

VCP# NW 1551



The Benham Companies, LLC

Holly Park
Seattle
VCP NW 1551

February 18, 2010

Ms. Olivia Skance
Chevron Environmental Management Company
6111 Bollinger Canyon Road, Ste. 3636
San Ramon, CA 94583-5186

Subject: **Fourth Quarter 2009 Groundwater Monitoring Report**
Former Tidewater Service Station No. 30-3189 (Holly Park)
7301 MLK Jr. Way South Ecology E.D. 8747316
Seattle, Washington

Dear Ms. Skance:

Science Applications International Corporation (SAIC), on behalf of Chevron Environmental Management Company (Chevron), has prepared this letter summarizing the latest groundwater monitoring and sampling results from the above referenced site in Seattle, Washington. The fourth quarter 2009 groundwater monitoring and sampling event was conducted by Gettler-Ryan Inc. on November 14, 2009.

Groundwater elevation and analytical data are presented along with field data sheets and a laboratory analytical report in the Gettler-Ryan Inc. *Groundwater Monitoring and Sampling Report*, included as Attachment A.

1.0 FIELD ACTIVITIES

Depth-to-groundwater measurements were collected from each of the three monitoring wells (MW-1, MW-2 and MW-3) present on the property. Each monitoring well was also checked for the presence of separate-phase hydrocarbon (SPH). SPH was not detected in any of the monitoring wells gauged during this event.

At the time of this monitoring event, groundwater elevations ranged from 98.40 feet in monitoring well MW-3 to 93.30 feet in monitoring well MW-2, based on an arbitrary benchmark elevation of 100.00 feet. Groundwater flow at the time of this event was towards the northeast at an approximate gradient of 0.06 feet per foot (ft/ft), and groundwater elevation had increased an average of 2.59 feet since the previous groundwater monitoring event performed in August 2009. Figure 1 of the enclosed Attachment A depicts groundwater elevations and well locations.

Groundwater samples were collected from each of the three monitoring wells on the property and submitted to Lancaster Laboratories of Lancaster, Pennsylvania for the following analyses:

- Gasoline-range hydrocarbons by Washington State Department of Ecology (WDOE) Method NWTPH-Gx;
- Diesel- and heavy oil-range hydrocarbons by WDOE Method NWTPH-D extended; and
- Benzene, toluene, ethylbenzene, total xylenes (BTEX), and methyl tertiary-butyl ether (MTBE) by United States Environmental Protection Agency (USEPA) Method 8260B.

Science Applications International Corporation

18912 North Creek Parkway | Suite 101 / Bothell, WA 98011 / tel: (425) 485-5800 / fax: (425) 485-5566 | saic.com



DEPT OF ECOLOGY
RECEIVED
OCT 20 2009

2.0 ANALYTICAL RESULTS

The following petroleum analytes were detected where indicated at concentrations exceeding their respective Model Toxics Control Act (MTCA) Method A cleanup levels (CULs).

- Gasoline-range hydrocarbons, benzene, ethylbenzene, and total xylenes in monitoring well MW-2.

Diesel- and heavy oil-range hydrocarbons were not analyzed for monitoring well MW-2 due to the well dewatering during sampling. None of the other constituents analyzed for were present at concentrations exceeding their respective MTCA Method A CULs. Groundwater analytical results are summarized in Table 1 of Attachment A.

3.0 SUMMARY

Groundwater elevations and sampling results appear to be consistent with data collected during the previous three sampling events, performed at the property. The concentrations of gasoline-range hydrocarbons and benzene in monitoring well MW-2 are likely due to residual soil impacts related to the former underground storage tanks (USTs), which are located upgradient from this well.

Groundwater monitoring results from the three previous monitoring events suggest that variations in hydrocarbon concentrations may correspond with seasonal groundwater fluctuation. The most recent laboratory results indicated a decrease in target analyte concentrations during the fourth quarter 2009 monitoring event.

Quarterly monitoring and sampling at this site will continue with the next groundwater sampling event scheduled to be performed in February 2010.

Please feel free to contact me at 425-482-3321 or at catterallp@saic.com if you have any questions or comments regarding the information provided.

Sincerely,

SCIENCE APPLICATIONS INTERNATIONAL CORPORATION



Peter Catterall
Project Manager

Enclosures:

Attachment A: Gettler-Ryan Inc. - *Groundwater Monitoring & Sampling Report*, Event of November 14, 2009, Former Tidewater Service Station No. 30-3189, 7301 MLK Jr. Way South, Seattle, Washington

cc: Ms. Donna Musa, WDOE, Northwest Regional Office, Toxics Cleanup Program
Mr. Larry Hard, Seattle Housing Authority
File

Attachment A:
Gettler-Ryan Inc. – Groundwater Monitoring and Sampling Report
Event of November 14, 2009, Former Tidewater Service Station No. 30-3189
7301 MLK Jr. Way South, Seattle, Washington



GETTLER-RYAN Inc.

TRANSMITTAL

December 14, 2009
G-R #385862

TO: Mr. Peter Catterall
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	DATED	DESCRIPTION
4	December 10, 2009	Groundwater Monitoring and Sampling Report Event of November 14, 2009

COMMENTS:

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

Ms. Olivia Skance, Chevron Environmental Management Company, 6111 Bollinger Canyon Road, Ste. 3636,
San Ramon, CA 94583

Mr. Larry Hard, Seattle Housing Authority, P.O. Box 19028, Seattle, Washington 98109-1028
Washington State Department of Ecology, Northwest Region, Toxics Cleanup Program,
3190 160th Avenue SE, Bellevue, WA 98008

Current Site Check List included.

