Technical Memorandum

To: Chris Maurer, Washington Department of Ecology

From: Janet Knox and Glen Wallace, Pacific Groundwater Group

Re: Scougal Rubber Remedial Action Update (VCP Site NW 1707)

Date: November 13, 2013

This technical memorandum summarizes the remedial actions conducted at Scougal Rubber between September 2012 and November 2013. Remedial action at the site focuses on reduction of chlorinated solvent concentrations in soil and groundwater. Previous remedial actions at the site are described in other documents, including:

- *Scougal Rubber Remedial Action Update (VCP Site NW 1707)* (PGG, 2009)
- *Scougal Rubber Remedial Action Update (VCP Site NW 1707)* (PGG, 2011)
- *Scougal Rubber Remedial Action Update (VCP Site NW 1707)* (PGG, 2012)
- *Scougal Rubber Final Remedial Action Plan* (PGG, 2007)
- *Independent Remedial Action Report* (Retec, 2002)

The work was performed using generally accepted hydrogeologic practices at this time and in this vicinity, for exclusive application to the Scougal Rubber site and for the exclusive use of Scougal Rubber. This statement is in lieu of other warranties, express or implied.

INTRODUCTION

Scougal Rubber is located in the Georgetown neighborhood of Seattle, Washington at 6239 Corson Avenue (Figure 1). Remedial efforts have been underway at the site for over 20 years and have been successful in significantly reducing contaminant concentrations (Table 1). Source area groundwater concentrations have decreased, but were above MTCA Method A cleanup levels in the most recent sampling event.

The Scougal property overlies fine to medium silty sands with scattered, discontinuous silt and gravel stringers. These soils are commonly observed throughout the lower Duwamish area. Depth to groundwater at the site is between 7 and 9 feet. The regional groundwater flow direction is to the southwest toward the Duwamish River, approximately 0.5 miles away (Retec, 2003). Soil cores collected in 2009 identified a 6- to 12-inch thick silt layer at approximately 16 feet below ground surface (bgs) that appears to be laterally continuous within at least the alleyway area of the site.

Petroleum- and chlorinated solvent-impacted soil was identified on the Scougal property in the late 1980s. This discovery led to remedial action at the site including removal of underground storage tanks, hotspot excavation, hydraulic containment, and operation of an air sparging soil vapor extraction (SVE) system (Retec, 2002). The SVE system was designed to reduce contaminant concentrations in soil and groundwater behind the Scougal main plant and beneath the Machinists Inc. property to the west. The SVE system was operated intermittently from 1994 through 1999.

Operation of the SVE system reduced groundwater concentrations by approximately 90 percent, and had inconsistent effectiveness in soil. In 1994, TCE (1,000 ug/L) and vinyl chloride (1,300 ug/L) concentrations at MW-14 exceeded cleanup levels. After operation of the SVE system, concentrations of TCE and vinyl chloride had decreased, but groundwater concentrations rebounded each time the system was shut down. The SVE system was effective at reducing contaminant mass, but soil and groundwater concentrations remained above cleanup levels.

Scougal Rubber contacted Pacific Groundwater Group (PGG) in 2006 to develop a plan to further reduce contaminant concentrations to below cleanup levels. PGG performed additional site investigation in 2006 as the basis for further remediation and found concentrations as high as TCE (110 ug/L) and vinyl chloride (33 ug/L) in groundwater.

PGG developed a Final Remedial Action Plan to address residual contamination. With that plan, Scougal Rubber chose to enter the Washington Department of Ecology's Voluntary Cleanup Program to receive Ecology's approval of the cleanup approach and to obtain a No Further Action (NFA) letter once the cleanup goals are achieved.

Upon review of the existing site documents and the Final Remedial Action Plan, Ecology provided approval of the plan on April 12, 2007. PGG then implemented the planned removal of shallow impacted soil, in-situ chemical oxidation with potassium permanganate, and confirmation sampling (PGG, 2009) All confirmation soil samples within the treatment area were non-detect for chlorinated solvents. Groundwater petroleum compound concentrations were reduced to below cleanup levels. Groundwater chlorinated ethene concentrations were reduced an additional 90 percent to approximately 1 percent of the pre-remediation (1993) levels. However, TCE and vinyl chloride concentrations remained above MTCA Method A cleanup values at the end of 2008. In 2009, PGG developed and implemented a targeted ozone injection system to further reduce concentrations. This system is described in the following sections.

OZONE REMEDIATION

PGG designed and observed installation of an ozone remediation system in May-June 2009. A second phase of ozone sparge points was added in June 2010. Ozone was selected to address residual groundwater contamination because of the ability to distribute oxidant to soil and groundwater in areas with difficult access with minimal disturbance to site structures and manufacturing operations. The ozone system installation included (Figures 2 and 3):

- An H2O Engineering model OSU-52 cabinet capable of producing 2.7 pounds of ozone per day at a concentration of 3,570 ppm in a 90% oxygen stream.
- 8 soil injection points screened between 5 and 6.5 feet bgs
- 8 groundwater sparge points screened between 15 and 16.5 feet bgs (keyed to top of silt) with micro-bubble screens to enhance ozone dispersal.
- 3 groundwater sparge points screened between 18.5 and 20 feet bgs (below silt interval) with micro-bubble screens to enhance ozone dispersal.

Between 1,800 and 2,200 lbs of ozone were delivered to groundwater sparge points[1] during ozone operations through September 2013.

SOIL AND GROUNDWATER MONITORING

SUPPLEMENTAL SOIL AND GROUNDWATER CHARACTERIZATION

In May 2013, additional soil and groundwater samples were collected in the vicinity of the paint booth building. Sampling points SR-27 and SR-28 were located in the alley between Machinists Inc. and the paint-booth building. Sampling point SR-29 was located in the rear of the paint-booth building between the sand-blasting room and the paint-booth. Sampling points SR-30 and SR-31 were located in the rear of the paint booth. Sampling results are included in Tables 2 and 3.

Soil results indicate a residual soil hotspot beneath the west end of the paint booth building. Soils in the alleyway behind the paint booth building were non-detect for PCE, TCE, cis-1,2 DCE and vinyl chloride. Soils in the paint booth building hotspot are difficult to access due to equipment inside the building; ozone delivery to soil sparge points around the periphery of the paint booth building have been increased to expedite cleanup in this area to the extent possible with the current system configuration.

Groundwater TCE concentrations ranged from 2.7 to 5.9 ug/L. PCE, cis-1,2 DCE and vinyl chloride were non-detect. Groundwater data indicate modest impact to groundwater

[1] The ozone system had intermittent down time when oxygen was delivered to sparge points without ozone. For safety, when the cabinet detects a problem, ozone production to that point is discontinued.

from the soil hotspot. The low groundwater concentrations relative to the overlying soils are consistent with limited recharge below the building.

Sampling Methods

Soil samples were collected directly from handheld soil-sampling augers using EPA Method 5035. Soil augers were decontaminated between sampling locations. Soil samples were collected at SR-27, SR-28, SR-29, SR-30, and SR-31 into laboratory-provided sample containers and placed in coolers with ice.

Groundwater samples were collected from temporary well points driven to 9 feet bgs. Well points were purged using a peristaltic pump and low flow methods to minimize volatilization. Temporary wells were purged until turbidity decreased and stabilized before sampling. Groundwater samples were collected at SR-27, SR-28, and SR-31 into laboratory-provided sample containers, and placed in coolers with ice. Well points, attached pipe, and PEX liner was decontaminated between samples.

Chain of custody was maintained for all samples though delivery to Friedman and Bruya for analysis.

GROUNDWATER MONITORING

Groundwater samples were collected from MW-11, MW-12, MW-13 and MW-14 on June 14, 2013 to monitor remediation progress. Ozone application had been offline since March to allow for potential rebound, and to repair a failed ozone generator unit. As approved by Ecology under the Final Remedial Action Plan, MW-11, MW-12, and MW-14 are the compliance monitoring wells. MW-14 has been used as the performance location monitoring because it had the highest historical TCE concentrations, and is located towards the down gradient end of the treatment area (the ozone radius of influence likely extended approximately 15-25 ft down gradient of MW-14). Performance monitoring results from the June 2013 event are included in Table 2.

