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March 8, 2005
File No. 04203016.02

Mr. Frank Jensen
Griffin & Jensen Tenancy in Common
16027 SE 63rd Street
Bellevue, Washington 98006

Subject: **Sixth Quarterly Groundwater Monitoring Report: February 15 & 16, 2005, Former Sooper Dry Cleaners Site, Normandy Park Shopping Center, Normandy Park, Washington**

Dear Mr. Jensen:

This letter report presents the results of the February 2005 groundwater monitoring event for the former Sooper Dry Cleaners site. This represents the sixth quarterly monitoring event conducted at the site. The project site is located in the Normandy Park Shopping Center at 17835 First Avenue South in Normandy Park, Washington (Figure 1).

BACKGROUND

Historical releases of dry cleaning solvents contaminated the shallow soils beneath the Former Sooper Dry Cleaners and along adjacent utility lines with perchloroethylene (PCE), which subsequently leached PCE into the shallow groundwater. Site cleanup activities were initiated on the property in March 2003. The remedial actions included focused soil excavation to remove suspected sources of PCE soil and groundwater contamination followed by the implementation of engineered and institutional controls to further isolate any remaining residual soil contamination. These independent cleanup activities were completed under the Washington Department of Ecology's Voluntary Cleanup Program. The state identification number for the site is TCP #NW0614.

Following the onsite remedial actions, a five year groundwater program was proposed to assess the effectiveness of the source removal and engineered/institutional control measures to reduce the levels of residual groundwater contamination and minimize potential impacts to human health and the environment. At that time, Ecology suggested that the initial year (i.e. first four quarters) of groundwater monitoring be completed and the resulting field and chemical data be evaluated before proceeding with the remaining portions of the monitoring program. The first year of post-remedial groundwater monitoring was completed between October 2003 and July 2004. Subsequent discussions with Ecology concluded that the continued presence of elevated levels of PCE beneath the shopping center warranted continuing groundwater monitoring at the site through the originally proposed five year period.

MONITORING WELL NETWORK

As illustrated on Figure 1, a total of 11 groundwater monitoring wells (MW-1 through MW-6, MW-8 and MW-10 through MW-12) are currently present on the Normandy Park shopping center. In addition, three offsite monitoring wells are located between 500 and 800 feet hydrologically downgradient (west-southwest) of the property. As detailed in the site remedial plan (SCS Engineers, June 2002), the current groundwater monitoring program incorporates both onsite and offsite groundwater sampling locations.

During the 2003/2004 reporting period, groundwater was regularly observed to be present in only five of the 11 onsite monitoring wells. Due to locally depressed water table conditions, the six remaining onsite wells were dry throughout this period. Based on these observations, the same five monitoring onsite wells (MW-5B, MW-8, MW-10, MW-11 and MW-12) will continue to be monitored during the remaining four years of the groundwater monitoring program to provide coverage within the residual plume of PCE contaminated groundwater and along the western property border. Similarly, all three off-site monitoring wells (MW-13, MW-14 and MW-15) will continue be monitored to provide coverage downgradient of the observed PCE contamination. Quarterly groundwater sampling is anticipated to continue through the second monitoring year, at which time modifications in the well network and/or the sampling frequency may be implemented to enhance the efficiency of the post-remedial monitoring program.

SAMPLING METHODS

The sixth round of quarterly groundwater monitoring was completed at the Normandy Park shopping center on February 15 and 16, 2005. Permission was obtained from the City of Normandy Park prior to sampling the offsite groundwater wells located in Marivista Park.

The depth to the water table was measured in each of the wells in the monitoring network before commencing well purging and groundwater sampling activities. The groundwater elevation was measured to the nearest 0.01 foot using an electronic water level meter. These data were used for calculation of the local groundwater flow direction and gradient.

Well purging and groundwater sampling was performed using a submersible QED bladder pump system and low-flow/low-volume well sampling techniques. Low-flow sampling can control sample turbidity and minimize sample chemistry alteration by pumping at very low flow rates from the well screen zone, avoiding disturbance to the water column in the well and minimizing stress on the surrounding formation. Samples obtained in this manner will best represent the groundwater chemistry at each location beneath the site.

Field measurements for specific conductance, pH, dissolved oxygen, Eh, turbidity, and groundwater temperature were taken throughout all well purging activities to ensure the collection of representative groundwater samples. An accurate record of all sampling activities, field measurements and site observations made during the monitoring event were maintained on separate field sampling forms (see Appendix B).

All non-disposable sampling equipment (bladder pump, water level probe) was thoroughly decontaminated with non-phosphate detergent (TSP-substitute) and clean tap water washes followed by a final distilled water rinse before each use. A new pair of disposable sampling gloves was used during the collection of each sample, and then discarded. Groundwater samples were collected directly from the pump discharge tubing into 40-milliliter (ml) glass VOA vials.

Low flow sampling methods minimized the volume of purge water that was generated during the monitoring event. The small volume of purge water generated during the sampling event was accumulated in a 55-gallon drum currently located on the shopping center property. Water that does not contain detectable PCE concentrations was discharged at the site. Water that contains PCE concentrations in excess of regulatory criteria will be retained at the site until proper disposal can be arranged.

The groundwater samples collected during the February 2005 monitoring event were submitted to a Washington Department of Ecology accredited laboratory (Severn Trent Laboratories, Tacoma, WA) and analyzed for PCE and related volatile organic compounds (VOCs) using EPA Method 8260. The samples were delivered to the laboratory the day after sample collection. Severn Trent performed all analyses within the appropriate holding time (14 days for EPA method 8260). The laboratory also performed method-specific quality control activities, including surrogate recoveries, matrix spike, duplicates, and blanks. One field duplicate was also collected and submitted to the testing laboratory to provide field and analytical quality assurance/quality control.

HYDROLOGICAL RESULTS

The depth to groundwater was measured in each of the monitoring wells sampled during the February 2005 monitoring event. The groundwater elevation in each well was determined by subtracting the measured depth to groundwater from the surveyed elevation of the top of the wellhead (Table 1). The groundwater elevation contours were then plotted on a site map to indicate the local groundwater flow direction, and are illustrated on Figure 1 in Appendix A. As shown on Table 1, six of the 11 onsite groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5A, and MW-6) were observed to be dry during this event.

TABLE 1

Summary of Water Level Measurements, February 2005

Well Location	Date	Wellhead Elevation[1](ft)	Depth to Groundwater[2] (ft)	Groundwater Elevation (ft)
MW-1	02/16/05	270.49	DRY	--
MW-2	02/16/05	270.78	DRY	--
MW-3	02/16/05	271.67	DRY	--
MW-4	02/16/05	272.01	DRY	--
MW-5A	02/16/05	271.29	DRY	--
MW-5B	02/16/05	271.10	47.85	223.25
MW-6	02/16/05	272.27	DRY	--
MW-8	02/16/05	271.06	48.02	223.04
MW-10	02/16/05	270.58	57.82	212.76
MW-11	02/16/05	271.30	52.60	218.70
MW-12	02/16/05	269.56	46.61	222.95
MW-13	02/15/05	321.72	114.12	207.60
MW-14	02/15/05	316.22	108.62	207.60
MW-15	02/15/05	319.14	110.41	208.73

1 Elevation of the top of the well casing based on the USC&GS datum for geodetic mean sea level.
2 Referenced from the top of wellhead.
-- Water table elevation not available.

