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Seattle, Washington 98102

Draft – Issued for Ecology Review

March 1, 2013

Ms. Maura O'Brien
Washington State Department of Ecology
3190 160th Avenue Southeast
Bellevue, Washington 98008

**SUBJECT: SEMIANNUAL GROUNDWATER MONITORING AND SAMPLING REPORT
February 2013
Former PACE National Site
500 7th Avenue South
Kirkland, Washington**

Dear Ms. O'Brien:

SoundEarth Strategies, Inc. (SoundEarth) has prepared this semiannual groundwater monitoring and sampling report to present the results of the February 2013 groundwater monitoring and sampling event conducted at the Former PACE National site located at 500 7th Avenue South in Kirkland, Washington (the Site). The Site location is shown on Figure 1. The groundwater monitoring and sampling event was performed as part of ongoing compliance groundwater monitoring to evaluate groundwater quality at the Site. The monitoring and sampling event was conducted in accordance with the *Compliance Monitoring Plan, Former Pace National Site, 500 7th Avenue South in Kirkland, Washington*, prepared by SoundEarth and dated January 17, 2012 (CMP).

This report documents the field activities performed at the Site for the February 2013 groundwater monitoring and sampling event, laboratory analytical results for groundwater samples, and monitoring results for field parameters.

FIELD ACTIVITIES

The semiannual groundwater monitoring and sampling event was conducted on February 12 and 13, 2013. The work included measuring depth to groundwater at monitoring wells (HC-MW-3, HC-MW-7 through HC-MW-10, and SES-MW25 through SES-MW27); monitoring field parameters; and collecting groundwater samples for laboratory analysis from monitoring wells HC-MW-3, HC-MW-7 through HC-MW-10, and SES-MW25 through SES-MW27 (Figure 2).

On February 12, 2013, SoundEarth removed the caps from all monitoring wells and allowed each well a minimum of 15 minutes to equilibrate with atmospheric pressure prior to collecting static groundwater level measurements. Groundwater levels were measured to an accuracy of 0.01 feet using an electronic water level indicator. Purging and sampling of each monitoring well was performed using a peristaltic pump and dedicated polyethylene tubing, and in accordance with U.S. Environmental Protection Agency (EPA) guidance on low-flow sampling protocols. Measured flow rates ranged from 60 to 100 milliliters per minute (mL/min); in some cases, flow rates below 100 mL/min were determined appropriate by field

personnel based on the degree of drawdown observed and/or in consideration of limited yield (i.e., recharge) documented during previous sampling events. The tubing intake was placed a minimum of 2 feet below the groundwater table and slightly below the midpoint of the saturated screen at each monitoring well. During purging, field parameters were monitored using a YSI water quality meter equipped with a flow-through cell. The water quality parameters that were monitored and recorded included temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential; in addition, groundwater levels and flow rates were monitored and recorded. Each monitoring well was purged until, at a minimum, pH, specific conductance, and dissolved oxygen or turbidity stabilized.

Once stabilization of low-flow parameters was achieved at each monitoring well, the tubing was disconnected from the flow-through cell and groundwater was collected from the pump outlet into laboratory-prepared sample containers. The sample containers were placed on ice in a cooler and transported to the laboratory under standard chain-of-custody protocols.

Purge water generated during the groundwater monitoring and sampling event was placed in a labeled 55-gallon steel drum and temporarily stored on the Site pending disposal. Upon receipt of laboratory analytical data for groundwater samples, purge water will be disposed of in accordance with applicable Washington State Dangerous Waste Regulations, Chapter 303 of Title 173 of the Washington Administrative Code.

LABORATORY ANALYSIS

Groundwater samples were analyzed for vinyl chloride by EPA Method 8260C by OnSite Environmental Inc., of Redmond, Washington.

RESULTS

Depth to groundwater at the Site ranged from 0.65 feet below top of casing (TOC) at monitoring well SES-MW27 to 4.76 feet below TOC at monitoring well HC-MW-7 (Table 1). The groundwater elevation (referenced to an arbitrary elevation datum of 100.00 feet established for the Site) ranged from 133.95 feet at monitoring well SES-MW25 to 152.27 feet at monitoring well HC-MW-3 (Table 1).

Based on depth-to-groundwater measurements taken from monitoring wells on February 12, 2013, the direction of groundwater flow at the Site is to the northwest. The average hydraulic gradient at the Site is approximately 0.087 feet per foot (Figure 2).