Pre-ozone-treatment groundwater concentrations at MW-14 were 19.0 ug/L (July, 2009). TCE concentrations decreased to below cleanup levels (5 ug/L) by September 2009 (4 ug/L). Vinyl chloride concentrations decreased to below cleanup levels by 2009. However, concentrations have subsequently fluctuated above and below cleanup levels. Results from the June 2013 event were above cleanup levels, but generally support continued contaminant mass reduction within the treatment area.

Sampling Methods

Groundwater samples were collected using a peristaltic pump and low flow methods to minimize volatilization. Samples were collected into laboratory-provided sample containers and placed in coolers with ice, and chain of custody was maintained. Ozone distribution was discontinued prior to groundwater performance sampling to allow for potential rebound.

NEXT STEPS

Ozone treatment has reduced chlorinated ethene concentrations to below MTCA Method A groundwater cleanup levels several times during the course of the ozone treatment, followed by rebound to above MTCA cleanup levels. Ozone treatment is continuing to address residual concentrations leading to rebound with additional sparge points added in 2010. Groundwater monitoring will be continued in a spring/summer 2014 sampling event.

Attachments:

Table 1. Remedial Investigation and Action Timeline
Table 2. Groundwater Sampling Result Summary
Table 3. Soil Sampling Results Summary

Figure 1. Site Map and Ozone Sparge Point Locations
Figure 2. Locations of Targeted Soil and Groundwater Samples
Figure 3. MW-14 Concentration Trends

Appendix A. Analytical Lab Reports October 2012- September 2013

References:

Pacific Groundwater Group, 2007. *Final Remedial Action Plan, Scougal Rubber*. January 17, 2007.

Pacific Groundwater Group, 2009. *Letter to Chris Maurer, Washington Department of Ecology, RE: Scougal Rubber Remedial Action Update (VCP Site NW 1707).* January 22, 2009.

Pacific Groundwater Group, 2011. *Letter to Chris Maurer, Washington Department of Ecology, RE: Scougal Rubber Remedial Action Update (VCP Site NW 1707).* September 20, 2011.

Retec, 2002. *Independent Remedial Action Report*. March 28, 2002. Retec Project Number SRC00-02417-400.

cc: Matt Bowman, Scougal Rubber Corporation

Table 1. Remedial Investigation and Action Timeline

Scougal Rubber Corporation, Seattle, Washington

Date	Location*	Event	Result	Reference
1980s	AW, EW	Contamination identified on site	Contamination recognized; finding initiated remedial invesitgation and cleanup process.	Retec (2002)
1992	AW	UST removal, hotspot excavation	Bulk of contaminant mass removed; soil and groundwater impacts remained	Retec (2002)
1994-1999	AW	Air sparge and soil vapor extraction	Reduced contaminant mass; soil and groundwater remaiedn above cleanup levels	Retec (2002)
2006	AW	Soil and groundwater sampling	Contamination in alleyway area delinieated; provided baseline for remedial action	PGG (2006)
2007	AW	Soil hotspot excavation and permanganate application	Reduced soil VOC concentrations to non-detect; groundwater concentrations reduced by approximately 90%	PGG (2009)
2008	AW	Confirmation groundwater sampling	Groundwater rebound noted at MW-14 to above cleanup levels	PGG (2009)
2009-2012	AW	Ozone injection in two phases	Reduced groundwater VOC concentrations to near cleanup levels (ongoing)	Table 2
2009	EW	Soil and groundwater sampling	Identified remaining soil hotspot; groundwater concentrations at EW and down gradient below cleanup levels	PGG (2011)
2010	EW	Permanganate application	Reduced soil VOC concentrations to non-detect	PGG (2011)
2013	PB	Paint Booth Investigation	Identified soil hotspot beneath building; GW below or near cleanup levels	PGG (2013)

* Location Acronyms: AW- Alleyway; EW- East Warehouse; PB Paint Booth Area

Table 2. Groundwater Sampling Result Summary

Scougal Rubber Corporation, Seattle, Washington

Sample Location	Date	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
Pre-Permanganate Concentrations					
MW-11	8/3/2006	0.3	**9.4**	8.7	U 0.2
MW-12	8/3/2006	U 1	0.2	0.4	**0.7**
MW-13	8/3/2006	U 1	**46**	11	**2.6**
MW-14	8/3/2006	4.1	**110**	26	**33**
MW-4	8/3/2006	0.2	3.3	U 1	U 0.2
OW-10	8/3/2006	U 1	**9.6**	18	**3.5**
Post-Permanganate Concentrations					
MW-11	6/10/2008	U 1	**10**	3.7	U 0.2
MW-12	6/10/2008	U 1	U 1	U 1	U 0.2
MW-14	6/10/2008	U 1	**13**	3.7	**15**
MW-11	9/5/2008	U 1	**13**	2.9	U 0.2
MW-12	9/5/2008	U 1	U 1	U 1	**1**
MW-14	9/5/2008	U 1	**14**	3.4	**25**
Ozone Install Reconnaissance Samples					
OP-10	6/29/2010	U 1	U 1	U 1	U 0.2
OP-11	6/29/2010	U 1	U 1	U 1	**0.51**
OP-9	6/29/2010	U 1	U 1	U 1	**0.7**
Ozone Operational Data					
MW-11	1/23/2009	U 1	**12**	U 1	U 0.2
MW-12	1/23/2009	U 1	U 1	U 1	U 0.2
MW-14	1/23/2009	1.6	**41**	1.3	**13**
MW-14	7/20/2009	0.8	**19**	5.8	**9.2**
MW-14	9/23/2009	U 0.2	4	1.7	1.9
MW-14	12/4/2009	0.3	3.7	1.3	**0.5**
MW-14	1/22/2010	0	1.4	1.8	**1**
MW-14	3/10/2010	0	2.3	2.3	**5.7**
MW-14	4/22/2010	U 1	1.6	U 1	U 0.2
MW-11	5/24/2010	U 1	U 1	U 1	U 0.2
MW-12	5/24/2010	U 1	U 1	U 1	U 0.2
MW-14	5/24/2010	U 1	3.1	U 1	**1.5**
MW-14	9/15/2010	U 1	U 1	U 1	U 0.2
MW-14	10/14/2010	U 1	0.89 J	U 1	**1.1**
MW-14	3/9/2011	0.39 J	1.6	0.12 J	0.08 J
MW-14	5/6/2011	0.18 J	1.9	0.34 J	0.15 J
MW-14	7/15/2011	U 0.11	0.49 J	U 1	0.1 UJ
MW-11	9/16/2011	U 0.5	2.6	U 1	U 0.2
MW-12	9/16/2011	U 0.5	U 0.5	U 1	**0.89**
MW-14	9/16/2011	U 0.5	2.8	U 1	**0.69**
MW-11	11/23/2011	U 0.12	2.5	U 1	**U 0.2**
MW-12	11/23/2011	U 0.12	0.22 J	U 1	**0.32**
MW-13	11/23/2011	0.24 J	**8.4**	3.3	**0.6**
MW-14	11/23/2011	0.3 J	4.2	1.5	**2.1**
MW-11	6/14/2013	U 1	**6.8**	U 1	U 0.2
MW-12	6/14/2013	U 1	U 1	U 1	U 0.2
MW-13	6/14/2013	U 1	**11**	U 1	**0.32**
MW-14	6/14/2013	U 1	**5**	U 1	**0.44**
East Warehouse Reconnaissance Samples					
SR-18	5/1/2009	U 1	U 1	U 1	U 0.2
SR-19	5/1/2009	U 1	U 1	U 1	U 0.2
SR-20	5/1/2009	U 1	U 1	U 1	U 0.2
SR-21	5/1/2009	U 1	1.1	U 1	U 0.2
SR-22	5/1/2009	U 1	1.1	U 1	U 0.2
SR-23	5/1/2009	U 1	U 1	1.4	U 0.2
Paint Booth Building Reconnaissance Samples					
SR-27	5/14/2013	U 1	2.7	U 1	U 0.2
SR-28	5/14/2013	U 1	**5.9**	U 1	U 0.2
SR-31	5/14/2013	U 1	3.5	U 1	U 0.2
MTCA Method A table values		*5*	*5*	*80*	*0.2*

Bold indicates exceedance of MTCA Method A table value.

