has been reported on sample tubing in the past.


Petroleum-hydrocarbon constituent concentrations are generally consistent with respect to historical data.


Gettler-Ryan will continue to perform groundwater monitoring and sampling on a quarterly basis. The next groundwater monitoring and sampling event is scheduled for November 2011.

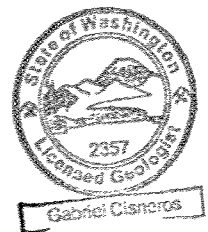
If you have any questions or comments, please contact me at (425) 482-3319 or via email at [langem@saic.com](mailto:langem@saic.com).

Sincerely,

**SAIC Energy, Environment & Infrastructure, LLC**

  
\_\_\_\_\_  
Michael Lange  
Northwest Portfolio Manager

  
\_\_\_\_\_  
Gabriel Cisneros, LG #2357  
Geologist



**Enclosures:**

**Figure 1 – Vicinity Map**

**Figure 2 – Potentiometric Map**

**Table 1 – Groundwater Monitoring Data and Analytical Results**

**Attachment A – Groundwater Monitoring and Sampling Data Package**

**Attachment B – Laboratory Analysis Report**

cc: **Ms. Donna Musa – Ecology NW Region, Toxics Cleanup Program**  
3190 160<sup>th</sup> Avenue SE, Bellevue, WA 98008-5452  
**Mr. Larry Hard – Seattle Housing Authority**  
120 Sixth Avenue North, P.O Box 19028, Seattle, WA 98109-1028  
Project File

## **REPORT LIMITATIONS**

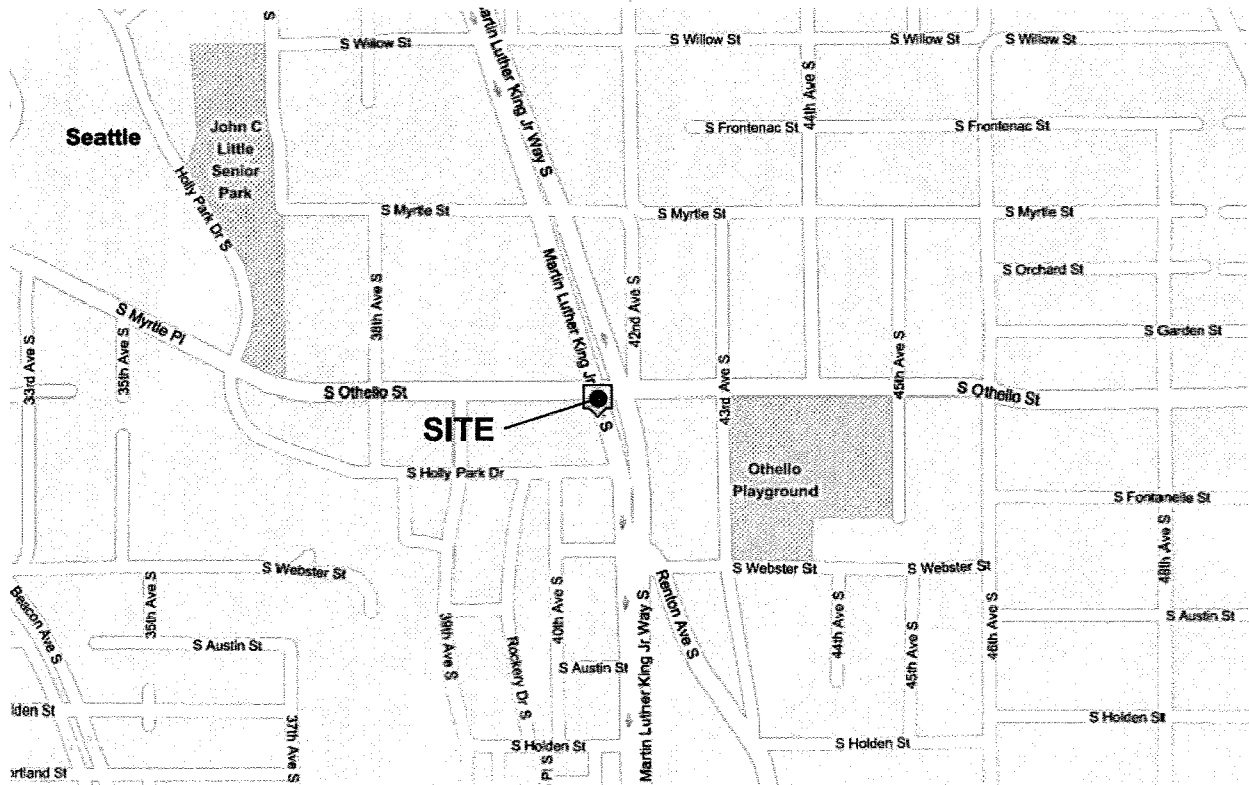
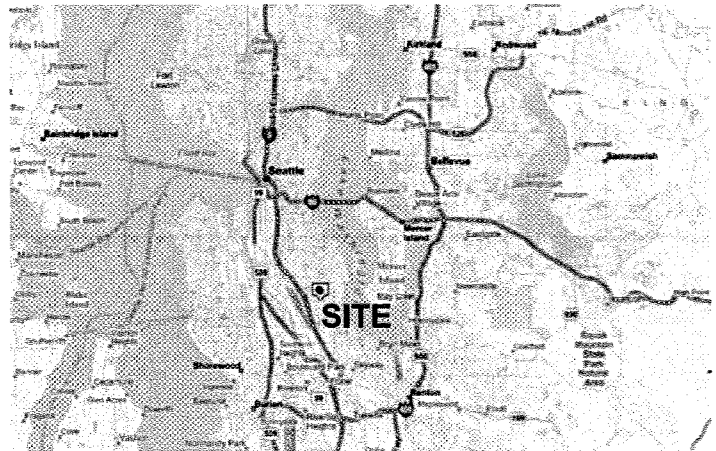
**This technical document was prepared on behalf of Chevron and is intended for its sole use and for use by the local, state or federal regulatory agency that the technical document was sent to by SAIC. Any other person or entity obtaining, using, or relying on this technical document hereby acknowledges that they do so at their own risk, and that SAIC shall have no responsibility or liability for the consequences thereof.**

**Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from CEMC and others. SAIC has not made, nor has it been asked to make, any independent investigation concerning the accuracy, reliability, or completeness of such information beyond that described in this technical document.**

**Recognizing reasonable limits of time and cost, this technical document cannot wholly eliminate uncertainty regarding the vertical and lateral extent of impacted environmental media.**

**Opinions and recommendations presented in this technical document apply only to site conditions and features as they existed at the time of SAIC's site visits or site work and cannot be applied to conditions and features of which SAIC is unaware and has not had the opportunity to evaluate.**

**All sources of information on which SAIC has relied in making its conclusions (including direct field observations) are identified by reference in this technical document or in appendices attached to this technical document. Any information not listed by reference or in appendices has not been evaluated or relied upon by SAIC in the context of this technical document. The conclusions, therefore, represent our professional opinion based on the identified sources of information.**



Maps Provided by Seattle.gov



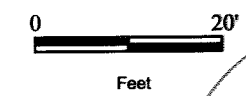
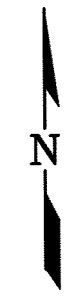
Former Tidewater Service Station No. 30-3189  
7301 Martin Luther King Jr. Way South  
Seattle, Washington

**FIGURE 1**  
Vicinity Map

FILE NAME:  
303189\_VM.dwg

DATE:  
10/05/2011

South Othello Street



Former Building

Former Building

Former USTs

Former Station Building

Former Canopy / Pump Island

Former Restaurant

Sidewalk

Martin Luther King Jr. Way South

MW-1  
95.56

91.00

90.83  
MW-2

91.00

92.00

92.00

93.00

94.00


93.00

94.00

95.00


MW-3  
95.62


**Legend**


MW-3  Groundwater Monitoring Wells Installed 2007 (SAIC)

—x— Fence

--- Property Boundary

94.00  Groundwater Elevation Contour at a 1.00 Foot Interval (Dashed Where Inferred)

95.62  Groundwater Elevation in Feet

 Approximate Groundwater Flow Direction at a Gradient of 0.07

Former Building

Former Tidewater Service Station No. 30-3189  
7301 Martin Luther King Jr. Way South  
Seattle, Washington

**FIGURE 2**  
Potentiometric Map  
August 18, 2011

FILE NAME: Site Map\_2008.dwg      DATE: 10/26/2011



**TABLE 1**  
**GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS**  
**FORMER TIDEWATER SERVICE STATION NO. 30-3189**  
**7301 Martin Luther King Jr. Way South**  
**Seattle, Washington**  
**Concentrations reported in µg/L**

Well ID/ Date	Purge Method	TOC* (ft.)	DTW (ft.)	GWE (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead
<b>MW-1</b>													
8/31/07 <sup>1</sup>		--	--	--	930	190	<50	<0.5	<0.5	<0.5	<1.5	--	0.052
4/24/09	LFP	99.66	2.36	97.30	650	<76	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/12/09	LFP	99.66	4.24	95.42	370	<67	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/14/09	LFP	99.66	1.78	97.88	270 <sup>3</sup>	<68 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
2/11/10	LFP	99.66	1.92	97.74	560	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
5/24/10	LFP	99.66	2.43	97.23	91	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/4/10	LFP	99.66	3.62	96.04	520	<75	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/12/10	LFP	99.66	2.00	97.66	440	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
2/23/11	LFP	99.66	2.03	97.63	1,000	270	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
5/6/11	LFP	99.66	2.32	97.34	1,100	210	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/18/11	LFP	99.66	4.10	95.56	830	210	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
<b>MW-2</b>													
8/31/07 <sup>1</sup>		--	--	--	2,100	1,200	26,000	3,200	190	1,400	3,300	--	--
4/24/09	PER	99.05	7.34	91.71	-- <sup>2</sup>	-- <sup>2</sup>	16,000	4,100	99	1,500	2,000	<3	--
8/12/09	PER	99.05	8.18	90.87	-- <sup>2</sup>	-- <sup>2</sup>	27,000	4,000	100	1,300	1,900	<3	--
11/14/09	PER	99.05	5.75	93.30	-- <sup>2</sup>	-- <sup>2</sup>	19,000	2,800	62	950	1,300	<3	--
2/11/10	PER	99.05	6.98	92.07	-- <sup>2</sup>	-- <sup>2</sup>	25,000	3,400	97	1,600	2,200	<0.5	--
5/24/10	PER	99.05	7.42	91.63	-- <sup>2</sup>	-- <sup>2</sup>	19,000	2,900	88	1,400	2,000	<1	--
8/4/10	PER	99.05	7.92	91.13	-- <sup>2</sup>	-- <sup>2</sup>	16,000	3,800	110	1,700	2,700	<3	--
11/12/10	PER	99.05	6.16	92.89	-- <sup>2</sup>	-- <sup>2</sup>	16,000	1,900	56	660	680	<1	--
2/23/11	PER	99.05	6.09	92.96	-- <sup>2</sup>	-- <sup>2</sup>	12,000	2,800	60	680	780	<3	--
5/6/11	PER	99.05	6.98	92.07	-- <sup>2</sup>	-- <sup>2</sup>	15,000	3,100	72	1,300	1,400	<3	--
8/18/11**	PER	99.05	8.30	90.83	UNABLE TO SAMPLE DUE TO PRESENCE OF SPH					--	--	--	--
<b>MW-3</b>													
8/31/07 <sup>1</sup>		--	--	--	120	<100	<50	<0.5	<0.5	<0.5	<1.5	--	0.055
4/24/09	LFP	100.00	2.13	97.87	58	<75	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/12/09	LFP	100.00	4.47	95.53	620	170	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
11/14/09	LFP	100.00	1.60	98.40	450	370	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
2/11/10	LFP	100.00	1.59	98.41	160	130	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
5/24/10	LFP	100.00	1.83	98.17	910	310	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
8/4/10	LFP	100.00	3.84	96.16	55	<74	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--

