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Technical Memorandum

Status Report – SVE Monitoring (Second Quarter 2018)

To: Jonathan Polonsky and Brent Chadwick, Plaid Pantries, Inc.

From: Paul Ecker LHG, and Chris Rhea, LG

Date: July 31, 2018

Regarding: Plaid Pantry Store #112
1002 West Fourth Plain Boulevard
Vancouver, WA
Ecology VCP Site ID SW1314
UST Facility ID 9158935
EES Project 1179-02

This memorandum provides a summary of soil vapor extraction (SVE) monitoring results and performance through May 2018 for the Plaid Pantries, Inc. (Plaid) convenience market and retail fueling station #112, located at 1002 West Fourth Plain Boulevard in Vancouver, Washington (Figure 1). Plaid operates an SVE system at the subject Property as an interim action to mitigate gasoline impacts associated with prior Site operations (EES, 12/27/2013). Figure 2 illustrates Property features.

SVE OPERATION

The SVE system includes application of vacuum to five well locations in a historic gasoline release area near the southern Property margin. The SVE system has operated without major problems since full-time system startup in September 2013. SVE performance is monitored during routine system operations and maintenance visits, with quarterly vapor sampling events scheduled for January, April, July, and October while the system is in operation. Operational data collected through May 30, 2018 is presented on the attached tables, figures, and charts, and summarized below.

AIR FLOW

Since May 2017, the system has produced between around 90 and 110 cubic feet per minute (CFM) of air flow from the subsurface (see Table 1, "AWS Inlet"), averaging 105 CFM. The major source of air flow is obtained from wells SVE-2 and SVE-4 which are screened between 15 and 20 feet depth in relatively coarse-grained soils (sand/gravel), each with typical extraction flow rates of approximately 30 to 40 CFM. In comparison, flow rates from the three shallow extraction wells (screened in fine-grained soils between 5 and 10 feet depth) are all individually around 5 to 10 CFM.

RADIUS OF INFLUENCE

The system's zone of shallow vapor extraction influence generally covers the area of known historical gasoline soil impacts at the Property, with consistent measurable influence extending to off-Property sidewalk well B-17 (Figure 3, and Tables 1 and 2). The radius of influence for each SVE well is estimated at approximately 6 to 10 feet.

BIOGENIC DEGRADATION OF GASOLINE

Aerobic conditions are expected to promote natural biological degradation of subsurface gasoline vapors. As expected, aerobic conditions (19-21% oxygen) are observed at active SVE wells (SVE-1 through SVE-5) while the system is operating, indicating the remedial system is promoting oxygen flow into the subsurface. Within the SVE system's observed zone of influence, the effects of active SVE are also evident at well B-17, where vacuum influence is consistently observed (Table 2). Fluctuating aerobic conditions observed prior to 2018 at B-17 indicate that this well is in contact with gasoline contamination and near the perimeter of SVE influence. At other wells (B-18, S-27, S-28, S-30, and S-31) located outside of the gasoline source-area, and at or beyond the perimeter of the system's zone of influence, natural aerobic subsurface conditions (approximately 19-21% oxygen) are consistently observed. Among all site wells, S-29 is the only well located outside of the area of known gasoline contamination that usually exhibits anaerobic subsurface conditions. Biogenic conditions at select wells outside the radius of influence of the SVE system (S-27, S-28, S-29, and S-31) are considered defined and will no longer be monitored unless significant changes in site conditions are observed. Biogenic degradation data is presented in Table 2.

CONTAMINANT CONCENTRATIONS AND MASS REMOVAL

On April 27, 2018, vapor samples were collected from the five active SVE wells for laboratory analysis to evaluate contaminant mass removal trends and to evaluate compliance with regulatory criteria for ongoing air discharges. Within the SVE treatment zone, gasoline and related constituent vapors continue to be removed from the subsurface at concentrations indicating generally diminishing residual impacts and mass removal rates. Observations during the April 2018 sampling event overall were generally consistent with long-term gasoline treatment trends over the past three years.

Findings are summarized below, presented in Tables 3 and 4, and illustrated in Figure 4 and Charts 1 through 4. A copy of the laboratory analytical report for this monitoring period is presented in Attachment A.

- Gasoline Concentrations: During the April 2018 event, gasoline and/or benzene were detected at two of the five sampled SVE wells, SVE-1 and SVE-4. Overall, gasoline and related constituent concentrations had diminished since July 2017, and within the range of variability observed during the past several years. The highest concentration of gasoline (5,700 micrograms per cubic meter [ug/m^3]) was detected at well SVE-4. Benzene was not detected above laboratory method reporting limits (MRLs) at any of the sampled SVE wells during the April 2018 sampling event. Other gasoline constituents were not detected above laboratory MRLs at each of the SVE wells, except at SVE-5 where m,p-xylene was detected below the MTCA Method B soil gas screening level. Note that a relatively

elevated gasoline concentration previously observed at SVE-1 in January 2017 (Table 3, Figure 4) appears to have been a localized and short-term anomaly, as was a July 2017 anomaly at SVE-5.

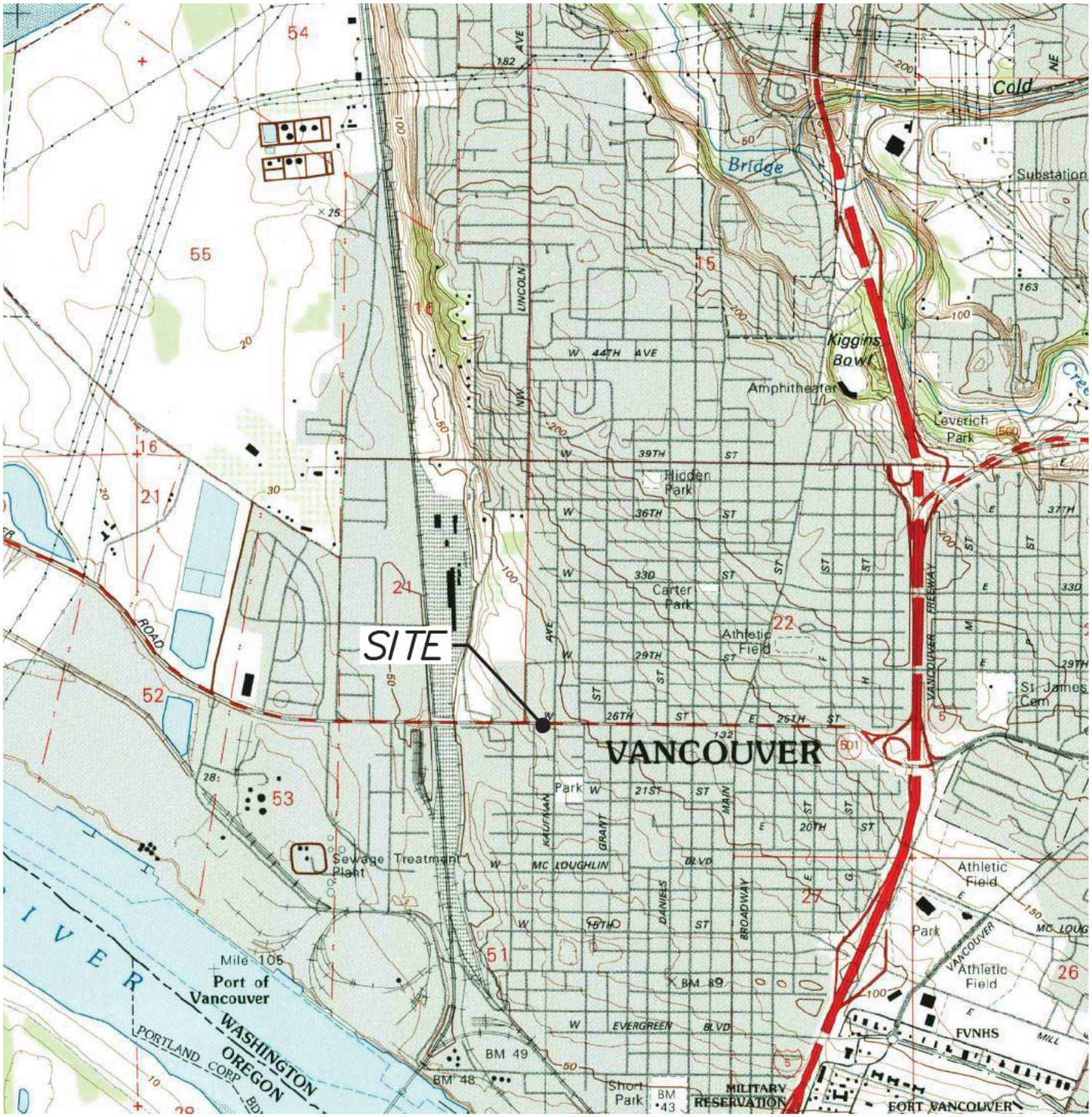
- Gasoline Mass Extraction Rate: Initial gasoline mass extraction rates at SVE startup in August 2013 were estimated at 1.4 pounds per day and decreased to approximately 0.3 pounds per day by November 2013. Since then, gasoline mass extraction rates have fluctuated but generally decreased, with removal rates near or below 0.1 pounds per day since June 2015. Gasoline removal rates were calculated to be approximately 0.033 pounds per day based on the April 2018 monitoring results. Since mass extraction rates stabilized in June 2015, approximately 53 pounds of gasoline mass were removed by SVE from the subsurface. Since 2013 startup, cumulative removal of gasoline range hydrocarbons is estimated to be 200 pounds, or approximately 33 gallons (Table 4, Chart 3). Chart 3 illustrates these gasoline mass removal trends.
- Chlorinated Solvents: Non-gasoline chlorinated solvent vapors, primarily tetrachloroethylene (PCE), continue to be removed from the subsurface during SVE operations (Table 3, Figure 4, Chart 4). Total PCE concentrations in SVE system exhaust are measured quarterly for regional air discharge compliance purposes. PCE in the system exhaust was detected in April 2018 at a concentration of 400 ug/m^3. This concentration exceeds the published MTCA Method B soil gas screening level of 321 ug/m^3, but is far below air emissions permit thresholds and will continue to be monitored based on regulatory discharge criteria.
- Chlorinated Solvents Mass Extraction Rate: PCE mass extraction rates are very low but have varied since system startup in 2013. PCE extraction rates were elevated between July 2016 and January 2017 compared to prior monitoring events, but have generally diminished since that time. The PCE mass removal rate for April 2018 was calculated at 0.0021 pounds per day. Cumulative PCE mass removal since 2013 startup is estimated to be 9.3 pounds, more than half of which was accumulated since April 2016 (Table 4, Chart 4).
- Air Discharge Compliance: Per Southwest Washington Clean Air Agency (SWCAA) approval, SVE exhaust treatment controls were discontinued on March 28, 2014 due to low total emissions. Extracted VOC concentrations indicate SVE emissions remain in compliance with agency requirements for untreated exhausts. Both PCE and gasoline-related vapor emissions are far below the maximum allowable discharge limits (500 and 2,000 pounds/year, respectively) and exhaust treatment is not currently required by SWCAA based solely on gasoline/BTEX and PCE vapor exhausts (Table 4).

Note that gasoline impacts in soil extend beyond Property boundaries to the south under the right-of-way, outside of the influence of the current SVE system. Regulatory requirements and potential response actions for the right-of-way area are under evaluation.

ATTACHMENTS

Figures	Figure 1: Vicinity Map Figure 2: Site Features Figure 3: Inferred Zone of Vacuum Influence Figure 4: Contaminated Vapor Concentrations during SVE Operations
Tables	Table 1: Soil Vapor Extraction Monitoring Data Table 2: Soil Vapor Extraction Radius of Influence Data Table 3: Soil Vapor Analytical Results – Volatile Organic Compounds Table 4: Soil Vapor Extraction Mass Removal
Charts	Chart 1: Gasoline Vapor Concentrations during SVE Operations Chart 2: Benzene Vapor Concentrations during SVE Operations Chart 3: Gasoline Mass Extraction Rates and Cumulative Mass Removal Chart 4: PCE Mass Extraction Rates and Cumulative Mass Removal
Attachments	Attachment A: Laboratory Analytical Data

Figures



SOURCE:
USGS, VANCOUVER QUADRANGLE
WASHINGTON–OREGON
7.5 MINUTE SERIES (TOPOGRAPHIC)

N

APPROXIMATE SCALE IN FEET

0 1000 2000 4000

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VICINITY MAP

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WA.

DATE:	7–14–15	PROJECT NO.	
FILE:	1179–02	1179–02	
DRAWN:	JJT	FIGURE NO.	
APPROVED:	AG	1	

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LEGEND

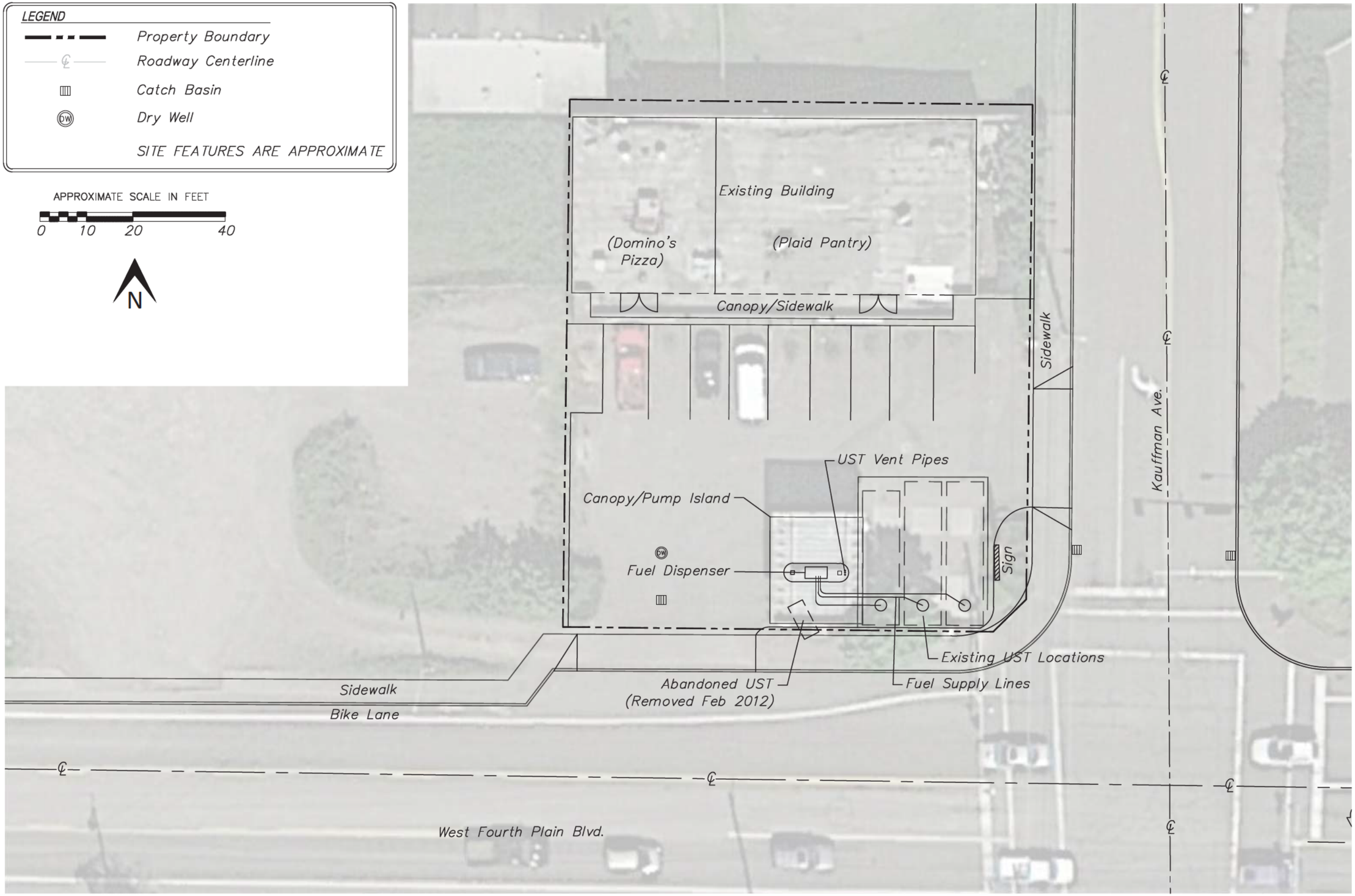
- Property Boundary
- Roadway Centerline
- Catch Basin
- Dry Well

SITE FEATURES ARE APPROXIMATE

APPROXIMATE SCALE IN FEET

0 10 20 40

N



DATE:	6-1-18
FILE:	1179-01
DRAWN:	JJT
APPROVED:	CR
PROJECT NO.	1179-01
FIGURE NO.	2

SITE FEATURES

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WA.