The groundwater flow direction and gradient beneath the site were calculated using a standard three-point geometric model. Using the February 2005 elevation data, groundwater flow was calculated to be towards the west-southwest, with an estimated average hydraulic gradient of 0.019 ft/ft. An identical hydraulic gradient (0.019 ft/ft) was calculated for the site using the water table elevation measurements

obtained during the most recent previous (November 2004) groundwater monitoring event. On average, groundwater elevations measured at the site during February 2005 were approximately 0.5 foot lower than those recorded for the November 2004 sampling period.

ANALYTICAL RESULTS

Field parameters were recorded at each monitoring well location before the collection of groundwater samples. Groundwater temperatures measured during the February 2005 sampling event in the onsite wells ranged from 10.6 to 12.8°C. Slightly lower temperatures, ranging from 10.1 to 11.0°C were observed in the three offsite wells. Groundwater pH in the onsite wells was slightly acidic to neutral, ranging between 6.3 to 7.0 standard units. Readings from the three offsite wells were similar, ranging from 6.1 to 7.1 standard units.

Specific conductivity across the site ranged from 150 to 512 µS, with the most elevated readings being measured in onsite well MW-12 (512 µS) and offsite well MW-13 (297 µS). Dissolved oxygen (DO) levels in the onsite wells were generally high (ranging from 4.7 to 7.7 mg/L) with the exception of well MW-12 which had an anomalously low DO of 0.30 mg/L. Lower DO levels were observed at the offsite monitoring wells, ranging between 0.32 to 3.08 mg/L.

The measured field parameters generally remained consistent with measurements obtained during the previous monitoring events. All of the current field parameter data collected from the groundwater monitoring wells are recorded on the Groundwater Sampling Data Sheets in Appendix B.

The analytical results for the February 2005 quarterly groundwater monitoring event are summarized below on Table 2.

TABLE 2

Summary of Analytical Data for Halogenated and Aromatic VOCs in Groundwater
February 2005 Groundwater Sampling Event

Sample Location	Sampling Date	EPA Method 8260 Analytes (µg/L)	
		PCE	TCE
MW-5B*	02/16/05	**263**	ND
MW-8	02/16/05	**60.4**	ND
MW-10	02/16/05	**1460**	ND
MW-11	02/16/05	2.84	ND
MW-12	02/16/05	ND	ND
MW-13	02/15/05	ND	ND
MW-14	02/15/05	ND	ND
MW-15	02/15/05	ND	ND
MTCA Method A GW Standard		**5**	**5**

Bold Analytical results exceed the Model Toxics Control Act Method A standard for this compound.
PCE Tetrachloroethylene
TCE Trichloroethene;.
ND Analyte not detected.
* Duplicate sample DUP-A collected at this location. DUP-A results were 263 µg/L for PCE and ND for TCE.

Detectable PCE concentrations were reported in four (MW-5B, MW-8, MW-10 and MW-11) of the eight groundwater monitoring wells sampled during the February 2005 quarterly event. As shown on Table 2, these PCE concentrations ranged from 2.84 to 1,460 µg/L, with three onsite wells (MW-5B, MW-8 and MW-10) exceeding the 5 µg/L MTCA Method A groundwater standard.

The most elevated PCE levels (1,460 µg/L at MW-10 and 263 µg/L at MW-5B) continue to be observed near the western property border in the area immediately downgradient of the former dry cleaner tenant space. The PCE concentration in onsite well MW-11 (2.51 µg/L) remained below the MTCA Method A groundwater standard. PCE was not detected the remaining onsite monitoring well MW-12 or in any of the three offsite (MW-13, MW-14 and MW-15) monitoring wells. The PCE concentrations reported for the February 2005 monitoring event are illustrated on Figure 2 (in Appendix A).

None of the monitoring wells sampled during the February 2005 event were reported to contain chlorinated compounds (trichloroethene (TCE), dichloroethene (DCE) and vinyl chloride) associated with the PCE breakdown processes. Low, but detectable, concentrations of TCE and DCE were reported in MW-5B and MW-10 during the previous (November 2004) monitoring event.

The PCE concentrations detected in the groundwater samples collected from the former Sooper Cleaners site during the current monitoring period are slightly higher than those reported for November 2004. The February 2005 PCE levels in onsite wells MW-11, MW-8, MW-5B and MW-10 were 2.84, 60.4, 263 and 1,460 µg/L, respectively. During November 2004, these same wells were reported to contain 2.41, 53.8, 184 and 1,020 µg/L PCE, respectively. However, the current PCE groundwater concentrations continue to remain well below the pre-remedial levels. The February 2005 results are similar to those (2.55, 60.8, 260 and 1,420 µg/L, respectively) reported during the July 2004 monitoring event. Offsite wells MW-13 through MW-15 continue to report non-detects for all the contaminants of concern.

DISCUSSION

The results of the February 2005 groundwater monitoring at the Former Sooper Dry Cleaners are generally consistent with the field and chemical data previously reported for the site. Local groundwater flow was towards the west-southwest with a gradient of approximately 0.019 ft/ft.

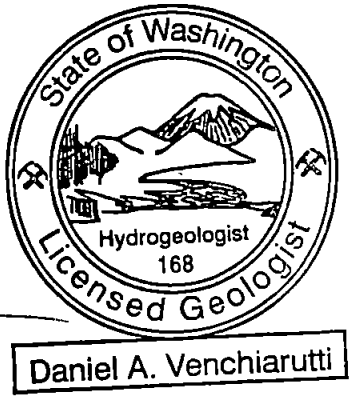
As illustrated on Figure 2, PCE levels in excess of the 5 µg/L MTCA Method A groundwater standard continue to be reported in onsite monitoring wells MW-5B, MW-8 and MW-10. However, the PCE concentrations at the site continue to remain significantly reduced from their pre-remedial levels. These reductions are likely related to the source removals and engineered-control infrastructure completed at the site during 2003.

In addition, neither PCE nor any of its associated breakdown products were detected in any of the offsite monitoring wells (MW-13, MW-14, or MW-15) located downgradient of the shopping center property. The latter results continue to suggest that the plume of residual PCE groundwater contamination has not migrated a significant distance downgradient (i.e. west-southwest) of the western border of the shopping center property.

The next quarterly monitoring event for the site is scheduled for May 2005.

Thank you for the opportunity to continue to provide our services. If you have any questions about the information presented above, please do not hesitate to call.