**TABLE 1  
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS  
FORMER TIDEWATER SERVICE STATION NO. 30-3189**

**7301 Martin Luther King Jr. Way South  
Seattle, Washington**

Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC* (ft.)	DTW (ft.)	GWE (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead	
<b>MW-3 (cont)</b>														
11/12/10	LFP	100.00	1.62	98.38	67	<71	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
2/23/11	LFP	100.00	1.73	98.27	140	<73	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
5/6/11	LFP	100.00	1.85	98.15	160	82	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
8/18/11	LFP	100.00	4.38	95.62	56	<74	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
<b>B-9</b>														
5/1/02 <sup>1</sup>		--	--	--	0.660	0.310	32	<b>530</b>	<100	<b>1,600</b>	<b>4,300</b>	--	--	
<b>B-10</b>														
5/1/02 <sup>1</sup>		--	--	--	5.10	<0.063	26	<b>240</b>	110	240	330	--	--	
<b>QA/TRIP BLANK</b>														
4/24/09		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
8/12/09		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
11/14/09		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
2/11/10		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
5/24/10		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
8/4/10		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
11/12/10		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
2/23/11		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
5/6/11		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
8/18/11 <sup>4</sup>		--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
Standard Laboratory Reporting Limits:					--	--	50	0.5	0.5	0.5	0.5	1	--	
MTCA Method A CULs:					500	500	800/1,000	5	1,000	700	1,000	0.5	15	
Current Method:					NWTPH-Dx + Extended							NWTPH-Gx and USEPA 8021B/8260B		USEPA 7421

**EXPLANATIONS:**

Groundwater monitoring data and laboratory analytical results prior to April 24, 2009 were compiled for wells MW-1, MW-2, and MW-3 by SAIC.

Analytical results in bold font indicate concentrations exceed MTCA Method A CULs.

Results for wells B-9 and B-10 were provided by GeoEngineers.

BTEX = Benzene, toluene, ethylbenzene, and total xylenes

CULs = Cleanup levels

DTW = Depth to Water

(ft.) = Feet

GC/MS = gas chromatography/mas spectrometry

GWE = Groundwater Elevation

LFP = Low Flow Purge

MTBE = Methyl Tertiary Butyl Ether

MTCA = Model Toxics Control Act

ND = Non-detect

PER = Peristaltic Pump

QA = Quality Assurance/Trip Blank

QC = Quality control

SAIC = SAIC Energy, Environment & Infrastructure, LLC

TOC = Top of Casing

TPH = Total Petroleum Hydrocarbons

TPH-DRO = TPH as diesel-range organics

TPH-GRO = TPH as gasoline-range organics

TPH-HRO = TPH as heavy oil-range organics

USEPA = United States Environmental Protection Agency

µg/L = Micrograms per liter

< = The analyte was not detected at or above the reported value

-- = Not Measured/Not Analyzed



**TABLE 1**  
**GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS**  
**FORMER TIDEWATER SERVICE STATION NO. 30-3189**  
**7301 Martin Luther King Jr. Way South**  
**Seattle, Washington**  
**Concentrations reported in µg/L**

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**EXPLANATIONS (cont):**

**ANALYTICAL METHOD:**

Prior to April 24, 2009, BTEX analysis by USEPA Method 8021B.

TPH-GRO by Method NWTPH-Gx.

TPH-DRO and TPH-HRO by Method NWTPH-Dx with silica-gel cleanup.

BTEX and MTBE by USEPA Method 8260B.

\* TOC elevations are expressed in feet relative to an arbitrary datum.

\*\* GWE has been corrected for the presence of SPH; correction factor:  $[(TOC - DTW) + (SPHT \times 0.80)]$ .

1 Data provided by SAIC.

2 Not sampled due to insufficient water.

3 Laboratory report indicates the surrogate data is outside the QC limits. Results from the reextraction are within the limits. The hold time had expired prior to the reextraction therefore, all results are reported from the original extract. The TPH-DRO result for the re-extraction is 610 µg/L; the TPH-HRO result for the re-extraction is ND.

4 The initial analysis for GC.MS volatiles could not be reported due to analytical difficulties. Since only one sample vial was submitted, the analysis was repeated using the remaining sample volume which contained the

**Attachment A:**  
**Groundwater Monitoring and Sampling Data Package**

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# GETTLER-RYAN INC.

## TRANSMITTAL

August 25, 2011  
G-R #385862

TO: Mr. Michael Lange  
SAIC  
18912 North Creek Parkway, Ste. 101  
Bothell, Washington 98011

FROM: Deanna L. Harding   
Project Coordinator  
Gettler-Ryan Inc.  
6747 Sierra Court, Suite J  
Dublin, California 94568

RE: Chevron Facility  
#303189  
(Former Tidewater Service Stn.)  
7301 MLK Jr. Way South  
Seattle, Washington

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DESCRIPTION
VIA PDF	Groundwater Monitoring and Sampling Data Package Third Quarter Event of August 18, 2011

COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced data for your use.

Please provide us the updated historical data prior to the next monitoring and sampling event for our field use.