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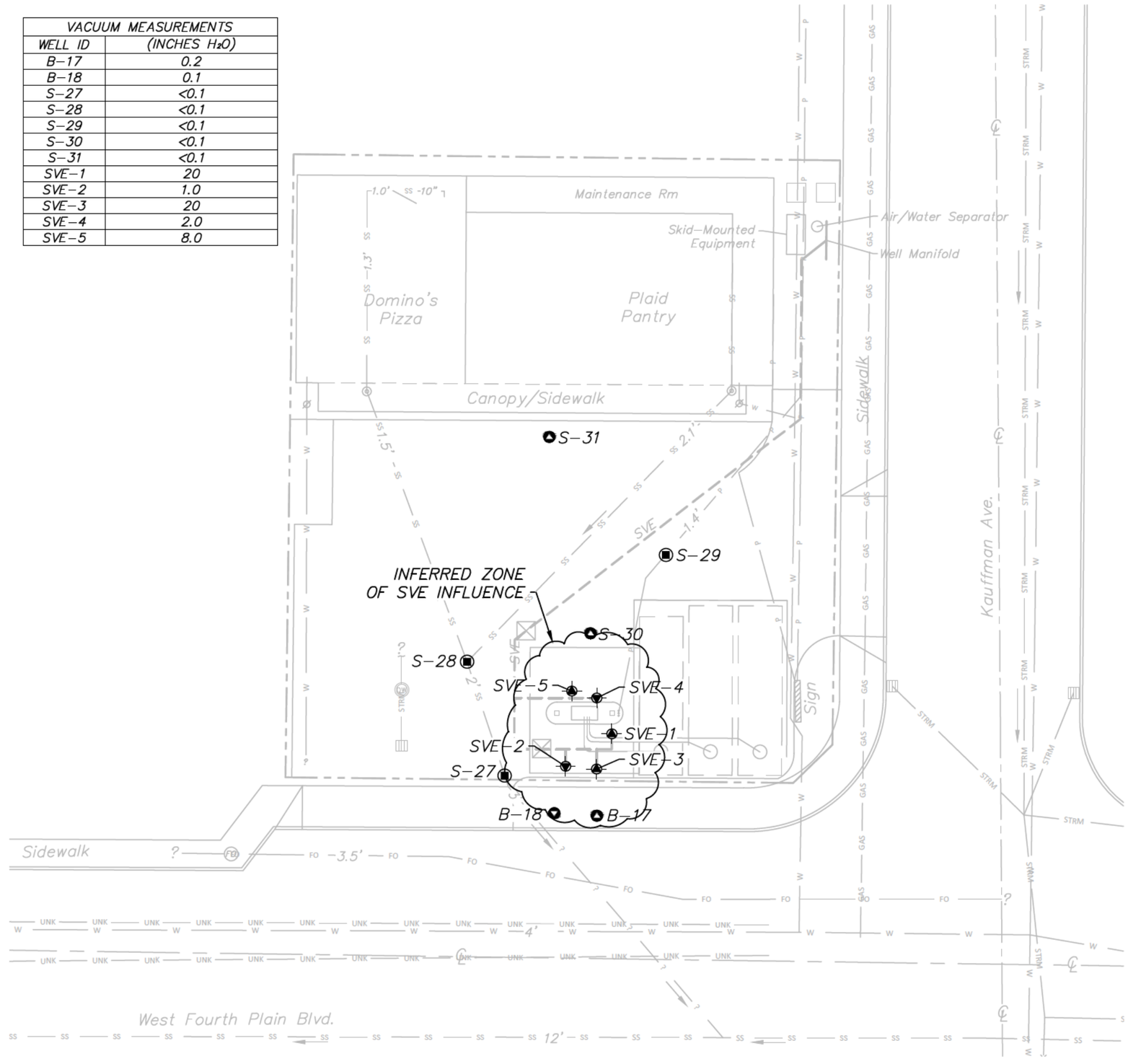
LEGEND

- Property Boundary
- Roadway Centerline
- Catch Basin
- Dry Well
- Vault
- SVE–1 — Shallow SVE Well (Screened 5–10' bgs)
- SVE–2 — Deep SVE Well (Screened 15–20' bgs)
- S–28 — Utility Vapor Monitoring Well (Screened at Various Shallow Depths in Trench Backfill)
- B–17 — Shallow Vapor Monitoring Well (Screened 5–10' bgs)
- B–18 — Deep Vapor Monitoring Well (Screened 15–20' bgs)
- SVE Piping
- W Water Line
- SS Sanitary Sewer & Flow Direction
- STRM Storm Sewer & Flow Direction
- P Power
- GAS Natural Gas
- UNK Unknown Utility
- FO Fiber Optic
- Arrows Indicate Flow Direction Where Known
- Approximate Utility Depths Indicated Where Known (Feet)

SITE FEATURES ARE APPROXIMATE.

VACUUM MEASUREMENTS	
WELL ID	(INCHES H_2O)
B–17	0.2
B–18	0.1
S–27	<0.1
S–28	<0.1
S–29	<0.1
S–30	<0.1
S–31	<0.1
SVE–1	20
SVE–2	1.0
SVE–3	20
SVE–4	2.0
SVE–5	8.0



N

APPROXIMATE SCALE IN FEET

0 10 20 40

INFERRED SVE RADIUS OF INFLUENCE (APRIL 2018)

PLAID PANTRY #112
1002 W. FOURTH PLAIN BLVD.
VANCOUVER, WA.

DATE:	5–24–18	PROJECT NO.	1179–02
FILE:	1179–02	FIGURE NO.	3
DRAWN:	JJT		
APPROVED:	CJ		

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LEGEND

- Property Boundary
- Catch Basin
- Dry Well
- Bollards
- Vault
- SVE–1 — Shallow SVE test well (screened 5–10' bgs)
- SVE–2 — Deep SVE test well (screened 15–20' bgs)
- Fiber Optic Manhole
- Water Valves
- Signal Control
- SS — Sanitary Sewer
- STRM — Storm
- W — Water
- FO — Fiber Optic
- P — Power
- SVE Piping
- G = Gasoline
- B = Benzene
- PCE = Tetrachloroethylene
- –– = Not Analyzed

RESULTS REPORTED IN MICROGRAMS PER CUBIC METER (ug/m³)

* = SVE SYSTEM OFF 12/11/15 THROUGH 3/16/16 TO EVALUATE PERCHED GROUNDWATER CONDITIONS

** = RESAMPLED ON 3/21/17 BASED ON ANOMALOUSLY HIGH GASOLINE DETECTION

*** = THIS SAMPLE WAS NOT ANALYZED DUE TO CANISTER VACUUM ISSUES

**** = THIS SAMPLE WAS NOT ANALYZED DUE TO WATER IN SAMPLING LINE

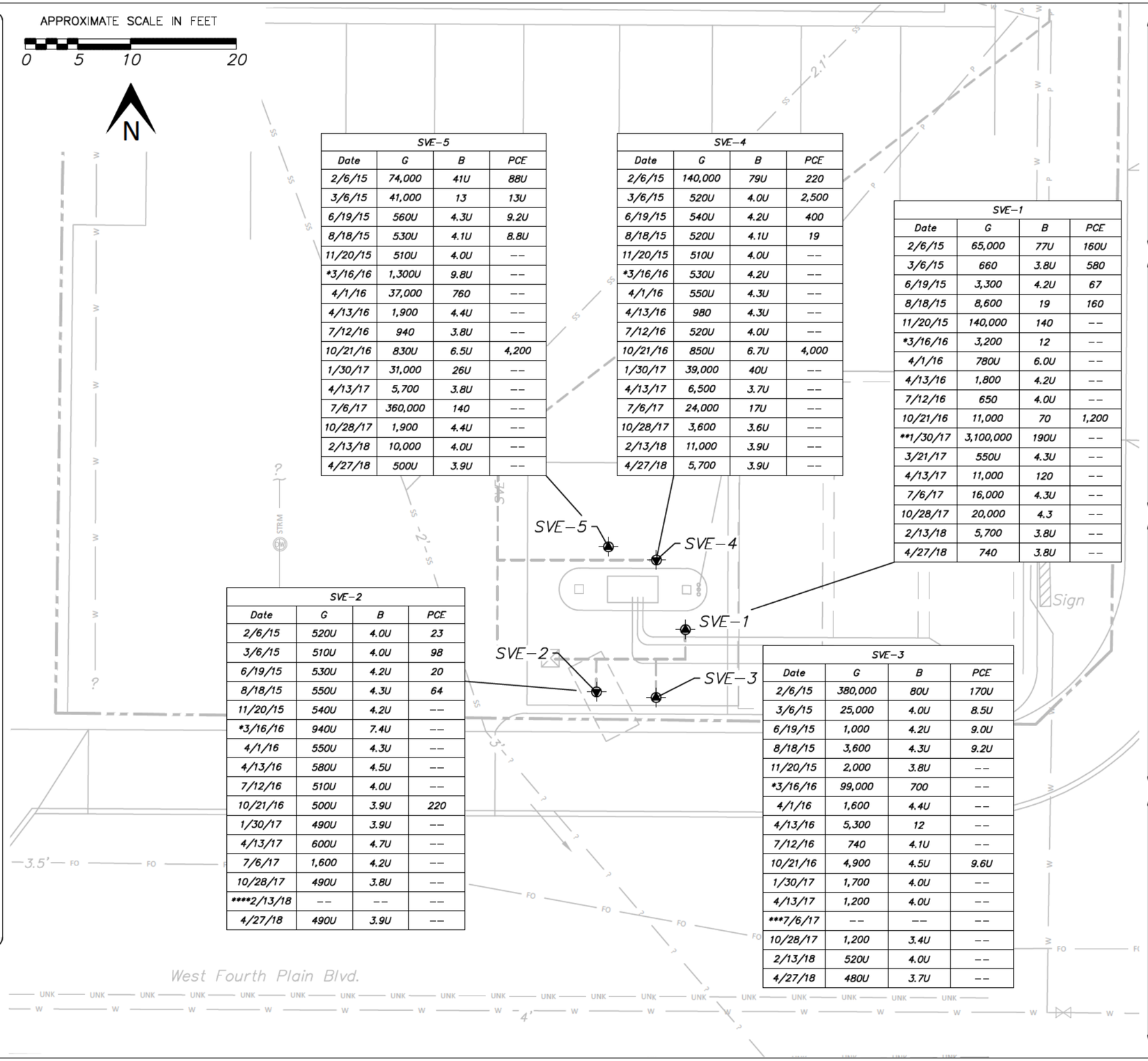
SVE SYSTEM OPERATIONS STARTED IN AUGUST 2013. SEE TABLES FOR COMPREHENSIVE LABORATORY RESULTS.

SITE FEATURES ARE APPROXIMATE

APPROXIMATE SCALE IN FEET

0 5 10 20

N



SVE–5			
Date	G	B	PCE
2/6/15	74,000	41U	88U
3/6/15	41,000	13	13U
6/19/15	560U	4.3U	9.2U
8/18/15	530U	4.1U	8.8U
11/20/15	510U	4.0U	––
*3/16/16	1,300U	9.8U	––
4/1/16	37,000	760	––
4/13/16	1,900	4.4U	––
7/12/16	940	3.8U	––
10/21/16	830U	6.5U	4,200
1/30/17	31,000	26U	––
4/13/17	5,700	3.8U	––
7/6/17	360,000	140	––
10/28/17	1,900	4.4U	––
2/13/18	10,000	4.0U	––
4/27/18	500U	3.9U	––

SVE–4			
Date	G	B	PCE
2/6/15	140,000	79U	220
3/6/15	520U	4.0U	2,500
6/19/15	540U	4.2U	400
8/18/15	520U	4.1U	19
11/20/15	510U	4.0U	––
*3/16/16	530U	4.2U	––
4/1/16	550U	4.3U	––
4/13/16	980	4.3U	––
7/12/16	520U	4.0U	––
10/21/16	850U	6.7U	4,000
1/30/17	39,000	40U	––
4/13/17	6,500	3.7U	––
7/6/17	24,000	17U	––
10/28/17	3,600	3.6U	––
2/13/18	11,000	3.9U	––
4/27/18	5,700	3.9U	––

SVE–1			
Date	G	B	PCE
2/6/15	65,000	77U	160U
3/6/15	660	3.8U	580
6/19/15	3,300	4.2U	67
8/18/15	8,600	19	160
11/20/15	140,000	140	––
*3/16/16	3,200	12	––
4/1/16	780U	6.0U	––
4/13/16	1,800	4.2U	––
7/12/16	650	4.0U	––
10/21/16	11,000	70	1,200
**1/30/17	3,100,000	190U	––
3/21/17	550U	4.3U	––
4/13/17	11,000	120	––
7/6/17	16,000	4.3U	––
10/28/17	20,000	4.3	––
2/13/18	5,700	3.8U	––
4/27/18	740	3.8U	––

SVE–2			
Date	G	B	PCE
2/6/15	520U	4.0U	23
3/6/15	510U	4.0U	98
6/19/15	530U	4.2U	20
8/18/15	550U	4.3U	64
11/20/15	540U	4.2U	––
*3/16/16	940U	7.4U	––
4/1/16	550U	4.3U	––
4/13/16	580U	4.5U	––
7/12/16	510U	4.0U	––
10/21/16	500U	3.9U	220
1/30/17	490U	3.9U	––
4/13/17	600U	4.7U	––
7/6/17	1,600	4.2U	––
10/28/17	490U	3.8U	––
****2/13/18	––	––	––
4/27/18	490U	3.9U	––

SVE–3			
Date	G	B	PCE
2/6/15	380,000	80U	170U
3/6/15	25,000	4.0U	8.5U
6/19/15	1,000	4.2U	9.0U
8/18/15	3,600	4.3U	9.2U
11/20/15	2,000	3.8U	––
*3/16/16	99,000	700	––
4/1/16	1,600	4.4U	––
4/13/16	5,300	12	––
7/12/16	740	4.1U	––
10/21/16	4,900	4.5U	9.6U
1/30/17	1,700	4.0U	––
4/13/17	1,200	4.0U	––
***7/6/17	––	––	––
10/28/17	1,200	3.4U	––
2/13/18	520U	4.0U	––
4/27/18	480U	3.7U	––

DATE:	5-24-18
FILE:	1179-02
DRAWN:	JJT
APPROVED:	CJ
PROJECT NO.	1179-02
FIGURE NO.	4

CONTAMINANT VAPOR CONCENTRATIONS DURING SVE OPERATIONS (THROUGH 4/27/18)

PLAID PANTRY #112
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VANCOUVER, WA.