U indicates non-detect at the shown reporting limit.

J indicates an estimated value. J-flag values occur where concentrations are reported between the method detection limit and reporting limit.

All Results ug/L.

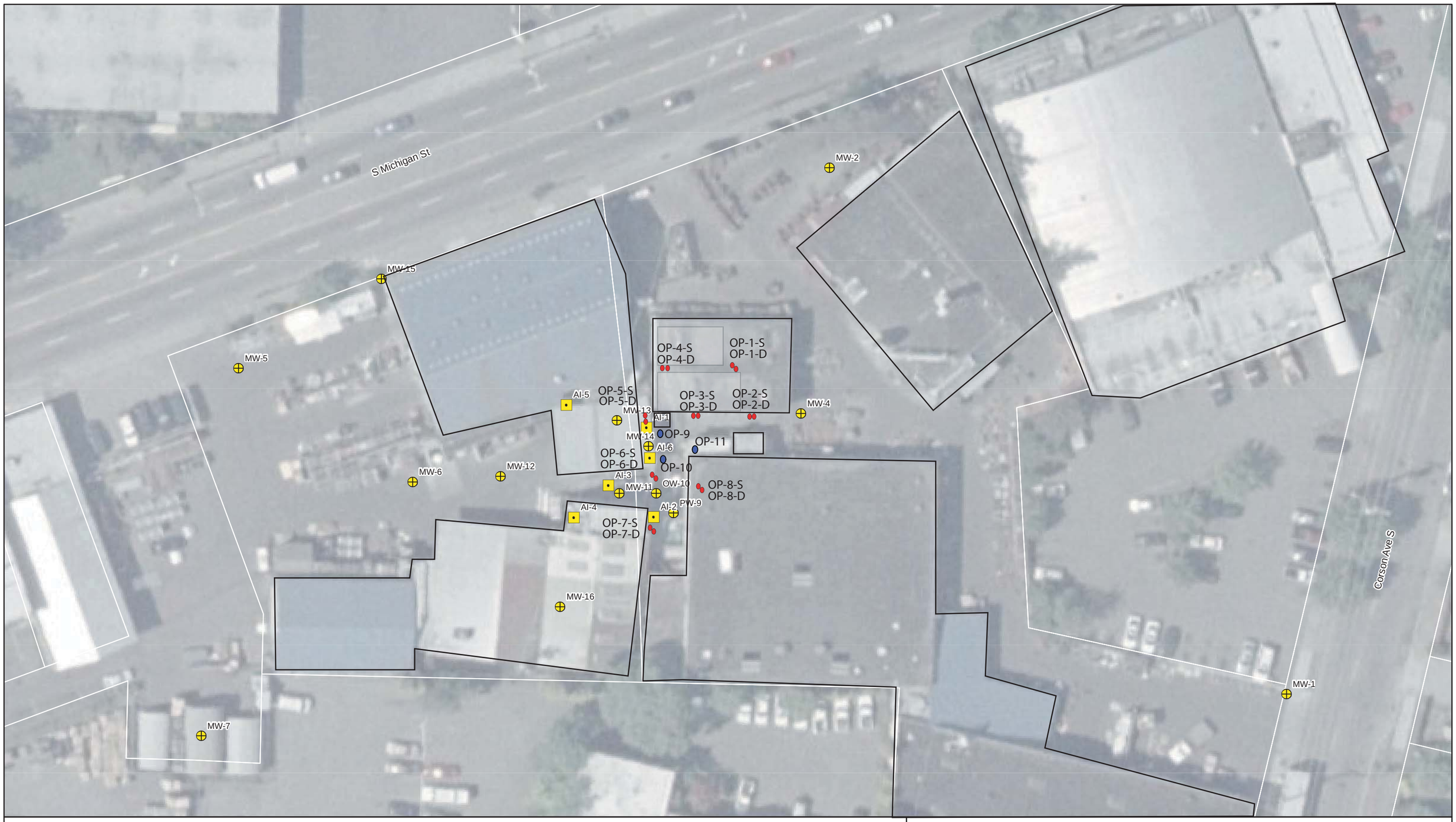
Table 3. Soil Sampling Results Summary

Scougal Rubber Corporation, Seattle, Washington

Sample	Date	Depth	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride
		feet	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
Paint Booth Investgiation						
SR-27	5/13/13	5.1	U 0.025	U 0.03	U 0.05	U 0.05
SR-28	5/13/13	5.5	U 0.025	U 0.03	U 0.05	U 0.05
SR-29	5/13/13	2.5	U 0.025	**0.29**	U 0.05	U 0.05
SR-30	5/13/13	2.7	**0.05**	**0.67**	U 0.05	U 0.05
SR-31	5/13/13	5.1	**0.081**	**0.23**	U 0.05	U 0.05
MTCA Method A table values			*0.05*	*0.03*	*8000*	*0.67*

Bold indicates exceedance of MTCA Method A table value.

U indicates non-detect at the shown reporting limit.



Well

- Air Sparging Well
- Monitoring Well
- Ozone Sparge Points (June 2009)
- Ozone Sparge Points (June 2010)