Enclosure



GETTLER-RYAN INC.

CHEVRON - SITE CHECK LIST

Facility#: **Chevron #303189** Date: **11-14-09**
Address: **7301 Martin Luther King Jr. Way South**
City/St.: **Seattle, WA**
Status of Site: **VACANT LOT**

DRUMS:

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



#	Description	Condition	Labeling	Contents	Location
	NO DRUMS				

WELLS:

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



Well ID	Well Box	Bolts	Well Plug	Well Lock	Other
MW-1	OK	OK	OK	OK	
MW-2	↓	↓	↓	↓	
MW-3	↓	↓	↓	↓	

Additional Comments/Observations:



GETTLER-RYAN INC.

December 10, 2009
Job #386795

Ms. Olivia Skance
Chevron Environmental Management Company
P.O. Box 6012, Room 3636
San Ramon, CA 94583

RE: Event of November 14, 2009
Groundwater Monitoring & Sampling Report
Chevron Facility (Former Tidewater) #303189
7301 Martin Luther King Jr. Way South
Seattle, Washington

Dear Ms. Skance:

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. Separate-phase hydrocarbons were not present in the wells. Static water level data and groundwater elevations are presented in 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. Purge water was treated by filtration through granular activated carbon and was subsequently discharged. The chain of custody document and laboratory analytical reports are attached.

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

Sincerely,

Deanna L. Harding
Project Coordinator

Douglas J. Lee
Senior Geologist, L.G. No. 2660

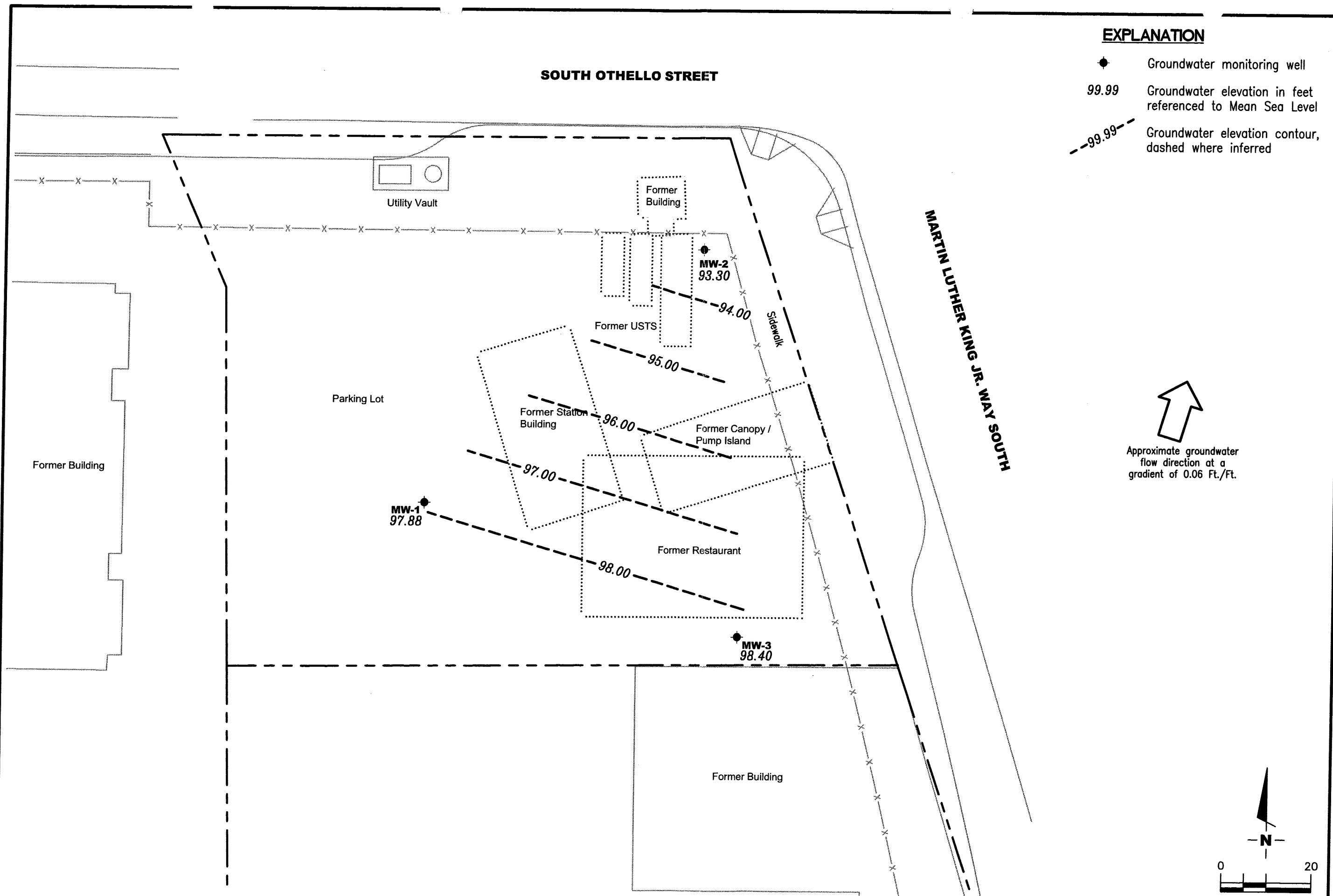


Douglas J. Lee

Figure 1: Potentiometric Map
Table 1: Groundwater Monitoring Data and Analytical Results
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