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Tables

TABLE 1
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Analytical Sampling	Induced Vacuum (inches H_2O)[a]	PID (ppmv)[a]	Approximate Velocity (fpm)[a]	Flow (scfm)[b]
SVE-1	2013 Q3 Avg.	-	22	1,129	637	8
	2013 Q4 Avg.	-	41	205	1,099	9
	2014 Q1 Avg.	-	35	180	919	11
	2014 Q2 Avg.	-	26	101	807	9
	2014 Q3 Avg.	-	23	56	1,079	11
	2014 Q4 Avg.	-	25	17	933	11
	2015 Q1 Avg.	-	28	1.4	779	7
	2015 Q2 Avg.	-	25	5.8	813	8
	2015 Q3 Avg.	-	21	5.7	881	10
	2015 Q4 Avg.	-	21	2.9	816	10
	2016 Q1 Avg.	-	23	1.1	627	-
	2016 Q2 Avg.	-	22	11	594	7
	2016 Q3 Avg.	-	18	6.4	510	7
	2016 Q4 Avg.	-	24	5.8	904	10
	2017 Q1 Avg.	-	26	11.9	935	9
	2017 Q2 Avg.	-	20	10.8	532	7
	2017 Q3 Avg.	-	18	2.9	575	10
	2017 Q4 Avg.	-	22	3.7	612	8
	02/13/2018	Yes	22	1.3	608	8
	02/15/2018	-	22	1.1	608	7
	03/21/2018	-	22	7.7	617	8
	04/18/2018	-	22	-	636	-
	04/27/2018	Yes	20	3.0	521	8
	05/30/2018	-	20	5.7	447	6
SVE-2	2013 Q3 Avg.	-	6.9	4.0	2,470	29
	2013 Q4 Avg.	-	9.1	3.9	3,043	32
	2014 Q1 Avg.	-	8.0	20	1,597	15
	2014 Q2 Avg.	-	12	6.5	2,664	29
	2014 Q3 Avg.	-	8.5	1.2	3,046	32
	2014 Q4 Avg.	-	11	0.8	2,414	31
	2015 Q1 Avg.	-	12	0.1	3,500	32
	2015 Q2 Avg.	-	9.2	0.5	3,272	35
	2015 Q3 Avg.	-	7.7	0.5	2,886	33
	2015 Q4 Avg.	-	8.5	0.6	2,562	32
	2016 Q1 Avg.	-	11	0.8	3,025	-
	2016 Q2 Avg.	-	9.4	3.3	3,665	42
	2016 Q3 Avg.	-	7.5	5.4	2,843	39
	2016 Q4 Avg.	-	10	4.4	3,280	34
	2017 Q1 Avg.	-	14	4.4	3,179	32
	2017 Q2 Avg.	-	12	3.8	3,373	45
	2017 Q3 Avg.	-	8	2.0	2,597	43
	2017 Q4 Avg.	-	11	3.8	3,209	43
	02/13/2018	Yes	12	1.6	2,600	32
	02/15/2018	-	10	0.9	2,870	34
	03/21/2018	-	10	10.4	2,470	34
	04/18/2018	-	12	-	2,670	-

TABLE 1
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Analytical Sampling	Induced Vacuum (inches H_2O)[a]	PID (ppmv)[a]	Approximate Velocity (fpm)[a]	Flow (scfm)[b]
SVE-2 (cont'd)	04/27/2018	Yes	12	2.1	2,504	40
	05/30/2018	-	8.2	7.0	2,841	39
SVE-3	2013 Q3 Avg.	-	22	27	732	9
	2013 Q4 Avg.	-	39	11	1,077	9
	2014 Q1 Avg.	-	36	18	1,107	9
	2014 Q2 Avg.	-	26	6.1	808	8
	2014 Q3 Avg.	-	23	1.2	890	9
	2014 Q4 Avg.	-	26	3.7	951	11
	2015 Q1 Avg.	-	28	3.0	769	7
	2015 Q2 Avg.	-	24	1.6	763	8
	2015 Q3 Avg.	-	21	1.5	746	9
	2015 Q4 Avg.	-	21	0.8	588	7
	2016 Q1 Avg.	-	23	8.0	607	-
	2016 Q2 Avg.	-	21	236	535	6
	2016 Q3 Avg.	-	19	5.8	463	7
	2016 Q4 Avg.	-	24	7.5	802	8
	2017 Q1 Avg.	-	26	5.2	859	9
	2017 Q2 Avg.	-	20	3.9	482	6
	2017 Q3 Avg.	-	19	2.1	461	8
	2017 Q4 Avg.	-	22	7.3	627	8
	02/13/2018	Yes	22	3.0	768	10
	02/15/2018	-	22	1.0	525	6
	03/21/2018	-	22	7.8	658	9
	04/18/2018	-	20	-	621	-
	04/27/2018	Yes	20	2.4	512	8
	05/30/2018	-	20	6.1	557	8
SVE-4	2013 Q3 Avg.	-	8.2	4.1	2,767	33
	2013 Q4 Avg.	-	13	9.0	2,743	27
	2014 Q1 Avg.	-	15	8.9	3,382	32
	2014 Q2 Avg.	-	15	5.1	3,525	40
	2014 Q3 Avg.	-	8.5	1.4	2,940	29
	2014 Q4 Avg.	-	11	2.9	2,489	32
	2015 Q1 Avg.	-	12	3.4	3,833	35
	2015 Q2 Avg.	-	9.4	1.1	3,254	33
	2015 Q3 Avg.	-	8.3	1.8	3,116	36
	2015 Q4 Avg.	-	8.5	1.1	3,187	39
	2016 Q1 Avg.	-	13	1.1	3,583	-
	2016 Q2 Avg.	-	9.9	5.1	3,401	39
	2016 Q3 Avg.	-	8.0	7.1	2,750	38
	2016 Q4 Avg.	-	9.3	5.5	3,229	33
	2017 Q1 Avg.	-	13.0	6.4	3,302	33
	2017 Q2 Avg.	-	11.6	5.9	3,182	42
	2017 Q3 Avg.	-	8.7	2.7	2,543	42
	2017 Q4 Avg.	-	11.8	9.4	3,111	42
	02/13/2018	Yes	13	0.6	2,900	36

TABLE 1
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Analytical Sampling	Induced Vacuum (inches H_2O)[a]	PID (ppmv)[a]	Approximate Velocity (fpm)[a]	Flow (scfm)[b]
SVE-4 (cont'd)	02/15/2018	-	12	3.2	3,370	39
	03/21/2018	-	12	9.3	2,897	39
	04/18/2018	-	12	-	2,461	-
	04/27/2018	Yes	10	3.7	2,536	40
	05/30/2018	-	8.3	5.4	3,052	42
SVE-5	2013 Q3 Avg.	-	22	6.9	674	8
	2013 Q4 Avg.	-	39	10	1,079	9
	2014 Q1 Avg.	-	35	18	889	7
	2014 Q2 Avg.	-	26	7.8	790	9
	2014 Q3 Avg.	-	23	1.2	886	9
	2014 Q4 Avg.	-	25	2.7	766	9
	2015 Q1 Avg.	-	28	2.8	862	8
	2015 Q2 Avg.	-	24	0.6	812	8
	2015 Q3 Avg.	-	21	0.6	895	10
	2015 Q4 Avg.	-	21	3.9	559	7
	2016 Q1 Avg.	-	23	1.1	515	-
	2016 Q2 Avg.	-	21	6.2	556	7
	2016 Q3 Avg.	-	18	12	446	6
	2016 Q4 Avg.	-	24	4.5	724	7
	2017 Q1 Avg.	-	26	5.9	899	9
	2017 Q2 Avg.	-	20	5.1	473	6
	2017 Q3 Avg.	-	18	7.6	424	7
	2017 Q4 Avg.	-	22	6.7	578	8
	02/13/2018	Yes	22	1.1	624	8
	02/15/2018	-	22	3.7	561	7
	03/21/2018	-	22	15.7	538	7
	04/18/2018	-	22	-	577	-
	04/27/2018	Yes	20	2.2	526	8
	05/30/2018	-	20	4.6	438	6
AWS Inlet	2013 Q3 Avg.	-	23	-	-	86
	2013 Q4 Avg.	-	42	-	-	65
	2014 Q1 Avg.	-	34	-	-	58
	2014 Q2 Avg.	-	27	-	-	87
	2014 Q3 Avg.	-	25	-	-	89
	2014 Q4 Avg.	-	26	-	-	93
	2015 Q1 Avg.	-	29	-	-	88
	2015 Q2 Avg.	-	26	-	-	91
	2015 Q3 Avg.	-	21	-	-	98
	2015 Q4 Avg.	-	22	-	-	95
	2016 Q1 Avg.	-	22	-	-	-
	2016 Q2 Avg.	-	22	-	-	101
	2016 Q3 Avg.	-	20	-	-	98
	2016 Q4 Avg.	-	25	-	-	93
	2017 Q1 Avg.	-	28	-	-	92

TABLE 1
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Analytical Sampling	Induced Vacuum (inches H_2O)[a]	PID (ppmv)[a]	Approximate Velocity (fpm)[a]	Flow (scfm)[b]
AWS Inlet (cont'd)	2017 Q2 Avg.	-	23	-	-	105
	2017 Q3 Avg.	-	20	-	-	109
	2017 Q4 Avg.	-	23	-	-	110
	02/13/2018	-	22	-	-	93
	02/15/2018	-	22	-	-	93
	03/21/2018	-	23	-	-	98
	04/18/2018	-	23	-	-	-
	04/27/2018	-	22	-	-	105
	05/30/2018	-	21	-	-	102
SVE Blower Inlet	2013 Q3 Avg.	-	24	37	1,744	80
	2013 Q4 Avg.	-	43	21	1,643	76
	2014 Q1 Avg.	-	35	10	1,686	79
	2014 Q2 Avg.	-	28	3.6	1,918	88
	2014 Q3 Avg.	-	25	3.3	1,777	82
	2014 Q4 Avg.	-	27	1.7	1,874	86
	2015 Q1 Avg.	-	30	1.4	2,353	108
	2015 Q2 Avg.	-	27	0.6	2,203	101
	2015 Q3 Avg.	-	23	1.8	2,380	109
	2015 Q4 Avg.	-	22	0.9	2,223	102
	2016 Q1 Avg.	-	24	1.4	1,983	91
	2016 Q2 Avg.	-	23	31	2,294	106
	2016 Q3 Avg.	-	21	3.7	1,926	89
	2016 Q4 Avg.	-	25	4.7	2,652	122
	2017 Q1 Avg.	-	28	4.9	1,970	91
	2017 Q2 Avg.	-	22	5.7	1,757	81
	2017 Q3 Avg.	-	20	2.7	2,071	95
	2017 Q4 Avg.	-	23	6.1	2,117	97
	02/13/2018	Yes	22	4.0	1,479	68
	02/15/2018	-	24	1.5	1,550	71
	03/21/2018	-	24	8.8	1,444	66
	04/18/2018	-	-	-	-	-
	04/27/2018	Yes	23	2.8	2,266	104
	05/30/2018	-	21	4.6	2,469	114
SVE Blower Outlet[c]	2013 Q3 Avg.	-	-	76	-	-
	2013 Q4 Avg.	-	-	24	-	-
	2014 Q1 Avg.	-	9.3	25	-	-
	2014 Q2 Avg.	-	0.4	4.5	-	-
	2014 Q3 Avg.	-	0.3	6.0	-	-
	2014 Q4 Avg.	-	0.4	4.2	-	-
	2015 Q1 Avg.	-	0.3	1.9	-	-
	2015 Q2 Avg.	-	0.3	0.7	-	-
	2015 Q3 Avg.	-	0.4	2.0	-	-
	2015 Q4 Avg.	-	0.4	1.7	-	-
	2016 Q1 Avg.	-	0.2	2.9	-	-
	2016 Q2 Avg.	-	0.5	34	-	-

TABLE 1
Soil Vapor Extraction Monitoring Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Analytical Sampling	Induced Vacuum (inches H_2O)[a]	PID (ppmv)[a]	Approximate Velocity (fpm)[a]	Flow (scfm)[b]
SVE Blower Outlet	2016 Q3 Avg.	-	0.5	3.1	-	-
(cont'd)	2016 Q4 Avg.	-	0.5	3.6	-	-
	2017 Q1 Avg.	-	0.4	5.8	-	-
	2017 Q2 Avg.	-	0.4	4.8	-	-
	2017 Q3 Avg.	-	0.4	2.5	-	-
	2017 Q4 Avg.	-	0.4	6.0	-	-
	02/13/2018	-	0.4	3.5	-	-
	02/15/2018	-	0.4	1.1	-	-
	03/21/2018	-	0.4	12.8	-	-
	04/18/2018	-	-	-	-	-
	04/27/2018	-	0.4	2.3	-	-
	05/30/2018	-	0.4	4.2	-	-
GAC #2	2013 Q3 Avg.	-	-	0.0	-	-
	2013 Q4 Avg.	-	-	0.9	-	-
	2014 Q1 Avg.	-	-	2.9	-	-
	2014 Q2 Avg.	-	-	1.4	-	-
Post GAC	2013 Q3 Avg.	-	-	0.0	-	-
	2013 Q4 Avg.	-	-	0.0	-	-
	2014 Q1 Avg.	-	0.2	1.4	-	-
	2014 Q2 Avg.	-	0.1	2.5	-	-
	2014 Q3 Avg.	-	0.1	5.2	-	-
	2014 Q4 Avg.	-	0.1	-	-	-
	2015 Q1 Avg.	-	0.1	-	-	-

Notes:
[a] Measured at SVE system manifold.
[b] Air flow calculated at individual well laterals (SVE-1 through -5), and measured at AWS Inlet (system total) using a dedicated pitot tube. Individual well air flow calculations corrected to reflect proportional contribution to the system total.
[c] Values in the vacuum column are positive pressure at the SVE Blower Outlet (inches H_2O).
Avg. = average
AWS = air/water separator
scfm = standard cubic feet per minute
cont'd = continued
fpm = feet per minute
ppmv = parts per million vapor
- = Not measured
GAC = Granular activated carbon

TABLE 2
Biodegradation Parameter Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Vacuum (inches H_2O)[a]	Flow Observed (Yes/No)[c]	PID (ppmv)[a]	CH_4 (%)[a]	CO_2 (%)[a]	O_2 (%)[a]
SVE Wells							
SVE-1	11/23/2015	20	Yes	2.8	-	-	-
	07/12/2016	19	Yes	19[b]	0.0[b]	1.0[b]	19.7[b]
	10/21/2016	19	Yes	1.9[b]	0.0[b]	0.1[b]	20.5[b]
	01/30/2017	26	Yes	35[b]	0.5[b]	0.2[b]	20.4[b]
	04/13/2017	21	-	1.7[b]	0.0[b]	0.4[b]	20.3[b]
	07/06/2017	17	Yes	1.1[b]	0.0[b]	0.6[b]	20.2[b]
	10/28/2017	21	Yes	1.8[b]	0.0[b]	0.3[b]	20.5[b]
	02/13/2018	20	-	1.3[b]	-	-	-
	02/15/2018	-	-	1.1[b]	0.0[b]	2.2[b]	19.8[b]
	04/27/2018	20	-	1.8	0.0[b]	0.0[b]	21.7[b]
SVE-2	11/23/2015	4.0	Yes	1.9	-	-	-
	07/12/2016	1.2	Yes	17[b]	0.0[b]	1.7[b]	19.3[b]
	10/21/2016	1.5	Yes	1.4[b]	0.0[b]	0.3[b]	20.5[b]
	01/30/2017	2.0	Yes	3.2[b]	0.0[b]	0.3[b]	20.5[b]
	04/13/2017	2.5	-	1.0[b]	0.0[b]	0.2[b]	20.5[b]
	07/06/2017	1.3	Yes	0.6[b]	0.0[b]	0.8[b]	20.2[b]
	10/28/2017	1.4	Yes	1.3[b]	0.0[b]	0.5[b]	20.5[b]
	02/13/2018	1.0	-	1.6[b]	-	-	-
	02/15/2018	-	-	0.9[b]	0.0[b]	2.3[b]	19.9[b]
	04/27/2018	1.0	-	0.9[b]	0.0[b]	0.0[b]	21.5[b]
SVE-3	11/23/2015	21	Yes	2.8	-	-	-
	07/12/2016	19	Yes	17[b]	0.0[b]	0.3[b]	20.5[b]
	10/21/2016	16	Yes	5.2[b]	0.0[b]	0.5[b]	19.9[b]
	01/30/2017	25	Yes	2.0[b]	0.0[b]	0.1[b]	20.8[b]
	04/13/2017	24	-	0.5[b]	0.0[b]	0.0[b]	20.9[b]
	07/06/2017	17	Yes	0.7[b]	0.0[b]	0.0[b]	20.7[b]
	10/28/2017	20	Yes	1.9[b]	0.0[b]	0.2[b]	20.7[b]
	02/13/2018	20	-	3.0[b]	-	-	-
	02/15/2018	-	-	1.0[b]	0.0[b]	0.2[b]	21.0[b]
	04/27/2018	20	-	1.9[b]	0.0[b]	0.0[b]	21.5[b]
SVE-4	11/23/2015	1.8	Yes	0.9	-	-	-
	07/12/2016	1.5	Yes	17[b]	0.0[b]	1.3[b]	19.4[b]
	10/21/2016	1.8	Yes	2.4[b]	0.0[b]	0.3[b]	20.3[b]
	01/30/2017	2.0	Yes	2.8[b]	0.0[b]	0.3[b]	20.5[b]
	04/13/2017	2.8	-	1.0[b]	0.0[b]	0.3[b]	20.5[b]
	07/06/2017	1.8	Yes	1.7[b]	0.0[b]	0.6[b]	20.3[b]
	10/28/2017	2.0	Yes	1.7[b]	0.0[b]	0.5[b]	20.4[b]
	02/13/2018	1.8	-	0.6[b]	-	-	-
	02/15/2018	-	-	3.2[b]	0.0[b]	1.8[b]	20.2[b]
	04/27/2018	2.0	-	2.5[b]	0.0[b]	0.0[b]	21.7[b]
SVE-5	11/23/2015	6.0	Yes	0.8	-	-	-
	07/12/2016	20	Yes	15[b]	0.0[b]	0.1[b]	20.5[b]
	10/21/2016	10	Yes	1.7[b]	0.0[b]	0.2[b]	20.2[b]
	01/30/2017	20	Yes	2.4[b]	0.0[b]	0.2[b]	20.6[b]
	04/13/2017	27	-	1.1[b]	0.0[b]	0.2[b]	20.5[b]
	07/06/2017	16	Yes	16.7[b]	0.0[b]	0.0[b]	20.9[b]
	10/28/2017	15	Yes	1.5[b]	0.0[b]	1.0[b]	19.9[b]
	02/13/2018	10	-	1.1[b]	-	-	-
	02/15/2018	-	-	3.7[b]	0.0[b]	0.0[b]	21.2[b]