0 Feet 100

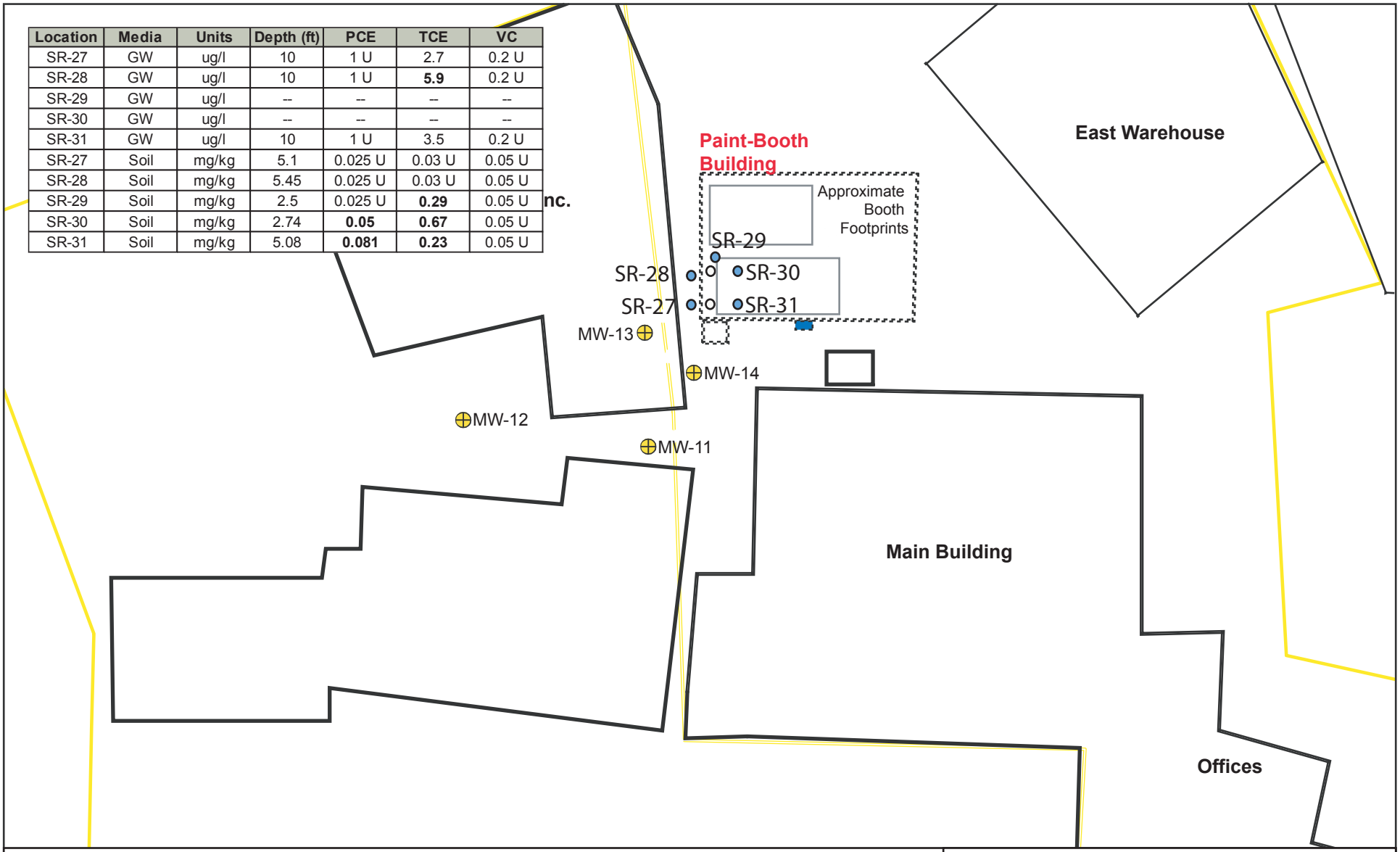
N

Figure 1. Site Map and Ozone Sparge Point Locations
Scougal Rubber Corporation
Seattle, Washington

PgG

JK0605 / 2-27-09

Location	Media	Units	Depth (ft)	PCE	TCE	VC
SR-27	GW	ug/l	10	1 U	2.7	0.2 U
SR-28	GW	ug/l	10	1 U	**5.9**	0.2 U
SR-29	GW	ug/l	--	--	--	--
SR-30	GW	ug/l	--	--	--	--
SR-31	GW	ug/l	10	1 U	3.5	0.2 U
SR-27	Soil	mg/kg	5.1	0.025 U	0.03 U	0.05 U
SR-28	Soil	mg/kg	5.45	0.025 U	0.03 U	0.05 U
SR-29	Soil	mg/kg	2.5	0.025 U	**0.29**	0.05 U
SR-30	Soil	mg/kg	2.74	**0.05**	**0.67**	0.05 U
SR-31	Soil	mg/kg	5.08	**0.081**	**0.23**	0.05 U



Well

- Air Sparging Well
- Monitoring Well
- Ozone Sparge Point
- Ozone Cabinet
- Soil/Groundwater Location

Hollow symbols indicate that the location was not sampled due to the presence of foundation footings.

N

0 Feet 50

Figure 2.
Locations of Targeted Soil and Groundwater Samples
Scougal Rubber, Seattle, Washington

PgG

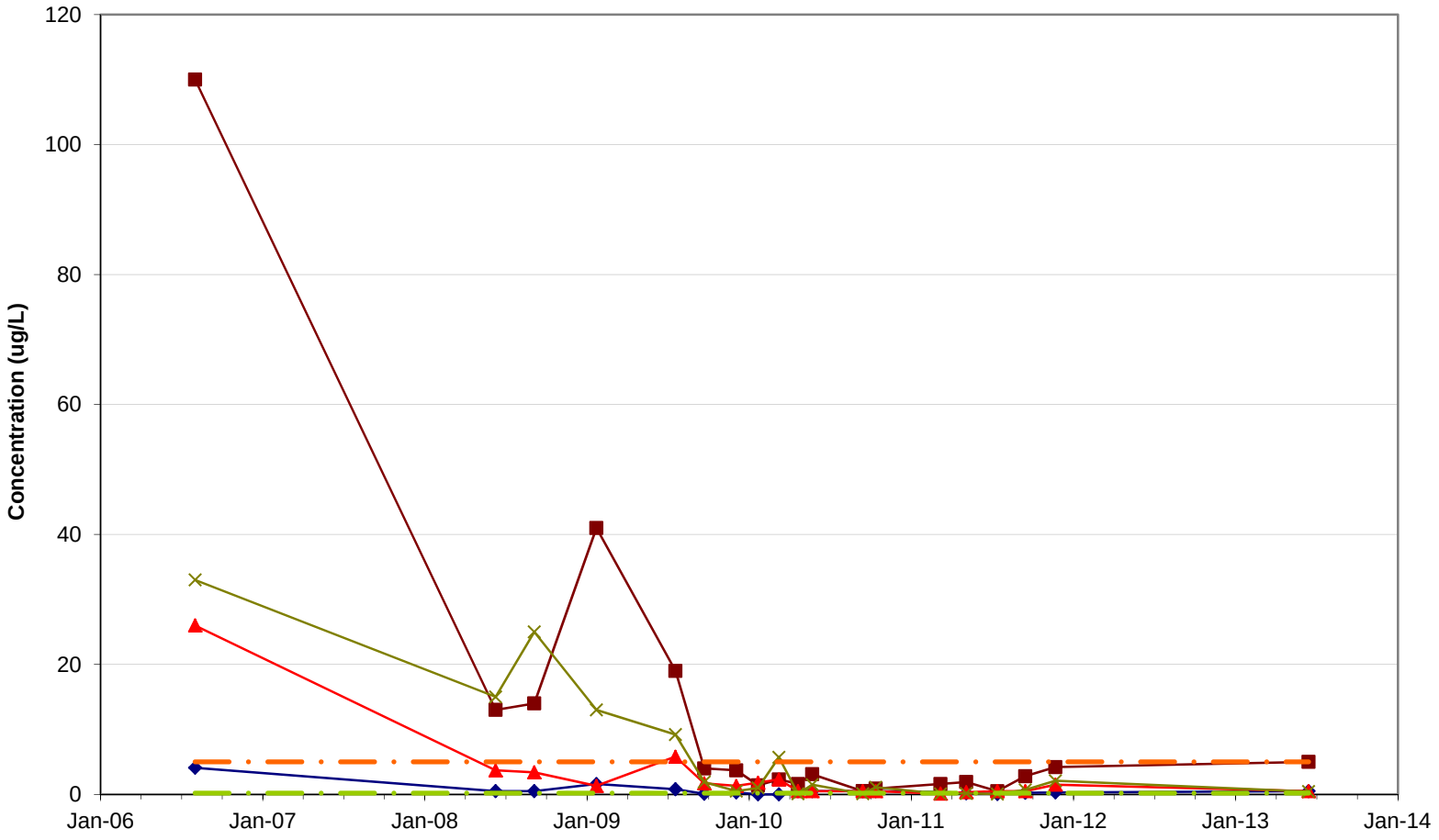


Figure 3a. MW-14 Concentration Trends
Scougal Rubber Corporation
Seattle, Washington