Please feel free to contact me if you have any comments/questions.

trans/303189



# GETTLER - RYAN INC.

## CHEVRON - SITE CHECK LIST

Facility#: <b>Chevron #303189</b>	Date: <b>8.18.11</b>
Address: <b>7301 Martin Luther King Jr. Way South</b>	
City/St.: <b>Seattle, WA</b>	
Status of Site: <b>VACANT LOT</b>	

**DRUMS:**

Please list below ALL DRUMS @ site: i.e., drum description, condition, labeling, contents, location of drum:



#	Description	Condition	Labeling	Contents	Location
	<b>NO DRUMS</b>				

**WELLS:**

Please check the condition of ALL WELLS @ site: i.e., well box condition, gaskets, bolts, well plug, well lock, etc.:

Well ID	Gaskets (M) Missing (R) Replaced	Bolts (M) Missing (R) Replaced	Well Plug Y/N	Well Lock Y/N	Well Box Manufacturer/Size/# of Bolts	Other
<b>MW-1</b>	<b>GOOD</b>	<del>—————→</del>	<del>—————→</del>	<del>—————→</del>	<b>8' MORRIS x 3</b> ↓	
<b>MW-2</b>	<b>GOOD</b>	<del>—————→</del>	<del>—————→</del>	<del>—————→</del>		
<b>MW-3</b>	<b>GOOD</b>	<del>—————→</del>	<del>—————→</del>	<del>—————→</del>		

Additional Comments/Observations: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## **Standard Operating Procedure, Low-Flow Purging and Sampling**

Gettler-Ryan Inc. field personnel adhere to the following Standard Operating Procedure (SOP) for the collection and handling of representative groundwater samples using the Low-Flow (Minimal-Drawdown) Purging technique. This SOP incorporates purging and sampling methods discussed in U.S. EPA, Ground Water Issue, Publication Number EPA/540/S-95/504, April 1996 by Puls, R.W. and M.J. Barcelona - "*Low-Flow (Minimal-Drawdown) Ground-Water Sampling Procedures.*"

A QED Well Wizard™ (or equivalent) bladder pump or Peristaltic Pump will be used to purge and sample selected wells as outlined in the scope-of-work. An in-line flow cell or other multi-parameter meter is used to collect water quality indicating parameters during purging.

### ***Initial Pump Discharge Test Procedures***

The Static Water Level (SWL) is measured in all wells at the site prior to the installation of the pump or tubing and initiation of the test procedures in any well. In addition, the presence or absence of separate-phase hydrocarbons (SPH) is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot. The SWL measurement and SPH thickness, if any, will be recorded on the field data sheet.

The bladder pump or suction inlet tubing of the peristaltic pump is then positioned with its inlet located within the screened interval of the well. After pump installation, the SWL is allowed to recover to its original level. The pump is then started at a discharge rate between 100 ml to 300 ml per minute without the in-line flow cell connected. The water level is monitored continuously for any change from the original measurement and the discharge rate is adjusted until an optimum discharge rate (ODR) is determined. The goal for the ODR is to produce a stable drawdown of less than 0.1 meter; however the total drawdown from the initial SWL should not exceed 25% of the distance between pump inlet location and the top of the well screen. If the in-line flow cell is to be used, purging is discontinued once the ODR is determined, and the inline flow cell is connected. Purging is then resumed and the ODR is adjusted to allow for the back pressure of the in-line flow cell.

### ***Purging and Water Quality Parameter Measurement***

Prior to sampling the well, the SWL will be re-measured and documented and purging will be re-initiated using the ODR. The discharge rate will be confirmed by volumetric discharge measurement and the ODR adjusted as necessary. When the ODR has been re-established, the SWL drawdown has stabilized within the acceptable range and at least one pump system volume (bladder volume and/or discharge tubing volume) has been purged, field measurements for temperature (T), pH, conductivity (Ec), and if required, oxygen reduction potential (ORP) and dissolved oxygen (DO) will be collected and documented on the field data sheet. Measurements should be taken every three to five minutes until parameters stabilize for three consecutive readings. The minimum parameter subset of T ( $\pm 10\%$ ), pH ( $\pm 0.1$  unit), and Ec ( $\pm 10$  uS) are required to stabilize. Additional parameters that may be required are DO ( $\pm 0.2$  mg/l) and ORP ( $\pm 20$  mV).

### ***Sample Collection***

When water quality parameters have stabilized, and there is no change in the SWL drawdown, groundwater sample collection may begin. Water samples are collected from the discharge tubing 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, as directed by the scope of work. 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. A laboratory supplied trip blank accompanies each sampling set. The trip blank is analyzed for some or all of the same compounds as the groundwater samples. 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.



# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #303189 Job Number: 385862  
 Site Address: 7301 Martin Luther King Jr. Way S Event Date: 8.18.11 (inclusive)  
 City: Seattle, WA Sampler: J. PAYNE

Well ID: MW 1  
 Well Diameter: .75 in.  
 Total Depth: 11.52 ft.  
 Depth to Water: 4.10 ft.  
7.42 xVF =        =        x3 case volume = Estimated Purge Volume:        gal.

Date Monitored: 8.18.11

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]:       

**Purge Equipment:**  
 Disposable Bailer \_\_\_\_\_  
 Stainless Steel Bailer \_\_\_\_\_  
 Stack Pump \_\_\_\_\_  
 Suction Pump \_\_\_\_\_  
 Grundfos \_\_\_\_\_  
 Peristaltic Pump   ✓    
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

**Sampling Equipment:**  
 Disposable Bailer \_\_\_\_\_  
 Pressure Bailer \_\_\_\_\_  
 Metal Filters \_\_\_\_\_  
 Peristaltic Pump   ✓    
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started: \_\_\_\_\_ (2400 hrs)  
 Time Completed: \_\_\_\_\_ (2400 hrs)  
 Depth to Product: \_\_\_\_\_ ft  
 Depth to Water: \_\_\_\_\_ ft  
 Hydrocarbon Thickness: \_\_\_\_\_ ft  
 Visual Confirmation/Description: \_\_\_\_\_  
 Skimmer / Absorbant Sock (circle one)  
 Amt Removed from Skimmer: \_\_\_\_\_ gal  
 Amt Removed from Well: \_\_\_\_\_ gal  
 Water Removed: \_\_\_\_\_  
 Product Transferred to: \_\_\_\_\_