EXPLANATION

- Groundwater monitoring well
- 99.99 Groundwater elevation in feet referenced to Mean Sea Level
- - - 99.99 - - - Groundwater elevation contour, dashed where inferred



POTENTIOMETRIC MAP
 Chevron Facility (Former Tidewater) #303189
 7301 Martin Luther King Jr. Way South
 Seattle, Washington

GETTLER - RYAN INC.
 6747 Sierra Court, Suite J
 Dublin, CA 94568
 (925) 551-7555

PROJECT NUMBER: 385862
 REVIEWED BY: [Signature]
 DATE: November 14, 2009
 REVISED DATE: [Blank]
 FILE NAME: P:\Enviro\Chevron\303189\009-303189.dwg | Layout Tab: Pot4

Source: Figure modified from drawing provided by SAIC, Site Map, Figure 1, Dated: 01/11/08..

Table 1
Groundwater Monitoring Data and Analytical Results
Chevron Facility (Former Tidewater) #303189
7301 Martin Luther King Jr. Way South
Seattle, Washington

WELL ID/ DATE		TOC* (ft.)	DTW (ft.)	GWE (ft.)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	T. LEAD (µg/L)
MW-1													
08/31/07 ¹		--	--	--	930	190	<50	<0.5	<0.5	<0.5	<1.5	--	0.052
04/24/09	PER	99.66	2.36	97.30	650	<76	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
08/12/09	PER	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 ³	<68 ³	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
MW-2													
08/31/07 ¹		--	--	--	2,100	1,200	26,000	3,200	190	1,400	3,300	--	--
04/24/09	PER	99.05	7.34	91.71	-- ²	-- ²	16,000	4,100	99	1,500	2,000	<3	--
08/12/09	PER	99.05	8.18	90.87	-- ²	-- ²	27,000	4,000	100	1,300	1,900	<3	--
11/14/09	PER	99.05	5.75	93.30	-- ²	-- ²	19,000	2,800	62	950	1,300	<3	--
MW-3													
08/31/07 ¹		--	--	--	120	<100	<50	<0.5	<0.5	<0.5	<1.5		0.055
04/24/09	PER	100.00	2.13	97.87	58	<75	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
08/12/09	PER	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	--
B-9													
05/01/02 ¹		--	--	--	0.660	0.310	32	530	<100	1,600	4,300	--	--
B-10													
05/01/02 ¹		--	--	--	5.10	<0.0630	26	240	110	240	330	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Chevron Facility (Former Tidewater) #303189
 7301 Martin Luther King Jr. Way South
 Seattle, Washington

WELL ID/ DATE	TOC* (ft)	DTW (ft)	GWE (ft)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	T. LEAD (µg/L)
TRIP BLANK												
QA												
04/24/09	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--
08/12/09	--	--	--	--	--	<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	--

	TPH-DRO	TPH-HRO	TPH-GRO	B	T	E	X	MTBE	T. LEAD
Standard Laboratory Reporting Limits:	--	--	50	0.5	0.5	0.5	0.5	1	--
MTCA Method A Cleanup Levels:	500	500	800/1,000	5	1,000	700	1,000	0.5	15
Current Method:	NWTPH-Dx + Extended			NWTPH-Gx and EPA 8021B/8260B					EPA 7421

Table 1
Groundwater Monitoring Data and Analytical Results
Chevron Facility (Former Tidewater) #303189
7301 Martin Luther King Jr. Way South
Seattle, Washington

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 Science Application International Corporation prior. Results for wells B-9 and B-10 were provided by GeoEngineers.

TOC = Top of Casing

(ft.) = Feet

DTW = Depth to Water

GWE = Groundwater Elevation

TPH = Total Petroleum Hydrocarbons

DRO = Diesel Range Organics

HRO = Heavy Range Organics

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl Tertiary Butyl Ether

(µg/L) = Micrograms per liter

PER = Peristaltic Pump

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

-- = Not Measured/Not Analyzed

QA = Quality Assurance/Trip Blank

MTCA = Model Toxics Control Act Cleanup Regulations

[WAC 173-340-720(2)(a)(I), as amended 02/01]

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

ANALYTICAL METHOD:

Prior to April 24, 2009, Benzene, Toluene, Ethylbenzene, Xylene Analysis by USEPA 8021

Gasoline-range hydrocarbons (TPH-GRO) Method NWTPH-Gx.

Diesel- and lube oil-range hydrocarbons (TPH-DRO) by Method NWTPH-Dx.

TPH-DRO and TPH-HRO analyzed with silica gel cleanup

BTEX and MTBE Analysis by Method 8260B

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 DRO result for the reextraction is 610 ug/L, the HRO result for the reextract is ND.