TABLE 2
Biodegradation Parameter Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Vacuum (inches H_2O)[a]	Flow Observed (Yes/No)[c]	PID (ppmv)[a]	CH_4 (%)[a]	CO_2 (%)[a]	O_2 (%)[a]
SVE-5 (cont'd)	04/27/2018	8.0	-	1.7[b]	0.0[b]	0.0[b]	21.7[b]
Vapor Monitoring Wells							
B-17	11/20/2015	0.30	-	-	-	-	-
	11/23/2015	0.22	No	123	-	-	-
	11/24/2015	*0.02*	-	*307*	-	-	-
	12/11/2015	0.21	-	1,210	-	-	-
	03/16/2016	*0.00*	-	*287*	-	-	-
	03/16/2016[1]	0.01	-	1,469	1.3	7.1	8.2
	03/16/2016[2]	0.03	-	359	0.6	9.5	5.4
	03/22/2016	1.5	-	-	-	-	-
	03/28/2016	0.25	-	-	-	-	-
	04/01/2016	0.24	No	315	0.3	4.0	15.4
	04/08/2016	0.24	-	-	-	-	-
	04/13/2016	0.25	-	-	-	-	-
	05/13/2016	0.30	Yes	-	-	-	-
	07/12/2016	0.21	Yes	2.6	0.0	4.6	15.3
	10/21/2016	0.30	Yes	305	0.2	8.8	9.7
	01/30/2017	0.40	Yes	840	2.3	13	0.5
	04/13/2017	0.20	-	49.2	0.0	8.2	6.2
	07/06/2017	0.32	No	1.2	0.0	0.0	20.6
	10/28/2017	0.21	Yes	1.7	0.0	1.1	19.5
	02/13/2018	-	Yes	0.5	-	-	-
	02/15/2018	0.16	-	0.7	0.0	1.6	20.1
	04/27/2018	0.17	-	0.9	0.0	0.6	21.0
B-18	11/20/2015	0.05	-	-	-	-	-
	11/23/2015	0.08	No	28	-	-	-
	11/24/2015	*0.00*	-	*0.6*	-	-	-
	12/11/2015	0.03	-	0.9	-	-	-
	03/16/2016	*0.00*	-	*1.3*	-	-	-
	03/16/2016[1]	0.02	-	1.4	0.1	0.9	20.1
	03/16/2016[2]	+0.04	-	1.5	0.1	1.6	19.3
	03/22/2016	0.09	-	-	-	-	-
	03/28/2016	0.07	-	-	-	-	-
	04/01/2016	0.06	No	1.3	0.0	1.7	18.8
	04/08/2016	0.05	-	-	-	-	-
	04/13/2016	0.06	-	-	-	-	-
	05/13/2016	0.08	No	-	-	-	-
	07/12/2016	0.07	-	2.7	0.0	2.0	18.4
	10/21/2016	0.18	No	0.9	0.0	2.2	18.4
	01/30/2017	0.20	Yes	6.9	0.0	0.6	20.1
	04/13/2017	0.25	-	2.4	0.0	2.2	18.4
	07/06/2017	0.14	Yes	0.4	0.0	1.1	19.8
	10/28/2017	0.08	-	1.6	0.0	1.1	19.7
	02/13/2018	0.05	-	0.5	-	-	-
	02/15/2018	0.06	-	0.7	0.0	0.0	21.2
	04/27/2018	0.10	-	1.2	0.0	2.1	19.9
S-27	11/20/2015	0.02	-	-	-	-	-
	11/23/2015	0.01	No	5.5	-	-	-
	11/24/2015	*0.00*	-	*0.8*	-	-	-
	12/11/2015	0.10	-	0.5	-	-	-
	03/16/2016	*0.00*	-	*1.3*	-	-	-

TABLE 2
Biodegradation Parameter Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Vacuum (inches H_2O)[a]	Flow Observed (Yes/No)[c]	PID (ppmv)[a]	CH_4 (%)[a]	CO_2 (%)[a]	O_2 (%)[a]
S-27 (cont'd)	03/16/2016[1]	0.00	-	1.4	0.0	0.5	19.8
	03/16/2016[2]	0.00	-	1.9	0.1	0.9	18.9
	03/22/2016	0.02	-	-	-	-	-
	03/28/2016	0.02	-	-	-	-	-
	04/01/2016	0.02	No	0.9	0.0	0.2	20.7
	04/08/2016	0.02		-	-	-	-
	05/13/2016	0.05	No	-	-	-	-
	07/12/2016	0.03	-	2.3	0.0	0.1	20.3
	10/21/2016	0.05	-	0.8	0.0	0.2	20.6
	01/30/2017	0.10	No	7.5	0.0	0.1	20.8
	04/13/2017	0.12	-	1.6	0.0	0.1	20.8
	07/06/2017	0.06	-	0.5	0.0	0.0	20.5
	10/28/2017	0.02	-	1.7	0.0	0.1	20.8
	02/13/2018	0.00	-	-	-	-	-
	04/27/2018	0.03	-	1.8	0.0	0.0	21.3
S-28	11/20/2015	0.03	-	-	-	-	-
	11/23/2015	0.00	No	0.8	-	-	-
	11/24/2015	*+0.75*	-	*1.0*	-	-	-
	12/11/2015	3.40	-	-	-	-	-
	03/16/2016	*+0.04*	-	-	-	-	-
	05/13/2016	0+	-	-	-	-	-
	07/12/2016	0.00	-	3.3	0.0	1.7	17.8
	10/21/2016	0.04	-	0.9	0.0	1.0	17.6
	01/30/2017	0.60	No	6.4	0.0	0.6	18.4
	04/13/2017	0.01	No	1.5	0.0	0.2	19.4
	07/06/2017	0.09	-	0.6	0.0	0.5	19.7
	10/28/2017	0.08	-	1.7	0.0	0.5	19.9
	02/13/2018	0.00	-	-	-	-	-
	04/27/2018	0.00	-	1.7	0.0	1.5	18.7
S-29	11/20/2015	0.02	-	-	-	-	-
	11/23/2015	0.00	No	2.6	-	-	-
	11/24/2015	*0.00*	-	*1.0*	-	-	-
	12/11/2015	0.09	-	0.4	-	-	-
	03/16/2016	*0.02*	-	-	-	-	-
	05/13/2016	0.00	No	-	-	-	-
	07/12/2016	0.10	No	3.7	1.2	0.0	1.2
	10/21/2016	0.20	No	1.5	0.2	0.0	0.0
	01/30/2017	0+	-	1.5	0.4	0.0	0.8
	04/13/2017	0.02	-	5.5	0.2	0.0	2.9
	07/06/2017	0.00	-	0.9	0.0	0.0	20.7
	10/28/2017	0.24	-	2.0	0.0	0.0	13.9
	02/13/2018	0.08	-	-	-	-	-
	04/27/2018	0.00	-	0.3	0.1	0.0	6.7
S-30	11/20/2015	0.00	-	-	-	-	-
	11/23/2015	0.00	No	1.0	-	-	-
	11/24/2015	*0.02*	-	*0.8*	-	-	-
	12/11/2015	0.08	-	0.5	-	-	-
	03/16/2016	*0.00*	-	-	-	-	-
	04/01/2016	0.05	No	1.0	0.0	1.2	20.2
	04/08/2016	0.08	-	-	-	-	-
	04/13/2016	0.06	-	-	-	-	-

TABLE 2
Biodegradation Parameter Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Vacuum (inches H_2O)[a]	Flow Observed (Yes/No)[c]	PID (ppmv)[a]	CH_4 (%)[a]	CO_2 (%)[a]	O_2 (%)[a]
S-30 (cont'd)	05/13/2016	0.06	No	-	-	-	-
	07/12/2016	0.06	-	4.0	0.0	1.1	19.2
	10/21/2016	0.05	-	2.8	0.0	0.8	19.6
	01/30/2017	0.08	-	5.7	0.0	0.5	20.3
	04/13/2017	0.19	-	7.8	0.0	0.7	20.1
	07/06/2017	0.13	No	0.5	0.0	0.6	19.8
	10/28/2017	0.09	-	1.4	0.0	0.7	19.7
	02/13/2018	0.00	-	0.6	-	-	-
	02/15/2018	0.02	-	0.7	0.0	1.6	20.8
	04/27/2018	0.03	-	1.5	0.0	1.4	20.7
S-31	11/20/2015	0.02	-	-	-	-	-
	11/23/2015	0.03	No	3.6	-	-	-
	11/24/2015	*0.00*	-	*0.9*	-	-	-
	12/11/2015	0.05	-	0.5	-	-	-
	03/16/2016	*0.04*	-	-	-	-	-
	05/13/2016	0.00	No	-	-	-	-
	06/22/2016	-	-	*21*	*0.0*	*1.3*	*19.7*
	07/12/2016	0.06	-	5.3	0.0	1.2	19.3
	10/21/2016	0.01	-	2.6	0.0	1.3	19.7
	01/30/2017	0.03	-	4.8	0.0	0.8	19.9
	04/13/2017	0.00	-	3.0	0.0	0.8	19.8
	07/06/2017	0.00	-	1.2	0.0	0.4	20.0
	10/28/2017	0.00	-	1.5	0.0	1.0	20.1
	02/13/2018	0.03	-	-	-	-	-
	04/27/2018	0.05	-	1.5	0.0	0.8	20.8
Tier 1 Soil Gas Borings							
S-33	*6/22/2016*	-	-	*16*	*0.0*	*1.4*	*19.5*
S-34	*6/22/2016*	-	-	*20*	*0.0*	*1.8*	*19.5*
S-35	*6/22/2016*	-	-	*15*	*0.0*	*2.8*	*18.7*
S-36	*6/22/2016*	-	-	*27*	*0.0*	*1.3*	*19.5*
Tier 2 Sub-Slab Vapor Borings							
A-1ss	*9/22/2016*	-	-	*0.7*	*0.0*	*0.3*	*19.9*
A-2ss	*9/22/2016*	-	-	*2.6*	*0.0*	*0.6*	*19.8*
A-3ss	*9/22/2016*	-	-	*1.6*	*0.0*	*0.3*	*19.5*

Notes:

[a] Vacuum, PID and biodegradation parameters measured at wellhead unless otherwise indicated.

[b] Measured at SVE system manifold.

[c] Qualitative field observation based on relative deflation rate of a 1-liter tedlar bag.

[1] Measurements taken while only SVE-2 open at SVE manifold.

[2] Measurements taken while only SVE-3 open at SVE manifold.

Italics indicate measurements were collected while the SVE system was off.

ppmv = parts per million vapor

- = Not measured

TABLE 3

Soil Vapor Analytical Results - Volatile Organic Compounds (µg/m^3)