Analytical results for vinyl chloride are presented in Table 2 and on Figure 3. Analytical results are as follows:

- Concentrations of vinyl chloride exceeded the Washington State Model Toxics Control Act Method A (MTCA) cleanup level in the groundwater samples collected from monitoring wells HC-MW-7, MC-MW-8 and HC-MW-9.
- Concentrations of vinyl chloride in upgradient monitoring well HC-MW-3, crossgradient monitoring well HC-MW-10, and downgradient monitoring wells SES-MW25, SES-MW26, and SES-MW27 were all reported below the laboratory reporting limit. Laboratory reporting limits are equal to MTCA Method A Cleanup levels for vinyl chloride.

DATA QUALITY REVIEW

SoundEarth performed a quality assurance/quality control (QA/QC) review of the analytical results, which included a review of the accuracy and precision of data supplied by the laboratory. Laboratory QA/QC data were within laboratory supplied control limits. A copy of the laboratory analytical report is provided as Attachment A.

WORK TO BE PERFORMED

The next semiannual groundwater monitoring and sampling event for the Site is scheduled for August 2013 in general accordance with the CMP.

Respectfully,

SoundEarth Strategies, Inc.

DRAFT

Thomas Cammarata, LG, LHG
Senior Geochemist

DRAFT

Rob Honsberger, LG
Project Geologist

Attachments: Figure 1, Site Vicinity Map
Figure 2, Map Showing Groundwater Elevation Contours (February 2013)
Figure 3, Map Showing Groundwater Analytical Results for Vinyl Chloride
Table 1, Summary of Groundwater Elevation Data
Table 2, Summary of Groundwater Analytical Data, Chlorinated Volatile Organic
Compounds
A, Laboratory Analytical Report
OnSite Environmental Inc. #1302-085