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, temperature, pH and electrical conductivity are measured. 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. The measurements are taken a minimum of three times during the purging. Purging continues until these parameters stabilize. Purge water is treated by filtering the water through granular activated carbon and is subsequently discharged to the ground surface at the site.

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 for all samples. 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.

Standard Operating Procedure, Low-Flow Purging and Sampling

This procedure is designed to assist the user in taking representative groundwater samples from groundwater monitoring wells. Samples will be collected using low-flow (minimal drawdown) purging and sampling methods as 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."

The field sampler's objective is to purge and sample the well so that the water that is discharged from the pump, and subsequently collected, is representative of the formation water from the aquifer's identified zone of interest.

The wells to be sampled are equipped with QED Well Wizard™ bladder (squeeze-type) pumps or Peristaltic Pumps. Each bladder pump or the suction inlet tubing of the peristaltic pump is positioned with its inlet located within the screened interval of the well. The down well equipment includes a bladder pump or Teflon-lined PE (polyethylene) tubing.

Initial Pump Flow Test Procedures

If possible, the optimum flow rate for each well will be established during well development or redevelopment, or in advance of the actual sampling event. The monitoring well must be gauged for Static Water Level (SWL) prior to the installation of the pump and before pumping of any water from the well. The measurement will be documented on a Low Flow Ground Water Sample Collection Record, or field data sheet.

After pump installation, and confirmation that the SWL has returned to its original level (as determined prior to pump installation), the bladder pump or peristaltic pump should be started at a discharge rate between 100 ml to 300 ml per minute without any in-line flow cell connected. The water level in the well casing must be monitored continuously for any change from the original measurement. If significant drawdown is observed, the pump's flow rate should be incrementally reduced until the SWL drawdown ceases and stabilizes. Total drawdown from the initial (static) water level should not exceed 25% of the distance between pump inlet location and the top of the well screen. (For example, if a well has a 10-foot screen zone and the pump inlet is located mid-screen; the maximum drawdown should be 1.25 feet.) In any case, the water level in the well should not be lowered below the top of the screen/intake zone of the well.

Once the specific well's optimum discharge rate, without an in-line flow cell connected, has been determined and documented, the in-line flow cell system to be used is connected to the well discharge and the control settings required to achieve the well's optimum discharge rate are determined with the in-line flow cell connected. (Due to the system's back-pressure, the discharge rate will be decreased by 10-20%). All control settings are to be documented on the gauging and sampling sheet as specific to that particular well's ID and will be utilized for its subsequent purging and sampling events.

Purge and Sampling Events

Prior to the initiation of purging a well, the SWL will be measured and documented. The pump will be started utilizing its documented control settings and its discharge rate will be confirmed by volumetric discharge measurement with the in-line flow cell connected. If necessary, any minor modifications to the control settings to achieve the well's optimum discharge rate will be documented on the gauging sheet. When the optimum pump flow rate has been established, the SWL draw down has stabilized within the required range and at least one pump system volume (bladder volume + discharge tubing volume) has been purged, begin taking field measurements for pH, temperature (T), conductivity (Ec), oxygen reduction potential (ORP) and dissolved oxygen (DO) using a "QED" Model MP-20 in-line flow cell, or other multi-parameter meter. All water chemistry field measurements will be documented on the field data sheet. Measurements should be taken every three to five minutes until stabilization has been achieved. Stabilization is achieved after all parameters have stabilized for three consecutive readings. In lieu of measuring all five parameters, a minimum subset would include pH, conductivity and dissolved oxygen. Three consecutive measurements indicating stability should be within:

Temperature	± 10%
pH	± 0.1 units
Conductance	± 03

When water quality parameters have stabilized, and there has been no change in the stabilized SWL (ie. No continuous draw down), sample collection may begin.

Equipment List

The following equipment is needed to conduct low flow purging and sampling:

- Bladder pump installed within the well's screened interval
- Pump controller and air source set to operate at the specific well's documented optimum discharge rate
- In-line flow cell and meter(s) with connection fittings and tubing to measure water quality
- Water level probe or installed dedicated water level measurement system
- Sample containers appropriate for the analytical requirements
- Low Flow Ground Water Sample Collection Record, or field data sheets
- 300-500 milliliter graduated cylinder or measuring cup
- 5 gallon bucket(s) for collecting purge water
- Wristwatch with second hand or stopwatch
- Sufficient cleaning and decontamination supplies if portable water level probe is utilized
- Peristaltic pump & tubing, in place of bladder pump, if applicable
- Multi-parameter meter, in place of in-line flow cell, if applicable