Very truly yours,



Daniel A. Venchiarutti, P.G.
Project Manager
SCS ENGINEERS

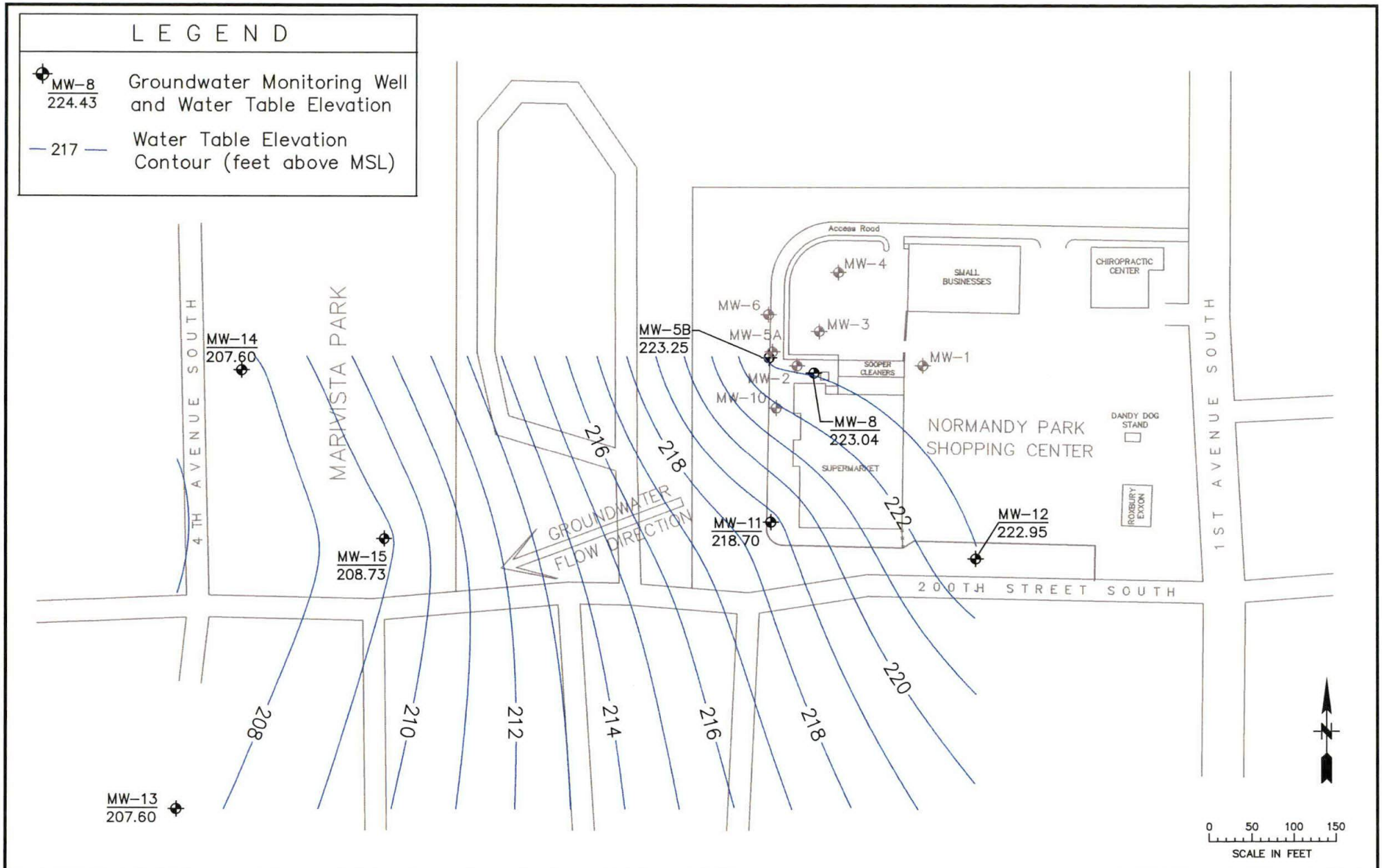
Gregory D. Helland, P.G.
Project Director
SCS ENGINEERS

Attachments

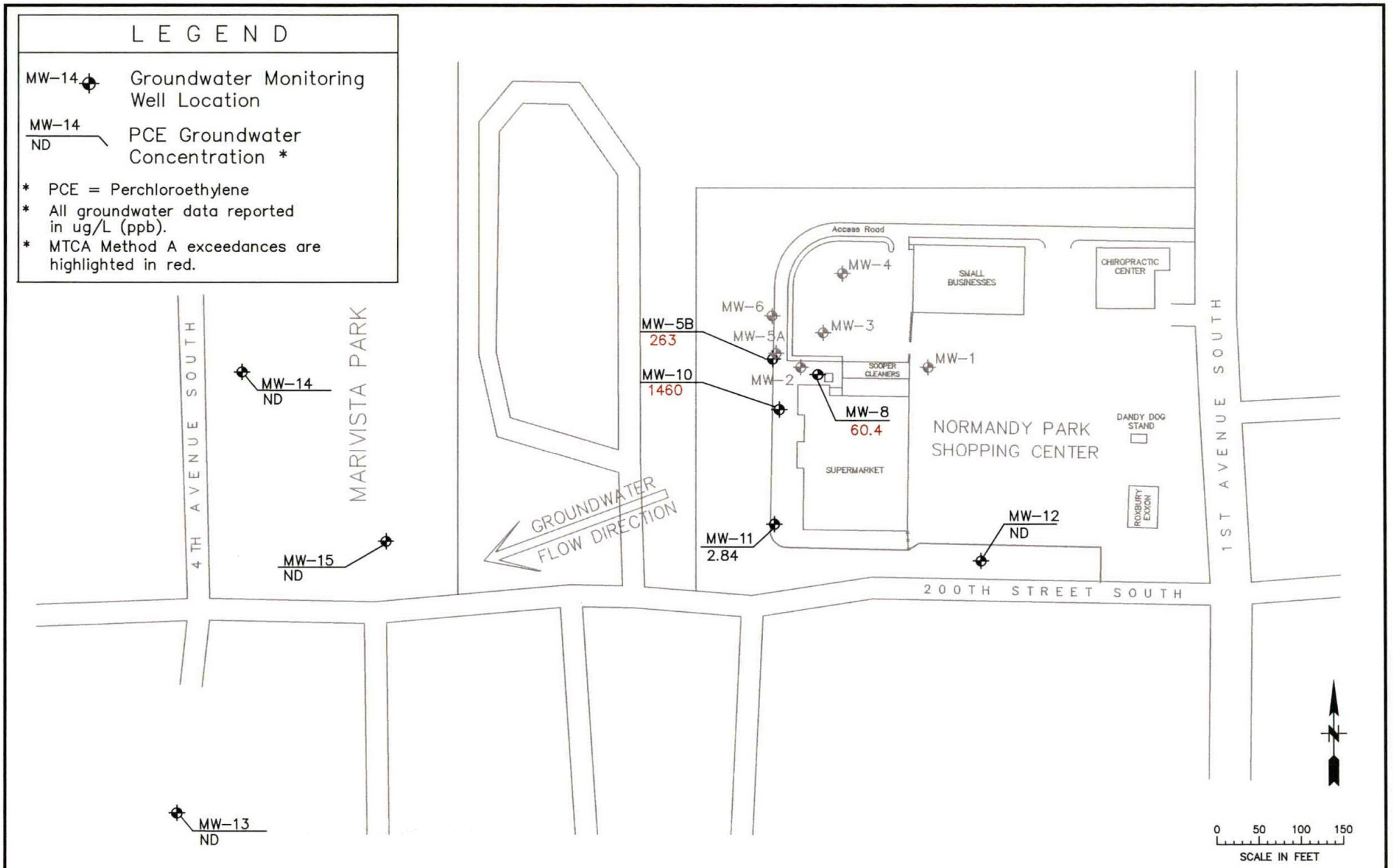
CC: Agnes Griffin, Griffin & Jensen Tenancy in Common
Bradley Helland, Washington Department of Ecology
Mark Schuster, The Schuster Group