cc: Mr. John J. Houlihan Jr., Houlihan Law

RAH/TJC:dnm/hsc

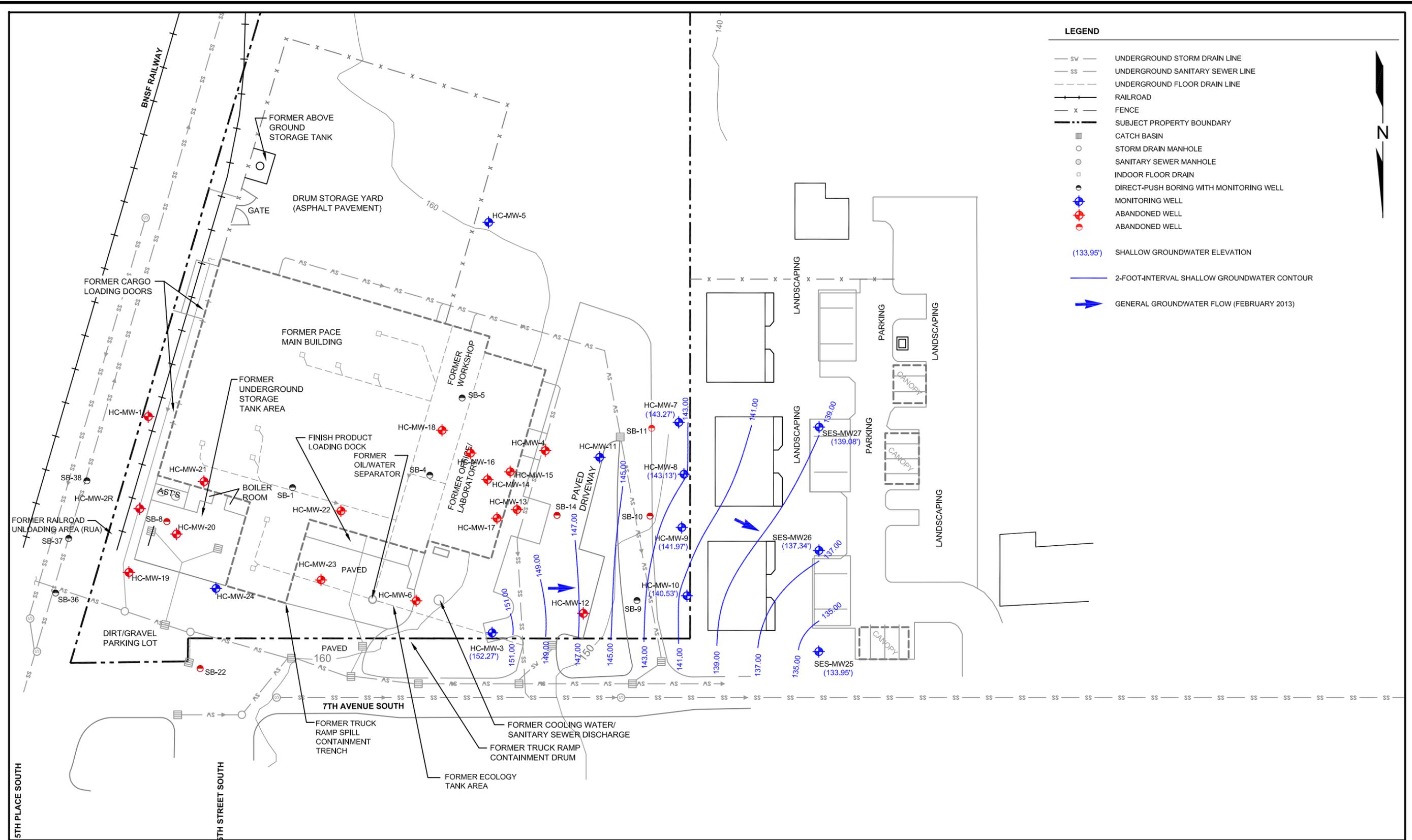
FIGURES



DATE:01/03/2011
 DRAWN BY:BLR
 CHECKED BY:DMB/TJC
 CAD FILE:0698-001 FIG1-VIC

PROJECT NAME:FORMER PACE NATIONAL SITE
 PROJECT NUMBER:0698-001
 STREET ADDRESS:500 7TH AVENUE SOUTH
 CITY, STATE:KIRKLAND, WASHINGTON

FIGURE 1
 SITE VICINITY MAP



5TH PLACE SOUTH

5TH STREET SOUTH

7TH AVENUE SOUTH



DATE: 03/01/13
 DRAWN BY: JQC
 CHECKED BY: TJC
 CAD FILE: 0698-001-2013Q1_CM

PROJECT NAME: FORMER PACE NATIONAL SITE
 PROJECT NUMBER: 0698-001
 STREET ADDRESS: 500 7TH AVENUE SOUTH
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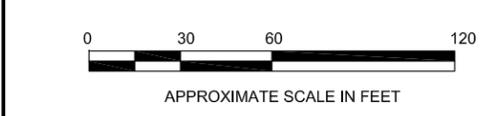
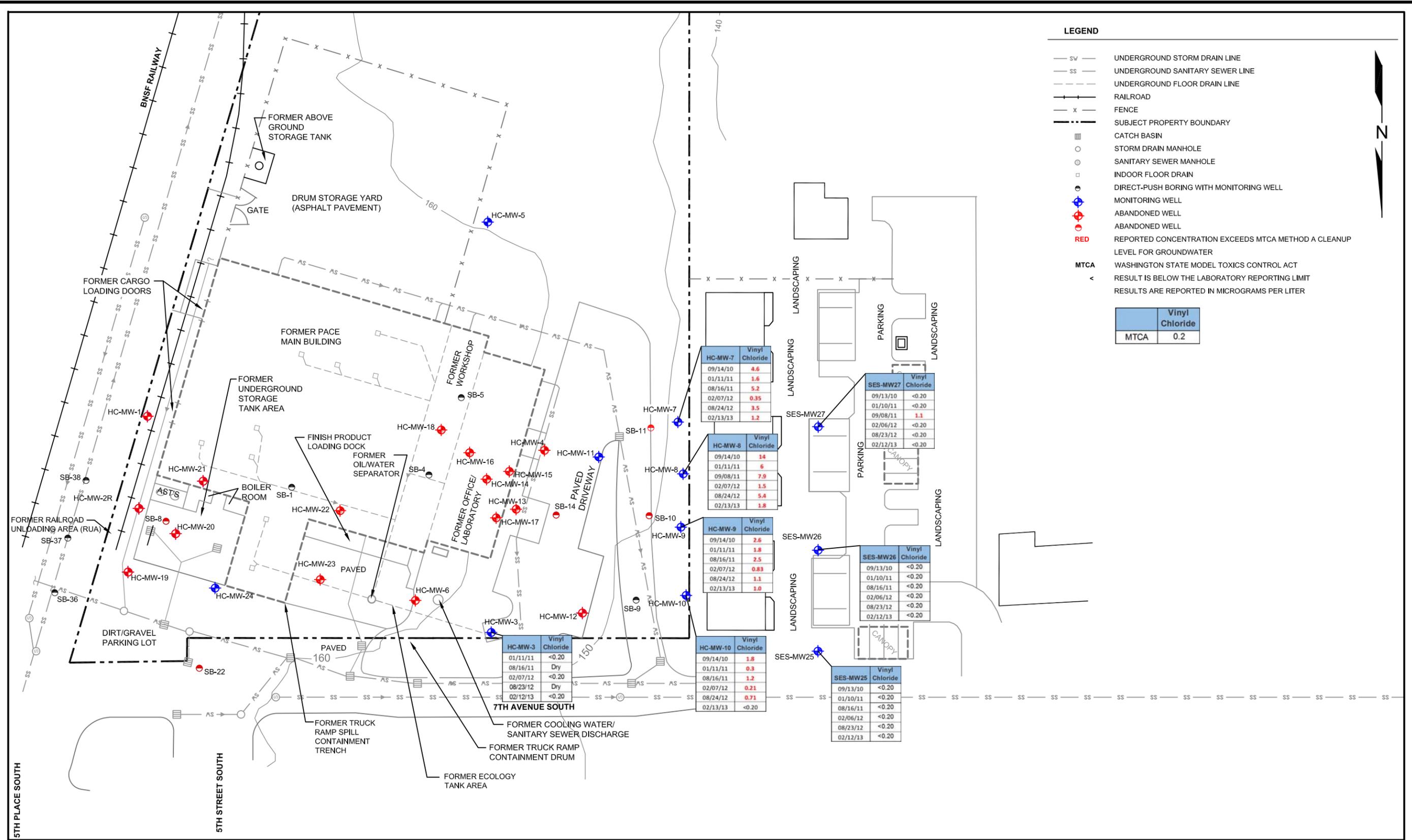