Plaid Pantry No. 112

Vancouver, Washington

Location	Date	Sample Depth (feet bgs)	Gasoline	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	EDB	EDC	MTBE	Naphthalene	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
Soil Gas Screening Levels MTCA Method B[1]			NA	10.7/32.1	76,200/229,000	15,200/45,700	1,520/4,570[2]	1,520/4,570	0.139/0.417	3.21/9.62	321/962	2.45/7.35	321/962	12.3/37	NA	13.9/41.7	76,200/229,000
August 2012 Soil Vapor Sampling																	
S-1	08/14/2012	5	-	6.1	50	9.6	37	12	*1.3 U*	0.68 U	0.60 U	**4.4**	3.7	0.90 U	30	3.8	0.92 U
S-2	08/15/2012	5	-	8.7	72	31	120	43	*1.2 U*	0.65 U	0.58 U	**4.4**	32	0.86 U	52	10	0.88 U
S-3	08/15/2012	5	-	3.8	18	2.6	8.2	3.3	*1.2 U*	0.62 U	0.55 U	**4.4**	28	0.82 U	16	8.4	0.83 U
S-4	08/14/2012	5	-	10	130	49	180	66	*1.2 U*	0.63 U	0.56 U	**6.2**	2.5	0.83 U	38	0.98 U	0.84 U
S-5/SVE-3	08/17/2012	5-10	-	**82,000**	**860,000**	**210,000**	**900,000**	**340,000**	*2,000 U*	*1,100 U*	*950 U*	*5,500 U*	**2,200**	*1,400 U*	3,100 U	*1,600 U*	1,400 U
S-6	08/14/2012	5	-	2.9	11	2.0	6.6	2.6	*1.4 U*	0.74 U	0.66 U	*4.8 U*	1.7	0.98 U	33	1.2 U	1.0 U
S-7	08/16/2012	5	-	7.7	14	3.1	9.0	5.0	*1.3 U*	0.71 U	0.63 U	**19**	2.0	0.94 U	32	1.1 U	0.95 U
S-8/SVE-5	08/17/2012	5-10	-	**7,900**	**220,000**	**86,000**	**340,000**	**160,000**	*1,000 U*	*530 U*	*470 U*	**7,700**	**2,500**	*710 U*	1,600 U	*830 U*	720 U
S-9	08/15/2012	5	-	2.1	8.1	1.7	6.0	2.5	*1.3 U*	0.66 U	0.59 U	*4.3 U*	6.8	0.88 U	16	1.2	0.89 U
S-10	08/14/2012	5	-	1.7	7.0	1.8	7.1	2.6	*1.1 U*	0.59 U	0.53 U	**6.4**	22	0.78 U	19	0.92 U	0.80 U
S-11	08/14/2012	15	-	1.3	9.7	2.2	6.6	2.1	*1.3 U*	0.69 U	0.62 U	4.5 U	100	0.92 U	12	3.5	1.1
S-12/SVE-2	08/20/2012	15-20	-	**3,900**	22,000	1,400	**25,000**	**17,000**	*120 U*	*65 U*	75	*340 U*	130	17 U	47 U	20 U	17 U
S-13	08/15/2012	15	-	1.1	11	0.71	3.1	1.2	*1.2 U*	0.65 U	0.58 U	4.2 U	230	0.86 U	5.9	**52**	0.88 U
SVE-4	08/17/2012	15-20	-	**560**	12,000	4,800	**22,000**	**9,300**	*130 U*	*66 U*	59 U	**620**	170	*88 U*	190 U	*100 U*	89 U
October 2012 SVE Pilot Test																	
SVE-1 START	10/04/2012	5-10	59,000,000	**240,000**	**2,100,000**	**200,000**	**1,100,000**	**380,000**	*14,000 U*	*7,300 U*	*6,500 U*	-	*12,000 U*	*9,700 U*	21,000 U	*11,000 U*	9,800 U
SVE-1 STOP	10/04/2012	5-10	74,000,000	**330,000**	**3,400,000**	**490,000**	**2,800,000**	**1,000,000**	*19,000 U*	*10,000 U*	*8,900 U*	-	*17,000 U*	*13,000 U*	29,000 U	*16,000 U*	13,000 U
SVE-2 START	10/05/2012	5-10	20,000	**50**	1,100	230	1,200	460	*91 U*	*48 U*	43 U	-	120	*64 U*	140 U	*75 U*	65 U
SVE-2 STOP	10/05/2012	5-10	42,000	**36**	1,300	410	**3,000**	1,200	*18 U*	*9.3 U*	8.3 U	-	130	12 U	27 U	**18**	12 U
SVE System Monitoring																	
SVE-1	08/22/2013	5-10	11,000,000	**97,000**	**350,000**	15,000	**82,000**	**25,000**	*2,400 U*	*1,200 U*	*1,100 U*	-	*2,100 U*	*1,600 U*	6,900	*1,900 U*	1,700 U
	12/04/2013	5-10	2,000,000	*360 U*	2,000	2,200	**62,000**	**31,000**	*860 U*	*450 U*	*400 U*	-	*760 U*	*600 U*	1,300 U	*700 U*	610 U
	02/10/2014	5-10	1,600,000	**710**	3,300	3,600	**38,000**	**15,000**	*710 U*	*370 U*	*330 U*	-	*630 U*	*500 U*	1,100 U	*580 U*	500 U
	05/08/2014	5-10	2,100,000	**220**	1,100	3,400	**60,000**	**34,000**	*460 U*	*240 U*	220 U	-	*410 U*	*320 U*	710 U	*380 U*	330 U
	08/08/2014	5-10	420,000	*40 U*	96	77	**3,700**	**3,300**	*95 U*	*50 U*	45 U	-	**620**	**73**	150 U	*78 U*	68 U
	11/14/2014	5-10	460,000 [a]	**65**	44 U	50 U	50 U	50 U	*90 U*	*47 U*	42 U	-	79 U	*63 U*	140 U	*73 U*	64 U
	02/06/2015	5-10	65,000	*77 U*	91 U	100 U	100 U	100 U	*190 U*	*98 U*	87 U	*510 U*	160 U	*130 U*	290 U	*150 U*	130 U
	03/06/2015	5-10	660	3.8 U	13	5.2	11	5.2 U	*9.2 U*	*4.8 U*	4.3 U	*25 U*	**580**	6.4 U	14 U	7.6 U	6.5 U
	06/19/2015	5-10	3,300	4.2 U	8.0	5.8 U	5.8 U	5.8 U	*10 U*	*5.4 U*	4.8 U	*14 U*	67	7.1 U	17	8.3 U	7.2 U
	08/18/2015	5-10	8,600	**19**	71	6.8	27	11	*10 U*	*5.5 U*	4.9 U	*14 U*	160	7.3 U	24	8.6 U	7.4 U
	11/20/2015	5-10	140,000	**140**	100 U	120 U	120 U	120 U	-	-	-	*570 U*	-	-	-	-	-
	03/16/2016	5-10	3,200	**12**	14 U	16 U	16 U	16 U	-	-	-	*39 U*	-	-	-	-	-
	04/01/2016	5-10	780 U	6.0 U	7.1 U	8.2 U	8.2 U	8.2 U	-	-	-	*40 U*	-	-	-	-	-
	04/13/2016	5-10	1,800	4.2 U	5.0 U	5.7 U	5.7 U	5.7 U	-	-	-	*14 U*	-	-	-	-	-
	07/12/2016	5-10	650	4.0 U	4.8 U	5.5 U	5.5 U	5.5 U	-	-	-	*13 U*	-	-	-	-	-
	10/21/2016	5-10	11,000	**70**	140	13	28	22	-	-	-	*27 U*	**1,200**	-	-	-	-
	01/30/2017	5-10	3,100,000 [a]	*190 U*	230 U	260 U	260 U	260 U	-	-	-	*1,300 U*	-	-	-	-	-
	03/21/2017	5-10	550 U	4.3 UJ	37 J	5.8 U	7.2	5.8 U	-	-	-	*14 U*	-	-	-	-	-
	04/13/2017	5-10	11,000	**120**	120	55	360	330	-	-	-	*14 U*	-	-	-	-	-
	07/06/2017	5-10	16,000	4.3 U	16	5.8 U	12	5.8 U	-	-	-	*14 U*	-	-	-	-	-
	10/28/2017	5-10	20,000 [a]	4.3	10	5.7 U	6.4	5.7 U	-	-	-	*14 U*	-	-	-	-	-
	02/13/2018	5-10	5,700	3.8 U	4.5 U	5.2 U	6.0	5.2 U	-	-	-	*12 U*	-	-	-	-	-
	04/27/2018	5-10	740 [a]	3.8 U	4.4 U	5.1 U	5.1 U	5.1 U	-	-	-	*12 U*	-	-	-	-	-
SVE-2	08/22/2013	15-20	250 U	3.9 U	4.6 U	5.3 U	5.3 U	5.3 U	*9.4 U*	5.0 U	4.4 U	-	14	6.6 U	290	7.7 U	6.7 U
	03/07/2014	15-20	560	4.0 U	4.7 U	5.4 U	5.6	5.4 U	*9.6 U*	5.1 U	4.5 U	-	94	6.7 U	86	7.9 U	6.8 U
	05/08/2014	15-20	1,600 U	26 U	30 U	35 U	35 U	35 U	*62 U*	*32 U*	29 U	-	87	*43 U*	95 U	*51 U*	44 U
	08/08/2014	15-20	1,700	3.9 U	17	5.3 U	16	6.6	*9.3 U*	4.9 U	4.4 U	-	170	20	28	7.6 U	6.6 U

TABLE 3

Soil Vapor Analytical Results - Volatile Organic Compounds (µg/m^3)

Plaid Pantry No. 112

Vancouver, Washington

Location	Date	Sample Depth (feet bgs)	Gasoline	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	EDB	EDC	MTBE	Naphthalene	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
Soil Gas Screening Levels MTCA Method B[1]			NA	10.7/32.1	76,200/229,000	15,200/45,700	1,520/4,570[2]	1,520/4,570	0.139/0.417	3.21/9.62	321/962	2.45/7.35	321/962	12.3/37	NA	13.9/41.7	76,200/229,000
SVE-2 (cont'd)	11/14/2014	15-20	240 U	3.8 U	4.5 U	5.2 U	6.7	5.2 U	*9.1 U*	4.8 U	4.3 U	-	26	6.4 U	14	7.5 U	6.5 U
	02/06/2015	15-20	520 U	4.0 U	4.8	5.5 U	5.5 U	5.5 U	*9.7 U*	5.1 U	4.5 U	*26 U*	23	6.8 U	15 U	7.9 U	6.9 U
	03/06/2015	15-20	510 U	4.0 U	4.8	5.4 U	5.9	5.4 U	*9.6 U*	5.0 U	4.5 U	*26 U*	98	6.7 U	15 U	7.9 U	6.8 U
	06/19/2015	15-20	530 U	4.2 U	4.9 U	5.6 U	5.6 U	5.6 U	*10 U*	5.3 U	4.7 U	*14 U*	20	7.0 U	15 U	8.2 U	7.1 U
	08/18/2015	15-20	550 U	4.3 U	5.1 U	5.9 U	5.9 U	5.9 U	*10 U*	5.5 U	4.9 U	*14 U*	64	7.2 U	16 U	8.5 U	7.4 U
	11/20/2015	15-20	540 U	4.2 U	4.9 U	5.7 U	5.7 U	5.7 U	-	-	-	*27 U*	-	-	-	-	-
	03/16/2016	15-20	940 U	7.4 U	8.7 U	10 U	10 U	10 U	-	-	-	*24 U*	-	-	-	-	-
	04/01/2016	15-20	550 U	4.3 U	5.1 U	5.9 U	5.9 U	5.9 U	-	-	-	*28 U*	-	-	-	-	-
	04/13/2016	15-20	580 U	4.5 U	5.3 U	6.1 U	6.1 U	6.1 U	-	-	-	*15 U*	-	-	-	-	-
	07/12/2016	15-20	510 U	4.0 U	4.7 U	5.4 U	5.4 U	5.4 U	-	-	-	*13 U*	-	-	-	-	-
	10/21/2016	15-20	500 U	3.9 U	4.6 U	5.4 U	5.4 U	5.4 U	-	-	-	*26 U*	220	-	-	-	-
	01/30/2017	15-20	490 U	3.9 U	4.6 U	5.2 U	5.2 U	5.2 U	-	-	-	*13 U*	-	-	-	-	-
	04/13/2017	15-20	600 U	4.7 U	42	6.4 U	9.5	6.4 U	-	-	-	*15 U*	-	-	-	-	-
	07/06/2017	15-20	1,600	4.2 U	19	5.7 U	12	5.7 U	-	-	-	*14 U*	-	-	-	-	-
	10/28/2017	15-20	490 U	3.8 U	6.9	5.2 U	5.2	5.2 U	-	-	-	*12 U*	-	-	-	-	-
	04/27/2018	15-20	490 U	3.9 U	4.6 U	5.2 U	5.2 U	5.2 U	-	-	-	*13 U*	-	-	-	-	-
SVE-3	08/22/2013	5-10	16,000	**55**	15	5.3 U	8.3	5.3 U	*9.4 U*	*4.9 U*	4.4 U	-	8.3 U	6.6 U	1,600 E	7.7 U	6.6 U
	12/04/2013	5-10	160,000	**72**	720	57	730	360	*9.1 U*	*4.8 U*	4.3 U	-	8.1 U	6.4 U	38	7.5 U	6.5 U
	02/10/2014	5-10	91,000	**36**	130	30	240	150	*35 U*	*19 U*	16 U	-	31 U	*25 U*	54 U	*29 U*	25 U
	05/08/2014	5-10	1,300 U	*20 U*	24 U	27 U	27 U	27 U	*48 U*	*25 U*	23 U	-	43 U	*34 U*	74 U	*40 U*	34 U
	08/08/2014	5-10	1,600	4.0 U	17	5.5 U	16	6.7	*9.8 U*	*5.1 U*	4.6 U	-	8.6 U	6.8 U	25	8.0 U	6.9 U
	11/14/2014	5-10	240 U	3.7 U	4.4 U	5.0 U	5.0 U	5.0 U	*8.9 U*	*4.7 U*	4.2 U	-	8.8	6.2 U	14 U	7.3 U	6.3 U
	02/06/2015	5-10	380,000	*80 U*	95 U	110 U	110 U	110 U	*190 U*	*100 U*	91 U	*530 U*	170 U	*140 U*	300 U	*160 U*	140 U
	03/06/2015	5-10	25,000	4.0 U	5.7	5.4 U	5.9	5.4 U	*9.6 U*	*5.1 U*	4.5 U	*26 U*	8.5 U	6.7 U	15 U	7.9 U	6.8 U
	06/19/2015	5-10	1,000	4.2 U	5.4	5.8 U	5.8 U	5.8 U	*10 U*	*5.4 U*	4.8 U	*14 U*	9.0 U	7.1 U	16 U	8.4 U	7.2 U
	08/18/2015	5-10	3,600	4.3 U	5.1 U	5.9 U	5.9 U	5.9 U	*10 U*	*5.5 U*	4.9 U	*14 U*	9.2 U	7.3 U	23	8.6 U	7.4 U
	11/20/2015	5-10	2,000	3.8 U	12	5.2 U	5.2 U	5.2 U	-	-	-	*25 U*	-	-	-	-	-
	03/16/2016	5-10	99,000	**700**	7,800	360	1,300	510	-	-	-	*54 U*	-	-	-	-	-
	04/01/2016	5-10	1,600	4.4 U	5.2 U	6.0 U	6.0 U	6.0 U	-	-	-	*29 U*	-	-	-	-	-
	04/13/2016	5-10	5,300	**12**	160	17	74	97	-	-	-	*14 U*	-	-	-	-	-
	07/12/2016	5-10	740	4.1 U	4.8 U	5.5 U	5.5 U	5.5 U	-	-	-	*13 U*	-	-	-	-	-
	10/21/2016	5-10	4,900	4.5 U	7.0	6.1 U	6.1 U	6.1 U	-	-	-	*30 U*	9.6 U	-	-	-	-
	01/30/2017	5-10	1,700	4.0 U	4.7 U	5.4 U	5.4 U	5.4 U	-	-	-	*13 U*	-	-	-	-	-
	04/13/2017	5-10	1,200	4.0 U	30	5.4 U	6.6	5.4 U	-	-	-	*13 U*	-	-	-	-	-
	07/06/2017[d]	5-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10/28/2017	5-10	1,200	3.4 U	9.1	4.7 U	6.2	4.7 U	-	-	-	*11 U*	-	-	-	-	-
	02/13/2018	5-10	520 U	4.0 U	5.4	5.5 U	6.7	5.5 U	-	-	-	*13 U*	-	-	-	-	-
	04/27/2018	5-10	480 U	3.7 U	4.4 U	5.0 U	5.0 U	5.0 U	-	-	-	*12 U*	-	-	-	-	-
SVE-4	08/22/2013	15-20	250 U	3.9 U	4.6 U	5.3 U	5.3 U	5.3 U	*9.4 U*	5.0 U	4.4 U	-	8.5	6.6 U	450	7.7 U	6.7 U
	12/04/2013	15-20	53,000	15 U	460	21 U	21 U	21 U	*36 U*	*19 U*	17 U	-	**3,600**	26 U	56 U	30 U	26 U
	03/07/2014	15-20	670	4.0 U	4.7 U	5.4 U	6.5	5.4 U	*9.5 U*	5.0 U	4.5 U	-	**1,200**	6.7 U	21	7.8 U	6.8 U
	05/08/2014	15-20	950 U	15 U	18 U	20 U	20 U	20 U	*36 U*	*19 U*	17 U	-	**2,700**	25 U	55 U	29 U	25 U
	08/08/2014	15-20	2,700	4.0 U	35	6.7	24	8.7	*9.6 U*	5.0 U	4.5 U	-	**3,200**	6.7 U	46	7.9 U	6.8 U
	11/14/2014	15-20	240 U	3.8 U	4.5 U	5.2 U	6.0	5.2 U	*9.2 U*	4.8 U	4.3 U	-	130	6.4 U	14 U	7.5 U	6.5 U
	02/06/2015	15-20	140,000	*79 U*	93 U	110 U	110 U	110 U	*190 U*	*100 U*	89 U	*520 U*	220	*130 U*	290 U	*160 U*	130 U
	03/06/2015	15-20	520 U	4.0 U	4.7 U	5.5 U	5.5 U	5.5 U	*9.7 U*	5.1 U	4.5 U	*26 U*	**2,500**	6.8 U	15 U	7.9 U	6.9 U
	06/19/2015	15-20	540 U	4.2 U	5.0	5.7 U	5.7 U	5.7 U	*10 U*	5.3 U	4.8 U	*14 U*	400	7.1 U	16 U	8.3 U	7.2 U
	08/18/2015	15-20	520 U	4.1 U	4.8 U	5.6 U	5.6 U	5.6 U	*9.9 U*	5.2 U	4.6 U	*13 U*	19	6.9 U	15 U	8.1 U	7.0 U

TABLE 3

Soil Vapor Analytical Results - Volatile Organic Compounds (µg/m^3)