Start Time (purge): 0930 Weather Conditions: SUNNY  
 Sample Time/Date: 0948 / 8.18.11 Water Color: CLEAR Odor: Y/N MILD  
 Approx. Flow Rate: 200 mlpm Sediment Description: NONE  
 Did well de-water? NO If yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: 7.81

Time (2400 hr.)	Volume (Liters)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)	Gauge DTW as parameters are recorded
<u>0948</u>	<u>3.6</u>	<u>6.59</u>	<u>745</u>	<u>12.7</u>	<u>.26</u>	<u>-48.2</u>	<u>7.80</u>
<u>0951</u>	<u>4.2</u>	<u>6.58</u>	<u>846</u>	<u>12.8</u>	<u>.24</u>	<u>-48.4</u>	<u>7.83</u>
<u>0954</u>	<u>4.8</u>	<u>6.58</u>	<u>846</u>	<u>12.8</u>	<u>.24</u>	<u>-48.3</u>	<u>7.81</u>

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW 1	0 x voa vial	YES	HCL	LANCASTER	NWTPH-Gx/BTEX+MTBE(8260B)
	2 x 1 liter ambers	YES	HCL	LANCASTER	NWTPH-Dx w/sg

COMMENTS: Depth Pump Set At: 8'

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



# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #303189 Job Number: 385862  
 Site Address: 7301 Martin Luther King Jr. Way S Event Date: 8.18.11 (inclusive)  
 City: Seattle, WA Sampler: J. PAYNE

Well ID: MW 2 Date Monitored: 8.18.11

Well Diameter: .75 in.  
 Total Depth: 9.41 ft.  
 Depth to Water: 8.30 ft.

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

1.11 xVF =          x3 case volume = Estimated Purge Volume:          gal.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]:         

**Purge Equipment:**  
 Disposable Bailer \_\_\_\_\_  
 Stainless Steel Bailer \_\_\_\_\_  
 Stack Pump \_\_\_\_\_  
 Suction Pump \_\_\_\_\_  
 Grundfos \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

**Sampling Equipment:**  
 Disposable Bailer \_\_\_\_\_  
 Pressure Bailer \_\_\_\_\_  
 Metal Filters \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started: 0900 (2400 hrs)  
 Time Completed: 0920 (2400 hrs)  
 Depth to Product: 5.20 ft  
 Depth to Water: 8.30 ft  
 Hydrocarbon Thickness: .10 ft  
 Visual Confirmation/Description:  
THICK BLACK  
 Skimmer/Absorbent sock (circle one) NONE  
 Amt Removed from Skimmer:          gal  
 Amt Removed from Well:          gal  
 Water Removed:           
 Product Transferred to:         

Start Time (purge): \_\_\_\_\_ Weather Conditions: \_\_\_\_\_  
 Sample Time/Date: / Water Color: \_\_\_\_\_ Odor: Y / N  
 Approx. Flow Rate: \_\_\_\_\_ mlpm Sediment Description: \_\_\_\_\_  
 Did well de-water? \_\_\_\_\_ if yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: \_\_\_\_\_

Time (2400 hr.)	Volume (Liters)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)	Gauge DTW as parameters are recorded

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW	x voa vial	YES	HCL	LANCASTER	NWTPH-Gx/BTEX+MTBE(8260B)
	x 1 liter ambers	YES	HCL	LANCASTER	NWTPH-Dx w/sg

COMMENTS: Depth Pump Set At: VERY HEAVY THICK BLACK SPH, HARD TO GAUGE ACCURATELY DUE TO THE PHYSICAL PROPERTIES OF THE PRODUCT

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





# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #303189 Job Number: 385862  
 Site Address: 7301 Martin Luther King Jr. Way S Event Date: 8-18-11 (inclusive)  
 City: Seattle, WA Sampler: J. PAYNE

Well ID: MW 3 Date Monitored: 8-18-11  
 Well Diameter: .75 in.  
 Total Depth: 9.50 ft.  
 Depth to Water: 4.38 ft.  Check if water column is less than 0.50 ft.  
5.12 xVF - = - x3 case volume = Estimated Purge Volume: - gal.

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 5.40

**Purge Equipment:**  
 Disposable Bailer \_\_\_\_\_  
 Stainless Steel Bailer \_\_\_\_\_  
 Stack Pump \_\_\_\_\_  
 Suction Pump \_\_\_\_\_  
 Grundfos \_\_\_\_\_  
 Peristaltic Pump   
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

**Sampling Equipment:**  
 Disposable Bailer \_\_\_\_\_  
 Pressure Bailer \_\_\_\_\_  
 Metal Filters \_\_\_\_\_  
 Peristaltic Pump   
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started: \_\_\_\_\_ (2400 hrs)  
 Time Completed: \_\_\_\_\_ (2400 hrs)  
 Depth to Product: \_\_\_\_\_ ft  
 Depth to Water: \_\_\_\_\_ ft  
 Hydrocarbon Thickness: \_\_\_\_\_ ft  
 Visual Confirmation/Description: \_\_\_\_\_  
 Skimmer / Absorbant Sock (circle one)  
 Amt Removed from Skimmer: \_\_\_\_\_ gal  
 Amt Removed from Well: \_\_\_\_\_ gal  
 Water Removed: \_\_\_\_\_  
 Product Transferred to: \_\_\_\_\_

Start Time (purge): 1010 Weather Conditions: SUNNY  
 Sample Time/Date: 1040 / 8-18-11 Water Color: CLEAR Odor: Y/N MILD  
 Approx. Flow Rate: 200 mlpm Sediment Description: NONE  
 Did well de-water? NO If yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: 4.48