Procedure QED Bladder Pumps

1. Calibrate all field instruments at the start of each day's deployment per the instrument manufacturer's instructions. Record calibration data on the "Field Instruments Calibration Documentation Form."
2. Drive to the first well scheduled to be sampled (typically the least contaminated). Make notes in the field logbook, describing the well condition and activity in the vicinity of the well. Decontaminate the portable water gauging probe by washing with phosphate-free detergent, rinsing with potable water.
3. Measure the depth to water from the surveyed reference mark on the wellhead and record the measurement on the gauging and sampling sheet. Lock the water level meter in place so that the level can be monitored during purging and sampling. When placing the probe in the well, take precautions to not disturb or agitate the water.
4. Connect the compressed air source's airline to the pump controller's "AIR IN" connection (if utilizing a gas-engine operated compressor, locate the compressor at least 25 feet, down wind from the wellhead).
5. Connect the pump controller "AIR OUT" air-line to the bladder pump's air supply fitting at the wellhead.
6. Connect the pump discharge line to the in-line flow cell's "IN" fitting.
7. Connect the flow cell's "OUT" line and secure to drain the purge water into the purge water collection container.
8. Start the air supply to the pump. Set the pump controller settings to the documented settings for the specific well. Confirm the flow rate is equal to the well's established optimum flow rate. Modify as necessary (documenting any required modifications).
9. Monitor the water level and confirm that the SWL draw down has stabilized within the well's allowable limits.
10. After a single pump-system's volume (bladder volume + discharge tubing volume) has been adequately purged, read and record water quality field measurements every three to five minutes until all parameters have stabilized within their allowable ranges for at least three consecutive measurements. When stabilization has been achieved, sample collection may begin.
11. Disconnect the flow cell, and it's tubing, from the pump discharge line before collecting samples. Decrease the pump rate to 100 milliliters per minute or less by lowering the controller's air pressure setting prior to collecting samples for volatiles. Utilize the QED Model 400 Controller's 'MANUAL SAMPLE' button to ensure minimized sample exposure to the ambient air. Refer to

- the task instructions for the correct order and procedures for filling sample containers. Place the samples in a cooler with enough ice to keep them at 4 degrees Centigrade.
12. Once samples for volatiles have been collected, re-establish pump flow rate to the original purge flow rate by inputting the documented controller settings for the well without the in-line flow cell connected and collect remaining samples.
 13. When all sample containers have been filled, make a final measurement of the well's SWL and record the measurement on the gauging and sampling sheet. If the well has a "QED" dedicated bottom sounder, measure the well's total depth and record the measurement, as well.
 14. Measure and record total purge volume collected. Consolidate generated purge water.
 15. Remove and decontaminate the portable water level probe with phosphate-free detergent, rinsing with potable water.
 16. Disconnect the controller air supply to the pump.
 17. Secure the pump's discharge line/discharge adapter in the wellhead.
 18. Secure the wellhead cover and secure with its lock. Move equipment to next well to be sampled.
 19. At the end of each day, post calibrate all field instruments and record the measurements on the "Field Calibration Documentation Form".
 20. Clean and decontaminate the in-line flow cell with phosphate-free detergent, rinsing with potable water.

Procedure Peristaltic Pump

1. Record all depth to water readings on field data sheets
2. Calibrate all field instruments according to manufacturer's directions.
3. Setup pump and install silicone tubing in the roller head.
4. Place suction tubing at desired intake level in well, (mid screen) and attach to the intake side of the pump roller head.
5. Attach tubing at discharge side of pump head and place in collection container.
6. Start pump and adjust flow rate to achieve flow without depressing water level more than necessary (approx. 0.30').
7. Record parameter readings after parameters have stabilized (3 consecutive readings that fall within the acceptance criteria).
8. Decrease the flow rate of the pump to achieve approximately 100ml/min. when collecting samples.
9. Change all tubing between wells and repeat procedure.



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: 11-14-09 (inclusive)
 City: Seattle, WA Sampler: MZ

Well ID: MW-1
 Well Diameter: .75 in.
 Total Depth: 11.52 ft.
 Depth to Water: 1.78 ft.

Date Monitored: 11-14-09

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]: gal.

Purge Equipment:
 Disposable Bailer _____
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump X
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:
 Disposable Bailer _____
 Pressure Bailer _____
 Discrete Bailer _____
 Peristaltic Pump X
 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): 1400 Weather Conditions: cloudy
 Sample Time/Date: 1425 / 11-14-09 Water Color: clear Odor: Y I (N)
 Approx. Flow Rate: 150 ml / gpm. Sediment Description: none
 Did well de-water? NO If yes, Time: _____ Volume: _____ gal. DTW @ Sampling: 5.77

Time (2400 hr.)	Volume (gal)	pH	Conductivity (µmhos/cm - MS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)	Gauge DTW as parameters are recorded
<u>1410</u>	<u>1.5</u>	<u>7.39</u>	<u>993</u>	<u>10.7</u>			<u>4.62</u>
<u>1413</u>	<u>2</u>	<u>7.34</u>	<u>999</u>	<u>10.7</u>			<u>5.09</u>
<u>1416</u>	<u>2.4</u>	<u>7.33</u>	<u>1001</u>	<u>10.7</u>			<u>5.77</u>

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	6 x voa vial	YES	HCL	LANCASTER	NWTPH-Gx/BTEX+MTBE(8260)
	2 x 1 liter ambers	YES	HCL	LANCASTER	NWTPH-Dx w/sg

COMMENTS: _____

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: 11-14-09 (inclusive)
 City: Seattle, WA Sampler: ml

Well ID: MW-2
 Well Diameter: .75 in.
 Total Depth: 9.42 ft.
 Depth to Water: 5.75 ft.

Date Monitored: 11-14-09

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]: _____ xVF _____ = _____ x3 case volume = Estimated Purge Volume: _____ gal.