Plaid Pantry No. 112

Vancouver, Washington

Location	Date	Sample Depth (feet bgs)	Gasoline	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	EDB	EDC	MTBE	Naphthalene	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
Soil Gas Screening Levels MTCA Method B[1]			NA	10.7/32.1	76,200/229,000	15,200/45,700	1,520/4,570[2]	1,520/4,570	0.139/0.417	3.21/9.62	321/962	2.45/7.35	321/962	12.3/37	NA	13.9/41.7	76,200/229,000
SVE-4 (cont'd)	11/20/2015	15-20	510 U	4.0 U	5.0	5.4 U	5.4 U	5.4 U	-	-	-	*26 U*	-	-	-	-	-
	03/16/2016	15-20	530 U	4.2 U	4.9 U	5.7 U	5.7 U	5.7 U	-	-	-	*14 U*	-	-	-	-	-
	04/01/2016	15-20	550 U	4.3 U	5.1 U	5.9 U	5.9 U	5.9 U	-	-	-	*28 U*	-	-	-	-	-
	04/13/2016	15-20	980	4.3 U	5.1 U	5.9 U	5.9 U	5.9 U	-	-	-	*14 U*	-	-	-	-	-
	07/12/2016	15-20	520 U	4.0 U	4.8 U	5.5 U	5.5 U	5.5 U	-	-	-	*13 U*	-	-	-	-	-
	10/21/2016	15-20	850 U	6.7 U	22	9.1 U	10	9.1 U	-	-	-	*44 U*	**4,000**	-	-	-	-
	01/30/2017	15-20	39,000	*40 U*	47 U	55 U	55 U	55 U	-	-	-	*130 U*	-	-	-	-	-
	04/13/2017	15-20	6,500	3.7 U	37	5.0 U	10	5.0 U	-	-	-	*12 U*	-	-	-	-	-
	07/06/2017	15-20	24,000	*17 U*	20 U	23 U	23 U	23 U	-	-	-	*55 U*	-	-	-	-	-
	10/28/2017	15-20	3,600	3.6 U	24	5.0 U	6.7	5.0 U	-	-	-	*12 U*	-	-	-	-	-
	02/13/2018	15-20	11,000	3.9 U	7.9	5.3 U	6.6	5.3 U	-	-	-	*13 U*	-	-	-	-	-
	04/27/2018	15-20	5,700 [a]	3.9 U	4.6 U	5.4 U	5.4 U	5.4 U	-	-	-	*13 U*	-	-	-	-	-
SVE-5	08/22/2013	5-10	8,600	*17 U*	20 U	23 U	23 U	23 U	*41 U*	*21 U*	19 U	-	36 U	*28 U*	4,500	*33 U*	29 U
	12/04/2013	5-10	8,100	**19**	640	53	180	92	*8.8 U*	*4.6 U*	4.1 U	-	18	6.2 U	20	7.2 U	6.2 U
	02/10/2014	5-10	110,000	**4,000**	8,400	810	**2,800**	970	*71 U*	*38 U*	34 U	-	63 U	*50 U*	110 U	*58 U*	51 U
	05/08/2014	5-10	3,200 U	*51 U*	60 U	69 U	69 U	69 U	*120 U*	*64 U*	57 U	-	280	*85 U*	200	*100 U*	86 U
	08/08/2014	5-10	2,000	4.1 U	18	5.6 U	18	7.8	*9.8 U*	*5.2 U*	4.6 U	-	8.7 U	6.9 U	37	8.0 U	7.0 U
	11/14/2014	5-10	230 U	3.6 U	4.3 U	5.0 U	13	5.0 U	*8.8 U*	*4.6 U*	4.1 U	-	87	6.2 U	14 U	7.2 U	6.2 U
	02/06/2015	5-10	74,000	*41 U*	49 U	56 U	56 U	56 U	*99 U*	*52 U*	46 U	*270 U*	88 U	*69 U*	150 U	*81 U*	70 U
	03/06/2015	5-10	41,000	**13**	990	69	760	330	*14 U*	*7.6 U*	6.8 U	*39 U*	13 U	10 U	22 U	12 U	10 U
	06/19/2015	5-10	560 U	4.3 U	5.1 U	5.9 U	5.9 U	5.9 U	*10 U*	*5.5 U*	4.9 U	*14 U*	9.2 U	7.3 U	18	8.6 U	7.4 U
	08/18/2015	5-10	530 U	4.1 U	4.9 U	5.6 U	5.6 U	5.6 U	*9.9 U*	*5.2 U*	4.6 U	*14 U*	8.8 U	6.9 U	21	8.1 U	7.0 U
	11/20/2015	5-10	510 U	4.0 U	4.7 U	5.4 U	5.4 U	5.4 U	-	-	-	*26 U*	-	-	-	-	-
	03/16/2016	5-10	1,300 U	9.8 U	12 U	13 U	13 U	13 U	-	-	-	*32 U*	-	-	-	-	-
	04/01/2016	5-10	37,000	**760**	1,200	40	170	67	-	-	-	*26 U*	-	-	-	-	-
	04/13/2016	5-10	1,900	4.4 U	5.2	6.0 U	82	100	-	-	-	*14 U*	-	-	-	-	-
	07/12/2016	5-10	940	3.8 U	7.1	5.2 U	10	12	-	-	-	*12 U*	-	-	-	-	-
	10/21/2016	5-10	830 U	6.5 U	8.6	8.8 U	8.8 U	8.8 U	-	-	-	*42 U*	**4,200**	-	-	-	-
	01/30/2017	5-10	31,000	*26 U*	31 U	36 U	36 U	36 U	-	-	-	*86 U*	-	-	-	-	-
	04/13/2017	5-10	5,700	3.8 U	33	5.2 U	8.9	5.2 U	-	-	-	*13 U*	-	-	-	-	-
	07/06/2017	5-10	360,000	**140**	4,300	1,400	**9,000**	**4,600**	-	-	-	*66 U*	-	-	-	-	-
	10/28/2017	5-10	1,900	4.4 U	8.2	6.0 U	6.0 U	6.0 U	-	-	-	*14 U*	-	-	-	-	-
	02/13/2018	5-10	10,000	4.0 U	40	5.4 U	6.3	5.4 U	-	-	-	*13 U*	-	-	-	-	-
	04/27/2018	5-10	500 U	3.9 U	4.6 U	5.3 U	5.5	5.3 U	-	-	-	*13 U*	-	-	-	-	-
SVE Blower Inlet	08/22/2013	NA	160,000	**2,100**	2,100	65	290	85	*92 U*	*48 U*	43 U	-	81 U	*64 U*	140 U	*76 U*	65 U
	09/27/2013	NA	24,000	**95**	92	5.2	18	5.2 U	*9.2 U*	*4.8 U*	4.3 U	-	8.1 U	6.4 U	14 U	7.5 U	6.5 U
	11/01/2013	NA	68,000	**200**	1,200	450	**2,200**	630	*18 U*	*9.7 U*	8.6 U	-	300	*13 U*	28 U	*15 U*	13 U
	12/04/2013	NA	26,000	**12**	1,500	16	130	52	*8.8 U*	*4.6 U*	4.1 U	-	**1,200**	6.2 U	14 U	7.2 U	6.2 U
	12/18/2013	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	03/07/2014	NA	50,000	8.3	65	70	1,100	470	*18 U*	*9.7 U*	8.6 U	-	**410**	*13 U*	28 U	*15 U*	13 U
	05/08/2014	NA	24,000	*39 U*	46 U	54 U	510	290	*95 U*	*50 U*	44 U	-	**1,200**	*66 U*	140 U	*78 U*	67 U
	08/08/2014	NA	25,000	3.8 U	35	8.3	130	100	*9.1 U*	*4.8 U*	4.2 U	-	**1,200**	9.4	21	7.4 U	6.4 U
	11/14/2014	NA	19,000 [a]	*36 U*	43 U	49 U	50 U	50 U	*88 U*	*46 U*	41 U	-	77 U	*61 U*	130 U	*72 U*	62 U
	02/06/2015	NA	94,000	*79 U*	93 U	110 U	110 U	110 U	*190 U*	*100 U*	89 U	*520 U*	170 U	**150**	290 U	*160 U*	140 U
	06/19/2015	NA	590 U	4.6 U	5.4 U	6.2 U	6.2 U	6.2 U	*11 U*	*5.8 U*	5.2 U	*15 U*	38	7.7 U	17 U	9.1 U	7.8 U
	08/18/2015	NA	540 U	4.2 U	5.0 U	5.8 U	5.8 U	5.8 U	*10 U*	*5.4 U*	4.8 U	*14 U*	26	7.1 U	16 U	8.3 U	7.2 U
	11/20/2015	NA	13,000	10 U	12 U	14 U	14 U	14 U	*24 U*	*13 U*	11 U	*33 U*	90	*17 U*	37 U	*20 U*	17 U
	04/13/2016	NA	540 U	4.2 U	10	5.7 U	5.7 U	5.7 U	*10 U*	*5.3 U*	4.7 U	*14 U*	**390**	7.1 U	16 U	8.3 U	7.2 U

TABLE 3

Soil Vapor Analytical Results - Volatile Organic Compounds (µg/m^3)

Plaid Pantry No. 112

Vancouver, Washington

Location	Date	Sample Depth (feet bgs)	Gasoline	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	EDB	EDC	MTBE	Naphthalene	PCE	TCE	2-Butanone	Carbon Tetrachloride	1,1,1-Trichloroethane
Soil Gas Screening Levels MTCA Method B[1]			NA	10.7/32.1	76,200/229,000	15,200/45,700	1,520/4,570[2]	1,520/4,570	0.139/0.417	3.21/9.62	321/962	2.45/7.35	321/962	12.3/37	NA	13.9/41.7	76,200/229,000
SVE Blower Inlet	07/12/2016	NA	560 U	4.3 U	5.1 U	5.9 U	5.9 U	5.9 U	-	-	-	*14 U*	**2,200**	-	-	-	-
(cont'd)	10/21/2016	NA	2,400	9.5	29	5.8 U	6.7	5.8 U	*10 U*	*5.4 U*	19 U	*14 U*	**1,800**	7.2 U	16 U	8.5 U	7.3 U
	01/30/2017	NA	34,000	*40 U*	48 U	55 U	55 U	55 U	*97 U*	*51 U*	180 U	*130 U*	**600**	*68 U*	150 U	*80 U*	69 U
	03/21/2017	NA	520 U	4.0 UJ	25 J	5.5 U	5.5 U	5.5 U	-	-	-	*13 U*	-	-	-	-	-
	04/13/2017	NA	3,600	4.4 U	39	5.9 U	13	5.9 U	*10 U*	*5.5 U*	20 U	*14 U*	**690**	7.3 U	16 U	8.6 U	7.4 U
	07/06/2017	NA	16,000	5.5 U	75	18	130	59	*13 U*	*7.0 U*	25 U	*18 U*	**1,100**	9.2 U	20 U	11 U	9.4 U
	10/28/2017	NA	3,600	4.0 U	12	5.4 U	7.8	5.4 U	*9.6 U*	*5.0 U*	18 U	*13 U*	**980**	6.7 U	15 U	7.8 U	6.8 U
	02/13/2018	NA	4,900	4.2 U	5.0 U	5.8 U	5.8	5.8 U	*10 U*	*5.4 U*	19 U	*14 U*	73	7.1 U	16 U	8.3 U	7.2 U
	04/27/2018	NA	2,600 [a]	3.9 U	4.6 U	5.3 U	5.3 U	5.3 U	*9.4 U*	*4.9 U*	18 U	*13 U*	**400**	6.6 U	180	7.7 U	6.6 U
Post-GAC	08/22/2013	NA	230 U	3.6 U	4.3 U	4.9 U	4.9 U	4.9 U	*8.7 U*	*4.6 U*	4.1 U	-	7.7 U	6.1 U	13	7.1 U	6.2 U
	09/27/2013	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/01/2013	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/04/2013	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12/18/2013	NA	1,900	3.8 U	5.4	5.2 U	5.2 U	5.2 U	*9.2 U*	*4.8 U*	4.3 U	-	8.1 U	6.4 U	14 U	7.6 U	6.5 U
	03/07/2014	NA	43,000	*37 U*	44 U	51 U	51 U	51 U	*90 U*	*47 U*	42 U	-	79 U	*63 U*	140 U	*74 U*	64 U
	05/08/2014[b]	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

[1] Washington Department of Ecology (WDOE), CLARC database values (August 2015).

The numerator value is the screening level for sub-slab (<15 foot depth) soil gas measurements; the denominator value is for deep (>=15 foot depth) soil gas measurements.

[2] Screening levels for m-xylene

[a] The hydrocarbon profile present did not resemble that of commercial gasoline. Results calculated using the response factor derived from the gasoline calibration.

[b] Carbon treatment for system exhaust discontinued on March 28, 2014.

[c] Reporting limits were raised due to high levels of non-target analytes.

[d] This sample was not analyzed due to canister vacuum issues.

Volatiles by EPA Method TO-15

MTBE = Methyl tert-butyl ether

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane

PCE = Tetrachloroethene

TCE = Trichloroethene

µg/m^3 = Micrograms per cubic meter

Bold values indicate concentrations exceed the Method B soil gas screening level for representative sample depth.

Italics indicate analytical reporting limits exceed Method B soil gas screening level for representative sample depth.

U = Undetected at method reporting limit shown

J = Estimated concentration. The associated numerical value is the approximate concentration of the analyte in the sample. See data validation report for additional information.

NA = Not Applicable/Not Available

E = Estimated concentration. Result exceeds calibration range for the instrument.

- = not analyzed for this parameter

TABLE 4
Soil Vapor Extraction Mass Removal
Plaid Pantry No. 112
Vancouver, Washington

Date	Cumulative Operating Days	Total System Flow (ft^3/min)	Pre-Treatment Lab Analysis (mg/m^3)		Estimated Mass Removal Rate Per Cycle (Pounds/Day)[a]		Estimated Cumulative Mass Removed (Pounds)		Estimated Cumulative Discharge Emissions (Pounds)[b]	
			Gasoline	PCE	Gasoline	PCE	Gasoline	PCE	Gasoline	PCE
08/22/2013	0.25	95	160	0.081 U	1.4	0.00069	0.34	0.00017	0.00049	0.000016
09/27/2013	23	79	24	0.0081 U	0.72	0.00035	17	0.0081	0.042	0.0014
11/01/2013	57	54	68	0.30	0.28	0.00092	26	0.039	0.088	0.0029
12/04/2013	89	98	26	1.2	0.32	0.0051	36	0.20	0.32	0.0047
03/07/2014	160	55	50	0.41	0.26	0.0055	55	0.60	11	0.026
05/09/2014	223	88	24	1.2	0.24	0.0052	70	0.92	25	0.28
08/08/2014	314	87	25	1.2	0.19	0.0095	87	1.8	42	1.1
11/14/2014	412	97	19	0.077 U	0.18	0.0053	105	2.3	60	1.7
02/06/2015	475	88	94	0.17 U	0.47	0.0010	135	2.4	90	1.7
03/06/2015	503	88	2.5 [e]	1.0 [e]	0.38	0.0047	145	2.5	101	1.9
06/19/2015	607	87	0.59 U	0.038	0.012	0.0041	147	2.9	102	2.3
08/18/2015	667	96	0.54 U	0.026	0.0047	0.00026	147	2.9	102	2.3
11/20/2015	758	89	13	0.090	0.056	0.00048	152	3.0	107	2.4
04/13/2016	803	112	0.54 U	0.39	0.061	0.0022	155	3.1	110	2.5
07/12/2016	881	96	0.56 U	2.2	0.0052	0.012	155	4.0	110	3.4
10/21/2016	975	97	2.4	1.8	0.013	0.017	156	5.7	112	5.0
01/30/2017	1052	89	34	0.60	0.15	0.010	168	6.4	123	5.8
03/21/2017	1102	89	0.52	-	0.14	0.0053	175	6.7	130	6.1
04/13/2017	1125	97	3.6	0.69	0.017	0.0054	175	6.8	131	6.2
07/06/2017	1209	116	16	1.1	0.094	0.0085	183	7.5	138	6.9
10/28/2017	1323	110	3.6	0.98	0.099	0.011	195	8.7	150	8.1
02/13/2018	1403	93	4.9	0.073	0.039	0.0048	198	9.1	153	8.5
04/27/2018	1468	105	2.6	0.400	0.033	0.0021	200	9.3	155	8.6
								Estimated Emissions During Last 12 Months (Pounds/Year):	24	2.4
								Annual Emissions Threshold (Pounds/Year):	2,000[c]	500[d]

TABLE 4

Soil Vapor Extraction Mass Removal

Plaid Pantry No. 112

Vancouver, Washington

Notes:

[a] Concentrations are averaged between start and end of each time period

[b] Granular activated carbon used to treat emissions prior to discharge between 8/22/13 and 3/28/14. Emissions treatment discontinued on 3/28/14.