APPENDIX A

SITE FIGURES



SCS ENGINEERS STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS 2405 140TH AVE NE, SUITE 107, BELLEVUE, WA 98005 (425) 746-4600	PROJECT NO. 04203016.02	DES BY E.D.	GROUNDWATER ELEVATION CONTOUR MAP FEBRUARY 15-16, 2005 NORMANDY PARK SHOPPING CENTER NORMANDY PARK, WA
	SCALE AS SHOWN	CHK BY D.V.	DATE MAR 2005
	CAD FILE Figrue 1	APP BY G.H.	FIGURE 1



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STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
2405 140TH AVE NE, SUITE 107, BELLEVUE, WA 98005 (425) 746-4600

PROJECT NO. 04203016.02	DES BY E.D.	PCE GROUNDWATER MONITORING RESULTS FEBRUARY 15-16, 2005 NORMANDY PARK SHOPPING CENTER NORMANDY PARK, WA	DATE MAR 2005
SCALE AS SHOWN	CHK BY D.V.		FIGURE 2
CAD FILE Figrue 2	APP BY G.H.		

APPENDIX B

GROUNDWATER SAMPLING DATA SHEETS

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Groundwater Sampling Data Sheet

SITE: Normandy Park
WELL ID: MW-5B
DATE: 2-16-05
WEATHER: sunny, cold

47.85	DTW
55	TOS
	Intake
60	BOS

CONTROL SETTINGS:
Refill 9.5
Discharge 10.5
Pressure 40

Well Location

9.5	±0.2 mg/L
10.5	±0.2 units
40	±0.5° C
31358.94	±5% Spc
63	±10% or <10 ntu

WELL CONDITIONS: Locked? (Y) N Water in Protector? Y (N) Damage? Y (N)

Comments:

SAMPLE CONTAINERS: 6 VOAS - HCL - 8260

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q
1026	Start							
1029	47.95	11.25	0.239	8.27	6.93	238	201	300
1034	"	12.31	0.239	7.61	7.03	252	>1000	"
1044	"	12.44	0.235	7.45	7.03	264	259	"
1054	"	12.50	0.235	7.42	7.01	271	74.8	"
1104	"	12.53	0.234	7.41	7.01	274	32.0	"
1114	"	12.52	0.234	7.50	7.01	277	17.0	"
1119	"	12.53	0.234	7.46	7.01	279	12.5	"
1124	"	12.47	0.234	7.47	7.00	280	9.24	"
sample								

Observations (color, odor, anomalies, etc)

Collected Duplicate
Dup.A Time = 1145

SAMPLER: Hayley Brown
Printed Name

Hayley Brown
Signature

SAS ENGINEERS

Groundwater Sampling Data Sheet

SITE: Normandy Park
WELL ID: MW-70
DATE: 9-16-05
WEATHER: Sunny

57.52 DTW
62.50 TOS
65.00 Intake
67.50 BOS

CONTROL SETTINGS:
Refill 11.5
Discharge 8.5
Pressure 55

Well Location

11.5 0.2 DO
8.5 0.2 pH
55 0.5 Temp
115 → 11.2 5% SpC
44/mins 10% <10

WELL CONDITIONS: Locked? (Y) N Water in Protector? (Y) N Damage? Y (N)

Comments:

SAMPLE CONTAINERS: 3 VOAS HCl - Halogenated VOCs

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q
1316	Start							
1321	57.37	11.75	0.142	8.64	7.09	232	191	300
1332	"	12.51	0.152	7.87	6.96	251	154	"
1336	57.96	12.60	0.152	7.73	6.95	265	38.4	"
1341	"	12.56	0.152	7.72	6.94	269	27.8	"
1346	"	12.57	0.152	7.70	6.94	273	17.4	"
1351	"	12.55	0.153	7.70	6.96	275	13.3	"
1356	"	12.55	0.157	7.72	6.94	278	11.9	"
1359	"	12.57	0.151	7.69	6.94	279	3.83	"
Sample								

Observations (color, odor, anomalies, etc).

SAMPLER: Hillary Brown
Printed Name

Hillary Brown
Signature

SGS ENGINEERS

Groundwater Sampling Data Sheet

SITE: N Micale [illegible]

WELL ID: MW-3

DATE: [illegible]5

WEATHER: [illegible]

48.07	DTW
85	TOS
87.5	Intake
90	BOS

CONTROL SETTINGS:

Refill 10.5

Discharge 9.5

Pressure 60

WELL CONDITIONS: Locked? (Y) N Water in Protector? Y (N) Damage? Y (N)

Comments:

SAMPLE CONTAINERS: 3 VOAs HCl / HVOCs

Well Location

9.5 [illegible] mg/L DO
10.5 [illegible]
60 [illegible]
51.1 [illegible]
[illegible]
[illegible]

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q
1145	Start	Purge						
1152	48.12	12.55	.203	5.41	6.73	247	577	330
1206	48.10	12.69	.210	4.80	6.66	265	94.7	"
1216	48.10	12.60	.210	4.76	6.67	273	59.4	"
1226	48.10	12.75	.210	4.72	6.67	276	41.4	"
1236	48.10	12.79	.210	4.69	6.66	279	25.1	"
1243	48.10	12.85	.210	4.70	6.66	281	20.1	"
1250	48.10	12.81	.211	4.68	6.65	281	17.3	"
1257	48.15	12.81	.211	4.64	6.66	283	17.1	"

Observations (color, odor, anomalies, etc)

SAMPLER: Claire Dilley
Printed Name

Claire Dilley
Signature

SAIC ENGINEERS

Groundwater Sampling Data Sheet

SITE: Normandy Rock
WELL ID: NW-11
DATE: 2-16-05
WEATHER: Clear + cold

52.60 DTW
55 TOS
57.5 Intake
60 BOS

CONTROL SETTINGS:
Refill 9.5
Discharge 10.5
Pressure 40

Well Location

WELL CONDITIONS: Locked? (Y) N Water in Protector? Y (N) Damage? Y (N)

Comments:

SAMPLE CONTAINERS: 3 VOAs/HCl/HVOCs

9.5 ±0.2 mg/L DO
10.5 ±0.2 units pH
40 ±0.5°C temp
300 ml/min ±5% SpC
13 mins
60-3.4 ntu ±10% or <40 NTU

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q
1153	start	purge						
1156	53.15	10.94	.152	8.47	6.81	240	44.7	300
9 54	53.19	10.53	.150	7.76	6.35	257	20.1	"
1002	53.19	10.60	.150	7.69	6.33	256	14.3	"
1005	53.19	10.61	.150	7.70	6.28	261	7.47	"

Observations (color, odor, anomalies, etc)

SAMPLER: Elaine Dilley
Printed Name

Elaine Dilley
Signature

2.3
2.1
46.01
3.39
1.65
48.35

SAS ENGINEERS

Groundwater Sampling Data Sheet

SITE: Normandy Park
WELL ID: MW-12D
DATE: 8/16/05
WEATHER:

46.61 DTW
45.00 TOS
48.9 Intake
50.00 BOS

CONTROL SETTINGS:
Refill
Discharge
Pressure

WELL CONDITIONS: Locked? Y/N — Water in Protector? Y/N — Damage? Y/N
Comments:
SAMPLE CONTAINERS: 3 VOAs - HCL - 8260