Purge Equipment:

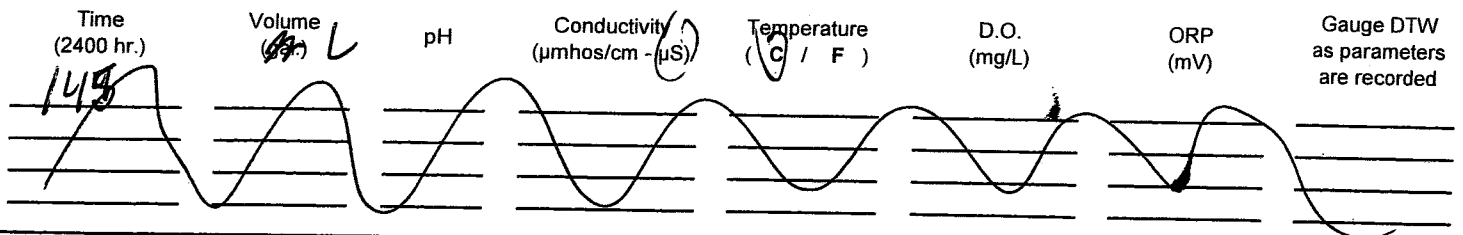
Disposable Bailer _____
 Stainless Steel Bailer _____
 Stack Pump _____
 Suction Pump _____
 Grundfos _____
 Peristaltic Pump X
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer _____
 Pressure Bailer _____
 Discrete Bailer _____
 Peristaltic Pump X
 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): 1443 Weather Conditions: cloudy
 Sample Time/Date: 1605 11-14-09 Water Color: clear Odor: YIN
 Approx. Flow Rate: 100 ml gpm. Sediment Description: None
 Did well de-water? yes If yes, Time: 1453 Volume: 80 ml DTW @ Sampling: 5.15



LABORATORY INFORMATION

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

COMMENTS: WELL DEWATERED, RETURNED TO SAMPLE, ONLY ABLE TO COLLECT 6 VOAS BEFORE DEWATERING AGAIN.

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #303189
 Site Address: 7301 Martin Luther King Jr. Way S
 City: Seattle, WA

Job Number: 385862
 Event Date: 11-14-09 (inclusive)
 Sampler: ML

Well ID: MW-3
 Well Diameter: .75 in.
 Total Depth: 9.49 ft.
 Depth to Water: 1.60 ft.

Date Monitored: 11-14-09

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.

_____ 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 X
 QED Bladder Pump _____
 Other: _____

Sampling Equipment:

Disposable Bailer _____
 Pressure Bailer _____
 Discrete Bailer _____
 Peristaltic Pump X
 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): 1520
 Sample Time/Date: 1545 11-14-09
 Approx. Flow Rate: 100 ml / pm.
 Did well de-water? no If yes, Time: _____

Weather Conditions: clouds
 Water Color: Clear Odor: Y / N
 Sediment Description: None
 Volume: _____ gal. DTW @ Sampling: 5.19

Time (2400 hr.)	Volume (L)	pH	Conductivity (µmhos/cm - (S))	Temperature (°F)	D.O. (mg/L)	ORP (mV)	Gauge DTW as parameters are recorded
<u>1530</u>	<u>1</u>	<u>7.20</u>	<u>862</u>	<u>10.5</u>			<u>4.15</u>
<u>1533</u>	<u>1.3</u>	<u>7.27</u>	<u>869</u>	<u>10.5</u>			<u>5.02</u>
<u>1536</u>	<u>1.6</u>	<u>7.28</u>	<u>871</u>	<u>10.6</u>			<u>5.19</u>

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	6 x voa vial	YES	HCL	LANCASTER	NWTPH-GxBTEX+MTBE(8260)
	2 x 1 liter ambers	YES	HCL	LANCASTER	NWTPH-Dx w/sg

COMMENTS: _____

Add/Replaced Lock: _____ Add/Replaced Plug: _____ Add/Replaced Bolt: _____

Chevron Northwest Region Analysis Request/Chain of Custody



For Lancaster Laboratories use only
 Acct. #: 112100 Sample #: 5840897-00 SCR#: _____

Group # 1171600

Facility #: <u>SS#303189-OML G-R#385862</u> Site Address: <u>7301 Martin Luther King Jr. Way South, SEATTLE, WA</u> Chevron PM: <u>OS</u> Lead Consultant: <u>SAICPC</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>Mike Lombard</u> Service Order #: _____ <input type="checkbox"/> Non SAR: _____				Matrix Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> Soil <input type="checkbox"/>		Analyses Requested Preservation Codes H H H BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth <input type="checkbox"/> 8260 full scan Oxygenates TPH <input checked="" type="checkbox"/> Extended Reg. Silica Gel Cleanup <input checked="" type="checkbox"/> Lead Total <input type="checkbox"/> Diss. <input type="checkbox"/> Method VP/IEPH NWTPH HClID <input type="checkbox"/> quantification										Preservative Codes H = HCl T = Thiosulfate N = HNO ₃ B = NaOH S = H ₂ SO ₄ O = Other <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds 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							
Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil	Air	Total Number of Containers	BTEX + MTBE	8021	8260	Naphth	Oxygenates	TPH	Extended Reg. Silica Gel Cleanup	Lead Total	Diss.	Method	VP/IEPH	NWTPH HClID	quantification	Comments / Remarks
QA	11-14-09		X			X			2	X					X								
MW-1		1425	X			X			2	X					X								
MW-2		1605	X			X			2	X					X								
MW-3		1845	X			X			2	X					X								