PgG

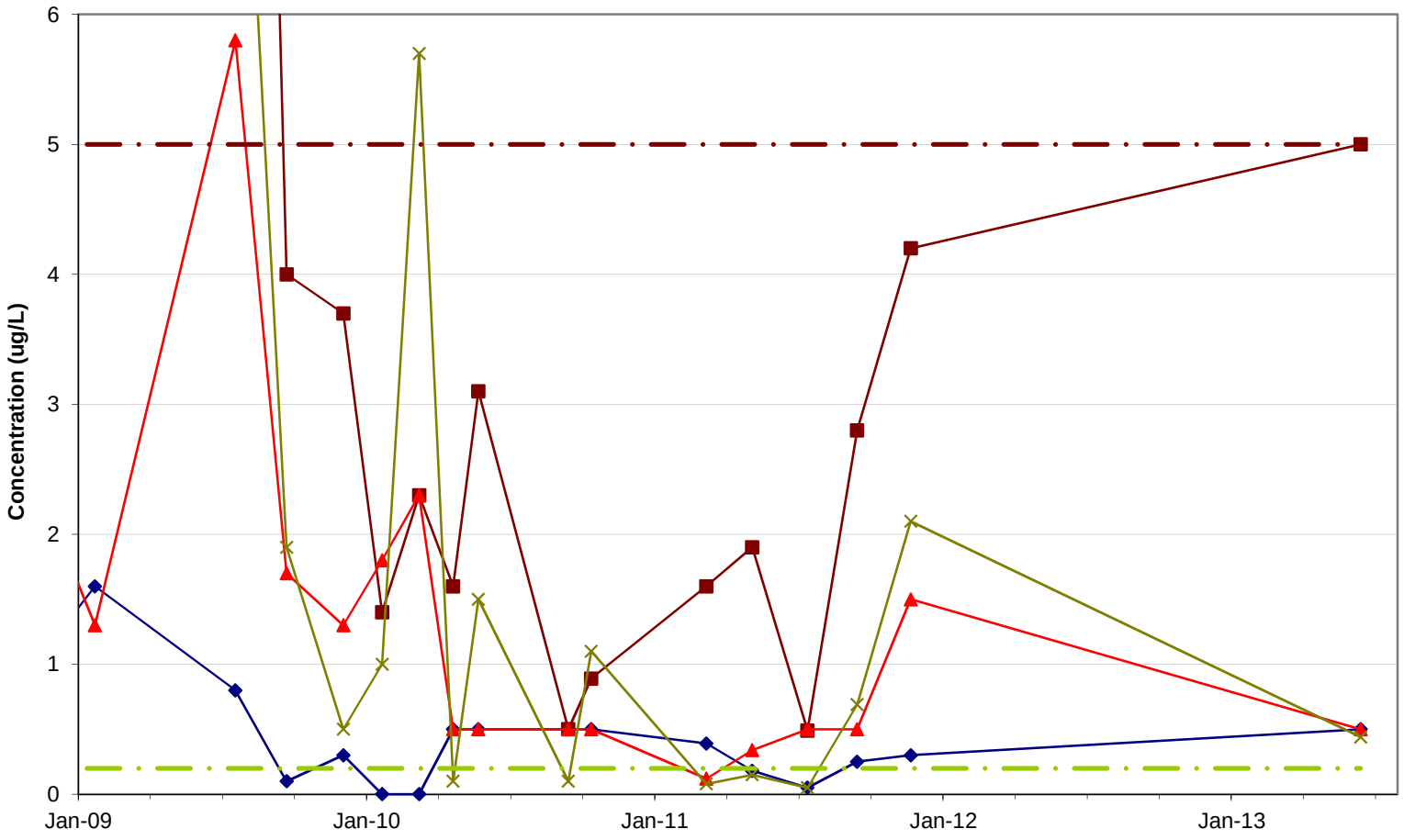


Figure 3b. MW-14 Concentration Trends
Scougal Rubber Corporation
Seattle, Washington

PgG

FRIEDMAN & BRUYA, INC.

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May 29, 2013

Glen Wallace, Project Manger
Pacific Groundwater Group
2377 Eastlake Ave East
Seattle, WA 98102

Dear Mr. Wallace:

Included are the results from the testing of material submitted on May 14, 2013 from the Scougal Rubber JK0605, F&BI 305265 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
PGG0529R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 14, 2013 by Friedman & Bruya, Inc. from the Pacific Groundwater Group Scougal Rubber JK0605, F&BI 305265 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Pacific Groundwater Group
305265 -01	SR-29-2.5
305265 -02	SR-27-5.1
305265 -03	SR-28-5.45
305265 -04	SR-31-5.08
305265 -05	SR-30-2.74
305265 -06	SR-31-GW
305265 -07	SR-28-GW
305265 -08	SR-27-GW

Bromomethane in the 8260C water matrix spike, laboratory control sample and laboratory control sample duplicate exceeded the acceptance criteria. The analyte was not detected in the sample, therefore the data were acceptable.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SR-29-2.5	Client:	Pacific Groundwater Group
Date Received:	05/14/13	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/15/13	Lab ID:	305265-01
Date Analyzed:	05/15/13	Data File:	051539.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	59	116
Toluene-d8	94	51	121
4-Bromofluorobenzene	96	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	<0.5	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	0.29	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SR-27-5.1	Client:	Pacific Groundwater Group
Date Received:	05/14/13	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/15/13	Lab ID:	305265-02
Date Analyzed:	05/15/13	Data File:	051540.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	59	116
Toluene-d8	95	51	121
4-Bromofluorobenzene	98	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	<0.5	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	<0.03	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SR-28-5.45	Client:	Pacific Groundwater Group
Date Received:	05/14/13	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/15/13	Lab ID:	305265-03
Date Analyzed:	05/15/13	Data File:	051541.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	59	116
Toluene-d8	94	51	121
4-Bromofluorobenzene	97	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	<0.5	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	<0.03	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SR-31-5.08	Client:	Pacific Groundwater Group
Date Received:	05/14/13	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/15/13	Lab ID:	305265-04
Date Analyzed:	05/15/13	Data File:	051542.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	59	116
Toluene-d8	94	51	121
4-Bromofluorobenzene	98	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.081
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.15
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	0.80
Methylene chloride	<0.5	o-Xylene	0.42
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	0.23	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	0.95	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	0.060	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SR-30-2.74	Client:	Pacific Groundwater Group
Date Received:	05/14/13	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/15/13	Lab ID:	305265-05
Date Analyzed:	05/15/13	Data File:	051543.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	59	116
Toluene-d8	94	51	121
4-Bromofluorobenzene	97	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	0.050
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	0.28
Methylene chloride	<0.5	o-Xylene	0.13
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	0.67	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Pacific Groundwater Group
Date Received:	Not Applicable	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/15/13	Lab ID:	03-0891 mb
Date Analyzed:	05/15/13	Data File:	051512.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	59	116
Toluene-d8	90	51	121
4-Bromofluorobenzene	94	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Methylene chloride	<0.5	o-Xylene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Styrene	<0.05
trans-1,2-Dichloroethene	<0.05	Isopropylbenzene	<0.05
1,1-Dichloroethane	<0.05	Bromoform	<0.05
2,2-Dichloropropane	<0.05	n-Propylbenzene	<0.05
cis-1,2-Dichloroethene	<0.05	Bromobenzene	<0.05
Chloroform	<0.05	1,3,5-Trimethylbenzene	<0.05
2-Butanone (MEK)	<0.5	1,1,2,2-Tetrachloroethane	<0.05
1,2-Dichloroethane (EDC)	<0.05	1,2,3-Trichloropropane	<0.05
1,1,1-Trichloroethane	<0.05	2-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	4-Chlorotoluene	<0.05
Carbon tetrachloride	<0.05	tert-Butylbenzene	<0.05
Benzene	<0.03	1,2,4-Trimethylbenzene	<0.05
Trichloroethene	<0.03	sec-Butylbenzene	<0.05
1,2-Dichloropropane	<0.05	p-Isopropyltoluene	<0.05
Bromodichloromethane	<0.05	1,3-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,4-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dichlorobenzene	<0.05
cis-1,3-Dichloropropene	<0.05	1,2-Dibromo-3-chloropropane	<0.5
Toluene	<0.05	1,2,4-Trichlorobenzene	<0.25
trans-1,3-Dichloropropene	<0.05	Hexachlorobutadiene	<0.25
1,1,2-Trichloroethane	<0.05	Naphthalene	<0.05
2-Hexanone	<0.5	1,2,3-Trichlorobenzene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SR-31-GW	Client:	Pacific Groundwater Group
Date Received:	05/14/13	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/16/13	Lab ID:	305265-06
Date Analyzed:	05/16/13	Data File:	051611.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	3.5	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SR-28-GW	Client:	Pacific Groundwater Group
Date Received:	05/14/13	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/16/13	Lab ID:	305265-07
Date Analyzed:	05/16/13	Data File:	051612.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	5.9	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	SR-27-GW	Client:	Pacific Groundwater Group
Date Received:	05/14/13	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/16/13	Lab ID:	305265-08
Date Analyzed:	05/16/13	Data File:	051613.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	2.7	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Pacific Groundwater Group
Date Received:	Not Applicable	Project:	Scougal Rubber JK0605, F&BI 305265
Date Extracted:	05/16/13	Lab ID:	03-0892 mb
Date Analyzed:	05/16/13	Data File:	051609.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