Well Location
12 — 0.2 mg/L
8 — 0.2 units
40
0.5 °C
330
5% Sp C
437→5.10 ±10% or <10 ntu
43 mins

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q
826 start								
831	46.67	11.64	0.528	1.40	6.49	289	956	300
836	"	12.17	0.535	0.72	6.51	284	558	"
841	"	12.11	0.522	0.53	6.51	277	211	"
846	"	12.37	0.521	0.46	6.51	272	147	"
851	"	12.12	0.520	0.43	6.51	268	139	"
856	"	12.20	0.520	0.39	6.51	265	107	"
901	"	12.02	0.518	0.37	6.51	263	74.7	"
906	"	12.06	0.519	0.34	6.51	261	45.5	"
911	"	12.13	0.519	0.32	6.52	260	33.7	"
916	"	12.03	0.519	0.30	6.51	259	23.3	"
921	"	12.19	0.518	0.32	6.51	258	17.5	"
926	"	12.26	0.512	0.28	6.52	"	12.5	"
931	"	12.23	0.512	0.30	6.51	256	11.2	"
936	"	12.40	0.512	0.30	6.52	255	9.06	"
sample								

Observations (color, odor, anomalies, etc)
distinct odor in water

SAMPLER: Harley Brown
Printed Name

Signature

SOS ENGINEERS

Groundwater Sampling Data Sheet

SITE: Normandy Park
WELL ID: MW-13
DATE: 7-15-05
WEATHER: clear + cold

114.27 DTW
185 TOS
187.50 Intake
190 BOS

CONTROL SETTINGS:
Refill 7
Discharge 13
Pressure 105

Well Location
7 ±0.2 mg/L DO
13 ±0.2 units pH
105
402 - 4.84 ntu ±0.5°C temp
345 ml/min ±5% SC mS
66 mins ±10% < 5 ntu turb

WELL CONDITIONS: Locked? (Y) N Water in Protector? Y (N) Damage? Y (N)

Comments:

SAMPLE CONTAINERS: 3 VOAs / HCl / 14 VOCs

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q
850								
854	114.40	10.04	0.299	3.20	7.06	180	494	315
9059	114.44	10.24	.296	2.99	7.09	189	364	"
913	114.45	10.23	.295	2.79	7.09	190	221	"
918	114.45	10.26	.297	2.58	7.06	191	131	"
926	114.45	10.28	.298	2.38	7.08	191	64.6	"
934	114.45	10.25	.297	2.41	7.11	187	49.8	"
942	114.45	10.23	.298	2.22	7.11	189	41.0	"
949	114.45	10.23	.298	2.15	7.10	191	30.0	"
956	114.45	10.17	.298	2.04	7.10	192	18.1	"
1000	114.45	10.18	.298	2.05	7.09	193	16.1	"
1006	114.45	10.05	.298	2.03	7.09	195	15.2	"
1012	114.45	10.01	.298	2.01	7.08	196	13.7	"
1018	114.45	10.09	.297	1.95	7.09	198	13.6	"
1023	114.45	10.12	.297	1.92	7.09	198	14.1	"

Observations (color, odor, anomalies, etc)

SAMPLER: Elaine Dilley
Printed Name

Signature Elaine D. Dilley

SOS ENGINEERS

Groundwater Sampling Data Sheet

SITE: Normandy Park
WELL ID: MW-14
DATE: 2-15-04
WEATHER: sunny, cold

108.62 DTW
175 TOS
~177.5 Intake
180 BOS

CONTROL SETTINGS:
Refill 7.5
Discharge 12.5
Pressure 105

Well Location

WELL CONDITIONS: Locked? Y N Water in Protector? Y (N) Damage? Y (N)

Comments:

SAMPLE CONTAINERS: 3 VOAs - HCl preserved - 8260

7.5
12.5
10 5
7l mins
806 → 7.44

0.2 mg/L
0.2 pH
0.5°C
5% spC
10% or <10 ntu

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q
1046	start purge							
1054	108.95	10.72	0.191	2.30	7.20	175		330
1100	109.05	10.99	0.191	0.85	7.06	184	480	"
1114	109.10	11.00	0.191	0.44	7.01	194	189	"
1124	109.03	10.93	0.191	0.49	6.99	197	106	"
1134	109.10	11.02	0.191	0.36	6.97	199	41.0	"
1139	109.10	10.92	0.191	0.33	6.98	201	22.4	"
1144	"	11.04	0.191	0.34	6.98	201	17.8	"
1149	"	10.98	0.191	0.32	6.98	202	9.96	"
Sample								

Observations (color, odor, anomalies, etc)

→ switched to CO_2

SAMPLER: Hayley Brown
Printed Name

Signature

SBS ENGINEERS

Groundwater Sampling Data Sheet

SITE: Normandy Park
WELL ID: MW-15
DATE: 2-15-05
WEATHER: clear + cold

10.41 DTW
140 TOS
142.5 Intake
145 BOS

CONTROL SETTINGS:
Refill 9
Discharge 11
Pressure 90

Well Location

WELL CONDITIONS: Locked? (Y) N Water in Protector? Y (N) Damage? Y (N)
Comments:

SAMPLE CONTAINERS: 3 VOAs / HCl / HVOCs

8.5 ±0.2 mg/L DO
11.5 ±0.2 units pH
90 ±0.5°C. temp
270 ml/min ±5% MS/pC
57 mins
573-25.3 MW

TIME	DTW	Temp.	Sp.Cond.	DO	pH	Eh	Turbidity	Q
1233	start purge							
1243	110.50	10.83	.282	2.69	7.08	186	>1000	240
1248	110.50	10.76	.252	2.09	6.82	194	639	"
1253	110.50	10.61	.282	2.76	6.57	202	377	"
1258	110.50	10.74	.283	2.49	6.40	208	248	"
1303	110.50	10.62	.282	2.71	6.31	213	166	"
1308	110.50	10.61	.282	2.86	6.27	217	115	"
1313	110.50	10.69	.282	2.96	6.23	220	79.5	"
1318	110.50	10.86	.281	3.03	6.18	223	64.7	"
1323	110.50	10.97	.281	3.05	6.14	227	44.2	"
1328	110.50	10.97	.281	3.08	6.13	230	36.5	"

Observations (color, odor, anomalies, etc)
ran out of N+CO2

SAMPLER: Elaine Dilley
Printed Name

Elaine Dilley
Signature

SCS ENGINEERS **GROUNDWATER SAMPLING INSTRUMENT CALIBRATION DOCUMENTATION FORM**

	Conductivity	pH 7	pH 4	DO	Turbidity	Comments/Exceptions
Date	2/15/05	→	→	→	→	
Time	8:35	8:25	8:30	8:40	8:45	
Weather (sky or precip, temp)	clear & cold	→	→	→	→	
Barometric Pressure (*)	NA	→	→		NA	
Type of Calibration	standard solution	buffer solution	→	saturated air	secondary stds	
Standard Value	445	7.00	4.00	100%	5.49 5.37 5.33	
Pre-Cal Reading	452	6.91	4.05	(9.68)	5.87 55.8 548	
Post Cal Reading	445	7.00	4.01	100%	5.87 55.8 548	
Descrepancy	0	0	0	0	.38 2.1 15	
Calib. Successful?	Yes	→	→	→	→	
Calibration by	ESD	→	→	→	→	
Instrument Type, ID	MP20	→	→	→	HACH 2100P	
Calibration Location	Field MW-13	→	→	→	→	

* If Direct Reading is Unavailable, Assume pressure = 760 mm - 2.5 (altitude in ft/100)

APPENDIX C

ANALYTICAL LABORATORY REPORTS

SEVERN TRENT STL

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

TRANSMITTAL MEMORANDUM

DATE: February 24, 2005

TO: Daniel Venchiarutti
SCS Engineers
2405 140th Ave. N. E., Suite 107
Bellevue, WA 98005

PROJECT: Normandy Park, WA

REPORT NUMBER: 126370

TOTAL NUMBER OF PAGES: 25

Enclosed are the test results for nine samples received at STL Seattle on February 17, 2005.