Turnaround Time Requested (TAT) (please circle) STD. TAT <input checked="" type="radio"/> 24 hour 72 hour <input type="radio"/> 48 hour 4 day <input type="radio"/> 5 day			Relinquished by: <u>[Signature]</u> Date: <u>11-17</u> Time: <u>1700</u>		Received by: _____ Date: _____ Time: _____	
Data Package Options (please circle if required) QC Summary Type I - Full <input type="checkbox"/> EDF/EDD <input checked="" type="checkbox"/> Type VI (Raw Data) Disk / EDD <input type="checkbox"/> WIP (RWQCB) Standard Format <input type="checkbox"/> Disk _____ Other. <input type="checkbox"/>			Relinquished by: _____ Date: _____ Time: _____		Received by: _____ Date: _____ Time: _____	
Relinquished by Commercial Carrier: UPS <input type="checkbox"/> FedEx <input checked="" type="checkbox"/> Other: _____ Temperature Upon Receipt: <u>1.4-2.8 c°</u>			Received by: <u>[Signature]</u> Date: <u>11-18-09</u> Time: <u>0900</u>		Custody Seals Intact? <input checked="" type="radio"/> Yes <input type="radio"/> No	



2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2661 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

Chevron
6001 Bollinger Canyon Road
L4310
San Ramon CA 94583

925-842-8582

Prepared by:

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

December 02, 2009

Project: 303189

RECEIVED

NOV 18 2009

GETTLER-RYAN INC.
GENERAL CONTRACTORS

Samples arrived at the laboratory on Wednesday, November 18, 2009. The PO# for this group is 0015045667 and the release number is SKANCE. The group number for this submittal is 1171600.

Client Sample Description

QA Water Sample
MW-1 Grab Water Sample
MW-2 Grab Water Sample
MW-3 Grab Water Sample

Lancaster Labs (LLI) #

5840897
5840898
5840899
5840900

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

Attn: Cheryl Hansen



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2661 • www.lancasterlabs.com

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

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Robin C. Runkle".

Robin C. Runkle
Senior Specialist



Analysis Report

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

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

LLI Sample # WW 5840897
LLI Group # 1171600
WA

Project Name: 303189

Collected: 11/14/2009

Account Number: 11260

Submitted: 11/18/2009 09:00

Reported: 12/02/2009 at 14:55

Discard: 01/02/2010

Chevron

6001 Bollinger Canyon Road

L4310

San Ramon CA 94583

MARQA

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	ug/l	
06054	Benzene	71-43-2	N.D.	0.5	1
06054	Ethylbenzene	100-41-4	N.D.	0.5	1
06054	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06054	Toluene	108-88-3	N.D.	0.5	1
06054	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles			ECY 97-602 NWTPH-Gx	ug/l	
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
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	F093252AA	11/21/2009 11:19	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F093252AA	11/21/2009 11:19	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	09324B20A	11/20/2009 18:59	Tyler O Griffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	09324B20A	11/20/2009 18:59	Tyler O Griffin	1



Analysis Report

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

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

LLI Sample # WW 5840898
LLI Group # 1171600
WA

Project Name: 303189

Collected: 11/14/2009 14:25 by ML

Account Number: 11260

Submitted: 11/18/2009 09:00
Reported: 12/02/2009 at 14:55
Discard: 01/02/2010

Chevron
6001 Bollinger Canyon Road
L4310
San Ramon CA 94583

MARM1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			ug/l	ug/l	
06054	Benzene	71-43-2	N.D.	0.5	1
06054	Ethylbenzene	100-41-4	N.D.	0.5	1
06054	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06054	Toluene	108-88-3	N.D.	0.5	1
06054	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles ECY 97-602 NWTPH-Gx			ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1
GC Extractable TPH ECY 97-602 NWTPH-Dx w/Si Gel modified			ug/l	ug/l	
02211	DRO C12-C24 w/Si Gel	n.a.	270	29	1
02211	HRO C24-C40 w/Si Gel	n.a.	N.D.	68	1

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 DRO result for the reextract is 610 ug/l, the HRO result for the reextract is ND.

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
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	F093252AA	11/21/2009 11:41	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F093252AA	11/21/2009 11:41	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	09324B20A	11/20/2009 20:04	Tyler O Griffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	09324B20A	11/20/2009 20:04	Tyler O Griffin	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	093280025A	11/27/2009 12:28	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	093280025A	11/25/2009 13:45	Timothy J Attenberger	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-2 Grab Water Sample
Facility# 303189 Job# 385862
7301 Martin Luther King Jr Way S-Seattle, WA

LLI Sample # WW 5840899
LLI Group # 1171600
WA

Project Name: 303189

Collected: 11/14/2009 16:05 by ML

Account Number: 11260

Submitted: 11/18/2009 09:00

Chevron

Reported: 12/02/2009 at 14:55

6001 Bollinger Canyon Road

Discard: 01/02/2010

L4310

San Ramon CA 94583

MARM2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	ug/l	
06054	Benzene	71-43-2	2,800	25	50
06054	Ethylbenzene	100-41-4	950	25	50
06054	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	3	5
06054	Toluene	108-88-3	62	3	5
06054	Xylene (Total)	1330-20-7	1,300	3	5
GC Volatiles			ECY 97-602 NWTPH-Gx	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	19,000	500	10