[c] Small Quantity Emissions Rate (SQER), per SWCAA 400, General Regulations for Air Pollution Sources, dated 11/15/09.

[d] Registration exemption threshold for criteria pollutants and VOCs, per Chapter 173-460 WAC, Controls for New Sources of Toxic Air Pollutants, dated 8/21/98.

[e] Estimated mass based upon historic data trends.

ft^3/min = Cubic feet per minute

mg/m^3 = Milligrams per cubic meter

- = Not measured

SVE system off from December 2015 through March 2016 for rebound monitoring and perched GW evaluation.

Charts

CHART 1

Gasoline Vapor Concentrations During SVE Operations (ug/m^3)

Plaid Pantry No. 112

Vancouver, Washington

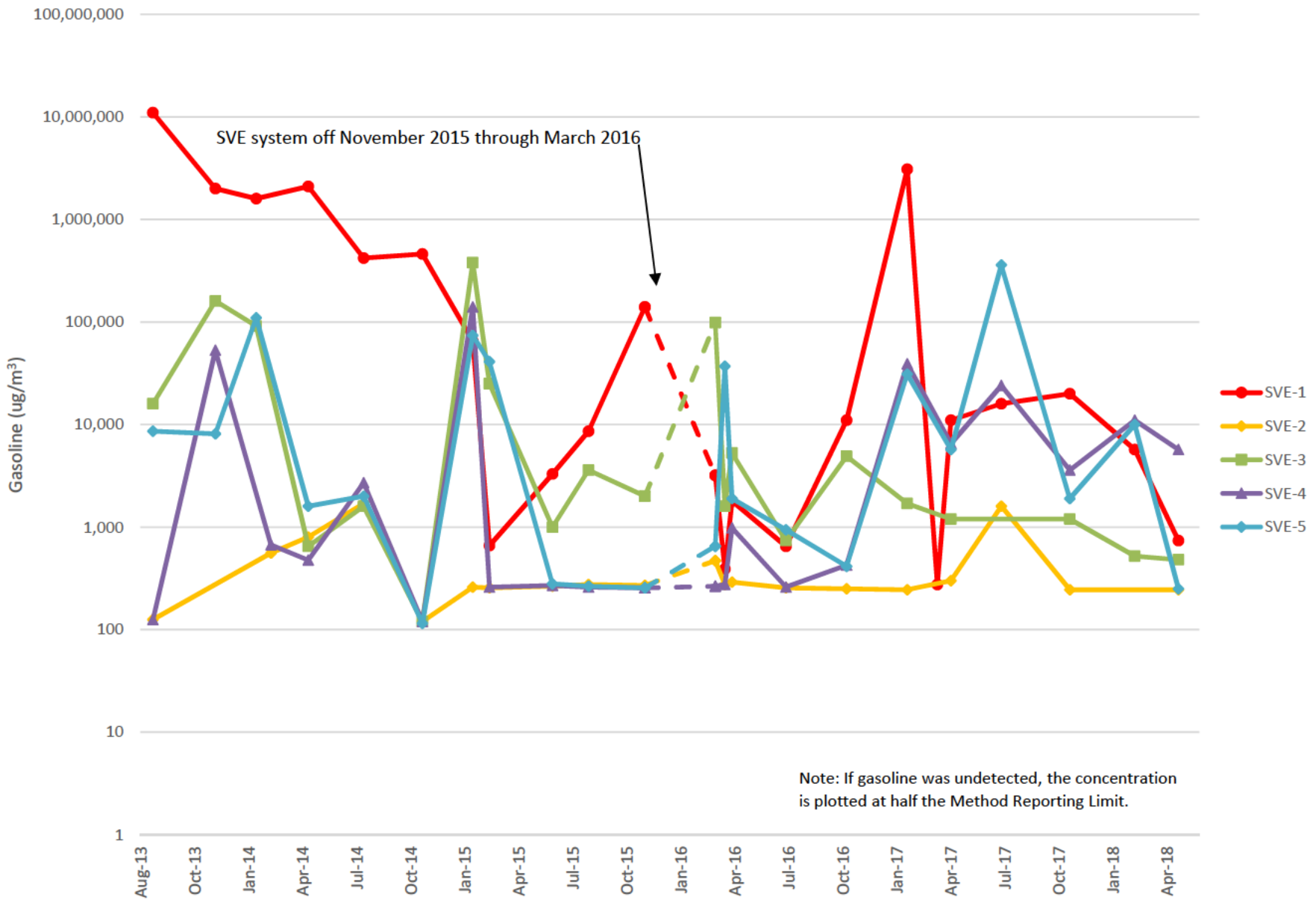


CHART 2

Benzene Vapor Concentrations During SVE Operations (ug/m^3)

Plaid Pantry No. 112

Vancouver, Washington

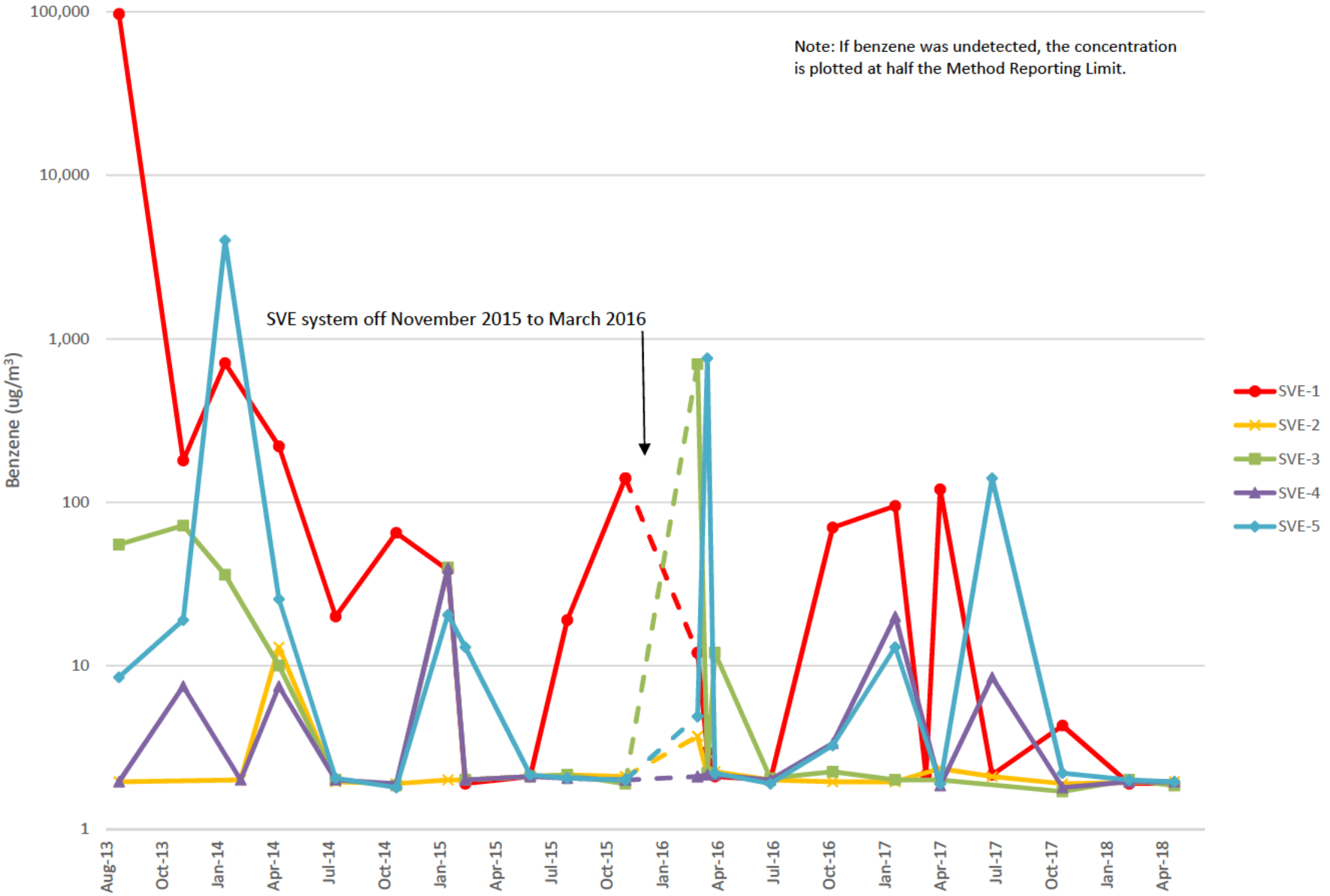


CHART 3

Gasoline Mass Extraction Rates and Cumulative Mass Removal

Plaid Pantry No. 112

Vancouver, Washington

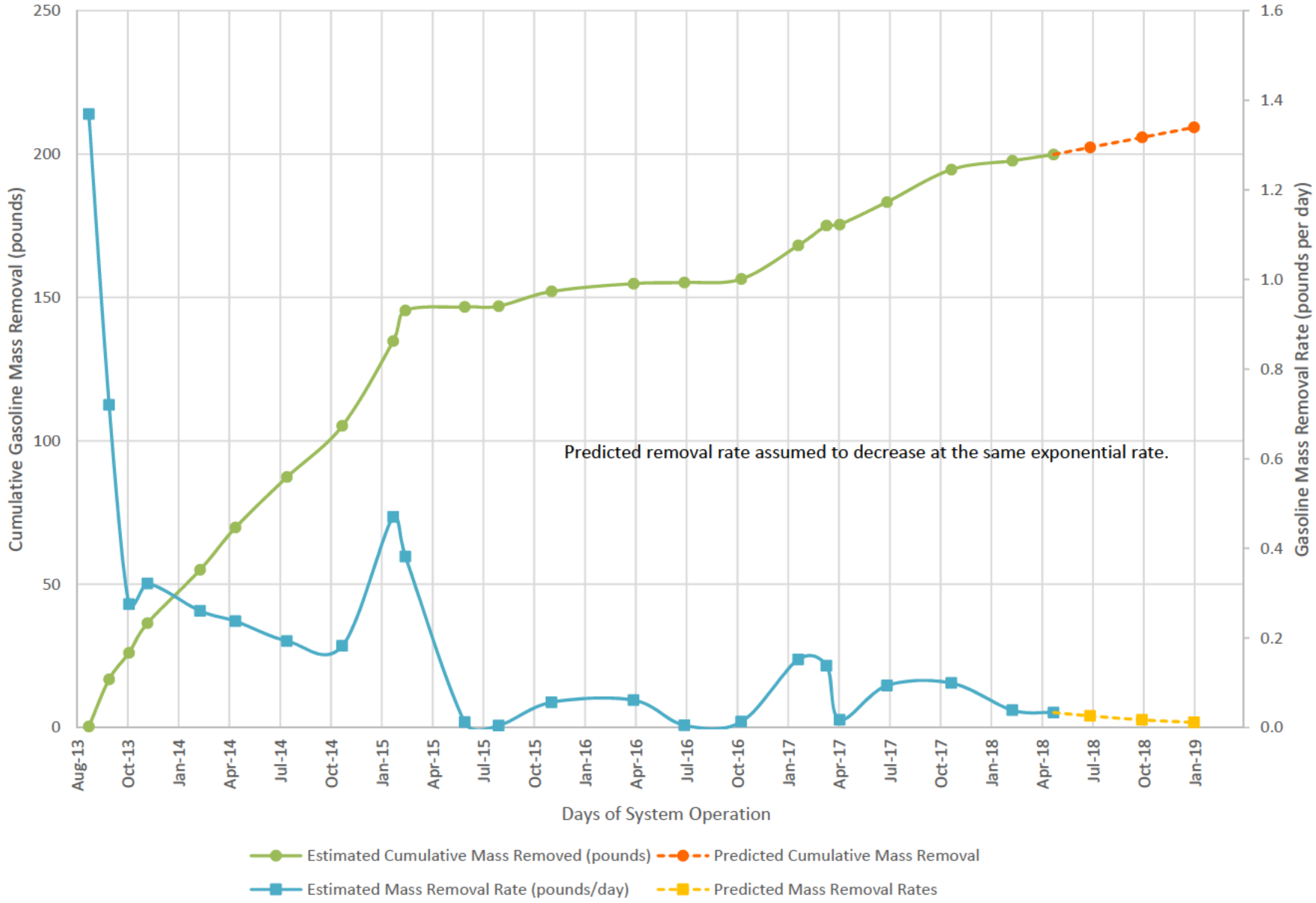
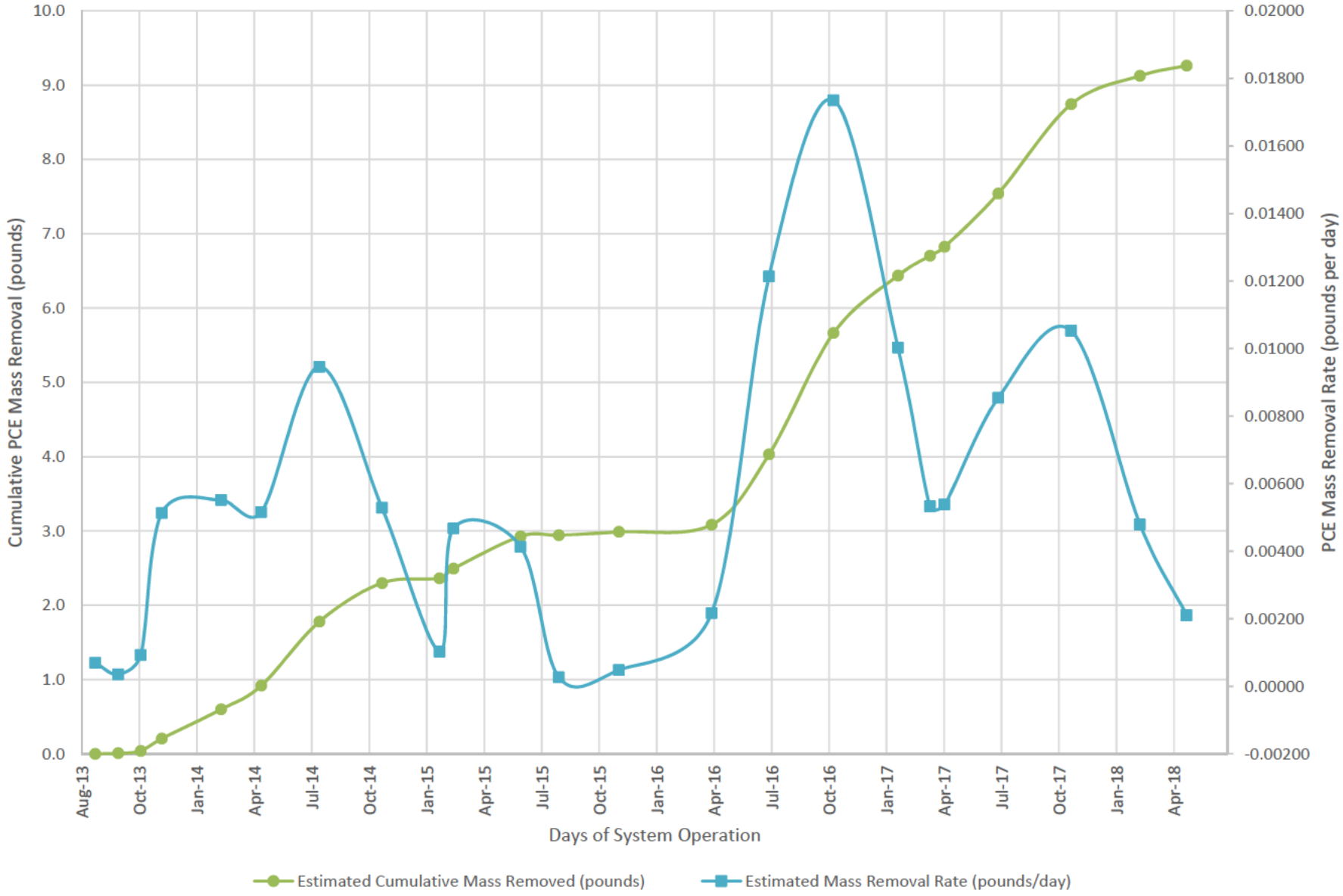


CHART 4

PCE Mass Extraction Rates and Cumulative Mass Removal

Plaid Pantry No. 112

Vancouver, Washington



Attachment A

eurofins | Air Toxics

5/16/2018
Mr. Chris Rhea
EES Environmental Consulting, Inc.
240 N Broadway
Suite 203
Portland OR 97227

Project Name: Plaid Pantry 112
Project #: 1179-02
Workorder #: 1805055

Dear Mr. Chris Rhea

The following report includes the data for the above referenced project for sample(s) received on 5/2/2018 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1805055

Work Order Summary

CLIENT:	Mr. Chris Rhea EES Environmental Consulting, Inc. 240 N Broadway Suite 203 Portland, OR 97227	**BILL TO:**	Mr. Chris Rhea EES Environmental Consulting, Inc. 240 N Broadway Suite 203 Portland, OR 97227
PHONE:	530-847-2740	**P.O. #**	
FAX:		**PROJECT #**	1179-02 Plaid Pantry 112
DATE RECEIVED:	05/02/2018	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	05/16/2018		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SVE-2	TO-15	5.1 "Hg	14.8 psi
02A	SVE-3	TO-15	4.1 "Hg	14.9 psi
03A	SVE-1	TO-15	4.7 "Hg	14.6 psi
04A	SVE-4	TO-15	5.3 "Hg	15.2 psi
05A	SVE-5	TO-15	5.5 "Hg	14.5 psi
06A	SVE Inlet	TO-15	4.9 "Hg	15.3 psi
07A	Lab Blank	TO-15	NA	NA
08A	CCV	TO-15	NA	NA
09A	LCS	TO-15	NA	NA
09AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 05/16/18

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
EPA Method TO-15
EES Environmental Consulting, Inc.
Workorder# 1805055

Six 1 Liter Summa Canister samples were received on May 02, 2018. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

The Chain of Custody (COC) was not relinquished properly. A time was not provided by the field sampler.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

The hydrocarbon profile present in samples SVE-1, SVE-4 and SVE Inlet did not resemble that of commercial gasoline. Results were calculated using the response factor derived from the gasoline calibration.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SVE-2

Lab ID#: 1805055-01A

No Detections Were Found.