The report consists of this transmittal memo, analytical results, quality control reports, a copy of the chain-of-custody, a list of data qualifiers and analytical narrative when applicable, and a copy of any requested raw data.

Should there be any questions regarding this report, please contact me at (253) 922-2310.

Sincerely,

for Darla Powell
Project Manager

STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
126370-1	MW-14	02-15-05 11:49	Liquid
126370-2	MW-13	02-15-05 10:23	Liquid
126370-3	MW-15	02-15-05 13:28	Liquid
126370-4	MW-12	02-16-05 09:36	Liquid
126370-5	MW-11	02-16-05 10:05	Liquid
126370-6	MW-5B	02-16-05 11:24	Liquid
126370-7	DUP A	02-16-05 11:45	Liquid
126370-8	MW-8	02-16-05 12:57	Liquid
126370-9	MW-10	02-16-05 13:59	Liquid

STL Seattle

Client Name:	SCS Engineers
Client ID:	MW-14
Lab ID:	126370-01
Date Received:	2/17/2005
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	1

Halogenated Volatile Organics by USEPA Method 5035\8260B

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Dibromofluoromethane	95.3		80	120
Fluorobenzene	102		80	120
Toluene-D8	102		80	120
Ethylbenzene-d10	109		80	120
Bromofluorobenzene	105		80	120
Trifluorotoluene	113		80	120

Analyte	Result (ug/L)	RL	Flags
Chloromethane	ND	1	
Vinyl chloride	ND	0.2	
Bromomethane	ND	1	
Chloroethane	ND	1	
Trichlorofluoromethane	ND	1	
1,1-Dichloroethene	ND	1	
Methylene chloride	ND	1	
trans-1,2-Dichloroethene	ND	1	
1,1-Dichloroethane	ND	1	
cis-1,2-Dichloroethene	ND	1	
Chloroform	ND	1	
1,1,1-Trichloroethane	ND	1	
Carbon Tetrachloride	ND	1	
1,2-Dichloroethane	ND	1	
Trichloroethene	ND	1	
1,2-Dichloropropane	ND	1	
Bromodichloromethane	ND	1	
cis-1,3-Dichloropropene	ND	1	
trans-1,3-Dichloropropene	ND	1	
1,1,2-Trichloroethane	ND	1	
Tetrachloroethene	ND	1	
Dibromochloromethane	ND	1	
Chlorobenzene	ND	1	
Bromoform	ND	1	
1,1,2,2-Tetrachloroethane	ND	1	
1,3-Dichlorobenzene	ND	1	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for 126370-01 continued...

Analyte	Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND	1	
1,2-Dichlorobenzene	ND	1	

STL Seattle

Client Name:	SCS Engineers
Client ID:	MW-13
Lab ID:	126370-02
Date Received:	2/17/2005
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	1

Halogenated Volatile Organics by USEPA Method 5035\8260B

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dibromofluoromethane	93.3		80	120
Fluorobenzene	102		80	120
Toluene-D8	104		80	120
Ethylbenzene-d10	109		80	120
Bromofluorobenzene	105		80	120
Trifluorotoluene	112		80	120

Analyte	**Result (ug/L)**	**RL**	**Flags**
Chloromethane	ND	1	
Vinyl chloride	ND	0.2	
Bromomethane	ND	1	
Chloroethane	ND	1	
Trichlorofluoromethane	ND	1	
1,1-Dichloroethene	ND	1	
Methylene chloride	ND	1	
trans-1,2-Dichloroethene	ND	1	
1,1-Dichloroethane	ND	1	
cis-1,2-Dichloroethene	ND	1	
Chloroform	ND	1	
1,1,1-Trichloroethane	ND	1	
Carbon Tetrachloride	ND	1	
1,2-Dichloroethane	ND	1	
Trichloroethene	ND	1	
1,2-Dichloropropane	ND	1	
Bromodichloromethane	ND	1	
cis-1,3-Dichloropropene	ND	1	
trans-1,3-Dichloropropene	ND	1	
1,1,2-Trichloroethane	ND	1	
Tetrachloroethene	ND	1	
Dibromochloromethane	ND	1	
Chlorobenzene	ND	1	
Bromoform	ND	1	
1,1,2,2-Tetrachloroethane	ND	1	
1,3-Dichlorobenzene	ND	1	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for 126370-02 continued...

Analyte	Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND	1	
1,2-Dichlorobenzene	ND	1	

STL Seattle

Client Name:	SCS Engineers
Client ID:	MW-15
Lab ID:	126370-03
Date Received:	2/17/2005
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	1

Halogenated Volatile Organics by USEPA Method 5035\8260B

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dibromofluoromethane	92.8		80	120
Fluorobenzene	101		80	120
Toluene-D8	102		80	120
Ethylbenzene-d10	109		80	120
Bromofluorobenzene	106		80	120
Trifluorotoluene	113		80	120

Analyte	**Result (ug/L)**	**RL**	**Flags**
Chloromethane	ND	1	
Vinyl chloride	ND	0.2	
Bromomethane	ND	1	
Chloroethane	ND	1	
Trichlorofluoromethane	ND	1	
1,1-Dichloroethene	ND	1	
Methylene chloride	ND	1	
trans-1,2-Dichloroethene	ND	1	
1,1-Dichloroethane	ND	1	
cis-1,2-Dichloroethene	ND	1	
Chloroform	ND	1	
1,1,1-Trichloroethane	ND	1	
Carbon Tetrachloride	ND	1	
1,2-Dichloroethane	ND	1	
Trichloroethene	ND	1	
1,2-Dichloropropane	ND	1	
Bromodichloromethane	ND	1	
cis-1,3-Dichloropropene	ND	1	
trans-1,3-Dichloropropene	ND	1	
1,1,2-Trichloroethane	ND	1	
Tetrachloroethene	ND	1	
Dibromochloromethane	ND	1	
Chlorobenzene	ND	1	
Bromoform	ND	1	
1,1,2,2-Tetrachloroethane	ND	1	
1,3-Dichlorobenzene	ND	1	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for 126370-03 continued...