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Project: Scougal Rubber JK0605, F&BI 305265

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 305269-11 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	30	33	10-142	10
Chloromethane	mg/kg (ppm)	2.5	<0.5	54	55	10-126	2
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	59	61	10-138	3
Bromomethane	mg/kg (ppm)	2.5	<0.5	71	64	10-163	10
Chloroethane	mg/kg (ppm)	2.5	<0.5	68	69	10-176	1
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	72	77	10-176	7
Acetone	mg/kg (ppm)	12.5	<0.5	60	70	10-163	15
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	68	70	10-160	3
Methylene chloride	mg/kg (ppm)	2.5	<0.5	64	67	10-156	5
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	77	78	21-145	1
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	71	75	14-137	5
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	73	75	19-140	3
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	77	76	10-158	1
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	75	77	25-135	3
Chloroform	mg/kg (ppm)	2.5	<0.05	75	77	21-145	3
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	65	71	19-147	9
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	73	76	12-160	4
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	74	77	10-156	4
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	68	72	17-140	6
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	71	75	9-164	5
Benzene	mg/kg (ppm)	2.5	<0.03	69	74	29-129	7
Trichloroethene	mg/kg (ppm)	2.5	<0.03	71	75	21-139	5
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	72	76	30-135	5
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	75	81	23-155	8
Dibromomethane	mg/kg (ppm)	2.5	<0.05	73	76	23-145	4
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	68	70	24-155	3
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	70	76	28-144	8
Toluene	mg/kg (ppm)	2.5	<0.05	76	79	35-130	4
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	81	82	26-149	1
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	84	84	10-205	0
2-Hexanone	mg/kg (ppm)	12.5	<0.5	72	73	15-166	1
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	78	82	31-137	5
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	68	74	20-133	8
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	81	86	28-150	6
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	76	80	28-142	5
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	78	80	32-129	3
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	74	78	32-137	5
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	88	85	31-143	3
m,p-Xylene	mg/kg (ppm)	5	<0.1	74	77	34-136	4
o-Xylene	mg/kg (ppm)	2.5	0.047	79	81	33-134	2
Styrene	mg/kg (ppm)	2.5	<0.05	78	81	35-137	4
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	77	80	31-142	4
Bromoform	mg/kg (ppm)	2.5	<0.05	82	85	21-156	4
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	73	80	23-146	9
Bromobenzene	mg/kg (ppm)	2.5	<0.05	77	89	34-130	14
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	0.11	76	81	18-149	6
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	83	87	28-140	5
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	75	80	25-144	6
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	74	80	31-134	8
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	73	80	31-136	9
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	78	82	30-137	5
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	0.19	81	86	10-182	6
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	75	82	23-145	9
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	74	80	21-149	8
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	73	81	30-131	10
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	74	79	29-129	7
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	80	84	31-132	5
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	81	82	11-161	1
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	87	95	22-142	9
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	92	107	10-142	15
Naphthalene	mg/kg (ppm)	2.5	0.098	98	98	14-157	0
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	97	104	20-144	7

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	45	10-146
Chloromethane	mg/kg (ppm)	2.5	61	27-133
Vinyl chloride	mg/kg (ppm)	2.5	67	22-139
Bromomethane	mg/kg (ppm)	2.5	72	38-114
Chloroethane	mg/kg (ppm)	2.5	72	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	78	10-196
Acetone	mg/kg (ppm)	12.5	69	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	76	47-128
Methylene chloride	mg/kg (ppm)	2.5	72	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	82	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	79	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	81	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	101	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	83	72-113
Chloroform	mg/kg (ppm)	2.5	82	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	76	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	80	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	82	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	79	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	81	60-139
Benzene	mg/kg (ppm)	2.5	79	68-114
Trichloroethene	mg/kg (ppm)	2.5	77	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	81	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	85	72-130
Dibromomethane	mg/kg (ppm)	2.5	82	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	73	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	82	75-136
Toluene	mg/kg (ppm)	2.5	87	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	90	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	87	75-113
2-Hexanone	mg/kg (ppm)	12.5	77	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	86	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	84	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	95	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	85	74-132
Chlorobenzene	mg/kg (ppm)	2.5	88	76-111
Ethylbenzene	mg/kg (ppm)	2.5	87	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	96	69-135
m,p-Xylene	mg/kg (ppm)	5	85	78-122
o-Xylene	mg/kg (ppm)	2.5	88	77-124
Styrene	mg/kg (ppm)	2.5	89	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	90	76-127
Bromoform	mg/kg (ppm)	2.5	93	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	89	74-124
Bromobenzene	mg/kg (ppm)	2.5	90	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	90	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	92	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	84	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	87	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	90	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	91	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	89	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	89	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	90	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	90	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	88	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	92	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	90	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	104	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	100	50-153
Naphthalene	mg/kg (ppm)	2.5	100	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	106	63-138

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 305286-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	95	55-144
Chloromethane	ug/L (ppb)	50	<10	91	67-131
Vinyl chloride	ug/L (ppb)	50	<0.2	93	61-139
Bromomethane	ug/L (ppb)	50	<1	224 vo	66-129
Chloroethane	ug/L (ppb)	50	<1	121	68-126
Trichlorofluoromethane	ug/L (ppb)	50	<1	113	71-128
Acetone	ug/L (ppb)	250	<10	90	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	97	71-123
Methylene chloride	ug/L (ppb)	50	<5	95	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	98	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	95	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	95	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	89	58-132
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	95	73-119
Chloroform	ug/L (ppb)	50	<1	99	80-112
2-Butanone (MEK)	ug/L (ppb)	250	<10	96	69-123
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	95	78-113
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	98	79-116
1,1-Dichloropropene	ug/L (ppb)	50	<1	96	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	99	72-123
Benzene	ug/L (ppb)	50	<0.35	92	79-109
Trichloroethene	ug/L (ppb)	50	<1	93	75-109
1,2-Dichloropropane	ug/L (ppb)	50	<1	94	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	98	78-117
Dibromomethane	ug/L (ppb)	50	<1	97	80-112
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	100	79-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	94	76-120
Toluene	ug/L (ppb)	50	<1	96	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	95	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	96	81-111
2-Hexanone	ug/L (ppb)	250	<10	99	75-126
1,3-Dichloropropane	ug/L (ppb)	50	<1	97	81-111
Tetrachloroethene	ug/L (ppb)	50	<1	98	72-113
Dibromochloromethane	ug/L (ppb)	50	<1	97	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	95	83-114
Chlorobenzene	ug/L (ppb)	50	<1	95	75-115
Ethylbenzene	ug/L (ppb)	50	<1	95	71-120
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	95	78-122
m,p-Xylene	ug/L (ppb)	100	<2	95	63-128
o-Xylene	ug/L (ppb)	50	<1	95	64-129
Styrene	ug/L (ppb)	50	<1	98	70-122
Isopropylbenzene	ug/L (ppb)	50	<1	98	76-118
Bromoform	ug/L (ppb)	50	<1	100	49-138
n-Propylbenzene	ug/L (ppb)	50	<1	94	74-117
Bromobenzene	ug/L (ppb)	50	<1	94	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	95	81-112
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	95	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	95	72-119
2-Chlorotoluene	ug/L (ppb)	50	<1	94	77-114
4-Chlorotoluene	ug/L (ppb)	50	<1	93	81-109
tert-Butylbenzene	ug/L (ppb)	50	<1	95	81-116
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	94	74-118
sec-Butylbenzene	ug/L (ppb)	50	<1	96	77-118
p-Isopropyltoluene	ug/L (ppb)	50	<1	96	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	94	81-111
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	94	78-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	97	81-111
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	92	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	92	74-115
Hexachlorobutadiene	ug/L (ppb)	50	<1	87	67-120
Naphthalene	ug/L (ppb)	50	<1	94	63-136
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	91	79-115