Time (2400 hr.)	Volume (Liters)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)	Gauge DTW as parameters are recorded
<u>1028</u>	<u>3.6</u>	<u>6.65</u>	<u>.637</u>	<u>12.5</u>	<u>Ø</u>	<u>33.6</u>	<u>4.49</u>
<u>1031</u>	<u>4.2</u>	<u>6.65</u>	<u>.637</u>	<u>12.6</u>	<u>Ø</u>	<u>32.9</u>	<u>4.47</u>
<u>1034</u>	<u>4.8</u>	<u>6.65</u>	<u>.636</u>	<u>12.6</u>	<u>Ø</u>	<u>33.4</u>	<u>4.48</u>

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW 3</u>	<u>Ø</u> x voa vial	<u>YES</u>	<u>HCL</u>	<u>LANCASTER</u>	<u>NWTPH-Gx/BTEX+MTBE(8260B)</u>
	<u>2</u> x 1 liter ambers	<u>YES</u>	<u>HCL</u>	<u>LANCASTER</u>	<u>NWTPH-Dx w/sg</u>

COMMENTS: Depth Pump Set At: 7.5'

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

# Chevron Northwest Region Analysis Request/Chain of Custody



**Lancaster  
Laboratories**

For Lancaster Laboratories use only

Acct. # \_\_\_\_\_ Group # \_\_\_\_\_ Sample # \_\_\_\_\_

SS #303189 OML G-R#395862

Facility # 7301 Martin Luther King Jr. Way South, SEATTLE, WA  
 Site Address: MGA SAICML Lange  
 Chevron PM: G-R Inc., 6747 Sierra Court, Suite J, Dublin, CA 94568  
 Consultant/Office: Deanna L. Harding (deanna@grinc.com)  
 Consultant Prj. Mgr: 925-551-7555  
 Consultant Phone #: 925-551-7555 Fax #: 925-551-7899  
 Sampler: J. Payne

**Analyses Requested**

SCR #: \_\_\_\_\_

Sample Identification	Date Collected	Time Collected	Grab	Composite	Matrix			Total Number of Containers	Preservation Codes										
					Soil	Water	Oil <input type="checkbox"/> Air <input type="checkbox"/>		<input type="checkbox"/> Potable <input type="checkbox"/> NPDES	BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth <input type="checkbox"/>	8260 full scan	Oxygenates	NWTPH GX	NWTPH DX <input checked="" type="checkbox"/> Silica Gel Cleanup	Lead Total <input type="checkbox"/> Diss <input type="checkbox"/> Method	<input type="checkbox"/> WAPPH <input type="checkbox"/> WAEPH	NWTPH H CID <input type="checkbox"/> quantification		
QA	8-18-11		X				2												
MW-1	↓	10:00	X				3												
MW-3	↓	10:10	X				3												

- Results in Dry Weight
- J value reporting needed
- Must meet lowest detection limits possible for 8260 compounds
- 8021 MTBE Confirmation
- Confirm MTBE + Naphthalene
- Confirm highest hit by 8260
- Confirm all hits by 8260
- Run \_\_\_ oxy's on highest hit
- Run \_\_\_ oxy's on all hits

**Comments /Remarks**

Please forward the lab results directly to the Lead Consultant and cc: G-R.

**Turnaround Time Requested (TAT)** (please circle)

STD. TAT 24 hour   
  72 hour   
  48 hour  
 4 day   
  5 day

**Data Package Options** (please circle if required)

QC Summary   
  Type I - Full  
 Type VI (Raw Data)

Relinquished by: <u>[Signature]</u>	Date: <u>8/18/11</u>	Time: <u>1600</u>	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by: Commercial Carrier	Date:		Time:		Received by:
UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other _____	Date:		Time:		Received by:
Temperature Upon Receipt: _____ C°	Custody Seals Intact?		Yes	No	

**Attachment B:**  
**Laboratory Analysis Report**

---

**ANALYTICAL RESULTS**

Prepared by:

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

Prepared for:

**Chevron  
6001 Bollinger Canyon Road  
L4310  
San Ramon CA 94583**

September 06, 2011

Project: 303189

**Submittal Date: 08/23/2011  
Group Number: 1263013  
PO Number: 0015080810  
Release Number: BAUHS  
State of Sample Origin: WA****Client Sample Description****QA Water Sample  
MW-1 Grab Water Sample  
MW-3 Grab Water Sample****Lancaster Labs (LLI) #****6384534  
6384535  
6384536**

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

**ELECTRONIC    SAIC c/o Gettler-Ryan  
COPY TO  
ELECTRONIC    SAIC  
COPY TO  
ELECTRONIC    SAIC  
COPY TO****Attn: Rachele Munoz****Attn: Mike Lange****Attn: Jamalyn Green**

Questions? Contact your Client Services Representative  
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,



**Robin C. Runkle**  
**Senior Specialist**

**Sample Description: QA Water Sample**  
**Facility# 303189 Job# 385862**  
**7301 Martin Luther King Jr Way S - Seattle, WA**

**LLI Sample # WW 6384534**  
**LLI Group # 1263013**  
**Account # 11260**

**Project Name: 303189**

Collected: 08/18/2011

Chevron

Submitted: 08/23/2011 09:05

6001 Bollinger Canyon Road

Reported: 09/06/2011 10:21

L4310

San Ramon CA 94583

**MLKQA**

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>			<b>SW-846 8260B</b>	<b>ug/l</b>	
10943	Benzene	71-43-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1

The initial analysis for GC/MS volatiles could not be reported due to analytical difficulties. Since only one sample vial was submitted, the analysis was repeated using the remaining sample volume which contained headspace.