Analyte		Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND		1	
1,2-Dichlorobenzene	ND		1	

STL Seattle

Client Name:	SCS Engineers
Client ID:	MW-12
Lab ID:	126370-04
Date Received:	2/17/2005
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	1

Halogenated Volatile Organics by USEPA Method 5035\8260B

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dibromofluoromethane	97.4		80	120
Fluorobenzene	105		80	120
Toluene-D8	112		80	120
Ethylbenzene-d10	113		80	120
Bromofluorobenzene	104		80	120
Trifluorotoluene	113		80	120

Analyte	**Result (ug/L)**	**RL**	**Flags**
Chloromethane	ND	1	
Vinyl chloride	ND	0.2	
Bromomethane	ND	1	
Chloroethane	ND	1	
Trichlorofluoromethane	ND	1	
1,1-Dichloroethene	ND	1	
Methylene chloride	ND	1	
trans-1,2-Dichloroethene	ND	1	
1,1-Dichloroethane	ND	1	
cis-1,2-Dichloroethene	ND	1	
Chloroform	ND	1	
1,1,1-Trichloroethane	ND	1	
Carbon Tetrachloride	ND	1	
1,2-Dichloroethane	ND	1	
Trichloroethene	ND	1	
1,2-Dichloropropane	ND	1	
Bromodichloromethane	ND	1	
cis-1,3-Dichloropropene	ND	1	
trans-1,3-Dichloropropene	ND	1	
1,1,2-Trichloroethane	ND	1	
Tetrachloroethene	ND	1	
Dibromochloromethane	ND	1	
Chlorobenzene	ND	1	
Bromoform	ND	1	
1,1,2,2-Tetrachloroethane	ND	1	
1,3-Dichlorobenzene	ND	1	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for 126370-04 continued...

Analyte	Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND	1	
1,2-Dichlorobenzene	ND	1	

STL Seattle

Client Name:	SCS Engineers
Client ID:	MW-11
Lab ID:	126370-05
Date Received:	2/17/2005
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	1

Halogenated Volatile Organics by USEPA Method 5035\8260B

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Dibromofluoromethane	101		80	120
Fluorobenzene	104		80	120
Toluene-D8	104		80	120
Ethylbenzene-d10	108		80	120
Bromofluorobenzene	103		80	120
Trifluorotoluene	111		80	120

Analyte	Result (ug/L)	RL	Flags
Chloromethane	ND	1	
Vinyl chloride	ND	0.2	
Bromomethane	ND	1	
Chloroethane	ND	1	
Trichlorofluoromethane	ND	1	
1,1-Dichloroethene	ND	1	
Methylene chloride	ND	1	
trans-1,2-Dichloroethene	ND	1	
1,1-Dichloroethane	ND	1	
cis-1,2-Dichloroethene	ND	1	
Chloroform	ND	1	
1,1,1-Trichloroethane	ND	1	
Carbon Tetrachloride	ND	1	
1,2-Dichloroethane	ND	1	
Trichloroethene	ND	1	
1,2-Dichloropropane	ND	1	
Bromodichloromethane	ND	1	
cis-1,3-Dichloropropene	ND	1	
trans-1,3-Dichloropropene	ND	1	
1,1,2-Trichloroethane	ND	1	
Tetrachloroethene	2.84	1	
Dibromochloromethane	ND	1	
Chlorobenzene	ND	1	
Bromoform	ND	1	
1,1,2,2-Tetrachloroethane	ND	1	
1,3-Dichlorobenzene	ND	1	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for 126370-05 continued...

Analyte	Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND	1	
1,2-Dichlorobenzene	ND	1	

STL Seattle

Client Name:	SCS Engineers
Client ID:	MW-5B
Lab ID:	126370-06
Date Received:	2/17/2005
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	10

Halogenated Volatile Organics by USEPA Method 5035\8260B

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Dibromofluoromethane	101		80	120
Fluorobenzene	105		80	120
Toluene-D8	103		80	120
Ethylbenzene-d10	112		80	120
Bromofluorobenzene	104		80	120
Trifluorotoluene	108		80	120

Analyte	Result (ug/L)	RL	Flags
Chloromethane	ND	10	
Vinyl chloride	ND	2	
Bromomethane	ND	10	
Chloroethane	ND	10	
Trichlorofluoromethane	ND	10	
1,1-Dichloroethene	ND	10	
Methylene chloride	ND	10	
trans-1,2-Dichloroethene	ND	10	
1,1-Dichloroethane	ND	10	
cis-1,2-Dichloroethene	ND	10	
Chloroform	ND	10	
1,1,1-Trichloroethane	ND	10	
Carbon Tetrachloride	ND	10	
1,2-Dichloroethane	ND	10	
Trichloroethene	ND	10	
1,2-Dichloropropane	ND	10	
Bromodichloromethane	ND	10	
cis-1,3-Dichloropropene	ND	10	
trans-1,3-Dichloropropene	ND	10	
1,1,2-Trichloroethane	ND	10	
Tetrachloroethene	262	10	
Dibromochloromethane	ND	10	
Chlorobenzene	ND	10	
Bromoform	ND	10	
1,1,2,2-Tetrachloroethane	ND	10	
1,3-Dichlorobenzene	ND	10	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for 126370-06 continued...

Analyte	Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND	10	
1,2-Dichlorobenzene	ND	10	

STL Seattle

Client Name:	SCS Engineers
Client ID:	DUP A
Lab ID:	126370-07
Date Received:	2/17/2005
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	10

Halogenated Volatile Organics by USEPA Method 5035\8260B

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
Dibromofluoromethane	96.6		80	120
Fluorobenzene	102		80	120
Toluene-D8	103		80	120
Ethylbenzene-d10	112		80	120
Bromofluorobenzene	106		80	120
Trifluorotoluene	112		80	120

Analyte	Result (ug/L)	RL	Flags
Chloromethane	ND	10	
Vinyl chloride	ND	2	
Bromomethane	ND	10	
Chloroethane	ND	10	
Trichlorofluoromethane	ND	10	
1,1-Dichloroethene	ND	10	
Methylene chloride	ND	10	
trans-1,2-Dichloroethene	ND	10	
1,1-Dichloroethane	ND	10	
cis-1,2-Dichloroethene	ND	10	
Chloroform	ND	10	
1,1,1-Trichloroethane	ND	10	
Carbon Tetrachloride	ND	10	
1,2-Dichloroethane	ND	10	
Trichloroethene	ND	10	
1,2-Dichloropropane	ND	10	
Bromodichloromethane	ND	10	
cis-1,3-Dichloropropene	ND	10	
trans-1,3-Dichloropropene	ND	10	
1,1,2-Trichloroethane	ND	10	
Tetrachloroethene	263	10	
Dibromochloromethane	ND	10	
Chlorobenzene	ND	10	
Bromoform	ND	10	
1,1,2,2-Tetrachloroethane	ND	10	
1,3-Dichlorobenzene	ND	10	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for 126370-07 continued...