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	90	90	54-149	0
Chloromethane	ug/L (ppb)	50	93	92	67-133	1
Vinyl chloride	ug/L (ppb)	50	91	91	73-132	0
Bromomethane	ug/L (ppb)	50	198 vo	204 vo	69-123	3
Chloroethane	ug/L (ppb)	50	120	118	68-126	2
Trichlorofluoromethane	ug/L (ppb)	50	107	107	70-132	0
Acetone	ug/L (ppb)	250	92	91	44-145	1
1,1-Dichloroethene	ug/L (ppb)	50	97	97	75-119	0
Methylene chloride	ug/L (ppb)	50	96	94	63-132	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	101	97	70-122	4
trans-1,2-Dichloroethene	ug/L (ppb)	50	97	95	76-118	2
1,1-Dichloroethane	ug/L (ppb)	50	98	96	80-116	2
2,2-Dichloropropane	ug/L (ppb)	50	102	97	62-141	5
cis-1,2-Dichloroethene	ug/L (ppb)	50	97	95	81-111	2
Chloroform	ug/L (ppb)	50	100	97	81-109	3
2-Butanone (MEK)	ug/L (ppb)	250	97	94	53-140	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	97	94	79-109	3
1,1,1-Trichloroethane	ug/L (ppb)	50	101	97	80-116	4
1,1-Dichloropropene	ug/L (ppb)	50	99	96	78-112	3
Carbon tetrachloride	ug/L (ppb)	50	101	97	72-128	4
Benzene	ug/L (ppb)	50	95	92	81-108	3
Trichloroethene	ug/L (ppb)	50	95	92	77-108	3
1,2-Dichloropropane	ug/L (ppb)	50	97	94	82-109	3
Bromodichloromethane	ug/L (ppb)	50	100	97	76-120	3
Dibromomethane	ug/L (ppb)	50	99	97	80-110	2
4-Methyl-2-pentanone	ug/L (ppb)	250	101	97	59-142	4
cis-1,3-Dichloropropene	ug/L (ppb)	50	99	96	76-128	3
Toluene	ug/L (ppb)	50	99	95	83-108	4
trans-1,3-Dichloropropene	ug/L (ppb)	50	101	97	76-128	4
1,1,2-Trichloroethane	ug/L (ppb)	50	97	94	82-110	3
2-Hexanone	ug/L (ppb)	250	101	97	53-145	4
1,3-Dichloropropane	ug/L (ppb)	50	99	95	83-110	4
Tetrachloroethene	ug/L (ppb)	50	101	98	78-109	3
Dibromochloromethane	ug/L (ppb)	50	101	97	63-140	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	97	94	85-113	3
Chlorobenzene	ug/L (ppb)	50	98	94	84-108	4
Ethylbenzene	ug/L (ppb)	50	97	94	84-110	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	98	93	76-125	5
m,p-Xylene	ug/L (ppb)	100	96	93	84-112	3
o-Xylene	ug/L (ppb)	50	97	94	82-113	3
Styrene	ug/L (ppb)	50	100	96	84-116	4
Isopropylbenzene	ug/L (ppb)	50	100	97	81-122	3
Bromoform	ug/L (ppb)	50	105	101	40-161	4
n-Propylbenzene	ug/L (ppb)	50	99	95	81-115	4
Bromobenzene	ug/L (ppb)	50	97	94	80-113	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	99	95	83-117	4
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	99	95	79-118	4
1,2,3-Trichloropropane	ug/L (ppb)	50	99	94	74-116	5
2-Chlorotoluene	ug/L (ppb)	50	99	94	79-112	5
4-Chlorotoluene	ug/L (ppb)	50	97	94	81-113	3
tert-Butylbenzene	ug/L (ppb)	50	99	96	81-119	3
1,2,4-Trimethylbenzene	ug/L (ppb)	50	97	94	83-116	3
sec-Butylbenzene	ug/L (ppb)	50	100	96	83-116	4
p-Isopropyltoluene	ug/L (ppb)	50	100	97	82-119	3
1,3-Dichlorobenzene	ug/L (ppb)	50	98	94	83-111	4
1,4-Dichlorobenzene	ug/L (ppb)	50	98	94	82-109	4
1,2-Dichlorobenzene	ug/L (ppb)	50	100	97	83-111	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	95	93	62-133	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	96	94	77-117	2
Hexachlorobutadiene	ug/L (ppb)	50	89	88	74-118	1
Naphthalene	ug/L (ppb)	50	97	96	75-131	1
1,2,3-Trichlorobenzene	ug/L (ppb)	50	93	91	82-115	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

305265

SAMPLE CHAIN OF CUSTODY

ME 05-14-13 VS2/V2

Page # 1 of 1

Send Report To Glen Wallace
Company PGG
Address 2377 EastlakeAve E
City, State, ZIP Seattle, WA 98102
Phone # (206) 329-0141 Fax #

SAMPLERS (signature)

PROJECT NAME/NO. Seaview Ave

PO # JK0605

REMARKS

Pls include EDD

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
SR-29-2.5	01 A-D	5/13/13	1756	S	4				X									
SR-27-5.1	02 T		1058	S	4				X									
SR-28-5.45	03		1221	S	4				X									
SR-30-GW			nr	W	4				X									received 10A empty
SR-31-5.08	04 A-D		1440	S	4				X									
SR-30-2.74	05 T		1540	S	3/4				X									
SR-31-GW	06		1504	W	4				X									
SR-29-GW	07		1251	W	4				X									
SR-27-GW	08	5/13/13	1311	W	4				X									

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Glen Wallace	PGG	5/14/13	1145
Received by:	Eric Town	FoB	5/14/13	1145
Relinquished by:				
Received by:		Samples received at 5 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 27, 2013

Glen Wallace, Project Manger
Pacific Groundwater Group
2377 Eastlake Ave East
Seattle, WA 98102

Dear Mr. Wallace:

Included are the results from the testing of material submitted on June 14, 2013 from the Scougal Rubber, PO JK0605, F&BI 306260 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
PGG0627R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 14, 2013 by Friedman & Bruya, Inc. from the Pacific Groundwater Group Scougal Rubber, PO JK0605, F&BI 306260 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Pacific Groundwater Group
306260-01	MW-11
306260-02	MW-12
306260-03	MW-13
306260-04	MW-14

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-11	Client:	Pacific Groundwater Group
Date Received:	06/14/13	Project:	Scougal Rubber, PO JK0605, F&BI 306260
Date Extracted:	06/18/13	Lab ID:	306260-01
Date Analyzed:	06/18/13	Data File:	061832.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	6.8	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-12	Client:	Pacific Groundwater Group
Date Received:	06/14/13	Project:	Scougal Rubber, PO JK0605, F&BI 306260
Date Extracted:	06/18/13	Lab ID:	306260-02
Date Analyzed:	06/18/13	Data File:	061833.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-13	Client:	Pacific Groundwater Group
Date Received:	06/14/13	Project:	Scougal Rubber, PO JK0605, F&BI 306260
Date Extracted:	06/18/13	Lab ID:	306260-03
Date Analyzed:	06/18/13	Data File:	061834.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	0.32	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	2.0	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	11	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-14	Client:	Pacific Groundwater Group
Date Received:	06/14/13	Project:	Scougal Rubber, PO JK0605, F&BI 306260
Date Extracted:	06/18/13	Lab ID:	306260-04
Date Analyzed:	06/19/13	Data File:	061835.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	0.44	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	5.0	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Pacific Groundwater Group
Date Received:	Not Applicable	Project:	Scougal Rubber, PO JK0605, F&BI 306260
Date Extracted:	06/18/13	Lab ID:	03-1115 mb
Date Analyzed:	06/18/13	Data File:	061823.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Methylene chloride	<5	o-Xylene	<1
Methyl t-butyl ether (MTBE)	<1	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<0.35	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<10
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1