<b>GC Volatiles</b>			<b>ECY 97-602 NWTPH-Gx</b>	<b>ug/l</b>	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

**General Sample Comments**

State of Washington Lab Certification No. C259

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

**Laboratory Sample Analysis Record**

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	D112421AA	08/30/2011 12:33	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	D112421AA	08/30/2011 12:33	Daniel H Heller	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11238A07A	08/27/2011 14:09	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11238A07A	08/27/2011 14:09	Laura M Krieger	1



# Analysis Report

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

Page 1 of 1

**Sample Description: MW-1 Grab Water Sample**  
**Facility# 303189 Job# 385862**  
**7301 Martin Luther King Jr Way S - Seattle, WA**

**LLI Sample # WW 6384535**  
**LLI Group # 1263013**  
**Account # 11260**

**Project Name: 303189**

Collected: 08/18/2011 10:00 by JP

Chevron

6001 Bollinger Canyon Road  
 L4310

Submitted: 08/23/2011 09:05

Reported: 09/06/2011 10:21

San Ramon CA 94583

MLKS1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>					
10943	Benzene	71-43-2	N.D.	0.5 ug/l	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Volatiles ECY 97-602 NWT PH-Gx</b>					
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50 ug/l	1
<b>GC Petroleum ECY 97-602 NWT PH-Dx</b>					
<b>Hydrocarbons modified</b>					
02211	DRO C12-C24 w/Si Gel	n.a.	830	29 ug/l	1
02211	HRO C24-C40 w/Si Gel	n.a.	210	67	1

### General Sample Comments

State of Washington Lab Certification No. C259

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

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	F112392AA	08/27/2011 06:11	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F112392AA	08/27/2011 06:11	Anita M Dale	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	11238A07A	08/27/2011 15:52	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11238A07A	08/27/2011 15:52	Laura M Krieger	1
02211	NWT PH-Dx water w/Si Gel	ECY 97-602 NWT PH-Dx modified	1	112410008A	08/31/2011 18:46	Carrie E Miller	1
02135	Extraction - DRO Water Special	ECY 97-602 NWT PH-Dx 06/97	1	112410008A	08/29/2011 21:30	Elaine F Stoltzfus	1

**Sample Description: MW-3 Grab Water Sample**  
**Facility# 303189 Job# 385862**  
**7301 Martin Luther King Jr Way S - Seattle, WA**

**LLI Sample # WW 6384536**  
**LLI Group # 1263013**  
**Account # 11260**

**Project Name: 303189**

Collected: 08/18/2011 10:40 by JP

Chevron

6001 Bollinger Canyon Road  
L4310

Submitted: 08/23/2011 09:05

Reported: 09/06/2011 10:21

San Ramon CA 94583

MLKS3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>					
	<b>SW-846 8260B</b>		<b>ug/l</b>	<b>ug/l</b>	
10943	Benzene	71-43-2	N.D.	0.5	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10943	Toluene	108-88-3	N.D.	0.5	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Volatiles</b>					
	<b>ECY 97-602 NWTPH-Gx</b>		<b>ug/l</b>	<b>ug/l</b>	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1
<b>GC Petroleum Hydrocarbons</b>					
	<b>ECY 97-602 NWTPH-Dx modified</b>		<b>ug/l</b>	<b>ug/l</b>	
02211	DRO C12-C24 w/Si Gel	n.a.	56	32	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	74	1

### General Sample Comments

State of Washington Lab Certification No. C259

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

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	F112392AA	08/27/2011 06:33	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F112392AA	08/27/2011 06:33	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	11238A07A	08/27/2011 16:17	Laura M Krieger	1
01146	GC VOA Water Prep	SW-846 5030B	1	11238A07A	08/27/2011 16:17	Laura M Krieger	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	112410008A	08/31/2011 18:25	Carrie E Miller	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	112410008A	08/29/2011 21:30	Elaine F Stoltzfus	1



## Quality Control Summary

 Client Name: Chevron  
 Reported: 09/06/11 at 10:21 AM

Group Number: 1263013

Matrix QC may not be reported if insufficient sample or 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>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: D112421AA	Sample number(s): 6384534							
Benzene	N.D.	0.5	ug/l	88		79-120		
Ethylbenzene	N.D.	0.5	ug/l	88		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	89		76-120		
Toluene	N.D.	0.5	ug/l	88		79-120		
Xylene (Total)	N.D.	0.5	ug/l	91		80-120		
Batch number: F112392AA	Sample number(s): 6384535-6384536							
Benzene	N.D.	0.5	ug/l	94		79-120		
Ethylbenzene	N.D.	0.5	ug/l	92		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	84		76-120		
Toluene	N.D.	0.5	ug/l	93		79-120		
Xylene (Total)	N.D.	0.5	ug/l	92		80-120		
Batch number: 11238A07A	Sample number(s): 6384534-6384536							
NWTPH-Gx water C7-C12	N.D.	50.	ug/l	89	91	75-135	2	30
Batch number: 112410008A	Sample number(s): 6384535-6384536							
DRO C12-C24 w/Si Gel	N.D.	30.	ug/l	95	94	56-103	1	20
HRO C24-C40 w/Si Gel	N.D.	70.	ug/l					

### 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>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: D112421AA	Sample number(s): 6384534 UNSPK: P385384								
Benzene	104	102	80-126	3	30				
Ethylbenzene	102	101	71-134	1	30				
Methyl Tertiary Butyl Ether	100	96	72-126	4	30				
Toluene	104	101	80-125	3	30				
Xylene (Total)	103	102	79-125	1	30				
Batch number: F112392AA	Sample number(s): 6384535-6384536 UNSPK: 6384536								
Benzene	98	103	80-126	5	30				
Ethylbenzene	96	100	71-134	4	30				
Methyl Tertiary Butyl Ether	86	90	72-126	4	30				
Toluene	96	99	80-125	2	30				
Xylene (Total)	95	98	79-125	2	30				

\*- 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.