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
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	F093252AA	11/21/2009 17:05	Anita M Dale	5
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	F093252AA	11/21/2009 17:26	Anita M Dale	50
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F093252AA	11/21/2009 17:05	Anita M Dale	5
01163	GC/MS VOA Water Prep	SW-846 5030B	2	F093252AA	11/21/2009 17:26	Anita M Dale	50
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	09324B20B	11/22/2009 16:23	Carrie E Miller	10
01146	GC VOA Water Prep	SW-846 5030B	1	09324B20B	11/22/2009 16:23	Carrie E Miller	10

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

LLI Sample # WW 5840900
 LLI Group # 1171600
 WA

Project Name: 303189

Collected: 11/14/2009 15:45 by ML Account Number: 11260

Submitted: 11/18/2009 09:00
 Reported: 12/02/2009 at 14:55
 Discard: 01/02/2010

Chevron
 6001 Bollinger Canyon Road
 L4310
 San Ramon CA 94583

MARM3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260B	ug/l	ug/l	
06054	Benzene	71-43-2	N.D.	0.5	1
06054	Ethylbenzene	100-41-4	N.D.	0.5	1
06054	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06054	Toluene	108-88-3	N.D.	0.5	1
06054	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1
GC Extractable TPH w/Si Gel		ECY 97-602 NWTPH-Dx modified	ug/l	ug/l	
02211	DRO C12-C24 w/Si Gel	n.a.	450	29	1
02211	HRO C24-C40 w/Si Gel	n.a.	370	68	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
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	F093252AA	11/21/2009 12:02	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F093252AA	11/21/2009 12:02	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	09324B20B	11/22/2009 15:40	Carrie E Miller	1
01146	GC VOA Water Prep	SW-846 5030B	1	09324B20B	11/22/2009 15:40	Carrie E Miller	1
02211	NWTPH-Dx water w/Si Gel	ECY 97-602 NWTPH-Dx modified	1	093280025A	12/01/2009 00:05	Glorines Suarez-Rivera	1
02135	Extraction - DRO Water Special	ECY 97-602 NWTPH-Dx 06/97	1	093280025A	11/25/2009 13:45	Timothy J Attenberger	1

Quality Control Summary

Client Name: Chevron Group Number: 1171600
 Reported: 12/02/09 at 02:55 PM

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

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: F093252AA	Sample number(s): 5840897-5840900							
Benzene	N.D.	0.5	ug/l	88	85	79-120	3	30
Ethylbenzene	N.D.	0.5	ug/l	89	84	79-120	5	30
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	79	79	76-120	1	30
Toluene	N.D.	0.5	ug/l	93	88	79-120	5	30
Xylene (Total)	N.D.	0.5	ug/l	93	88	80-120	5	30
Batch number: 09324B20A	Sample number(s): 5840897-5840898							
NWTPH-Gx water C7-C12	N.D.	50.	ug/l	100	100	75-135	0	30
Batch number: 09324B20B	Sample number(s): 5840899-5840900							
NWTPH-Gx water C7-C12	N.D.	50.	ug/l	100	100	75-135	0	30
Batch number: 093280025A	Sample number(s): 5840898, 5840900							
DRO C12-C24 w/Si Gel	N.D.	30.	ug/l	88	88	50-100	0	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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD RPD	BKG MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: F093252AA	Sample number(s): 5840897-5840900 UNSPK: P842765								
Benzene	94		80-126						
Ethylbenzene	92		71-134						
Methyl Tertiary Butyl Ether	84		72-126						
Toluene	99		80-125						
Xylene (Total)	97		79-125						
Batch number: 09324B20A	Sample number(s): 5840897-5840898 UNSPK: P840902								
NWTPH-Gx water C7-C12	109		57-157						
Batch number: 09324B20B	Sample number(s): 5840899-5840900 UNSPK: P840902								
NWTPH-Gx water C7-C12	109		57-157						

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.

*- 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: 12/02/09 at 02:55 PM

Group Number: 1171600

Surrogate Quality Control

Analysis Name: BTEX+MTBE by 8260B
Batch number: F093252AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5840897	104	97	95	97
5840898	104	99	94	98
5840899	101	97	97	104
5840900	106	103	95	98
Blank	105	101	96	98
LCS	104	101	96	108
LCSD	105	103	97	107
MS	105	103	94	107
Limits:	80-116	77-113	80-113	78-113

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 09324B20A

	Trifluorotoluene-F
5840897	104
5840898	104
Blank	105
LCS	116
LCSD	115
MS	116
Limits:	63-135

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 09324B20B

	Trifluorotoluene-F
5840899	127
5840900	104
Blank	103
LCS	116
LCSD	115
MS	116
Limits:	63-135

Analysis Name: NWTPH-Dx water w/Si Gel
Batch number: 093280025A

	Orthoterphenyl
5840898	38*
5840900	114
Blank	102
LCS	123
LCSD	125
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.

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	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	l	liter(s)
ml	milliliter(s)	ul	microliter(s)
m³	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml
<	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.		
>	greater than		
ppm	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.		
ppb	parts per billion		
Dry weight basis	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.		

U.S. EPA data qualifiers:

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

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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