FIGURE 2
 MAP SHOWING
 GROUNDWATER ELEVATION CONTOURS
 (FEBRUARY 2013)



DATE: 03/01/13
 DRAWN BY: JQC
 CHECKED BY: TJC
 CAD FILE: 0698-001-2013Q1_GD_VINYL

PROJECT NAME: FORMER PACE NATIONAL SITE
 PROJECT NUMBER: 0698-001
 STREET ADDRESS: 500 7TH AVENUE SOUTH
 CITY, STATE: KIRKLAND, WA

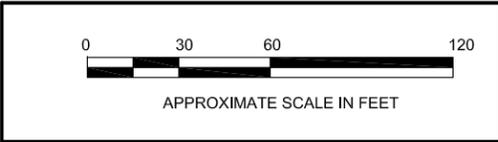
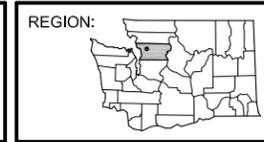


FIGURE 3
 MAP SHOWING GROUNDWATER ANALYTICAL RESULTS FOR VINYL CHLORIDE

TABLES



Table 1
Summary of Groundwater Elevation Data
Former PACE National Site
500 7th Avenue South
Kirkland, Washington

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Well Identification	Date Measured	Top of Well Casing Elevation ¹ (feet)	Depth to Groundwater ² (feet)	Groundwater Elevation ¹ (feet)
HC-MW-3	02/24/09	154.91	4.69	150.22
	05/20/09	154.91	4.34	150.57
	08/10/09	154.91	Dry	NA
	09/13/10	154.91	Dry	NA
	01/10/11	154.91	2.54	152.37
	09/08/11	154.91	Dry	NA
	02/06/12	154.91	2.66	152.25
	08/23/12	154.91	Dry	NA
	02/12/13	154.91	2.64	152.27
HC-MW-7	07/09/08	148.03	7.16	140.87
	02/24/09	148.03	5.51	142.52
	05/20/09	148.03	4.83	143.20
	08/10/09	148.03	8.02	140.01
	09/13/10	148.03	7.66	140.37
	01/10/11	148.03	4.61	143.42
	09/08/11	148.03	8.00	140.03
	02/06/12	148.03	4.72	143.31
	08/23/12	148.03	7.83	140.20
	02/12/13	148.03	4.76	143.27
HC-MW-8	07/09/08	146.92	3.15	143.77
	02/24/09	146.92	4.53	142.39
	05/20/09	146.92	3.82	143.10
	08/10/09	146.92	6.85	140.07
	09/13/10	146.92	6.61	140.31
	01/10/11	146.92	3.59	143.33
	09/08/11	146.92	6.96	139.96
	02/06/12	146.92	3.76	143.16
	08/23/12	146.92	6.78	140.14
	02/12/13	146.92	3.79	143.13
HC-MW-9	07/09/08	144.45	4.60	139.85
	02/24/09	144.45	3.15	141.30
	05/20/09	144.45	2.39	142.06
	08/10/09	144.45	5.17	139.28
	09/13/10	144.45	4.91	139.54
	01/10/11	144.45	2.40	142.05
	09/08/11	144.45	5.31	139.14
	02/06/12	144.45	2.33	142.12
	08/23/12	144.45	5.04	139.41
	02/12/13	144.45	2.48	141.97
HC-MW-10	07/09/08	141.31	2.40	138.91
	02/24/09	141.31	1.15	140.16
	05/20/09	141.31	0.54	140.77
	08/10/09	141.31	3.34	137.97
	09/13/10	141.31	2.76	138.55
	01/10/11	141.31	0.60	140.71
	09/08/11	141.31	0.66	140.65
	02/06/12	141.31	0.84	140.47
	08/23/12	141.31	3.19	138.12
	02/12/13	141.31	0.78	140.53