## Quality Control Summary

 Client Name: Chevron  
 Reported: 09/06/11 at 10:21 AM

Group Number: 1263013

### 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: UST VOCs by 8260B - Water  
 Batch number: D112421AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6384534	104	99	97	94
Blank	104	100	97	96
LCS	103	99	97	99
MS	103	103	95	96
MSD	103	103	97	97
Limits:	80-116	77-113	80-113	78-113

 Analysis Name: UST VOCs by 8260B - Water  
 Batch number: F112392AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6384535	111	107	94	90
6384536	109	106	95	90
Blank	112	109	95	92
LCS	107	103	95	102
MS	106	102	95	102
MSD	107	107	94	98
Limits:	80-116	77-113	80-113	78-113

 Analysis Name: NWTPH-Gx water C7-C12  
 Batch number: 11238A07A  
 Trifluorotoluene-F

6384534	97
6384535	95
6384536	98
Blank	97
LCS	104
LCSD	105
Limits:	63-135

 Analysis Name: NWTPH-Dx water w/Si Gel  
 Batch number: 112410008A  
 Orthoterphenyl

6384535	119
6384536	111
Blank	106
LCS	119
LCSD	117
Limits:	50-150

\*- 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.

## Quality Control Summary

Client Name: Chevron  
Reported: 09/06/11 at 10:21 AM

Group Number: 1263013

\*- 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.

# Chevron Northwest Region Analysis Request/Chain of Custody



For Lancaster Laboratories use only  
 Acct. #: 11260 Group # 1263013 Sample #: 6384534-36

Facility #: <u>SS#303189-OML G-R#385862</u> WBS: _____ Site Address: <u>730T Martin Luther King Jr. Way South, SEATTLE, WA</u> Chevron PM: <u>MGA</u> Lead Consultant: <u>SAICML Lange</u> Consultant/Office: <u>G-R, Inc., 6747 Sierra Court, Suite J, Dublin, CA 94568</u> Consultant Prj. Mgr.: <u>Deanna L. Harding (deanna@grinc.com)</u> Consultant Phone #: <u>925-551-7555</u> Fax #: <u>925-551-7899</u> Sampler: _____ <u>J. Payne</u>				<b>Analyses Requested</b> SCR #: _____					
<b>Matrix</b> <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air				<b>Preservation Codes</b>					
Total Number of Containers: _____				<input type="checkbox"/> BTEX + MTBE <input type="checkbox"/> 8260 full scan <input type="checkbox"/> 8260 Naphth	<input type="checkbox"/> Oxygenates <input type="checkbox"/> NWTPH GX <input checked="" type="checkbox"/> NWTPH DX Silica Gel Cleanup <input type="checkbox"/> Lead <input type="checkbox"/> Total <input type="checkbox"/> Diss. <input type="checkbox"/> Method <input type="checkbox"/> WAWPH <input type="checkbox"/> WAEPPH <input type="checkbox"/> NWTPH HClID <input type="checkbox"/> quantification	<input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run ___ oxy's on highest hit <input type="checkbox"/> Run ___ oxy's on all hits			
<b>Sample Identification</b>		Date Collected	Time Collected	Grab	Composite	<b>Comments /Remarks</b>			
<u>QA</u>		<u>8-18-11</u>		<input checked="" type="checkbox"/>		Please forward the lab results directly to the Lead Consultant and cc: G-R.			
<u>mw-1</u>		<u>↓</u>	<u>10:00</u>	<input checked="" type="checkbox"/>					
<u>mw-3</u>		<u>↓</u>	<u>10:10</u>	<input checked="" type="checkbox"/>					
<b>Turnaround Time Requested (TAT)</b> (please circle)				Relinquished by: _____ Date: <u>4/11/11</u> Time: <u>1600</u>		Received by: _____ Date: _____ Time: _____			
STD. TAT      72 hour      48 hour 24 hour      4 day      5 day				Relinquished by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____			
<b>Data Package Options</b> (please circle if required)				Relinquished by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____			
QC Summary      Type I - Full Type VI (Raw Data)				Relinquished by Commercial Carrier: UPS <u>FedEx</u> Other _____		Received by: _____ Date: <u>8/28/11</u> Time: <u>905</u>			
EDF/EDD _____				Temperature Upon Receipt <u>10-38</u> C°		Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

# Explanation of Symbols and Abbreviations

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

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>ug</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>ml</b>	milliliter(s)	<b>l</b>	liter(s)
<b>m3</b>	cubic meter(s)	<b>ul</b>	microliter(s)
<b>&lt;</b>	less than - The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
<b>&gt;</b>	greater than		
<b>J</b>	estimated value – The result is $\geq$ the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).		
<b>ppm</b>	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. 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.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	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. All other results are reported on an as-received basis.		

## U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
<b>A</b>	TIC is a possible aldol-condensation product	<b>B</b>	Value is $<$ CRDL, but $\geq$ IDL
<b>B</b>	Analyte was also detected in the blank	<b>E</b>	Estimated due to interference
<b>C</b>	Pesticide result confirmed by GC/MS	<b>M</b>	Duplicate injection precision not met
<b>D</b>	Compound quantitated on a diluted sample	<b>N</b>	Spike sample not within control limits
<b>E</b>	Concentration exceeds the calibration range of the instrument	<b>S</b>	Method of standard additions (MSA) used for calculation
<b>N</b>	Presumptive evidence of a compound (TICs only)	<b>U</b>	Compound was not detected
<b>P</b>	Concentration difference between primary and confirmation columns $>$ 25%	<b>W</b>	Post digestion spike out of control limits
<b>U</b>	Compound was not detected	<b>*</b>	Duplicate analysis not within control limits
<b>X,Y,Z</b>	Defined in case narrative	<b>+</b>	Correlation coefficient for MSA $<$ 0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

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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