Date of Report: 06/27/13
Date Received: 06/14/13
Project: Scougal Rubber, PO JK0605, F&BI 306260

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 306263-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	104	10-172
Chloromethane	ug/L (ppb)	50	<10	99	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	98	36-166
Bromomethane	ug/L (ppb)	50	<1	132	47-169
Chloroethane	ug/L (ppb)	50	<1	123	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	122	44-165
Acetone	ug/L (ppb)	250	<10	121	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	103	60-136
Methylene chloride	ug/L (ppb)	50	<5	93	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	101	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	99	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	101	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	100	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	100	71-127
Chloroform	ug/L (ppb)	50	<1	103	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	117	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	102	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	106	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	99	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	107	56-152
Benzene	ug/L (ppb)	50	<0.35	96	76-125
Trichloroethene	ug/L (ppb)	50	<1	99	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	97	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	106	61-150
Dibromomethane	ug/L (ppb)	50	<1	103	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	106	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	101	72-132
Toluene	ug/L (ppb)	50	<1	96	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	99	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	98	68-131
2-Hexanone	ug/L (ppb)	250	<10	103	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	97	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	98	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	110	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	102	69-134
Chlorobenzene	ug/L (ppb)	50	<1	97	77-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	105	73-137
m,p-Xylene	ug/L (ppb)	100	<2	98	69-135
o-Xylene	ug/L (ppb)	50	<1	99	60-140
Styrene	ug/L (ppb)	50	<1	99	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	101	65-142
Bromoform	ug/L (ppb)	50	<1	110	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	97	58-144
Bromobenzene	ug/L (ppb)	50	<1	95	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	99	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	103	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	98	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	97	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	98	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	99	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	100	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	97	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	96	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	96	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	94	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	99	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	107	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	92	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	96	60-143
Naphthalene	ug/L (ppb)	50	<1	95	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	95	69-148

Date of Report: 06/27/13
Date Received: 06/14/13
Project: Scougal Rubber, PO JK0605, F&BI 306260

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	106	107	25-158	1
Chloromethane	ug/L (ppb)	50	101	98	45-156	3
Vinyl chloride	ug/L (ppb)	50	102	102	50-154	0
Bromomethane	ug/L (ppb)	50	133	133	55-143	0
Chloroethane	ug/L (ppb)	50	122	123	58-146	1
Trichlorofluoromethane	ug/L (ppb)	250	117	119	50-150	2
Acetone	ug/L (ppb)	250	98	99	53-131	1
1,1-Dichloroethene	ug/L (ppb)	50	104	106	67-136	2
Methylene chloride	ug/L (ppb)	50	96	98	39-148	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	101	102	64-147	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	100	102	68-128	2
1,1-Dichloroethane	ug/L (ppb)	50	101	102	79-121	1
2,2-Dichloropropane	ug/L (ppb)	50	107	108	55-143	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	104	80-123	2
Chloroform	ug/L (ppb)	50	103	103	80-121	0
2-Butanone (MEK)	ug/L (ppb)	250	110	106	57-149	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	100	101	73-132	1
1,1,1-Trichloroethane	ug/L (ppb)	50	104	106	83-130	2
1,1-Dichloropropene	ug/L (ppb)	50	102	103	77-129	1
Carbon tetrachloride	ug/L (ppb)	50	106	109	75-158	3
Benzene	ug/L (ppb)	50	99	100	69-134	1
Trichloroethene	ug/L (ppb)	50	99	102	80-120	3
1,2-Dichloropropane	ug/L (ppb)	50	102	102	77-123	0
Bromodichloromethane	ug/L (ppb)	50	109	108	81-133	1
Dibromomethane	ug/L (ppb)	50	104	105	82-125	1
4-Methyl-2-pentanone	ug/L (ppb)	250	108	105	65-138	3
cis-1,3-Dichloropropene	ug/L (ppb)	50	108	108	82-132	0
Toluene	ug/L (ppb)	50	97	100	72-122	3
trans-1,3-Dichloropropene	ug/L (ppb)	50	107	108	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	50	102	103	75-124	1
2-Hexanone	ug/L (ppb)	250	106	104	60-136	2
1,3-Dichloropropane	ug/L (ppb)	50	100	101	76-126	1
Tetrachloroethene	ug/L (ppb)	50	100	102	76-121	2
Dibromochloromethane	ug/L (ppb)	50	110	112	84-133	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	105	105	82-125	0
Chlorobenzene	ug/L (ppb)	50	99	100	83-114	1
Ethylbenzene	ug/L (ppb)	50	100	103	77-124	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	105	106	84-127	1
m,p-Xylene	ug/L (ppb)	100	100	103	83-125	3
o-Xylene	ug/L (ppb)	50	102	103	81-121	1
Styrene	ug/L (ppb)	50	102	103	84-119	1
Isopropylbenzene	ug/L (ppb)	50	100	102	85-117	2
Bromoform	ug/L (ppb)	50	114	115	74-136	1
n-Propylbenzene	ug/L (ppb)	50	99	103	74-126	4
Bromobenzene	ug/L (ppb)	50	99	102	80-121	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	99	102	78-123	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	104	105	66-126	1
1,2,3-Trichloropropane	ug/L (ppb)	50	100	103	67-124	3
2-Chlorotoluene	ug/L (ppb)	50	98	103	77-127	5
4-Chlorotoluene	ug/L (ppb)	50	98	102	78-128	4
tert-Butylbenzene	ug/L (ppb)	50	99	103	80-123	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	100	103	79-122	3
sec-Butylbenzene	ug/L (ppb)	50	98	103	80-125	5
p-Isopropyltoluene	ug/L (ppb)	50	98	102	81-123	4
1,3-Dichlorobenzene	ug/L (ppb)	50	99	102	85-116	3
1,4-Dichlorobenzene	ug/L (ppb)	50	98	101	84-121	3
1,2-Dichlorobenzene	ug/L (ppb)	50	99	101	85-116	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	107	105	57-141	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	95	99	72-130	4
Hexachlorobutadiene	ug/L (ppb)	50	98	103	53-141	5
Naphthalene	ug/L (ppb)	50	98	100	64-133	2
1,2,3-Trichlorobenzene	ug/L (ppb)	50	100	102	65-136	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

306260

SAMPLE CHAIN OF CUSTODY ME 06-14-13

V2

Send Report To Glen Wallace
Company PacFic Groundwater Group
Address 2377 Eastlake Ave E
City, State, ZIP Seattle, WA 98102
Phone # 206 329-0441 Fax # ____

SAMPLERS (signature)

PROJECT NAME/NO. Scogal Rubber

PO# JK0605

REMARKS glen@pgwg.com

Page # ____ of ____

TURNAROUND TIME
☑ Standard (2 Weeks)
☐ RUSH ____
Rush charges authorized by ____

SAMPLE DISPOSAL
☑ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS							Notes
MW-11	01	6/14/13	1120	W	4				X									
MW-12	02	"	1155	W	4				X									
MW-13	03	"	1035	W	4				X									
MW-14	04	6/14/13	1245	W	4				X									

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Glen Wallace	PGG	6/14/13	1530
Received by:	Eric Hansen	FOB	6/14/13	1530
Relinquished by:				
Received by:		Samples received at		7 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044