Table 1
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Well Identification	Date Measured	Top of Well Casing Elevation ¹ (feet)	Depth to Groundwater ² (feet)	Groundwater Elevation ¹ (feet)
SES-MW25	06/30/10	138.48	4.55	133.93
	09/13/10	138.48	6.32	132.16
	01/10/11	138.48	4.15	134.33
	09/08/11	138.48	7.05	131.43
	02/06/12	138.48	4.52	133.96
	08/23/12	138.48	6.86	131.62
	02/12/13	138.48	4.53	133.95
SES-MW26	06/30/10	139.54	3.66	135.88
	09/13/10	139.54	5.98	133.56
	01/10/11	139.54	2.28	137.26
	09/08/11	139.54	6.48	133.06
	02/06/12	139.54	2.53	137.01
	08/23/12	139.54	6.03	133.51
	02/12/13	139.54	2.20	137.34
SES-MW27	06/30/10	139.73	0.76	138.97
	09/13/10	139.73	4.28	135.45
	01/10/11	139.73	0.30	139.43
	09/08/11	139.73	4.58	135.15
	02/06/12	139.73	0.48	139.25
	08/23/12	139.73	3.92	135.81
	02/12/13	139.73	0.65	139.08

NOTES:

¹Measured relative to a temporary benchmark with an assumed elevation of 100.00 feet.

DRY = no measurable groundwater encountered within the screened interval in the well

²As measured from a fixed point at the top of the well casing.

NA = not available



Table 2
Summary of Groundwater Analytical Data
Chlorinated Volatile Organic Compounds
Former PACE National Site
500 7th Avenue South
Kirkland, Washington

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Well ID	Sample Date	Analytical Results ¹ (micrograms per liter)											
		Tetrachloroethene	Trichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride	Chloroethane	1,1-Dichloroethene	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloroethane	1,1,1-Trichloroethane	1,2-Dichloropropane
HC-MW-3	01/11/11	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	08/16/11	Well Dry											
	02/07/12	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
	08/23/12	Well Dry											
	02/12/13	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
HC-MW-7	07/09/08	<1	<1	<1	<1	<0.2	<1	<1	<5	<1	<1	<1	<1
	02/24/09	<1	<1	<1	<1	0.39	<1	<1	<5	<1	<1	<1	<1
	05/21/09	<0.20	<0.20	<0.20	<0.20	0.60	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	08/11/09	<0.20	<0.20	<0.20	0.72	3.5	<1.0	<0.20	<1.0	0.36	<0.20	<0.20	<0.20
	06/04/10	<0.20	<0.20	<0.20	0.4	1.8	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	09/14/10	<0.20	<0.20	<0.20	0.63	4.6	<1.0	<0.20	<1.0	0.27	<0.20	<0.20	<0.20
	01/11/11	<0.20	<0.20	<0.20	0.30	1.6	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	08/16/11	NA	NA	NA	NA	5.2	NA	NA	NA	NA	NA	NA	NA
	02/07/12	NA	NA	NA	NA	0.4	NA	NA	NA	NA	NA	NA	NA
	08/24/12	NA	NA	NA	NA	3.5	NA	NA	NA	NA	NA	NA	NA
02/13/13	NA	NA	NA	NA	1.2	NA	NA	NA	NA	NA	NA	NA	
HC-MW-8	07/09/08	<1	<1	<1	13	11	<1	<1	<5	<1	<1	<1	<1
	02/24/09	<1	<1	<1	10	20	<1	<1	<5	<1	<1	<1	<1
	05/21/09	<0.20	<0.20	0.56	8.6	13	<1.0	<0.20	<1.0	0.54	<0.20	<0.20	0.72
	08/11/09	<0.20	<0.20	0.99	18	24	<1.0	<0.20	<1.0	0.95	<0.20	<0.20	0.89
	06/04/10	<0.20	<0.20	0.76	10	16	<1.0	<0.20	<1.0	0.60	<0.20	<0.20	0.78
	09/14/10	<0.20	<0.20	0.59	9.8	14	<1.0	<0.20	<1.0	0.50	<0.20	<0.20	0.82
	01/11/11	<0.20	<0.20	0.29	3.9	6	<1.0	<0.20	<1.0	0.23	<0.20	<0.20	0.34
	09/08/11	NA	NA	NA	NA	7.9	NA	NA	NA	NA	NA	NA	NA
	02/07/12	NA	NA	NA	NA	1.5	NA	NA	NA	NA	NA	NA	NA
	08/24/12	NA	NA	NA	NA	5.4	NA	NA	NA	NA	NA	NA	NA
02/13/13	NA	NA	NA	NA	1.8	NA	NA	NA	NA	NA	NA	NA	
MTCA Cleanup Level		5^a	5^a	160^b	80^b	0.2^a	15^b	400^b	5^a	1,600^b	5^a	200^a	5^c



Table 2
Summary of Groundwater Analytical Data
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Well ID	Sample Date	Analytical Results ¹ (micrograms per liter)											
		Tetrachloroethene	Trichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Vinyl Chloride	Chloroethane	1,1-Dichloroethene	Methylene Chloride	1,1-Dichloroethane	1,2-Dichloroethane	1,1,1-Trichloroethane	1,2-Dichloropropane
HC-MW-9	07/09/08	<1	<1	<1	6.4	5.3	<1	<1	<5	<1	<1	<1	<1
	02/24/09	<1	<1	<1	4.7	3.2	<1	<1	<5	<1	<1	<1	<1
	05/21/09	<0.20	<0.20	0.30	4.5	5.7	<1.0	0.33	<1.0	0.64	<0.20	<0.20	0.53
	08/11/09	<0.20	<0.20	0.42	8.3	5.9	<1.0	0.74	<1.0	1.3	<0.20	<0.20	0.77
	06/04/10	<0.20	<0.20	<0.20	3.5	2.3	<1.0	0.25	<1.0	0.49	<0.20	<0.20	0.33
	09/14/10	<0.20	<0.20	0.22	4.0	2.6	<1.0	0.23	<1.0	0.47	<0.20	<0.20	0.43
	01/11/11	<0.20	<0.20	<0.20	2.7	1.8	<1.0	0.31	<1.0	0.51	<0.20	<0.20	0.26
	08/16/11	NA	NA	NA	NA	2.5	NA	NA	NA	NA	NA	NA	NA
	02/07/12	NA	NA	NA	NA	0.83	NA	NA	NA	NA	NA	NA	NA
	08/24/12	NA	NA	NA	NA	1.1	NA	NA	NA	NA	NA	NA	NA
HC-MW-10	02/13/13	NA	NA	NA	NA	1.0	NA	NA	NA	NA	NA	NA	NA
	07/09/08	<1	<1	<1	<1	2.9	<1	<1	<5	<1	<1	<1	NA
	02/24/09	<1	<1	<1	<1	1.7	<1	<1	<5	<1	<1	<1	NA
	05/21/09	<0.20	<0.20	<0.20	0.29	0.51	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	08/11/09	<0.20	<0.20	<0.20	0.57	2.7	<1.0	<0.20	<1.0	0.34	<0.20	<0.20	<0.20
	06/04/10	<0.20	<0.20	<0.20	0.45	0.89	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	09/14/10	<0.20	<0.20	<0.20	0.40	1.8	<1.0	<0.20	<1.0	0.29	<0.20	<0.20	<0.20
	01/11/11	<0.20	<0.20	<0.20	<0.20	0.3	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	08/16/11	NA	NA	NA	NA	1.2	NA	NA	NA	NA	NA	NA	NA
	02/07/12	NA	NA	NA	NA	0.21	NA	NA	NA	NA	NA	NA	NA
MTCA Cleanup Level	08/24/12	NA	NA	NA	NA	0.71	NA	NA	NA	NA	NA	NA	NA
	02/13/13	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
MTCA Cleanup Level		5^a	5^a	160^b	80^b	0.2^a	15^b	400^b	5^a	1,600^b	5^a	200^a	5^c



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SES-MW25	06/03/10	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	09/14/10	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	01/10/11	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	08/16/11	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
	02/06/12	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
	08/23/12	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
	02/12/13	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
SES-MW26	06/03/10	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	09/13/10	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	01/10/11	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	08/16/11	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
	02/06/12	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
	08/23/12	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
02/12/13	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	
SES-MW27	06/03/10	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	09/13/10	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	01/10/11	<0.20	<0.20	<0.20	<0.20	<0.20	<1.0	<0.20	<1.0	<0.20	<0.20	<0.20	<0.20
	08/16/11	NA	NA	NA	NA	0.53	NA	NA	NA	NA	NA	NA	NA
	09/08/11	NA	NA	NA	NA	1.1	NA	NA	NA	NA	NA	NA	NA
	02/06/12	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
	08/23/12	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA
02/12/13	NA	NA	NA	NA	<0.20	NA	NA	NA	NA	NA	NA	NA	
MTCA Cleanup Level		5^a	5^a	160^b	80^b	0.2^a	15^b	400^b	5^a	1,600^b	5^a	200^a	5^c

NOTES:

Red denotes concentration exceeds MTCA cleanup level for groundwater.

Samples analyzed by Friedman & Bruya, Inc., of Seattle, Washington, Analytical Resources, Incorporated, and/or Onsite Environmental Inc. of Redmond, Washington.

¹Analyzed by EPA Method 8260B or 8260C.

^aMTCA Method A Groundwater Cleanup Level, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

^bCLARC Groundwater MTCA Method B Carcinogenic and Non-carcinogenic Standard Formula, Unrestricted Land Use.

^cEPA and State of Washington Maximum Contaminant Level.

< = not detected at concentrations exceeding the laboratory reporting limit

CLARC = Cleanup Levels and Risk Calculations

EPA = U.S. Environmental Protection Agency

MTCA = Washington State Model Toxics Control Act

NA = not analyzed

**ATTACHMENT A
LABORATORY ANALYTICAL REPORT**

OnSite Environmental Inc. #1302-085



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

February 21, 2013

Rob Honsberger
Sound Earth Strategies
2811 Fairview Avenue East, Suite 2000
Seattle, WA 98102

Re: Analytical Data for Project 0698
Laboratory Reference No. 1302-085

Dear Rob:

Enclosed are the analytical results and associated quality control data for samples submitted on February 13, 2013.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal line extending to the right.

David Baumeister
Project Manager

Enclosures

Date of Report: February 21, 2013
Samples Submitted: February 13, 2013
Laboratory Reference: 1302-085
Project: 0698

Case Narrative

Samples were collected on February 12 and 13, 2013 and received by the laboratory on February 13, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: February 21, 2013
 Samples Submitted: February 13, 2013
 Laboratory Reference: 1302-085
 Project: 0698

VINYL CHLORIDE EPA 8260C

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	SES-MW25-20130212					
Laboratory ID:	02-085-01					
Vinyl Chloride	ND	0.20	EPA 8260C	2-14-13	2-14-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	95	66-120				
<i>Toluene-d8</i>	97	70-120				
<i>4-Bromofluorobenzene</i>	86	63-120				

Date of Report: February 21, 2013
 Samples Submitted: February 13, 2013
 Laboratory Reference: 1302-085
 Project: 0698

VINYL CHLORIDE EPA 8260C

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	SES-MW26-20130212					
Laboratory ID:	02-085-02					
Vinyl Chloride	ND	0.20	EPA 8260C	2-14-13	2-14-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>113</i>	<i>66-120</i>				
<i>Toluene-d8</i>	<i>103</i>	<i>70-120</i>				
<i>4-Bromofluorobenzene</i>	<i>94</i>	<i>63-120</i>				

Date of Report: February 21, 2013
 Samples Submitted: February 13, 2013
 Laboratory Reference: 1302-085
 Project: 0698

VINYL CHLORIDE EPA 8260C

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	SES-MW27-20130212					
Laboratory ID:	02-085-03					
Vinyl Chloride	ND	0.20	EPA 8260C	2-14-13	2-14-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>101</i>	<i>66-120</i>				
<i>Toluene-d8</i>	<i>101</i>	<i>70-120</i>				
<i>4-Bromofluorobenzene</i>	<i>97</i>	<i>63-120</i>				

Date of Report: February 21, 2013
 Samples Submitted: February 13, 2013
 Laboratory Reference: 1302-085
 Project: 0698

VINYL CHLORIDE EPA 8260C

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	HC-MW-3-20130212					
Laboratory ID:	02-085-04					
Vinyl Chloride	ND	0.20	EPA 8260C	2-15-13	2-15-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>99</i>	<i>66-120</i>				
<i>Toluene-d8</i>	<i>104</i>	<i>70-120</i>				
<i>4-Bromofluorobenzene</i>	<i>95</i>	<i>63-120</i>				

Date of Report: February 21, 2013
Samples Submitted: February 13, 2013
Laboratory Reference: 1302-085
Project: 0698

VINYL CHLORIDE EPA 8260C

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	HC-MW-10-20130213					
Laboratory ID:	02-085-05					
Vinyl Chloride	ND	0.20	EPA 8260C	2-14-13	2-14-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>104</i>	<i>66-120</i>				
<i>Toluene-d8</i>	<i>100</i>	<i>70-120</i>				
<i>4-Bromofluorobenzene</i>	<i>95</i>	<i>63-120</i>				

Date of Report: February 21, 2013
 Samples Submitted: February 13, 2013
 Laboratory Reference: 1302-085
 Project: 0698

VINYL CHLORIDE EPA 8260C

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	HC-MW-10-20130213D					
Laboratory ID:	02-085-06					
Vinyl Chloride	ND	0.20	EPA 8260C	2-14-13	2-14-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	99	66-120				
<i>Toluene-d8</i>	101	70-120				
<i>4-Bromofluorobenzene</i>	96	63-120				

Date of Report: February 21, 2013
 Samples Submitted: February 13, 2013
 Laboratory Reference: 1302-085
 Project: 0698

VINYL CHLORIDE EPA 8260C

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	HC-MW-9-20130213					
Laboratory ID:	02-085-07					
Vinyl Chloride	1.0	0.20	EPA 8260C	2-14-13	2-14-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>108</i>	<i>66-120</i>				
<i>Toluene-d8</i>	<i>101</i>	<i>70-120</i>				
<i>4-Bromofluorobenzene</i>	<i>87</i>	<i>63-120</i>				

Date of Report: February 21, 2013
Samples Submitted: February 13, 2013
Laboratory Reference: 1302-085
Project: 0698

VINYL CHLORIDE EPA 8260C

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	HC-MW-8-20130213					
Laboratory ID:	02-085-08					
Vinyl Chloride	1.8	0.20	EPA 8260C	2-14-13	2-14-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>97</i>	<i>66-120</i>				
<i>Toluene-d8</i>	<i>100</i>	<i>70-120</i>				
<i>4-Bromofluorobenzene</i>	<i>98</i>	<i>63-120</i>				

Date of Report: February 21, 2013
 Samples Submitted: February 13, 2013
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VINYL CHLORIDE EPA 8260C

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	HC-MW-7-20130213					
Laboratory ID:	02-085-09					
Vinyl Chloride	1.2	0.20	EPA 8260C	2-14-13	2-14-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	102	66-120				
<i>Toluene-d8</i>	97	70-120				
<i>4-Bromofluorobenzene</i>	96	63-120				

Date of Report: February 21, 2013
 Samples Submitted: February 13, 2013
 Laboratory Reference: 1302-085
 Project: 0698

**VINYL CHLORIDE EPA 8260C
 METHOD BLANK QUALITY CONTROL**

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0214W1					
Vinyl Chloride	ND	0.20	EPA 8260C	2-14-13	2-14-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>108</i>	<i>66-120</i>				
<i>Toluene-d8</i>	<i>102</i>	<i>70-120</i>				
<i>4-Bromofluorobenzene</i>	<i>98</i>	<i>63-120</i>				
Laboratory ID:	MB0215W1					
Vinyl Chloride	ND	0.20	EPA 8260C	2-15-13	2-15-13	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>101</i>	<i>66-120</i>				
<i>Toluene-d8</i>	<i>99</i>	<i>70-120</i>				
<i>4-Bromofluorobenzene</i>	<i>93</i>	<i>63-120</i>				

Date of Report: February 21, 2013
 Samples Submitted: February 13, 2013
 Laboratory Reference: 1302-085
 Project: 0698

**VINYL CHLORIDE EPA 8260C
 SB/SBD QUALITY CONTROL**

Matrix: Water
 Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery	RPD		Flags
					Recovery	Limits	RPD	Limit		
SPIKE BLANKS										
Laboratory ID:	SB0214W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	10.5	9.91	10.0	10.0	105	99	65-141	6	15	
Benzene	9.71	9.56	10.0	10.0	97	96	77-125	2	15	
Trichloroethene	9.77	8.61	10.0	10.0	98	86	80-125	13	15	
Toluene	9.12	9.02	10.0	10.0	91	90	80-125	1	15	
Chlorobenzene	9.69	9.54	10.0	10.0	97	95	80-140	2	15	
<i>Surrogate:</i>										
<i>Dibromofluoromethane</i>					98	103	66-120			
<i>Toluene-d8</i>					97	97	70-120			
<i>4-Bromofluorobenzene</i>					89	97	63-120			
Laboratory ID:	SB0215W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	10.0	9.79	10.0	10.0	100	98	65-141	2	15	
Benzene	9.60	9.60	10.0	10.0	96	96	77-125	0	15	
Trichloroethene	9.47	9.55	10.0	10.0	95	96	80-125	1	15	
Toluene	9.74	9.07	10.0	10.0	97	91	80-125	7	15	
Chlorobenzene	9.85	9.56	10.0	10.0	99	96	80-140	3	15	
<i>Surrogate:</i>										
<i>Dibromofluoromethane</i>					100	105	66-120			
<i>Toluene-d8</i>					96	99	70-120			
<i>4-Bromofluorobenzene</i>					97	98	63-120			



Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
 - B - The analyte indicated was also found in the blank sample.
 - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
 - E - The value reported exceeds the quantitation range and is an estimate.
 - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
 - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
 - I - Compound recovery is outside of the control limits.
 - J - The value reported was below the practical quantitation limit. The value is an estimate.
 - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
 - L - The RPD is outside of the control limits.
 - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
 - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
 - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
 - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
 - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
 - P - The RPD of the detected concentrations between the two columns is greater than 40.
 - Q - Surrogate recovery is outside of the control limits.
 - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
 - T - The sample chromatogram is not similar to a typical _____.
 - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
 - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
 - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
 - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
 - X - Sample extract treated with a mercury cleanup procedure.
 - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
 - Z -
- ND - Not Detected at PQL
 PQL - Practical Quantitation Limit
 RPD - Relative Percent Difference