Client Sample ID: SVE-3

Lab ID#: 1805055-02A

No Detections Were Found.

Client Sample ID: SVE-1

Lab ID#: 1805055-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	120	180	480	740

Client Sample ID: SVE-4

Lab ID#: 1805055-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	120	1400	500	5700

Client Sample ID: SVE-5

Lab ID#: 1805055-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
m,p-Xylene	1.2	1.3	5.3	5.5

Client Sample ID: SVE Inlet

Lab ID#: 1805055-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.2	1.3	6.8	7.5
Ethanol	4.9	17	9.2	33
2-Propanol	4.9	86	12	210
2-Butanone (Methyl Ethyl Ketone)	4.9	60	14	180
2,2,4-Trimethylpentane	1.2	6.5	5.7	30

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SVE Inlet

Lab ID#: 1805055-06A

Tetrachloroethene	1.2	60	8.3	400
TPH ref. to Gasoline (MW=100)	120	650	500	2600

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Client Sample ID: SVE-2

Lab ID#: 1805055-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050411**	**Date of Collection:**	**4/27/18 10:21:00 AM**
Dil. Factor:	**2.42**	**Date of Analysis:**	**5/4/18 05:04 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.9	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Naphthalene	2.4	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	490	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	111	70-130

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Client Sample ID: SVE-3

Lab ID#: 1805055-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050412**	**Date of Collection:**	**4/27/18 10:32:00 AM**
Dil. Factor:	**2.33**	**Date of Analysis:**	**5/4/18 05:30 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.7	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
m,p-Xylene	1.2	Not Detected	5.0	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
Naphthalene	2.3	Not Detected	12	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	480	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	119	70-130

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Client Sample ID: SVE-1

Lab ID#: 1805055-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050419**	**Date of Collection:**	**4/27/18 10:43:00 AM**
Dil. Factor:	**2.36**	**Date of Analysis:**	**5/4/18 10:11 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
m,p-Xylene	1.2	Not Detected	5.1	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
Naphthalene	2.4	Not Detected	12	Not Detected
TPH ref. to Gasoline (MW=100)	120	180	480	740

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	120	70-130

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Client Sample ID: SVE-4

Lab ID#: 1805055-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050420**	**Date of Collection: 4/27/18 10:53:00 AM**	
Dil. Factor:	**2.47**	**Date of Analysis: 5/4/18 10:37 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.9	Not Detected
Ethyl Benzene	1.2	Not Detected	5.4	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
m,p-Xylene	1.2	Not Detected	5.4	Not Detected
o-Xylene	1.2	Not Detected	5.4	Not Detected
Naphthalene	2.5	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	120	1400	500	5700

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	117	70-130

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Client Sample ID: SVE-5

Lab ID#: 1805055-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050421**	**Date of Collection:**	**4/27/18 11:04:00 AM**
Dil. Factor:	**2.43**	**Date of Analysis:**	**5/4/18 11:03 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.9	Not Detected
Ethyl Benzene	1.2	Not Detected	5.3	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
m,p-Xylene	1.2	1.3	5.3	5.5
o-Xylene	1.2	Not Detected	5.3	Not Detected
Naphthalene	2.4	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	500	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	121	70-130

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Client Sample ID: SVE Inlet

Lab ID#: 1805055-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050422**	**Date of Collection:**	**4/27/18 11:14:00 AM**
Dil. Factor:	**2.44**	**Date of Analysis:**	**5/4/18 11:30 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	6.0	Not Detected
Freon 114	1.2	Not Detected	8.5	Not Detected
Chloromethane	12	Not Detected	25	Not Detected
Vinyl Chloride	1.2	Not Detected	3.1	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	47	Not Detected
Chloroethane	4.9	Not Detected	13	Not Detected
Freon 11	1.2	1.3	6.8	7.5
Ethanol	4.9	17	9.2	33
Freon 113	1.2	Not Detected	9.4	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Acetone	12	Not Detected	29	Not Detected
2-Propanol	4.9	86	12	210
Carbon Disulfide	4.9	Not Detected	15	Not Detected
3-Chloropropene	4.9	Not Detected	15	Not Detected
Methylene Chloride	12	Not Detected	42	Not Detected
Methyl tert-butyl ether	4.9	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Hexane	1.2	Not Detected	4.3	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.9	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.9	60	14	180
cis-1,2-Dichloroethene	1.2	Not Detected	4.8	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.6	Not Detected
Chloroform	1.2	Not Detected	6.0	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Cyclohexane	1.2	Not Detected	4.2	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.7	Not Detected
2,2,4-Trimethylpentane	1.2	6.5	5.7	30
Benzene	1.2	Not Detected	3.9	Not Detected
1,2-Dichloroethane	1.2	Not Detected	4.9	Not Detected
Heptane	1.2	Not Detected	5.0	Not Detected
Trichloroethene	1.2	Not Detected	6.6	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.6	Not Detected
1,4-Dioxane	4.9	Not Detected	18	Not Detected
Bromodichloromethane	1.2	Not Detected	8.2	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	5.0	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.5	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.6	Not Detected
Tetrachloroethene	1.2	60	8.3	400
2-Hexanone	4.9	Not Detected	20	Not Detected

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Client Sample ID: SVE Inlet

Lab ID#: 1805055-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050422**	**Date of Collection:**	**4/27/18 11:14:00 AM**
Dil. Factor:	**2.44**	**Date of Analysis:**	**5/4/18 11:30 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	9.4	Not Detected
Chlorobenzene	1.2	Not Detected	5.6	Not Detected
Ethyl Benzene	1.2	Not Detected	5.3	Not Detected
m,p-Xylene	1.2	Not Detected	5.3	Not Detected
o-Xylene	1.2	Not Detected	5.3	Not Detected
Styrene	1.2	Not Detected	5.2	Not Detected
Bromoform	1.2	Not Detected	13	Not Detected
Cumene	1.2	Not Detected	6.0	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.4	Not Detected
Propylbenzene	1.2	Not Detected	6.0	Not Detected
4-Ethyltoluene	1.2	Not Detected	6.0	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	6.0	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	6.0	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.3	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.3	Not Detected
1,2,4-Trichlorobenzene	4.9	Not Detected	36	Not Detected
Hexachlorobutadiene	4.9	Not Detected	52	Not Detected
Naphthalene	2.4	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	120	650	500	2600

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	116	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1805055-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050407**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/4/18 01:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 1805055-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050407**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/4/18 01:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
Naphthalene	1.0	Not Detected	5.2	Not Detected
TPH ref. to Gasoline (MW=100)	50	Not Detected	200	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	87	70-130

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Client Sample ID: CCV

Lab ID#: 1805055-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050403**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 5/4/18 09:59 AM**

Compound	%Recovery
Freon 12	99
Freon 114	97
Chloromethane	102
Vinyl Chloride	118
1,3-Butadiene	96
Bromomethane	103
Chloroethane	94
Freon 11	93
Ethanol	80
Freon 113	90
1,1-Dichloroethene	84
Acetone	89
2-Propanol	82
Carbon Disulfide	92
3-Chloropropene	85
Methylene Chloride	98
Methyl tert-butyl ether	87
trans-1,2-Dichloroethene	94
Hexane	98
1,1-Dichloroethane	104
2-Butanone (Methyl Ethyl Ketone)	98
cis-1,2-Dichloroethene	107
Tetrahydrofuran	100
Chloroform	107
1,1,1-Trichloroethane	101
Cyclohexane	104
Carbon Tetrachloride	109
2,2,4-Trimethylpentane	106
Benzene	113
1,2-Dichloroethane	114
Heptane	119
Trichloroethene	109
1,2-Dichloropropane	112
1,4-Dioxane	99
Bromodichloromethane	115
cis-1,3-Dichloropropene	98
4-Methyl-2-pentanone	97
Toluene	106
trans-1,3-Dichloropropene	110
1,1,2-Trichloroethane	111
Tetrachloroethene	109
2-Hexanone	94

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Client Sample ID: CCV

Lab ID#: 1805055-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/4/18 09:59 AM**	

Compound	%Recovery
Dibromochloromethane	114
1,2-Dibromoethane (EDB)	110
Chlorobenzene	105
Ethyl Benzene	114
m,p-Xylene	112
o-Xylene	111
Styrene	120
Bromoform	109
Cumene	112
1,1,2,2-Tetrachloroethane	109
Propylbenzene	112
4-Ethyltoluene	115
1,3,5-Trimethylbenzene	116
1,2,4-Trimethylbenzene	114
1,3-Dichlorobenzene	111
1,4-Dichlorobenzene	114
alpha-Chlorotoluene	125
1,2-Dichlorobenzene	113
1,2,4-Trichlorobenzene	119
Hexachlorobutadiene	130
Naphthalene	60
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	109	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: LCS

Lab ID#: 1805055-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/4/18 10:24 AM**	

Compound	%Recovery	Method Limits
Freon 12	99	70-130
Freon 114	99	70-130
Chloromethane	105	70-130
Vinyl Chloride	113	70-130
1,3-Butadiene	101	70-130
Bromomethane	106	70-130
Chloroethane	99	70-130
Freon 11	94	70-130
Ethanol	84	70-130
Freon 113	90	70-130
1,1-Dichloroethene	86	70-130
Acetone	90	70-130
2-Propanol	84	70-130
Carbon Disulfide	94	70-130
3-Chloropropene	92	70-130
Methylene Chloride	100	70-130
Methyl tert-butyl ether	84	70-130
trans-1,2-Dichloroethene	104	70-130
Hexane	102	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
cis-1,2-Dichloroethene	95	70-130
Tetrahydrofuran	105	70-130
Chloroform	106	70-130
1,1,1-Trichloroethane	104	70-130
Cyclohexane	110	70-130
Carbon Tetrachloride	114	70-130
2,2,4-Trimethylpentane	113	70-130
Benzene	111	70-130
1,2-Dichloroethane	111	70-130
Heptane	116	70-130
Trichloroethene	108	70-130
1,2-Dichloropropane	111	70-130
1,4-Dioxane	103	70-130
Bromodichloromethane	116	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	104	70-130
Toluene	106	70-130
trans-1,3-Dichloropropene	111	70-130
1,1,2-Trichloroethane	110	70-130
Tetrachloroethene	109	70-130
2-Hexanone	100	70-130

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Client Sample ID: LCS

Lab ID#: 1805055-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050404**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/4/18 10:24 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	116	70-130
1,2-Dibromoethane (EDB)	109	70-130
Chlorobenzene	107	70-130
Ethyl Benzene	116	70-130
m,p-Xylene	112	70-130
o-Xylene	114	70-130
Styrene	126	70-130
Bromoform	111	70-130
Cumene	113	70-130
1,1,2,2-Tetrachloroethane	111	70-130
Propylbenzene	114	70-130
4-Ethyltoluene	119	70-130
1,3,5-Trimethylbenzene	118	70-130
1,2,4-Trimethylbenzene	114	70-130
1,3-Dichlorobenzene	110	70-130
1,4-Dichlorobenzene	115	70-130
alpha-Chlorotoluene	132 Q	70-130
1,2-Dichlorobenzene	114	70-130
1,2,4-Trichlorobenzene	115	70-130
Hexachlorobutadiene	125	70-130
Naphthalene	70	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	108	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1805055-09AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050405**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/4/18 10:49 AM**	

Compound	%Recovery	Method Limits
Freon 12	100	70-130
Freon 114	99	70-130
Chloromethane	105	70-130
Vinyl Chloride	117	70-130
1,3-Butadiene	99	70-130
Bromomethane	106	70-130
Chloroethane	98	70-130
Freon 11	94	70-130
Ethanol	84	70-130
Freon 113	91	70-130
1,1-Dichloroethene	86	70-130
Acetone	91	70-130
2-Propanol	86	70-130
Carbon Disulfide	94	70-130
3-Chloropropene	92	70-130
Methylene Chloride	98	70-130
Methyl tert-butyl ether	84	70-130
trans-1,2-Dichloroethene	102	70-130
Hexane	102	70-130
1,1-Dichloroethane	101	70-130
2-Butanone (Methyl Ethyl Ketone)	98	70-130
cis-1,2-Dichloroethene	94	70-130
Tetrahydrofuran	102	70-130
Chloroform	106	70-130
1,1,1-Trichloroethane	104	70-130
Cyclohexane	109	70-130
Carbon Tetrachloride	112	70-130
2,2,4-Trimethylpentane	111	70-130
Benzene	112	70-130
1,2-Dichloroethane	110	70-130
Heptane	114	70-130
Trichloroethene	108	70-130
1,2-Dichloropropane	113	70-130
1,4-Dioxane	101	70-130
Bromodichloromethane	116	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	103	70-130
Toluene	106	70-130
trans-1,3-Dichloropropene	112	70-130
1,1,2-Trichloroethane	113	70-130
Tetrachloroethene	111	70-130
2-Hexanone	101	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1805055-09AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**p050405**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 5/4/18 10:49 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	117	70-130
1,2-Dibromoethane (EDB)	112	70-130
Chlorobenzene	108	70-130
Ethyl Benzene	117	70-130
m,p-Xylene	115	70-130
o-Xylene	115	70-130
Styrene	128	70-130
Bromoform	115	70-130
Cumene	115	70-130
1,1,2,2-Tetrachloroethane	113	70-130
Propylbenzene	115	70-130
4-Ethyltoluene	116	70-130
1,3,5-Trimethylbenzene	121	70-130
1,2,4-Trimethylbenzene	116	70-130
1,3-Dichlorobenzene	112	70-130
1,4-Dichlorobenzene	116	70-130
alpha-Chlorotoluene	132 Q	70-130
1,2-Dichlorobenzene	116	70-130
1,2,4-Trichlorobenzene	120	70-130
Hexachlorobutadiene	130	70-130
Naphthalene	74	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	107	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	104	70-130