Analyte	Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND	10	
1,2-Dichlorobenzene	ND	10	

STL Seattle

Client Name:	SCS Engineers
Client ID:	MW-8
Lab ID:	126370-08
Date Received:	2/17/2005
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	1

Halogenated Volatile Organics by USEPA Method 5035\8260B

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dibromofluoromethane	99.4		80	120
Fluorobenzene	103		80	120
Toluene-D8	105		80	120
Ethylbenzene-d10	111		80	120
Bromofluorobenzene	104		80	120
Trifluorotoluene	111		80	120

Analyte	**Result (ug/L)**	**RL**	**Flags**
Chloromethane	ND	1	
Vinyl chloride	ND	0.2	
Bromomethane	ND	1	
Chloroethane	ND	1	
Trichlorofluoromethane	ND	1	
1,1-Dichloroethene	ND	1	
Methylene chloride	ND	1	
trans-1,2-Dichloroethene	ND	1	
1,1-Dichloroethane	ND	1	
cis-1,2-Dichloroethene	ND	1	
Chloroform	ND	1	
1,1,1-Trichloroethane	ND	1	
Carbon Tetrachloride	ND	1	
1,2-Dichloroethane	ND	1	
Trichloroethene	ND	1	
1,2-Dichloropropane	ND	1	
Bromodichloromethane	ND	1	
cis-1,3-Dichloropropene	ND	1	
trans-1,3-Dichloropropene	ND	1	
1,1,2-Trichloroethane	ND	1	
Tetrachloroethene	60.4	1	
Dibromochloromethane	ND	1	
Chlorobenzene	ND	1	
Bromoform	ND	1	
1,1,2,2-Tetrachloroethane	ND	1	
1,3-Dichlorobenzene	ND	1	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for 126370-08 continued...

Analyte	Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND	1	
1,2-Dichlorobenzene	ND	1	

STL Seattle

Client Name:	SCS Engineers
Client ID:	MW-10
Lab ID:	126370-09
Date Received:	2/17/2005
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	50

Halogenated Volatile Organics by USEPA Method 5035\8260B

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dibromofluoromethane	97.1		80	120
Fluorobenzene	103		80	120
Toluene-D8	103		80	120
Ethylbenzene-d10	109		80	120
Bromofluorobenzene	104		80	120
Trifluorotoluene	111		80	120

Analyte	**Result (ug/L)**	**RL**	**Flags**
Chloromethane	ND	50	
Vinyl chloride	ND	10	
Bromomethane	ND	50	
Chloroethane	ND	50	
Trichlorofluoromethane	ND	50	
1,1-Dichloroethene	ND	50	
Methylene chloride	ND	50	
trans-1,2-Dichloroethene	ND	50	
1,1-Dichloroethane	ND	50	
cis-1,2-Dichloroethene	ND	50	
Chloroform	ND	50	
1,1,1-Trichloroethane	ND	50	
Carbon Tetrachloride	ND	50	
1,2-Dichloroethane	ND	50	
Trichloroethene	ND	50	
1,2-Dichloropropane	ND	50	
Bromodichloromethane	ND	50	
cis-1,3-Dichloropropene	ND	50	
trans-1,3-Dichloropropene	ND	50	
1,1,2-Trichloroethane	ND	50	
Tetrachloroethene	1460	50	
Dibromochloromethane	ND	50	
Chlorobenzene	ND	50	
Bromoform	ND	50	
1,1,2,2-Tetrachloroethane	ND	50	
1,3-Dichlorobenzene	ND	50	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for 126370-09 continued...

Analyte	Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND	50	
1,2-Dichlorobenzene	ND	50	

STL Seattle

Lab ID:	Method Blank - VOA1160
Date Received:	-
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
% Solids	-
Dilution Factor	1

Halogenated Volatile Organics by USEPA Method 5035\8260B

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
Dibromofluoromethane	95.3		80	120
Fluorobenzene	98.8		80	120
Toluene-D8	105		80	120
Ethylbenzene-d10	112		80	120
Bromofluorobenzene	110		80	120
Trifluorotoluene	101		80	120

Analyte	**Result (ug/L)**	**RL**	**Flags**
Chloromethane	ND	1	
Vinyl chloride	ND	0.2	
Bromomethane	ND	1	
Chloroethane	ND	1	
Trichlorofluoromethane	ND	1	
1,1-Dichloroethene	ND	1	
Methylene chloride	ND	1	
trans-1,2-Dichloroethene	ND	1	
1,1-Dichloroethane	ND	1	
cis-1,2-Dichloroethene	ND	1	
Chloroform	ND	1	
1,1,1-Trichloroethane	ND	1	
Carbon Tetrachloride	ND	1	
1,2-Dichloroethane	ND	1	
Trichloroethene	ND	1	
1,2-Dichloropropane	ND	1	
Bromodichloromethane	ND	1	
cis-1,3-Dichloropropene	ND	1	
trans-1,3-Dichloropropene	ND	1	
1,1,2-Trichloroethane	ND	1	
Tetrachloroethene	ND	1	
Dibromochloromethane	ND	1	
Chlorobenzene	ND	1	
Bromoform	ND	1	
1,1,2,2-Tetrachloroethane	ND	1	
1,3-Dichlorobenzene	ND	1	

STL Seattle

Halogenated Volatile Organics by USEPA Method 5035\8260B data for VOA1160 continued...

Analyte	Result (ug/L)	RL	Flags
1,4-Dichlorobenzene	ND	1	
1,2-Dichlorobenzene	ND	1	

STL Seattle

Blank Spike/Blank Spike Duplicate Report

Lab ID:	VOA1160
Date Prepared:	2/21/2005
Date Analyzed:	2/21/2005
QC Batch ID:	VOA1160

Halogenated Volatile Organics by USEPA Method 5035\8260B

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
1,1-Dichloroethene	0	5	4.78	95.6	4.77	95.4	-0.21	
enzene	0	5	5.12	102	4.96	99.2	-2.8	
richloroethene	0	5	5.12	102	5.22	104	1.9	
Toluene	0	5	5.25	105	5.36	107	1.9	
hlorobenzene	0	5	5	100	4.92	98.4	-1.6	

SEVERN TRENT STL

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

C3: Second analysis confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be $\leq$ 30%.

C4: Second analysis confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 30%. The presence of this analyte was not verified per WAC 246-290-010. The original analysis was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

MRL: Method Reporting Limit

N: See analytical narrative

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____.

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

000024

Chain of Custody Record

Seat
5755 8th Street E.
Tacoma, WA 98424
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Fax 253-922-5047
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SEVERN TRENT STL

Client: SCS Engineers	Project Manager: Dan Venchiarutti	Date: 2-17-05	Chain of Custody Number: 10511
Address: 2405 140th Ave. NE, Ste 107	Telephone Number (Area Code)/Fax Number: (425) 746-4600 / (425) 746-6741	Lab Number: 12637C	Page 1 of
City: Bellevue / State: WA / Zip Code: 98005	Site Contact: H. Brown	Lab Contact: D. Powell	
Project Name and Location (State): Normandy Park, WA	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.			

Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Halogenated VOCs by 8260B	Archive
MW-14	2-15-05	1149		X						3			X	
MW-13	↓	1023		↓						↓			↓	
MW-15	↓	1328												
MW-12	2-16-05	936												
MW-11	↓	1005												
MW-5B		1124												
DUP A		1145												X
MW-9		1257												
MW-10	↓	1359		↓						↓			↓	

Special Instructions/ Conditions of Receipt

Cooler: ☐ Yes ☐ No Cooler Temp:_____

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Heidi Brown	2-17-05	1140	1. Received By: Paula Yeater	2/17/05	11:40
2. Relinquished By: Paula Yeater	2/17/05	12:45	2. Received By: [illegible]	2/17/05	12:45
3. Relinquished By:	Date	Time	3. Received By:	Date	Time

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy