EES Environmental Consulting, Inc.
240 N. Broadway, Suite 203
Portland, Oregon 97227
(503) 847-2740 ees-environmental.com

Technical Memorandum

2020 Year-End Cleanup Status Report

Date: February 12, 2021

To: Aaren Fiedler, LG, Washington Department of Ecology Voluntary Cleanup Program

Copies: Jonathan Polonsky and Brent Chadwick, Plaid Pantries, Inc.
Mr. Brian Fallon, Southwest Clean Air Agency

From: Chris Rhea, LG; Daniele Peters, PE; and Paul Ecker, LHG

Regarding: Plaid Pantry Store #112
1002 W. Fourth Plain Boulevard
Vancouver, Washington
Department of Ecology Cleanup Site ID 11759 and VCP #SW1314
EES Project 1179-04

This memorandum provides a summary of soil vapor extraction (SVE) operations and site cleanup progress through December 2020 for the Plaid Pantry Store #112 subject property (Property, Figure 1). While prior SVE operations successfully addressed the on-Property gasoline release source area, SVE components were expanded in 2019-2020 to address soil impacts that migrated south of the Property boundary to an adjacent public right-of-way. Implementation of this remedial action was conducted in general accordance with the EES *Work Plan for Soil Vapor Extraction System Expansion* dated June 27, 2019. Figure 2 illustrates general Site features.

BACKGROUND

The nature and extent of gasoline contamination at the Site were previously characterized, and cleanup levels were established as detailed in the EES *Remedial Investigation Report* dated September 19, 2018.

On a parallel track, EES installed and operated an SVE system at the Property's source area between August 2013 and December 2018 as an interim action to mitigate readily accessible gasoline-impacted soils. The SVE system was operated using a five-well array (SVE-1 through SVE-5) screened at depths between 5 and 20 feet below ground surface (bgs) in the vicinity of the fuel distribution island near the southern Property margin. The SVE operations appear to have adequately mitigated on-Property soil and related subsurface vapor impacts with respect to MTCA compliance criteria, and the original SVE components were shut down in December 2018.

The zone of initial SVE operations was generally limited to the primary source area within Property boundaries and did not fully address residual gasoline impacts extending into the adjacent Fourth Plain Boulevard right-of-way (ROW). In December 2019 and January 2020, SVE infrastructure was expanded beyond the southern Property boundary to focus on gasoline-impacted subsurface soil located in the

ROW (Figure 3). On-property SVE components remain inactive and all SVE activity is currently applied to the off-Property well infrastructure.

The expanded SVE system is plumbed to a three-horsepower regenerative blower that applies vacuum to the three horizontal wells (SVE-6 through -8) with 15 to 20-foot long screened intervals intended to target the known 5 to 10-foot deep pocket of soil contamination within the ROW. The three horizontal well components provide overlapping vacuum influence. This SVE well configuration is shown on Figures 4 and 5.

SVE OPERATIONS DURING 2020

The expanded SVE system has operated continuously since startup on January 3, 2020, except for periodic short-term shutdowns occurring during maintenance or following power loss to the Plaid building. Initial performance testing was conducted in January through April 2020, including high frequency monitoring and vapor sampling to establish stable system operations. Routine SVE performance is monitored during monthly system operations and maintenance visits, with quarterly performance vapor sampling events scheduled for January, April, July, and October. System flow and vacuum are periodically modified to optimize contaminant mass removal. Operational data collected through December 28, 2020 are presented on the attached tables, figures, and charts, and summarized below.

AIR FLOW

Since startup in January 2020, the system has produced between approximately 28 and 62 cubic feet per minute (cfm) of air flow from the subsurface (see Table 1, "AWS Inlet"). Individual horizontal wells typically produce extraction flow rates ranging between 10 and 26 CFM. On August 14, 2020, easternmost well SVE-6 was inactivated after concentrations of gasoline in soil vapor were consistently observed to be below Ecology's MTCA Method B shallow soil gas screening level and action level targeted for SVE operations [4,700 micrograms per cubic meter (ug/m^3)], and to increase airflow at wells SVE-7 and SVE-8, where greater gasoline concentrations are observed in soil vapor (discussed below).

RADIUS OF INFLUENCE

Performance metrics including vacuum, volatile organic compound (VOC) concentrations, and biological degradation parameters were measured at nearby vertical monitoring wells to evaluate the SVE system's radius of influence (ROI; Table 2). Based on observations at nearby vadose-zone monitoring wells, vapor extraction operations have created a ROI that generally covers the identified areas of contamination in the West Fourth Plain Boulevard right-of-way (Figure 6). The lateral ROI for each individual horizontal SVE well is estimated at 35 feet between 5 and 10 feet below ground surface (bgs), and 10 feet at depths below 10 feet bgs. Vertically, the influence for each SVE well extends at least as deep as 20 feet in the target cleanup area (i.e., about 10 feet below the horizontal wells).

BIOGENIC DEGRADATION OF GASOLINE

One goal of SVE is to increase subsurface oxygen inflow and concentrations that promote natural biological degradation of gasoline vapors. Before operation of the SVE system, subsurface oxygen concentrations at wells within the targeted treatment area ranged between approximately 9 and 20%. As intended, SVE operations have established and maintained more highly aerobic conditions (18-21% oxygen) at wells SVE-6 through SVE-8 and monitoring wells within the SVE zone of influence (B-17, B-18, and SVE-1 through SVE-5), indicating the remedial system is promoting biodegradation of gasoline contaminants by increasing oxygen flow into the subsurface. Biogenic vapor monitoring data are presented in Table 2.

YEAR-END CONTAMINANT CONCENTRATIONS AND OBSERVED MASS REMOVAL

Regular monitoring data was collected during SVE operations through 2020 to evaluate the performance of this remedial action and as a basis to consider system adjustments. Quarterly status reports were provided to Ecology, with the most recent data from October 2020 included below.

To evaluate current conditions and air quality discharge compliance, vapor samples were most recently collected on October 16, 2020 from the three horizontal wells and submitted for laboratory analysis. Note that well SVE-6, which was inactivated in August 2020, was temporarily operated during this recent air sampling event to evaluate cleanup performance and residual contamination at that location, and then SVE-6 was subsequently inactivated again.

Monitoring data indicate the horizontal SVE wells are effective and have good lateral and vertical influence within contaminated portions of the ROW. Subsurface gasoline and related constituent vapor concentrations are decreasing as intended within the off-Property treatment zone, although extracted vapor concentrations exceed treatment goals and continued SVE operations during 2021 are necessary. Findings for 2020 operations are summarized below, presented in Tables 3, 4A and 4B, and illustrated on Figure 7 and Chart sets 1 through 3. A copy of the laboratory analytical report for the October 2020 monitoring event is presented in Attachment A.

GASOLINE CONCENTRATIONS

During the October 2020 event, gasoline was detected at two of the three ROW wells tested, SVE-7 and SVE-8, at concentrations of 4,000 and 13,000 ug/m^3, respectively. The gasoline concentration detected at well SVE-8 exceeds the MTCA Method B vapor intrusion screening level of 4,700 ug/m^3, which is referenced as an indication of relative SVE treatment performance. Benzene and other common gasoline constituents were not detected above laboratory method reporting limits (MRLs) at any of the SVE wells during the October 2020 sampling event.

Overall, gasoline and related constituent concentrations have greatly diminished since SVE startup in January 2020 and represent an overall decreasing contaminant concentration trend, with some short-term fluctuations (Table 3, Charts 1A/1B, Figure 7). Gasoline concentrations at the most highly-impacted well (SVE-8) averaged 6,150,000 ug/m^3 during the system's first two weeks of operations, with October 2020 indicating a vapor concentration decrease of 99.8% since startup, and these data

approach the general performance goal of 4,700 ug/m^3. The exponential decrease observed in vapor concentrations across the horizontal well network indicates effective coverage throughout the area of known contamination in the ROW and control of potential vapor migration (Chart set 2).

Gasoline Mass Extraction Rate

Initial mass removal rates at system startup in January 2020 were estimated at approximately 15 pounds per day and decreased to approximately 0.055 pounds per day by March 2, 2020 (see Chart set 3). Since then, the gasoline extraction rate appears to have stabilized with the last calculated rate being approximately 0.065 pounds per day in October 2020.

Since startup of the ROW component in January 2020, cumulative removal of gasoline range hydrocarbons is estimated to be 122 pounds, or approximately 20 gallons (Table 4A). Combined with prior on-Property system operations, a total of approximately 324 pounds (53 gallons) gasoline have been removed from the Site since the start of SVE operations in August 2013 (Table 4B and Chart set 3).

Air Discharge Compliance

Since air emissions from the SVE system are expected to remain below Southwest Clean Air Authority (SWCAA) emission exemption criteria (SWCAA 400-109), SWCAA authorized system startup and continued operation of the system without the use of air emission controls and confirmed on 8/27/2019 that a permit is not required for system operations.

In addition to gasoline, chlorinated solvent vapors, primarily tetrachloroethylene (PCE), are removed from the subsurface during SVE operations (Table 3). Although not attributed to the gasoline source or Plaid operations, total PCE concentrations in SVE system air emissions are monitored to demonstrate compliance with SWCAA discharge criteria. Gasoline constituents and PCE vapor emissions remain far below maximum allowable discharge limits, confirming that exhaust treatment is not required (Table 4A).

CONTINUED SVE OPERATIONS DURING 2021

Monitoring data collected between January and December 2020 indicate that the SVE system has been effective in the treatment area at removing gasoline contaminant mass, promoting hydrocarbon biodegradation, and limiting potential vapor migration. Gasoline mass in the ROW has been greatly diminished as a result of horizontal SVE well operations. The most recent gasoline vapor concentrations as measured in October 2020 (13,000 ug/m^3 maximum) exceed the operational reference standard, MTCA's Method B vapor intrusion screening level (4,700 ug/m^3), and confirm diminished but actionable gasoline mass remains in this ROW area.

As indicated in the 2019 RI Report, final cleanup compliance is governed by establishing protective gasoline concentrations in soil (2,619 mg/kg cleanup criteria) and will be demonstrated by soil sampling in the ROW once SVE vapor concentrations are more comprehensively and consistently diminished. Continued operation of the horizontal SVE system during 2021 is therefore recommended until SVE

vapor concentrations reliably decrease below the MTCA Method B screening level of 4,700 ug/m^3 and/or the gasoline mass removal rates become asymptotic.

Routine but limited system operations and maintenance will continue to be performed on a monthly basis, with quarterly air discharge sampling and testing as necessary. System operations will be modified to optimize system performance as contaminant concentrations continue to decrease. System modifications are expected to include cycling of the system and individual SVE wells, adjusting air flows to various wells, and fresh air venting. Performance monitoring and evaluation will continue while this system remains active.

ATTACHMENTS

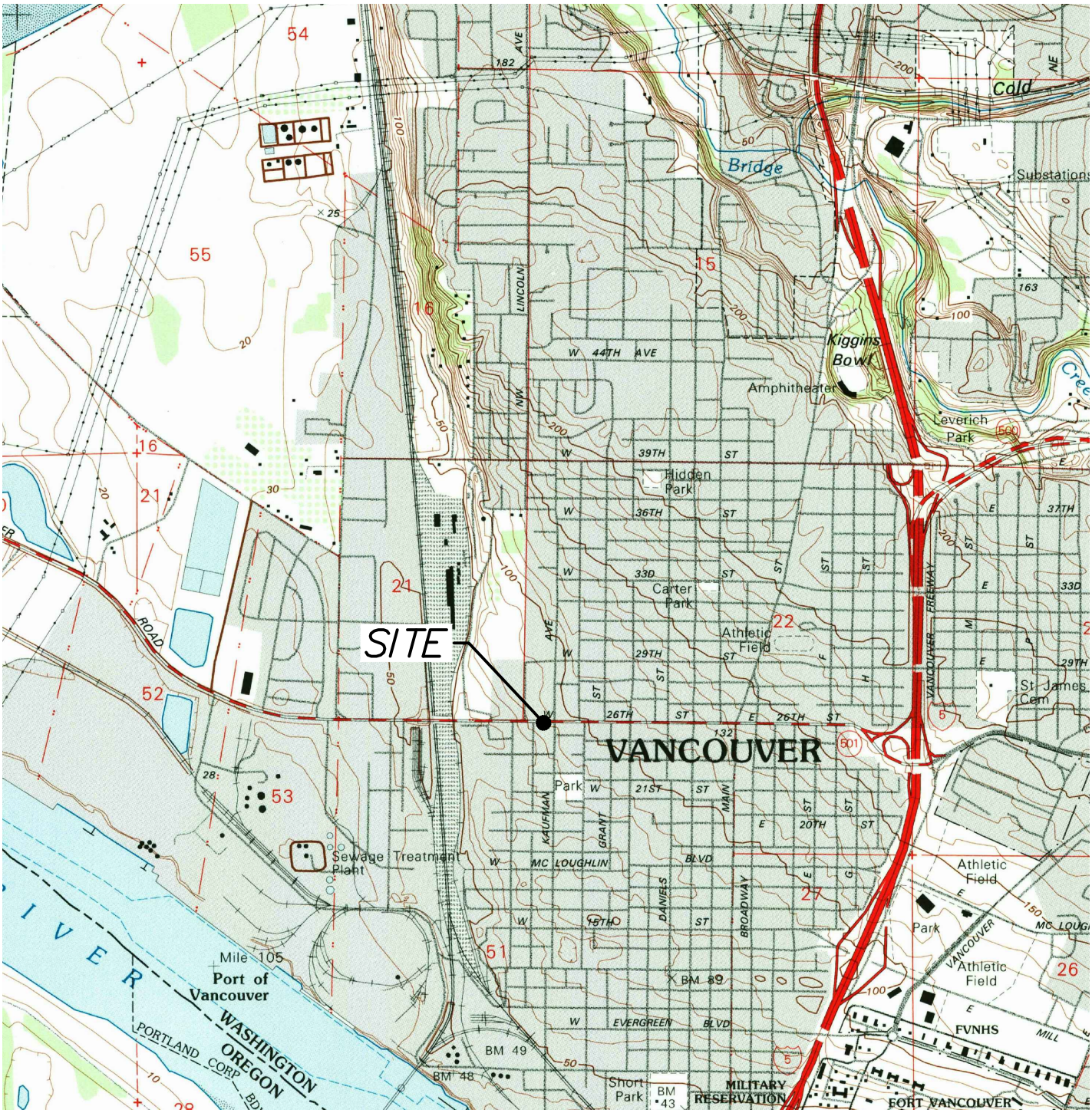
Figure 1: Vicinity Map
Figure 2: Site Features
Figure 3: SVE System Layout
Figure 4: SVE Well Configuration
Figure 5: Cross Section A–A'
Figure 6: Radius of Influence
Figure 7: Gasoline Vapor Concentrations During SVE Operations (January-October 2020)

Table 1: Soil Vapor Extraction Monitoring Data
Table 2: Biodegradation Parameter and Zone of Influence Data
Table 3: Soil Vapor Analytical Results – Volatile Organic Compounds
Table 4A: Soil Vapor Extraction Mass Removal in Right-of-Way
Table 4B: Site Total Soil Vapor Extraction Mass Removal

Chart 1A: System Total Gasoline Vapor Concentrations During SVE Operations in ROW (Linear Scale)
Chart 1B: System Total Gasoline Vapor Concentrations During SVE Operations in ROW (Log Scale)
Chart 1C: System Total Gasoline Vapor Concentrations During SVE Operations (Sitewide – Log Scale)
Chart 2A: Gasoline Vapor Concentrations & Removal Rates During SVE Operations in ROW (Linear Scale)
Chart 2B: Gasoline Vapor Concentrations & Removal Rates During SVE Operations in ROW (Log Scale)
Chart 3A: Site Total Gasoline Mass Extraction Rates & Cumulative Mass Removal (Linear Scale)
Chart 3B: Site Total Gasoline Mass Extraction Rates & Cumulative Mass Removal (Log Scale)

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

EES Environmental Consulting, Inc.
240 N. Broadway, Suite 203 • Portland, Oregon 97227
(503) 847-2740 • ees-environmental.com

VICINITY MAP

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

DATE:	1–5–21	PROJECT NO.	
FILE:	1179–04		1179–04
DRAWN:	JJT	FIGURE NO.	
APPROVED:	DBP		1

C:\Users\Josh\Desktop\Autocad Files\EES-Autocad\1179-04\2020\Jan 2020\1179-04_VM.dwg

LEGEND

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

SITE FEATURES ARE APPROXIMATE

APPROXIMATE SCALE IN FEET

0 10 20 40

N

Existing Building

(Domino's Pizza)

(Plaid Pantry)

Canopy/Sidewalk

Remediation Equipment Area

Sidewalk

Kauffman Ave.

UST Vent Pipes

Canopy/Pump Island

Fuel Dispenser

Sign

Abandoned UST (Removed Feb 2012)

Existing UST Locations

Fuel Supply Lines

Sidewalk

Bike Lane

West Fourth Plain Blvd.

PROJECT NO.	1179-04
DATE:	1-5-21
FILE:	1179-04
FIGURE NO.	2
DRAWN:	JJT
APPROVED:	DBP

SITE FEATURES

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

EES Environmental Consulting, Inc.
240 N. Broadway, Suite 203 • Portland, Oregon 97227
(503) 847-2740 • ees-environmental.com

C:\Users\Josh\Desktop\Autocad Files\EES-Autocad\1179-04\2021\Jan 2021\1179-04_BM-Data-010521.dwg

LEGEND

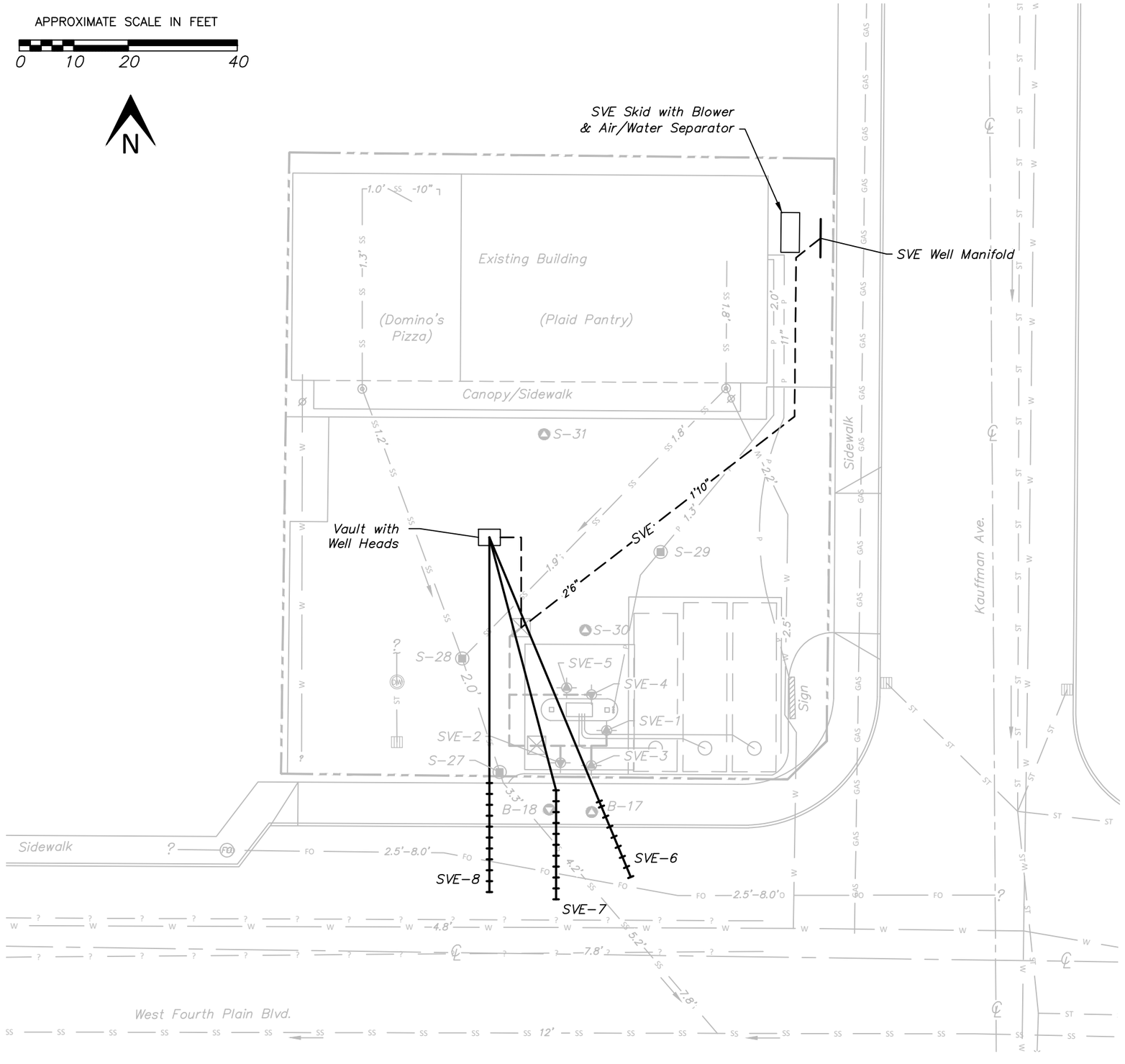
- Property Boundary
- Roadway Centerline
- Catch Basin
- DW — Dry Well
- Vault
- SVE–1 — Inactive Shallow SVE Well (Screened 5–10' bgs)
- SVE–2 — Inactive Deep SVE Well (Screened 15–20' bgs)
- S–28 — Utility Vapor Monitoring Well (Screened at Various Shallow Depths in Trench Backfill)
- B–17 — Shallow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

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 10 20 40

N



PROJECT NO.	1179–04
DATE:	1–5–21
FILE:	1179–04
FIGURE NO.	3
DRAWN:	JJT
APPROVED:	DBP

SVE SYSTEM LAYOUT

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

EES Environmental Consulting, Inc.
240 N. Broadway, Suite 203 • Portland, Oregon 97227
(503) 847–2740 • ees–environmental.com

LEGEND

- Property Boundary
- Road Centerline
- Catch Basin
- Dry Well
- SVE–1 — Inactive Shallow SVE Well
- SVE–2 — Inactive Deep SVE Well
- B–12 — Direct–Push Boring (Aug 2012)
- S–28 — Utility Vapor Monitoring Well (Screened at Various Shallow Depths in Trench Backfill)
- B–1 — Direct–Push Boring (Sept 2011)
- B–16 — Direct–Push Boring (Sept 2015)
- B–17 — Shallow Vapor Monitoring Well (Screened 5–10' bgs)
- B–18 — Deep Vapor Monitoring Well (Screened 15–20' bgs)
- B–22 — Temporary Soil Boring (Dec 2019)
- Vault
- 10 — Approximate Gasoline Isoconcentration Contour (mg/kg, Sept 2015)
- A ⟷ A' — Cross Section A–A' Location (See Figure 5)
- SVE — SVE–1 through SVE–5 Conveyance Piping
- SVE — SVE Conveyance Piping
- SVE Well Casing
- SVE Screen
- SS — Sanitary Sewer
- ST — Storm
- W — Water
- FO — Fiber Optic
- P — Power
- GAS — Gas
- ? — Unknown Utility

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 10 20

N

Vault with Well Heads

SVE–8
Depth=10 ft.
Screen=20 ft.
Diameter=3 in.

SVE–7
Depth=8 ft.
Screen=20 ft.
Diameter=3 in.

SVE–6
Depth=10 ft.
Screen=15 ft.
Diameter=3 in.

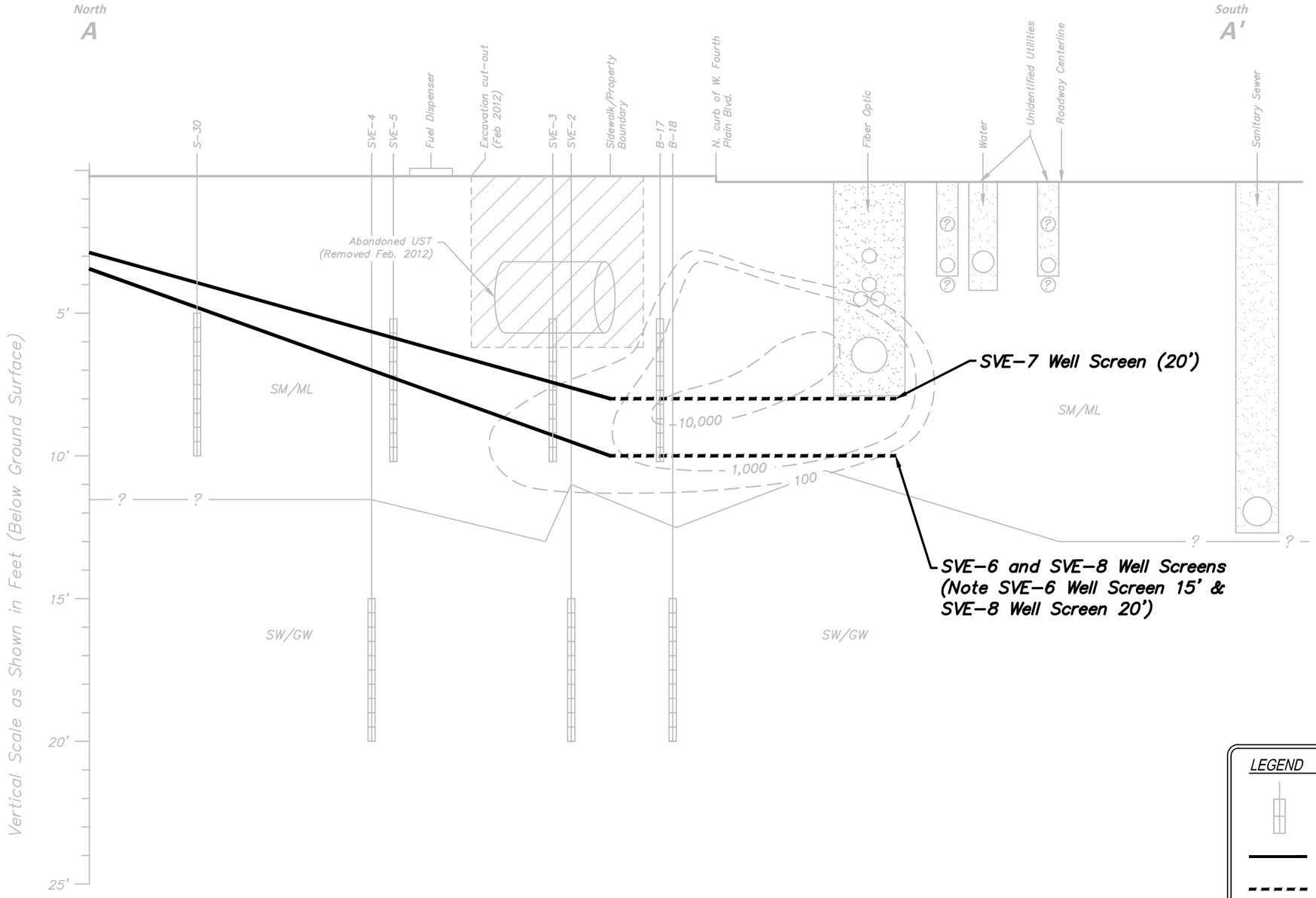
West Fourth Plain Blvd.

DATE:	1–5–21
FILE:	1179–04
DRAWN:	JJT
APPROVED:	DBP
PROJECT NO.	1179–04
FIGURE NO.	4

SVE WELL CONFIGURATION

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

EES Environmental Consulting, Inc.
240 N. Broadway, Suite 203 • Portland, Oregon 97227
(503) 847–2740 • ees-environmental.com



APPROXIMATE SCALE IN FEET

0 4 8 16

LEGEND

- Inactive SVE Well or Vapor Monitoring Well and Screened Interval
- SVE Well Casing
- SVE Screen
- SM/ML — Sandy Silt/Silty Sand
- SW/GW — Sand & Gravels
- 100 — Approximate Gasoline Isoconcentration Contour (mg/kg, Sept 2015)

SITE FEATURES ARE APPROXIMATE.

DATE:	1-5-21	PROJECT NO.	
FILE:	1179-04		1179-04
DRAWN:	JJT	FIGURE NO.	5
APPROVED:	DBP		

CROSS SECTION A-A'

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

EES Environmental Consulting, Inc.
240 N. Broadway, Suite 203 • Portland, Oregon 97227
(503) 847-2740 • ees-environmental.com

LEGEND

- Property Boundary
- Road Centerline
- Catch Basin
- Dry Well
- SVE–1 — Inactive Shallow SVE Well
- SVE–2 — Inactive Deep SVE Well
- 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)
- Vault
- 10 — Approximate Gasoline Isoconcentration Contour (mg/kg, Sept 2015)
- -SVE- — SVE–1 through SVE–5 Conveyance Piping
- -SVE- — SVE Conveyance Piping
- SVE Well Casing
- SVE Screen
- * = SVE–6 disabled on 8/14/20
- ** = With all wells enabled

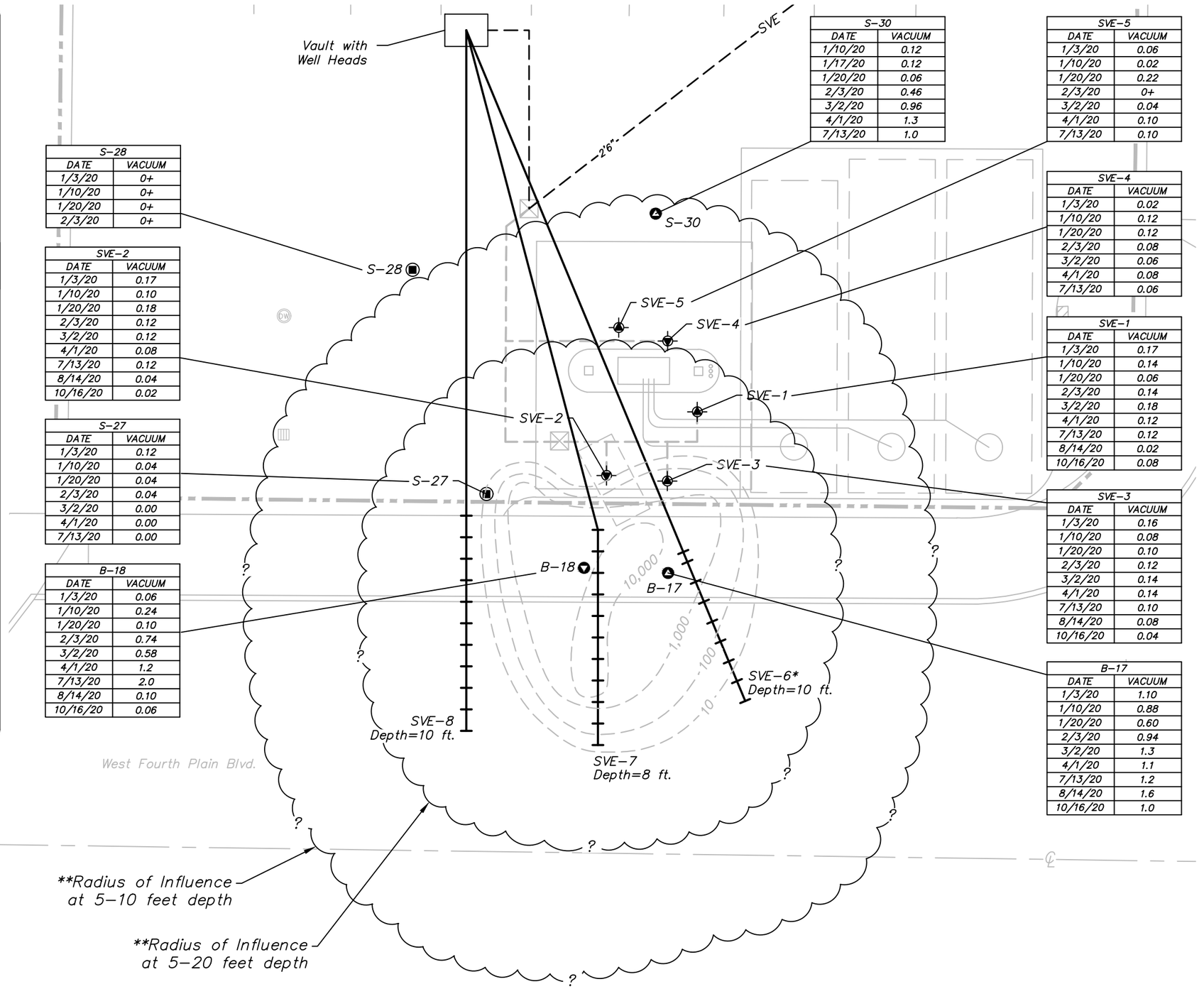
Vacuum measurements in inches of water column.

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 10 20

N



S–28	
DATE	VACUUM
1/3/20	0+
1/10/20	0+
1/20/20	0+
2/3/20	0+

SVE–2	
DATE	VACUUM
1/3/20	0.17
1/10/20	0.10
1/20/20	0.18
2/3/20	0.12
3/2/20	0.12
4/1/20	0.08
7/13/20	0.12
8/14/20	0.04
10/16/20	0.02

S–27	
DATE	VACUUM
1/3/20	0.12
1/10/20	0.04
1/20/20	0.04
2/3/20	0.04
3/2/20	0.00
4/1/20	0.00
7/13/20	0.00

B–18	
DATE	VACUUM
1/3/20	0.06
1/10/20	0.24
1/20/20	0.10
2/3/20	0.74
3/2/20	0.58
4/1/20	1.2
7/13/20	2.0
8/14/20	0.10
10/16/20	0.06

S–30	
DATE	VACUUM
1/10/20	0.12
1/17/20	0.12
1/20/20	0.06
2/3/20	0.46
3/2/20	0.96
4/1/20	1.3
7/13/20	1.0

SVE–5	
DATE	VACUUM
1/3/20	0.06
1/10/20	0.02
1/20/20	0.22
2/3/20	0+
3/2/20	0.04
4/1/20	0.10
7/13/20	0.10

SVE–4	
DATE	VACUUM
1/3/20	0.02
1/10/20	0.12
1/20/20	0.12
2/3/20	0.08
3/2/20	0.06
4/1/20	0.08
7/13/20	0.06

SVE–1	
DATE	VACUUM
1/3/20	0.17
1/10/20	0.14
1/20/20	0.06
2/3/20	0.14
3/2/20	0.18
4/1/20	0.12
7/13/20	0.12
8/14/20	0.02
10/16/20	0.08

SVE–3	
DATE	VACUUM
1/3/20	0.16
1/10/20	0.08
1/20/20	0.10
2/3/20	0.12
3/2/20	0.14
4/1/20	0.14
7/13/20	0.10
8/14/20	0.08
10/16/20	0.04

B–17	
DATE	VACUUM
1/3/20	1.10
1/10/20	0.88
1/20/20	0.60
2/3/20	0.94
3/2/20	1.3
4/1/20	1.1
7/13/20	1.2
8/14/20	1.6
10/16/20	1.0

PROJECT NO. 1179-04 FIGURE NO. 6
DATE: 1-5-20 FILE: 1179-04 DRAWN: JJT APPROVED: DBP

RADIUS OF INFLUENCE

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

EES Environmental Consulting, Inc.
240 N. Broadway, Suite 203 • Portland, Oregon 97227
(503) 847-2740 • ees-environmental.com

C:\Users\Josh\Desktop\Autocad Files\EES-Autocad\1179-04\2021\Jan 2021\1179-04_BM-Data-010521.dwg

LEGEND

- Property Boundary
- Road Centerline
- Catch Basin
- DW — Dry Well
- SVE–1 — Inactive Shallow SVE Well
- SVE–2 — Inactive Deep SVE Well
- 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)
- Vault
- 10 — Approximate Gasoline Isoconcentration Contour (mg/kg, Sept 2015)
- -SVE- — SVE–1 through SVE–5 Conveyance Piping
- -SVE- — SVE Conveyance Piping
- SVE Well Casing
- SVE Screen
- * = SVE–6 disabled on 8/14/20. Well enabled on 10/16/20 for sampling and then immediately disabled.

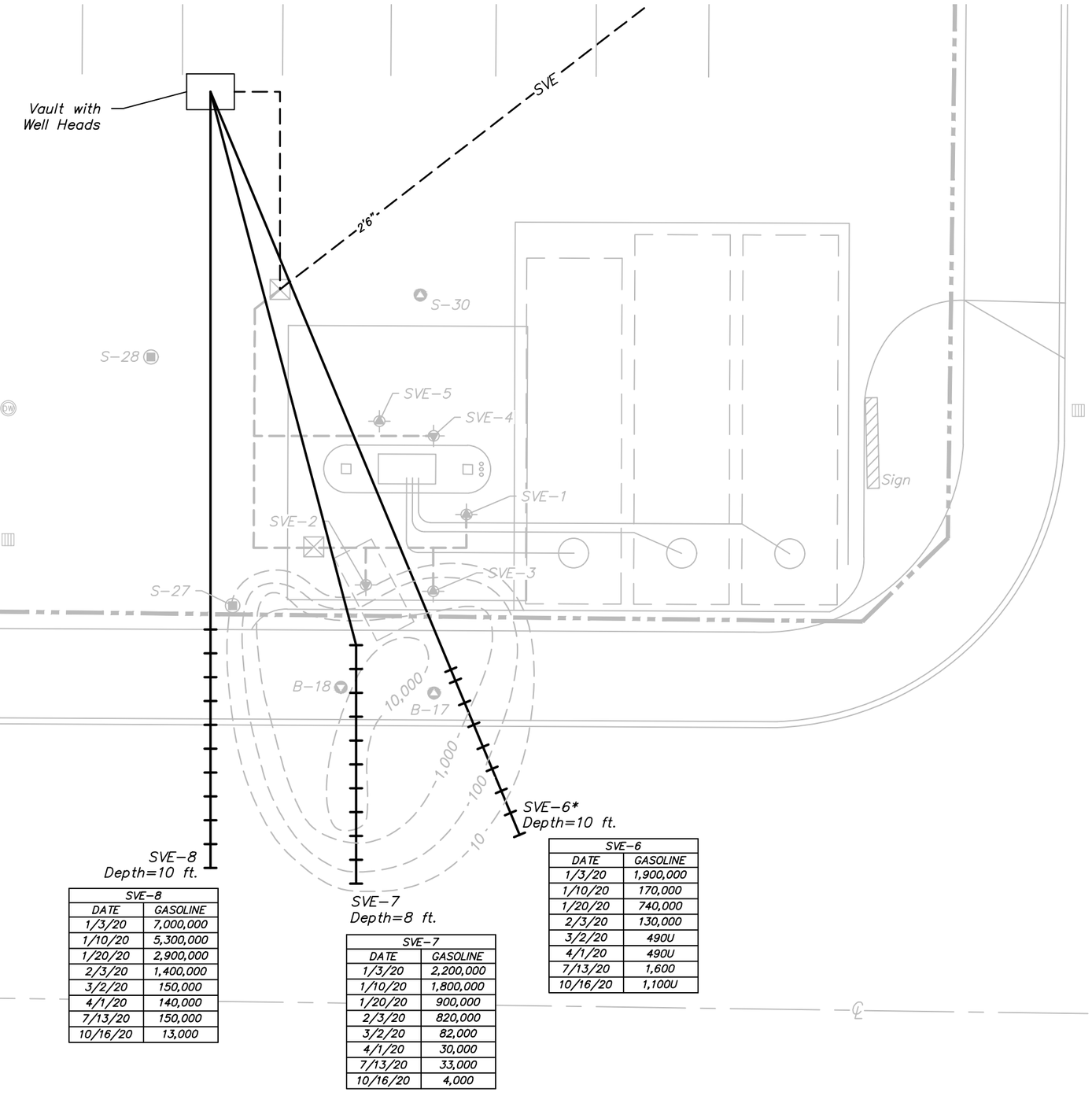
Soil Vapor Analytical Results in ug/m³

SITE FEATURES ARE APPROXIMATE.

APPROXIMATE SCALE IN FEET

0 10 20

N



SVE–8	
DATE	GASOLINE
1/3/20	7,000,000
1/10/20	5,300,000
1/20/20	2,900,000
2/3/20	1,400,000
3/2/20	150,000
4/1/20	140,000
7/13/20	150,000
10/16/20	13,000

SVE–7	
DATE	GASOLINE
1/3/20	2,200,000
1/10/20	1,800,000
1/20/20	900,000
2/3/20	820,000
3/2/20	82,000
4/1/20	30,000
7/13/20	33,000
10/16/20	4,000

SVE–6	
DATE	GASOLINE
1/3/20	1,900,000
1/10/20	170,000
1/20/20	740,000
2/3/20	130,000
3/2/20	490U
4/1/20	490U
7/13/20	1,600
10/16/20	1,100U

PROJECT NO.	1179–04
DATE: 1–5–21	FIGURE NO. 7
FILE: 1179–04	
DRAWN: JJT	
APPROVED: DBP	

GASOLINE VAPOR CONCENTRATIONS
DURING SVE OPERATIONS
(JANUARY – OCTOBER 2020)

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

EES Environmental Consulting, Inc.
240 N. Broadway, Suite 203 • Portland, Oregon 97227
(503) 847–2740 • ees-environmental.com

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-6	01/03/2020	-	20	133	1,431	22
	01/03/2020	-	20	145	1,344	22
	01/03/2020	-	20	-	1,283	18
	01/03/2020	Yes	20	75	1,256	20
	01/06/2020	-	21	-	877	14
	01/10/2020	Yes	21	4.5	859	15
	01/10/2020	-	21	6.8	922	15
	01/17/2020	-	20	75	-	-
	01/17/2020	-	20	120	-	-
	01/20/2020	Yes	19	17	-	-
	01/20/2020	-	19	38	807	16
	02/03/2020	-	18	2.3	802	16
	02/03/2020	Yes	19	3.6	917	17
	02/17/2020	-	20	2.8	943	15
	02/17/2020	-	20	9.2	927	17
	03/02/2020	Yes	20	0.8	921	17
	03/16/2020	-	20	37	610	14
	04/01/2020	Yes	19	0.9	650	15
	04/01/2020	-	20	0.8	800	15
	05/01/2020	-	20	0.7	717	13
	05/19/2020	-	20	1.7	539	12
	05/26/2020	-	20	7.8	760	12
	06/12/2020	-	20	1.8	738	17
	07/13/2020	Yes	20	1.8	702	14
	08/14/2020	-	20	8.0	710	10
	08/14/2020[d]	-	0.10	-	-	-
	08/14/2020[d]	-	0.10	-	-	-
	08/14/2020[d]	-	0.10	-	-	-
	08/18/2020[d]	-	0.10	-	-	-
	09/18/2020[g]	-	0.00	-	-	-
	09/18/2020	-	20	3.1	654	13
	09/18/2020[g]	-	0.14	-	-	-
	10/16/2020[g]	-	0.12	-	-	-
	10/16/2020	Yes	20	9.3	762	14
	10/16/2020[g]	-	0.22	-	-	-
	12/01/2020[g]	-	0.12	-	-	-
	12/28/2020[g]	-	0.12	-	-	-
SVE-7	01/03/2020	-	20	283	1,311	20
	01/03/2020	-	20	245	1,150	18
	01/03/2020	-	20	-	1,152	16
	01/03/2020	Yes	20	166	1,055	17
	01/06/2020	-	21	-	827	14
	01/10/2020	Yes	21	211	836	14
	01/10/2020	-	21	197	841	14
	01/17/2020	-	21	71	-	-

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-7 (cont'd)	01/17/2020	-	21	170	-	-
	01/20/2020	Yes	20	41	-	-
	01/20/2020	-	20	62	792	16
	02/03/2020	-	19	6.6	799	16
	02/03/2020	Yes	20	7.1	841	15
	02/17/2020	-	21	6.1	949	15
	02/17/2020	-	20	13	909	17
	03/02/2020	Yes	20	3.3	851	15
	03/16/2020	-	20	16	679	16
	04/01/2020	Yes	20	1.4	752	17
	04/01/2020	-	20	1.5	862	16
	05/01/2020	-	20	1.4	785	15
	05/19/2020	-	20	3.1	620	14
	05/26/2020	-	20	4.7	807	12
	06/12/2020	-	21	1.6	781	18
	07/13/2020	Yes	21	1.1	776	16
	08/14/2020	-	20	8.8	739	11
	08/14/2020	-	22	10	835	22
	08/14/2020	-	28	14	900	15
	08/14/2020	-	23	-	778	15
	08/18/2020	-	23	12	802	15
	09/18/2020	-	7.0	1.9	193	26
	09/18/2020	-	20	3.2	624	22
	10/16/2020	Yes	24	2.9	816	20
	10/16/2020	-	20	2.5	824	22
	12/01/2020	-	30	1.2	861	23
	12/28/2020	-	31	0.2	920	20
SVE-8	01/03/2020	-	20	928	1,366	21
	01/03/2020	-	20	388	1,378	22
	01/03/2020	-	20	-	1,354	19
	01/03/2020	Yes	20	385	1,270	21
	01/06/2020	-	21	-	825	14
	01/10/2020	Yes	21	372	842	15
	01/10/2020	-	21	360	810	14
	01/17/2020	-	20	65	-	-
	01/17/2020	-	20	284	-	-
	01/20/2020	Yes	20	89	-	-
	01/20/2020	-	20	110	796	16
	02/03/2020	-	19	37	777	16
	02/03/2020	Yes	20	36	848	15
	02/17/2020	-	21	10	928	15
	02/17/2020	-	20	29	915	17
	03/02/2020	Yes	20	12	855	15
	03/16/2020	-	20	15	701	17
	04/01/2020	Yes	20	1.8	653	15
	04/01/2020	-	20	7.8	973	18

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-8 (cont'd)	05/01/2020	-	20	2.8	733	14
	05/19/2020	-	20	8.1	650	14
	05/26/2020	-	20	16	817	12
	06/12/2020	-	21	2.3	803	18
	07/13/2020	Yes	20	1.6	787	16
	08/14/2020	-	20	21	750	11
	08/14/2020	-	22	14	762	20
	08/14/2020	-	27	18	773	13
	08/14/2020	-	22	-	721	13
	08/18/2020	-	22	30	739	13
	09/18/2020	-	6.0	1.6	138	19
	09/18/2020	-	23	5.4	709	25
	10/16/2020	Yes	26	3.1	853	21
	10/16/2020	-	23	3.5	763	20
	12/01/2020	-	29	1.4	906	24
	12/28/2020	-	30	0.3	897	19
AWS Inlet	01/03/2020	-	20	-	1,425	62
	01/03/2020	-	20	118	1,418	62
	01/03/2020	-	20	386	1,237	54
	01/03/2020	Yes	20	-	1,340	58
	01/06/2020	-	21	-	943	42
	01/10/2020	Yes	20	-	991	44
	01/10/2020	-	20	-	974	43
	01/17/2020	-	20	40	758	48
	01/17/2020	-	21	114	703	45
	01/20/2020	Yes	20	86	803	50
	01/20/2020	-	20	95	819	47
	02/03/2020	-	20	30	842	47
	02/03/2020	Yes	22	33	853	47
	02/17/2020	-	21	7.2	1,147	45
	02/17/2020	-	20	25	875	50
	03/02/2020	Yes	20	8.4	859	47
	03/16/2020	-	20	16	635	47
	04/01/2020	Yes	20	1.4	737	47
	04/01/2020	-	20	12	829	49
	05/01/2020	-	20	2.1	715	42
	05/19/2020	-	20	6.4	721	40
	05/26/2020	-	21	10	759	36
	06/12/2020	-	21	2.9	744	52
	07/13/2020	Yes	20	2.9	762	46
	08/14/2020	-	20	23	767	32
	08/14/2020	-	22	18	765	43
	08/14/2020	-	27	19	715	28
	08/14/2020	-	23	-	753	28
	08/18/2020	-	22	32	774	28
	09/18/2020	-	4.8	5.5	145	45

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 Inltet (cont'd)	09/18/2020	-	24	6.5	795	46
	10/16/2020	Yes	26	1.5	809	41
	10/16/2020	-	26	4.6	786	41
	12/01/2020	-	30	1.3	1,097	47
	12/28/2020	-	30	0.1	950	39
AWS Outlet	01/03/2020	-	22	-	-	-
	01/03/2020	-	22	-	-	-
	01/03/2020	-	22	-	-	-
	01/03/2020	-	22	-	-	-
	01/06/2020	-	23	-	-	-
	01/10/2020	-	23	-	-	-
	01/10/2020	-	23	-	-	-
	01/17/2020	-	21	-	-	-
	01/17/2020	-	19	-	-	-
	01/20/2020	-	22	-	-	-
	01/20/2020	-	22	-	-	-
	02/03/2020	-	23	-	-	-
	02/03/2020	-	25	-	-	-
	02/17/2020	-	25	-	-	-
	02/17/2020	-	23	-	-	-
	03/02/2020	-	23	-	-	-
	03/16/2020	-	24	-	-	-
	04/01/2020	-	25	-	-	-
	04/01/2020	-	26	-	-	-
	05/01/2020	-	23	-	-	-
	05/19/2020	-	23	-	-	-
	05/26/2020	-	23	-	-	-
	06/12/2020	-	25	-	-	-
	07/13/2020	-	25	-	-	-
	08/14/2020	-	25	-	-	-
	08/14/2020	-	26	-	-	-
	08/14/2020	-	33	-	-	-
	08/14/2020	-	27	-	-	-
	08/18/2020	-	27	-	-	-
	09/18/2020	-	64	-	-	-
	09/18/2020	-	-	-	-	-
	09/18/2020	-	26	-	-	-
	10/16/2020	-	29	-	-	-
	10/16/2020	-	-	-	-	-
	10/16/2020	-	28	-	-	-
	12/01/2020	-	34	-	-	-
	12/28/2020	-	32	-	-	-
Stack[c]	01/03/2020	-	0.15	77	-	-
	01/03/2020	-	0.14	71	2,153	166
	01/03/2020	-	0.08	64	2,305	177

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]
Stack[c] (cont'd)	01/03/2020	-	0.06	61	2,285	174
	01/06/2020	-	0.15	44	2,404	187
	01/10/2020	-	0.14	31	2,267	178
	01/10/2020	-	0.13	34	2,306	180
	01/17/2020	-	0.12	14	2,337	187
	01/17/2020	-	0.14	10	2,489	200
	01/20/2020	-	0.14	55	2,262	175
	01/20/2020	-	0.14	53	2,096	161
	02/03/2020	-	0.16	30	2,235	175
	02/03/2020	-	0.16	30	2,186	171
	02/17/2020	-	0.16	6.4	2,091	161
	02/17/2020	-	0.10	13	2,159	167
	03/02/2020	-	0.12	6.4	2,217	174
	03/16/2020	-	0.10	9.7	2,052	157
	04/01/2020	-	0.09	1.3	2,234	174
	04/01/2020	-	0.10	8.5	2,121	164
	05/01/2020	-	0.06	1.3	1,922	147
	05/19/2020	-	0.08	12	1,889	140
	05/26/2020	-	0.10	7.3	1,890	138
	06/12/2020	-	0.08	2.0	1,826	140
	07/13/2020	-	0.10	2.0	1,816	132
	08/14/2020	-	0.05	10	1,977	142
	08/14/2020	-	0.05	13	1,870	134
	08/14/2020	-	0.05	16	1,778	127
	08/14/2020	-	0.05	-	-	-
	08/18/2020	-	0.06	16	1,878	137
	09/18/2020	-	0.04	7	840	65
	09/18/2020	-	-	-	-	-
	09/18/2020	-	0.06	4	1,789	134
	10/16/2020	-	0.05	1	1,902	146
	10/16/2020	-	-	-	-	-
	10/16/2020	-	0.06	2	1,817	135
	12/01/2020	-	0.05	1	1,906	150
	12/28/2020	-	0.04	0	1,877	145

Notes:
[a] Measured at SVE system manifold.
[b] Air flow calculated at individual well laterals (SVE-6 through -8), and measured at AWS Inlet (system total) using a 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 stack (inches H_2O).
[d] SVE-6 disabled.
AWS = air/water separator
scfm = standard cubic feet per minute
fpm = feet per minute
ppmv = parts per million vapor
- = Not measured
cont'd = continued

TABLE 2
Biodegradation Parameter and Zone of Influence Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Time	Vacuum (inches H_2O)[a]	Flow Observed (Yes/No)[c]	PID (ppmv)[a]	O_2 (%)[a]	CO_2 (%)[a]	CH_4 (%)[a]
Active SVE Wells								
SVE-6	*1/2/2020*	*10:30*	*0.45*	-	*1,166*	*19.3*	*0.0*	*0.6*
	1/3/2020	12:00	-	-	133[b]	20.7[b]	0.1[b]	0.0[b]
	1/3/2020	12:25	5.9	-	-	-	-	-
	1/3/2020	14:00	7.0	-	-	-	-	-
	2/3/2020	14:30	-	-	2.9[b]	20.7[b]	0.1[b]	0.1[b]
	3/2/2020	12:30	-	-	0.8[b]	20.8[b]	0.0[b]	0.0[b]
	4/1/2020	14:00	-	-	0.8[b]	20.8[b]	0.0[b]	0.0[b]
	7/13/2020	14:00	-	-	1.8[b]	20.8[b]	0.0[b]	0.0[b]
	8/14/2020[c]	13:50	0.10	Yes	-	-	-	-
	10/16/2020[c]	10:30	0.14	Yes	3.2[b]	20.9[b]	0.0[b]	0.0[b]
SVE-7	*1/2/2020*	*10:30*	*0.00*	-	*1,951*	*20.4*	*0.0*	*1.1*
	1/3/2020	12:00	-	-	283[b]	20.3[b]	0.5[b]	0.0[b]
	1/3/2020	12:25	20	-	-	-	-	-
	1/3/2020	14:00	20	-	-	-	-	-
	2/3/2020	14:30	-	-	7.4[b]	19.6[b]	1.4[b]	0.3[b]
	3/2/2020	12:30	-	-	3.3[b]	19.9[b]	1.0[b]	0.0[b]
	4/1/2020	14:00	-	-	1.5[b]	19.4[b]	1.3[b]	0.0[b]
	7/13/2020	14:00	-	-	1.1[b]	19.5[b]	1.5[b]	0.0[b]
	10/16/2020	10:30	-	-	2.9[b]	19.8[b]	1.3[b]	0.0[b]
SVE-8	*1/2/2020*	*10:30*	*0.00*	-	*10,899*	*19.9*	*0.0*	*4.9*
	1/3/2020	12:00	-	-	928[b]	19.2[b]	0.9[b]	0.0[b]
	1/3/2020	12:25	20	-	-	-	-	-
	1/3/2020	14:00	20	-	-	-	-	-
	2/3/2020	14:30	-	-	36[b]	19.8[b]	1.1[b]	0.4[b]
	3/2/2020	12:30	-	-	12[b]	19.2[b]	1.6[b]	0.1[b]
	4/1/2020	14:00	-	-	7.8[b]	19.0[b]	1.6[b]	0.0[b]
	7/13/2020	14:00	-	-	1.6[b]	18.7[b]	2.3[b]	0.0[b]
	10/16/2020	10:30	-	-	3.1[b]	18.9[b]	2.1[b]	0.0[b]
Inactive SVE Wells								
SVE-1	*1/2/2020*	*10:30*	*0.00*	-	*127*	*14.6*	*6.0*	*0.0*
	1/3/2020	12:25	0.16	-	-	-	-	-
	1/3/2020	14:00	0.17	-	4.8	15.5	4.6	0.1
	1/3/2020	16:00	0.17	-	-	14.0	6.3	0.0
	1/10/2020	13:00	0.14	-	-	-	-	-
	1/20/2020	14:30	0.06	-	-	-	-	-
	2/3/2020	14:30	0.14	Yes	1.2	21.1	0.5	0.0
	3/2/2020	12:30	0.18	-	6.4	20.5	0.6	0.0
	4/1/2020	14:00	0.12	-	2.6	20.9	0.0	0.0
	7/13/2020	14:00	0.12	-	2.0	20.9	0.0	0.0
	8/14/2020	13:50	0.02	No	-	-	-	-
	10/16/2020	10:30	0.08	No	1.5	20.6	0.5	0.0
SVE-2	*1/2/2020*	*10:30*	*0.00*	-	*184*	*20.4*	*0.6*	*0.0*
	1/3/2020	12:25	0.06	-	-	-	-	-
	1/3/2020	14:00	0.17	-	4.4	18.1	2.1	0.0
	1/3/2020	16:00	-	-	-	18.1	2.2	0.0

TABLE 2
Biodegradation Parameter and Zone of Influence Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Time	Vacuum (inches H_2O)[a]	Flow Observed (Yes/No)[c]	PID (ppmv)[a]	O_2 (%)[a]	CO_2 (%)[a]	CH_4 (%)[a]
SVE-2 (cont'd)	1/10/2020	13:00	0.10	-	-	-	-	-
	1/20/2020	14:30	0.18	-	-	-	-	-
	2/3/2020	14:30	0.12	Yes	2.2	20.9	0.1	0.0
	3/2/2020	12:30	0.12	-	4.8	18.6	2.1	0.0
	4/1/2020	14:00	0.08	-	2.1	18.6	1.9	0.0
	7/13/2020	14:00	0.12	-	1.7	18.9	2.3	0.0
	8/14/2020	13:50	0.04	No	-	-	-	-
	10/16/2020	10:30	0.02	No	1.0	18.0	3.1	0.0
SVE-3	*1/2/2020*	*10:30*	*0.00*	-	*153*	*16.6*	*4.2*	*0.0*
	1/3/2020	12:25	0.15	-	-	-	-	-
	1/3/2020	14:00	0.16	-	4.4	17.7	3.4	0.0
	1/3/2020	16:00	-	-	-	18.3	3.2	0.0
	1/10/2020	13:00	0.08	-	-	-	-	-
	1/20/2020	14:30	0.10	-	-	-	-	-
	2/3/2020	14:30	0.12	Yes	2.0	20.6	0.9	0.0
	3/2/2020	12:30	0.14	-	6.7	20.1	0.9	0.0
	4/1/2020	14:00	0.14	-	2.0	20.3	0.6	0.0
	7/13/2020	14:00	0.10	-	1.6	20.5	0.6	0.0
	8/14/2020	13:50	0.08	No	-	-	-	-
	10/16/2020	10:30	0.04	No	1.2	20.6	0.6	0.0
SVE-4	*1/2/2020*	*10:30*	*0.00*	-	*52*	*19.2*	*1.5*	*0.0*
	1/3/2020	12:25	0.02	-	-	-	-	-
	1/3/2020	14:00	0.00	-	2.9	18.1	1.9	0.0
	1/10/2020	13:00	0.12	-	-	-	-	-
	1/20/2020	14:30	0.12	-	-	-	-	-
	2/3/2020	14:30	0.08	No	1.5	20.6	0.3	0.0
	3/2/2020	12:30	0.06	-	5.8	19.0	1.5	0.0
	4/1/2020	14:00	0.08	-	1.6	19.0	0.4	0.0
	7/13/2020	14:00	0.06	-	2.1	19.9	0.9	0.0
SVE-5	*1/2/2020*	*10:30*	*0.02*	-	*33*	*20.8*	*0.2*	*0.0*
	1/3/2020	12:25	0.10	-	-	-	-	-
	1/3/2020	14:00	0.06	-	2.8	20.1	0.3	0.0
	1/10/2020	13:00	0.02	-	-	-	-	-
	1/20/2020	14:30	0.22	-	-	-	-	-
	2/3/2020	14:30	0+	No	1.4	17.8	1.8	0.0
	3/2/2020	12:30	0.04	-	4.4	18.2	1.2	0.0
	4/1/2020	14:00	0.10	-	1.8	17.9	0.7	0.0
	7/13/2020	14:00	0.10	-	3.0	20.4	0.4	0.0
Vapor Monitoring Wells								
B-17	*1/2/2020*	*10:30*	*0.00*	-	*27.5*	*8.9*	*9.1*	*0.0*
	1/3/2020	12:25	1.20	-	-	-	-	-
	1/3/2020	14:00	1.10	-	3.0	19.4	2.8	0.0
	1/3/2020	16:00	-	-	-	20.9	0.5	0.0
	1/10/2020	13:00	0.88	-	-	-	-	-
	1/20/2020	14:30	0.60	-	-	-	-	-
	2/3/2020	14:30	0.94	Yes	3.7	20.1	1.3	0.0
	3/2/2020	12:30	1.3	-	3.6	20.4	0.7	0.0
	4/1/2020	14:00	1.1	-	1.8	20.2	0.8	0.0

TABLE 2
Biodegradation Parameter and Zone of Influence Data
Plaid Pantry No. 112
Vancouver, Washington

Well ID	Date	Time	Vacuum (inches H_2O)[a]	Flow Observed (Yes/No)[c]	PID (ppmv)[a]	O_2 (%)[a]	CO_2 (%)[a]	CH_4 (%)[a]
B-17 (cont'd)	7/13/2020	14:00	1.2	-	2.3	20.8	1.3	0.0
	8/14/2020	13:50	1.6	Yes	-	-	-	-
	10/16/2020	10:30	1.0	Yes	1.0	20.4	0.8	0.0
B-18	*1/2/2020*	*10:30*	*0.00*	-	*31*	*18.5*	*1.9*	*0.0*
	1/3/2020	12:25	0.04	-	-	-	-	-
	1/3/2020	14:00	0.06	-	3.3	19.2	1.2	0.0
	1/3/2020	16:00	-	-	-	18.1	2.3	0.0
	1/10/2020	13:00	0.24	-	-	-	-	-
	1/20/2020	14:30	0.10	-	-	-	-	-
	2/3/2020	14:30	0.74	Yes	2.2	18.0	2.6	0.0
	3/2/2020	12:30	0.58	-	2.7	18.8	1.9	0.0
	4/1/2020	14:00	1.2	-	2.0	18.4	2.0	0.0
	7/13/2020	14:00	2.0	-	2.7	17.8	2.3	0.0
	8/14/2020	13:50	0.10	No	-	-	-	-
	10/16/2020	10:30	0.06	No	1.2	17.7	3.1	0.0
S-27	*1/2/2020*	*10:30*	*0.00*	-	*42*	*19.7*	*0.8*	*0.0*
	1/3/2020	12:25	0.13	-	-	-	-	-
	1/3/2020	14:00	0.12	-	3.4	20.3	0.9	0.0
	1/10/2020	13:00	0.04	-	-	-	-	-
	1/20/2020	14:30	0.04	-	-	-	-	-
	2/3/2020	14:30	0.04	No	1.9	20.8	0.4	0.0
	3/2/2020	12:30	0.00	-	3.9	20.7	0.4	0.0
	4/1/2020	14:00	0.00	-	2.9	19.6	0.6	0.0
	7/13/2020	14:00	0.00	-	3.1	19.8	0.9	0.0
S-28	*1/2/2020*	*10:30*	*0.11*	-	*53*	*17.7*	*0.6*	*0.0*
	1/3/2020	12:25	0+	-	-	-	-	-
	1/3/2020	14:00	0+	-	3.2	17.6	0.7	0.0
	1/10/2020	13:00	0+	-	-	-	-	-
	1/20/2020	14:30	0+	-	-	-	-	-
	2/3/2020	14:30	0+	-	-	-	-	-
S-30	1/10/2020	13:00	0.12	-	-	-	-	-
	1/17/2020	11:00	0.12	-	-	-	-	-
	1/20/2020	14:30	0.06	-	-	-	-	-
	2/3/2020	14:30	0.46	-	-	-	-	-
	3/2/2020	11:00	0.96	-	-	-	-	-
	4/1/2020	14:00	1.3	-	-	-	-	-
	7/13/2020	14:00	1.0	-	-	-	-	-

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.

[d] SVE-6 disabled.

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]			4,700/14,000	11/32	76,000/230,000	15,000/46,000	1,500/4,600[2]	1,500/4,600[2]	0.14/0.42	3.2/9.6	320/960	2.5/7.4	320/960	11/33	76,000/230,000	14/42	76,000/230,000
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*	-	-	-	-	-
	07/06/2018	5-10	1,000	4.0 U	7.0	5.4 U	14	5.4 U	-	-	-	*13 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]			4,700/14,000	11/32	76,000/230,000	15,000/46,000	1,500/4,600[2]	1,500/4,600[2]	0.14/0.42	3.2/9.6	320/960	2.5/7.4	320/960	11/33	76,000/230,000	14/42	76,000/230,000
SVE-1 (cont'd)	10/04/2018	5-10	1,400	4.0 U	19	5.4 U	11	5.4 U	-	-	-	*13 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
	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*	-	-	-	-	-
	07/06/2018	15-20	510 U	4.0 U	4.7 U	5.4 U	5.6	5.4 U	-	-	-	*13 U*	-	-	-	-	-
	10/04/2018	15-20	510 U	4.0 U	17	5.4 U	11	5.4 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*	-	-	-	-	-

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]			4,700/14,000	11/32	76,000/230,000	15,000/46,000	1,500/4,600[2]	1,500/4,600[2]	0.14/0.42	3.2/9.6	320/960	2.5/7.4	320/960	11/33	76,000/230,000	14/42	76,000/230,000
SVE-3 (cont'd)	07/06/2018	5-10	570	4.0 U	5.9	5.5 U	11	5.5 U	-	-	-	*13 U*	-	-	-	-	-
	10/04/2018	5-10	530	3.8 U	14	5.1 U	11	5.1 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
	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*	-	-	-	-	-
	07/06/2018	15-20	610	4.0 U	7.8	5.5 U	12	5.5 U	-	-	-	*13 U*	-	-	-	-	-
	10/04/2018	15-20	500 U	3.9 U	12	5.3 U	8.0	5.3 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*	-	-	-	-	-

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]			4,700/14,000	11/32	76,000/230,000	15,000/46,000	1,500/4,600[2]	1,500/4,600[2]	0.14/0.42	3.2/9.6	320/960	2.5/7.4	320/960	11/33	76,000/230,000	14/42	76,000/230,000
SVE-5 (cont'd)	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*	-	-	-	-	-
	07/06/2018	5-10	520 U	4.0 U	4.8 U	5.5 U	5.5 U	5.5 U	-	-	-	*13 U*	-	-	-	-	-
	10/04/2018	5-10	540 U	4.2 U	5.0 U	5.7 U	5.7 U	5.7 U	-	-	-	*14 U*	-	-	-	-	-
SVE-6	01/03/2020	10	**1,900,000**	*100 U*	120 U	140 U	140 U	140 U	-	-	-	*680 U*	-	-	-	-	-
	01/10/2020	10	**170,000**	*39 U*	46 U	52 U	52 U	52 U	-	-	-	*250 U*	-	-	-	-	-
	01/20/2020	10	**740,000**	*67 U*	79 U	91 U	91 U	91 U	-	-	-	*220 U*	-	-	-	-	-
	02/03/2020	10	**130,000**	*52 U*	62 U	71 U	71 U	71 U	-	-	-	*170 U*	-	-	-	-	-
	03/02/2020	10	490 U	3.8 U	4.5 U	5.2 U	5.2 U	5.2 U	-	-	-	*13 U*	-	-	-	-	-
	04/01/2020	10	490 U	3.8 U	4.5 U	5.2 U	5.2 U	5.2 U	-	-	-	*13 U*	-	-	-	-	-
	07/13/2020	10	1,600	4.1 U	14	18	66	34	-	-	-	*14 U*	-	-	-	-	-
	10/16/2020	10	1,100 U	8.4 U	9.9 U	11 U	11 U	11 U	-	-	-	*28 U*	-	-	-	-	-
SVE-7	01/03/2020	8	**2,200,000**	*140 U*	160 U	190 U	190 U	190 U	-	-	-	*900 U*	-	-	-	-	-
	01/10/2020	8	**1,800,000**	*36 U*	43 U	50 U	50 U	50 U	-	-	-	*240 U*	-	-	-	-	-
	01/20/2020	8	**900,000**	9.9 U	12 U	13 U	13 U	13 U	-	-	-	*32 U*	-	-	-	-	-
	02/03/2020	8	**820,000**	*53 U*	63 U	72 U	72 U	72 U	-	-	-	*180 U*	-	-	-	-	-
	03/02/2020	8	**82,000**	*78 U*	92 U	100 U	100 U	100 U	-	-	-	*260 U*	-	-	-	-	-
	04/01/2020	8	**30,000**	3.9 U	4.6 U	5.2 U	5.2 U	5.2 U	-	-	-	*13 U*	-	-	-	-	-
	07/13/2020	8	**33,000**	4.1 U	14	25	100	52	-	-	-	*14 U*	-	-	-	-	-
	10/16/2020	8	4,000	4.3 U	6.0	5.8 U	5.8 U	5.8 U	-	-	-	*14 U*	-	-	-	-	-
SVE-8	01/03/2020	10	**7,000,000**	*130 U*	160 U	180 U	180 U	180 U	-	-	-	*880 U*	-	-	-	-	-
	01/10/2020	10	**5,300,000**	*39 U*	46 U	54 U	54 U	54 U	-	-	-	*260 U*	-	-	-	-	-
	01/20/2020	10	**2,900,000**	*27 U*	32 U	36 U	36 U	36 U	-	-	-	*88 U*	-	-	-	-	-
	02/03/2020	10	**1,400,000**	*52 U*	61 U	70 U	70 U	70 U	-	-	-	*170 U*	-	-	-	-	-
	03/02/2020	10	**150,000**	*78 U*	92 U	100 U	100 U	100 U	-	-	-	*260 U*	-	-	-	-	-
	04/01/2020	10	**140,000**	7.7 U	9.1 U	10 U	10 U	10 U	-	-	-	*25 U*	-	-	-	-	-
	07/13/2020	10	**150,000**	4.0 U	16	27	100	56	-	-	-	*13 U*	-	-	-	-	-
	10/16/2020	10	**13,000**	3.9 U	5.6	5.3 U	5.3 U	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
	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
	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**	-	-	-	-
	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*	-	-	-	-	-

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]			4,700/14,000	11/32	76,000/230,000	15,000/46,000	1,500/4,600[2]	1,500/4,600[2]	0.14/0.42	3.2/9.6	320/960	2.5/7.4	320/960	11/33	76,000/230,000	14/42	76,000/230,000
SVE Blower Inlet	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
(cont'd)	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
	07/06/2018	NA	520 U	4.0 U	5.2	5.5 U	8.0	5.5 U	*9.8 U*	*5.1 U*	18 U	*13 U*	**720**	6.8 U	56	8.0 U	6.9 U
	10/04/2018	NA	520 U	4.0 U	5.2	5.5 U	5.5 U	5.5 U	*9.7 U*	*5.1 U*	18 U	*13 U*	**580**	6.8 U	17	8.0 U	6.9 U
	01/03/2020	NA	**2,800,000**	*200 U*	240 U	270 U	270 U	270 U	*480 U*	*250 U*	230 U	*1,300 U*	*430 U*	*340 U*	6,600	*400 U*	340 U
	01/10/2020	NA	**1,300,000**	*38 U*	45 U	52 U	52 U	52 U	*91 U*	*48 U*	43 U	*250 U*	81 U	*64 U*	400	*75 U*	65 U
	01/20/2020	NA	**130,000**	3.7 U	4.4 U	5.0 U	5.0 U	5.0 U	*9.0 U*	*4.7 U*	17 U	*12 U*	33	6.3 U	170	7.3 U	6.4 U
	02/03/2020	NA	**13,000**	4.0 U	4.7 U	5.4 U	5.4 U	5.4 U	*9.5 U*	*5.0 U*	18 U	*13 U*	8.4 U	6.7 U	15 U	7.8 U	6.8 U
	03/02/2020	NA	**13,000**	7.6 U	9.0 U	10 U	10 U	10 U	*18 U*	*9.7 U*	34 U	*25 U*	16 U	*13 U*	28 U	*15 U*	13 U
	04/01/2020	NA	**18,000**	3.8 U	4.4 U	5.1 U	5.1 U	5.1 U	*9.1 U*	*4.8 U*	17 U	*12 U*	8.0 U	6.3 U	14 U	7.4 U	6.4 U
	07/13/2020	NA	**20,000**	4.0 U	5.7	10	36	20	*9.7 U*	*5.1 U*	18 U	*13 U*	8.5 U	6.8 U	19	7.9 U	6.9 U
	10/16/2020	NA	**13,000**	4.0 U	4.7 U	5.4 U	5.4 U	5.4 U	*9.5 U*	*5.0 U*	18 U	*13 U*	16	6.7 U	100	7.8 U	6.8 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 2020).

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 total xylenes.

[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 4A
Soil Vapor Extraction Mass Removal in Right-of-Way
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 & Discharge Emissions (Pounds)		
			Gasoline	Benzene	PCE	Gasoline	Benzene	PCE	Gasoline	Benzene	PCE
01/03/2020	0.4	58	2,800	0.20 U	0.43 U	15	0.0010	0.0023	6.0	0.00043	0.00092
01/10/2020	7	44	1,300	0.038 U	0.081 U	9.4	0.00055	0.0012	70	0.0042	0.0089
01/20/2020	17	50	130	0.0037 U	0.033	3.0	0.000088	0.00024	101	0.0050	0.011
02/03/2020	31	47	13	0.0040 U	0.0084 U	0.31	0.000017	0.000091	105	0.0053	0.013
03/02/2020	59	47	13	0.0076 U	0.016 U	0.055	0.000025	0.000052	107	0.0060	0.014
04/01/2020	80	47	18	0.0038 U	0.0080 U	0.066	0.000024	0.000051	108	0.0065	0.015
07/13/2020	183	46	20	0.0040 U	0.0085 U	0.080	0.000016	0.000035	116	0.0082	0.019
10/16/2020	278	41	13	0.0040 U	0.016	0.065	0.000016	0.000048	122	0.0097	0.023
01/01/2021	*355*	-	-	-	-	*0.045*	*0.000012*	*0.000033*	*126*	*0.011*	*0.026*
04/01/2021	*445*	-	-	-	-	*0.034*	*0.0000070*	*0.000027*	*129*	*0.011*	*0.028*
07/01/2021	*536*	-	-	-	-	*0.026*	*0.0000050*	*0.0000224*	*131*	*0.012*	*0.030*
								Estimated Emissions During Last 12 Months (Pounds/Year):	122	0.0097	0.023
								Annual Emissions Threshold (Pounds/Year):	NE[b]	20[c]	500[c]

Notes:

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

[b] No emission threshold eshablished for gasoline. Registration exemption threshold for the sum of total criteria pollutants and VOCs is 2,000 pounds per year, per SWCAA Chapter 400-109, Air Discharge Permits - Exempt Emission Thresholds, dated 03/21/2020.

[c] Small Quantity Emissions Rate (SQER), per SWCAA 400, General Regulations for Air Pollution Sources, dated 03/21/2020.

ft^3/min = cubic feet per minute

mg/m^3 = milligrams per cubic meter

NE = not established

Sample Calculations:

Estimated Gasoline Mass Removal Rate on 01/10/2020:

$$\left(\frac{58\ \frac{ft^3}{min}+44\frac{ft^3}{min}}{2}\right)\times\left(\frac{2{,}800\frac{mg}{m^3}+1{,}300\frac{mg}{m^3}}{2}\right)\times\frac{1\ m^3}{35.3146667\ ft^3}\times\frac{1\ pound}{453592.37\ mg}\times\frac{1440\ min}{day}=9.4\ \frac{pounds}{day}$$

Estimated Cumulative Gasoline Emissions on 01/10/2020:

$$(7\ days\ -0.4\ day)\times\left(\frac{58\ \frac{ft^3}{min}+44\ \frac{ft^3}{min}}{2}\right)\times\left(\frac{2{,}800\frac{mg}{m^3}+1{,}300\frac{mg}{m^3}}{2}\right)\times\frac{1\ m^3}{35.3146667\ ft^3}\times\frac{1\ pound}{453592.37\ mg}\times\frac{1440\ min}{day}+6.0\ pounds=70\ pounds$$

TABLE 4B
Site Total 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
05/08/2014	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	1,052	89	34	0.60	0.15	0.010	168	6.4	123	5.8
03/21/2017	1,102	89	0.52	-	0.14	0.0053	175	6.7	130	6.1
04/13/2017	1,125	97	3.6	0.69	0.017	0.0054	175	6.8	131	6.2
07/06/2017	1,209	116	16	1.1	0.094	0.0085	183	7.5	138	6.9
10/28/2017	1,323	110	3.6	0.98	0.099	0.011	195	8.7	150	8.1
02/13/2018	1,403	93	4.9	0.073	0.039	0.0048	198	9.1	153	8.5
04/27/2018	1,468	105	2.6	0.40	0.033	0.0021	200	9.3	155	8.6
07/06/2018	1,538	104	0.52 U	0.72	0.015	0.0053	201	9.6	156	9.0
10/04/2018	1,592	109	0.52 U	0.58	0.0050	0.0062	201	10	156	9.3
01/03/2020	1,592	58	2,800	0.43 U	15	0.0023	207	10	162	9.3
01/10/2020	1,599	44	1,300	0.081 U	9.4	0.0012	271	10	227	9.3
01/20/2020	1,609	50	130	0.033 U	3.0	0.00024	302	10	257	9.3
02/03/2020	1,623	47	13	0.0084 U	0.31	0.000091	306	10	261	9.3
03/02/2020	1,651	47	13	0.016 U	0.055	0.000052	308	10	263	9.3
04/01/2020	1,672	47	18	0.0080 U	0.066	0.000051	309	10	264	9.3
07/13/2020	1,775	46	20	0.0085 U	0.080	0.000035	317	10	273	9.3
10/16/2020	1,870	41	13	0.016	0.065	0.000048	324	10	279	9.3
01/01/2021	*1,947*	-	-	-	*0.045*	*0.000033*	*327*	*10*	*282*	*9.3*

TABLE 4B

Site Total 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
04/01/2021	*2,037*	-	-	-	*0.034*	*0.000027*	*330*	*10*	*285*	*9.4*
07/01/2021	*2,128*	-	-	-	*0.026*	*0.000022*	*332*	*10*	*287*	*9.4*
								Estimated Emissions During Last 12 Months (Pounds/Year):	122	0.023
								Annual Emissions Threshold (Pounds/Year):	NE[c]	500[d]

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] No emission threshold eshablished for gasoline. Registration exemption threshold for the sum of total criteria pollutants and VOCs is 2,000 pounds per year, per SWCAA Chapter 400-109, Air Discharge Permits - Exempt Emission Thresholds, dated 03/21/2020.

[d] Small Quantity Emissions Rate (SQER), per SWCAA 400, General Regulations for Air Pollution Sources, dated 03/21/2020.

[e] Estimated mass based upon historic data trends.

ft^3/min = Cubic feet per minute

mg/m^3 = Milligrams per cubic meter

NE = not established

- = Not measured

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

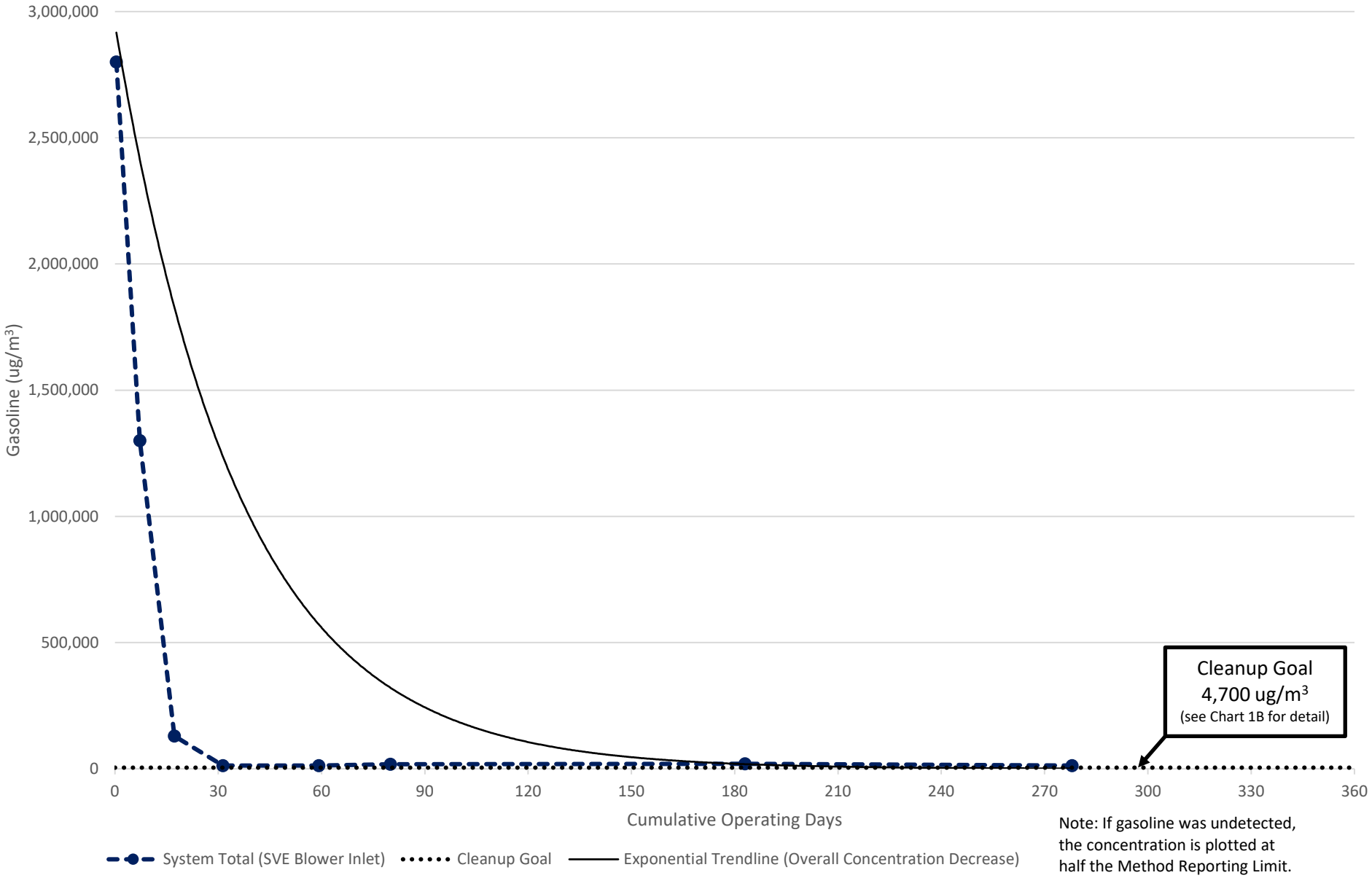
Charts

CHART 1A

System Total Gasoline Vapor Concentrations During SVE Operations in Right-of-Way (Linear Scale)

Plaid Pantry No. 112

Vancouver, Washington



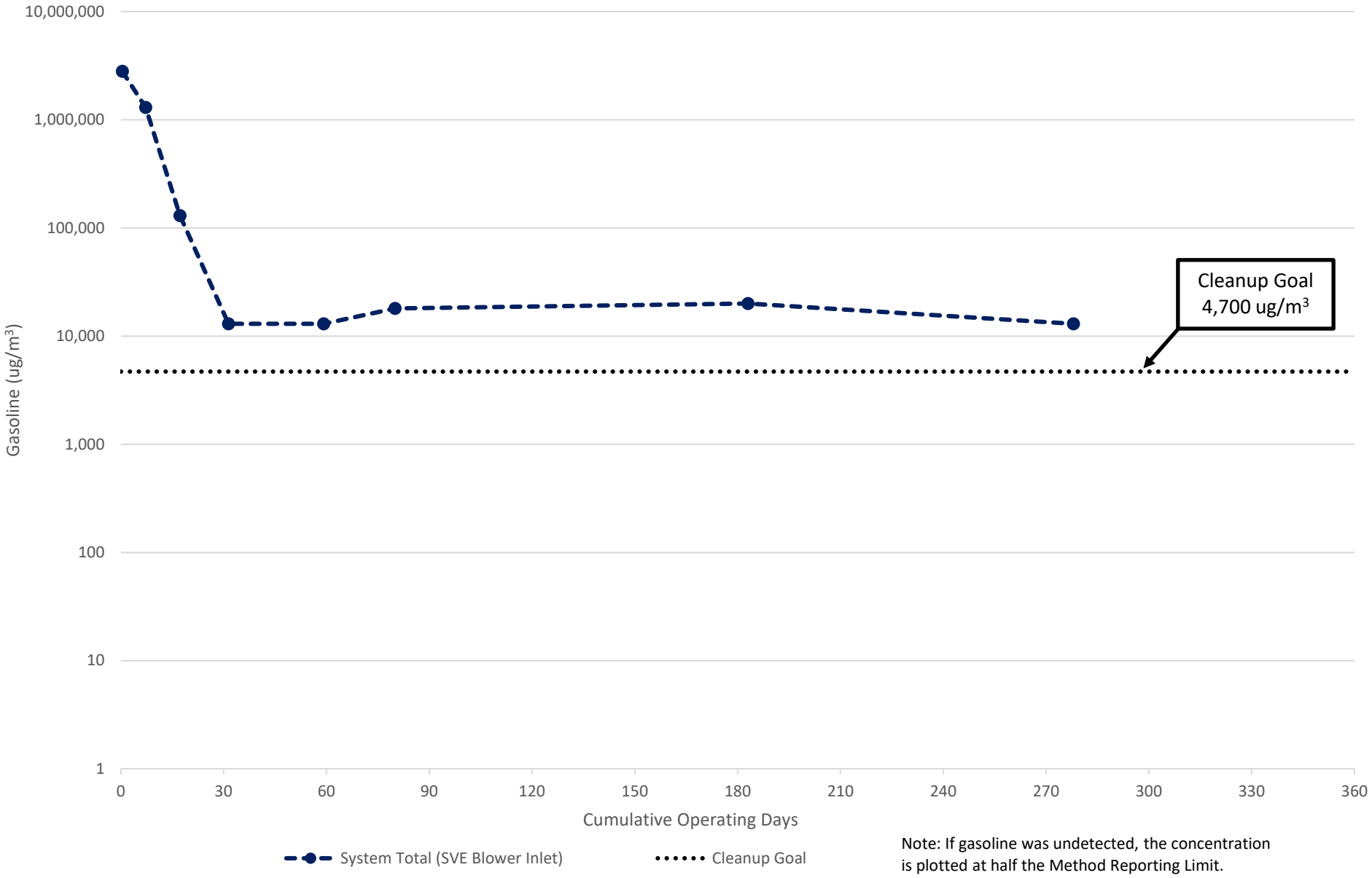
Note: If gasoline was undetected, the concentration is plotted at half the Method Reporting Limit.

CHART 1B

System Total Gasoline Vapor Concentrations During SVE Operations in Right-of-Way (Log Scale)

Plaid Pantry No. 112

Vancouver, Washington



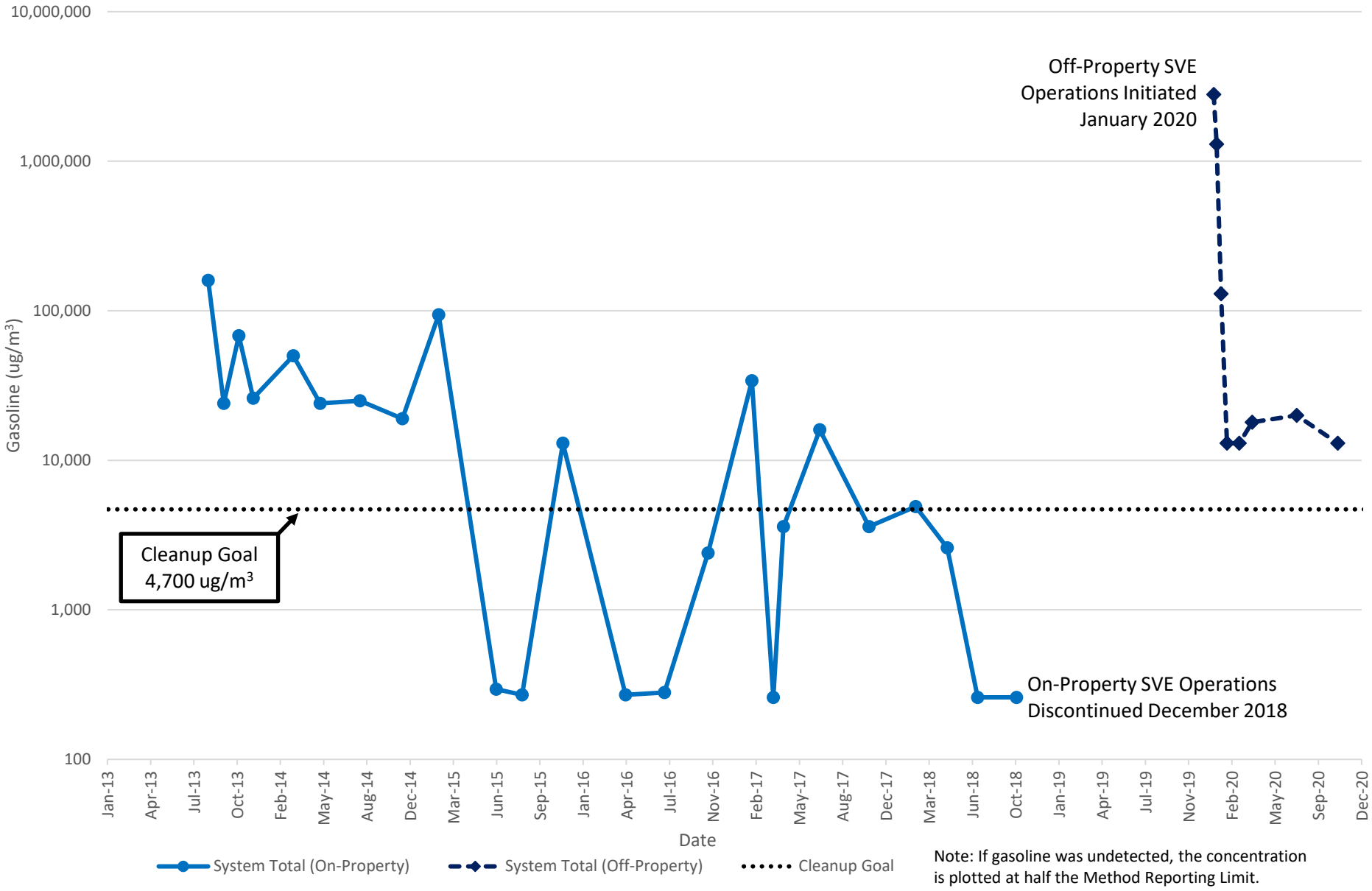
Note: If gasoline was undetected, the concentration is plotted at half the Method Reporting Limit.

CHART 1C

System Total Gasoline Vapor Concentrations During SVE Operations (Sitewide - Log Scale)

Plaid Pantry No. 112

Vancouver, Washington



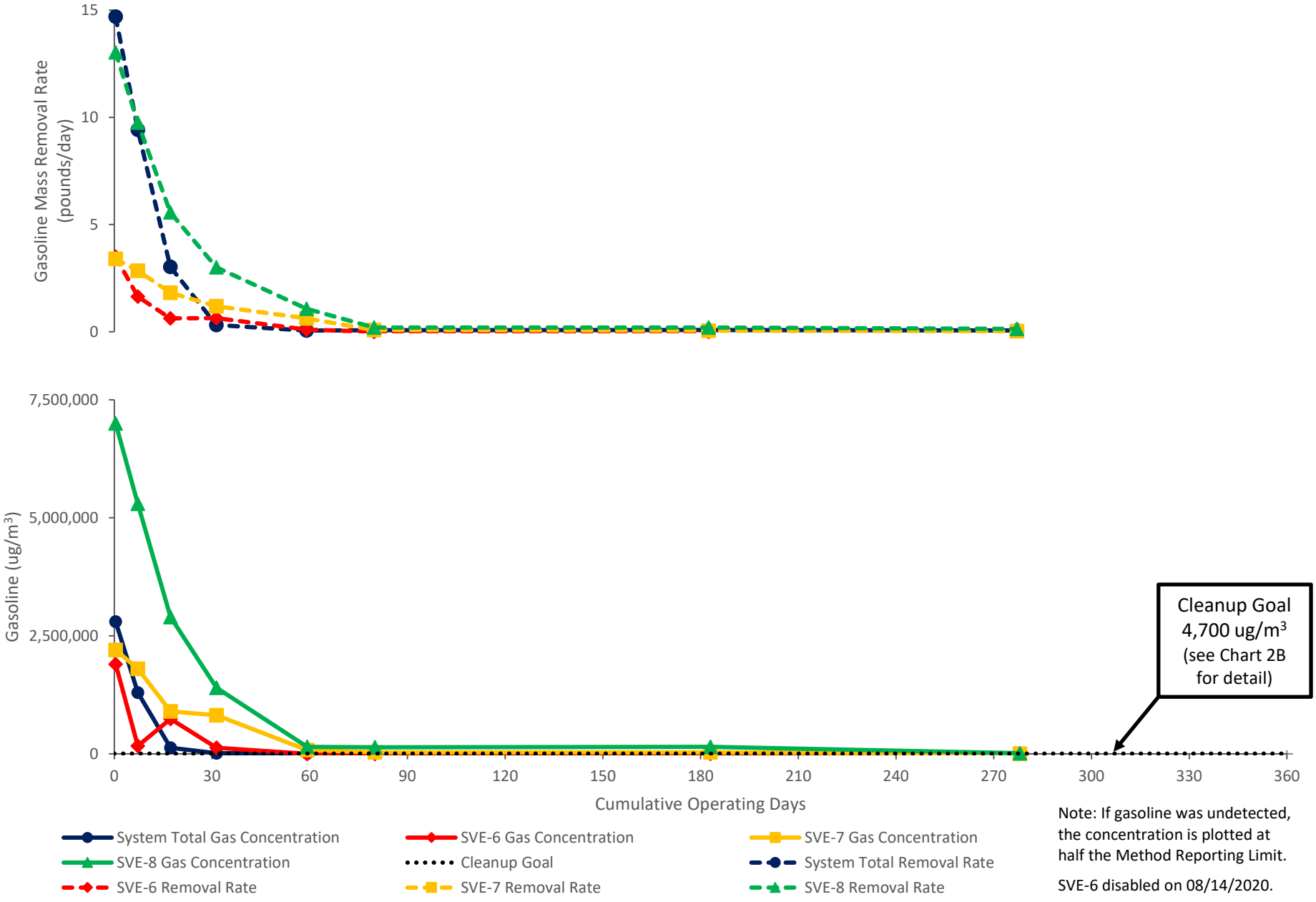
Note: If gasoline was undetected, the concentration is plotted at half the Method Reporting Limit.

CHART 2A

Gasoline Vapor Concentrations and Removal Rates During SVE Operations in Right-of-Way (Linear Scale)

Plaid Pantry No. 112

Vancouver, Washington



Note: If gasoline was undetected, the concentration is plotted at half the Method Reporting Limit.

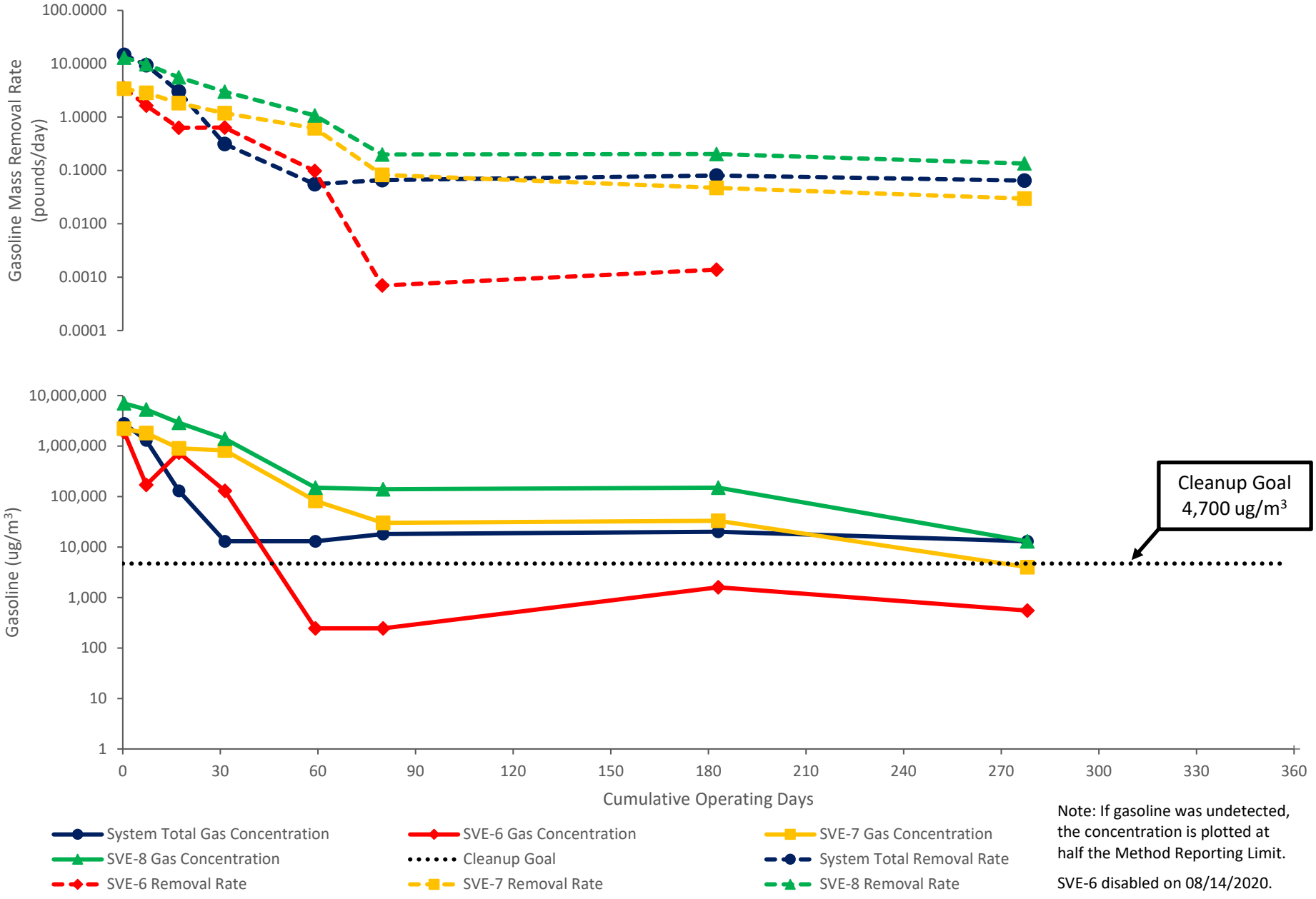
SVE-6 disabled on 08/14/2020.

CHART 2B

Gasoline Vapor Concentrations and Removal Rates During SVE Operations in Right-of-Way (Log Scale)

Plaid Pantry No. 112

Vancouver, Washington



Note: If gasoline was undetected, the concentration is plotted at half the Method Reporting Limit.

SVE-6 disabled on 08/14/2020.

CHART 3A

Site Total Gasoline Mass Extraction Rates and Cumulative Mass Removal (Linear Scale)

Plaid Pantry No. 112

Vancouver, Washington

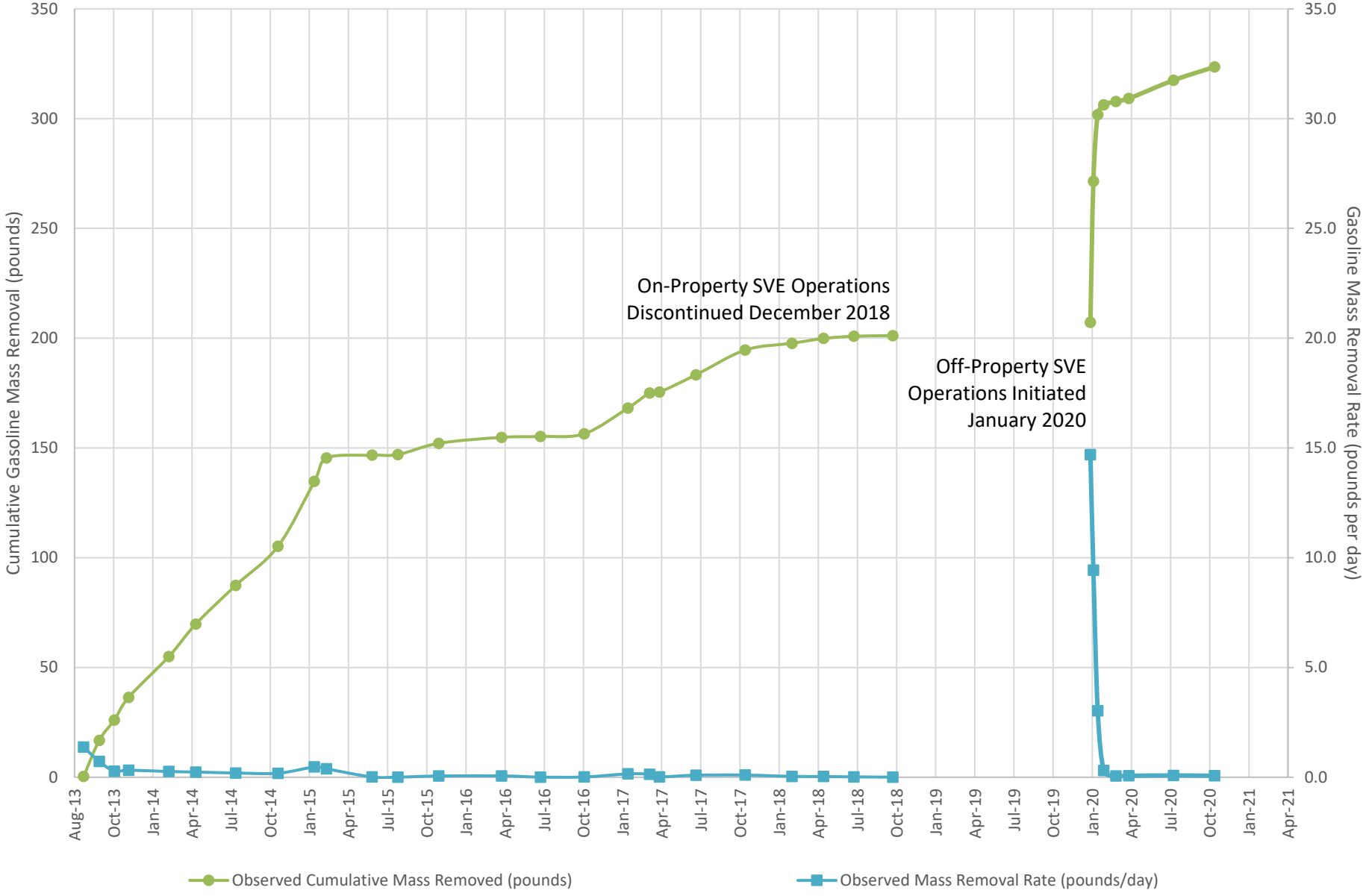
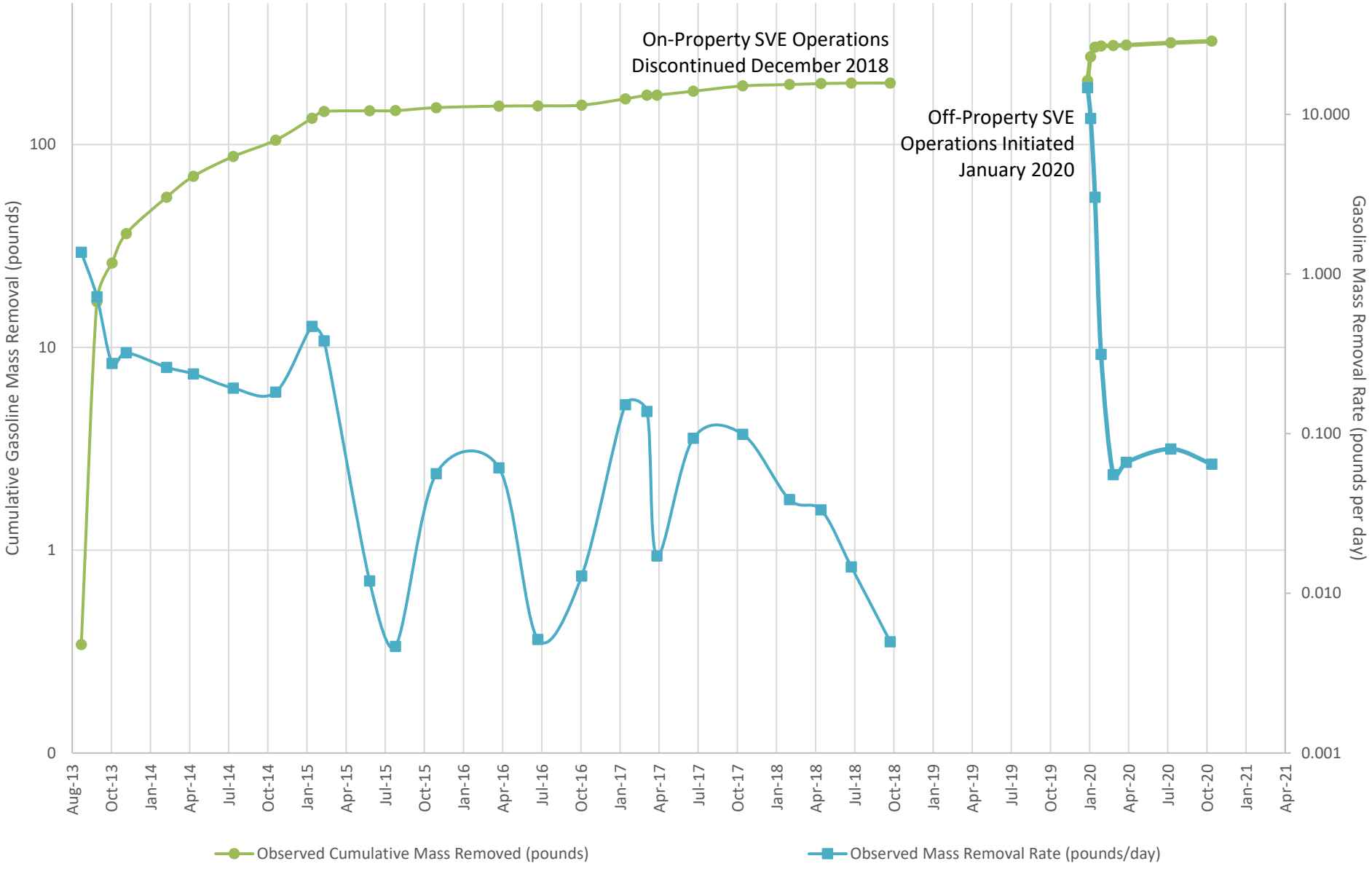


CHART 3B

Site Total Gasoline Mass Extraction Rates and Cumulative Mass Removal (Log Scale)

Plaid Pantry No. 112

Vancouver, Washington



Attachment A

eurofins | Air Toxics

11/2/2020
Mr. Chris Rhea
EES Environmental Consulting, Inc.
240 N Broadway
Suite 203
Portland OR 97227

Project Name: PP #112
Project #: 1179-04
Workorder #: 2010451A

Dear Mr. Chris Rhea

The following report includes the data for the above referenced project for sample(s) received on 10/20/2020 at Eurofins Air Toxics LLC.

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 LLC. 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: Alexandra Winslow at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Alexandra Winslow

Project Manager

eurofins | Air Toxics

WORK ORDER #: 2010451A

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 #**	1179-04 PP #112
DATE RECEIVED:	10/20/2020	**CONTACT:**	Alexandra Winslow
DATE COMPLETED:	11/02/2020		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SVE-7	TO-15	6.3 "Hg	16.3 psi
02A	SVE-8	TO-15	5.1 "Hg	15.3 psi
03A	MANIFOLD	TO-15	5.1 "Hg	15.5 psi
05A	SVE-6	TO-15	5.7 "Hg	16.7 psi
06A	Lab Blank	TO-15	NA	NA
06B	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
07B	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA
08B	LCS	TO-15	NA	NA
08BB	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 11/02/20

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209220, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-20-16, UT NELAP – CA009332020-12, VA NELAP - 10615, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005-014, Effective date: 10/18/2020, Expiration date: 10/17/2021.
Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

LABORATORY NARRATIVE
EPA Method TO-15
EES Environmental Consulting, Inc.
Workorder# 2010451A

Four 1 Liter Summa Canister samples were received on October 20, 2020. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

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.

Dilution was performed on sample SVE-6 due to the presence of high level non-target species.

Due to poor sensitivity at the time of the Initial Calibration, the reporting limit for Ethanol was raised from 2.0 ppbv to 5.0 ppbv.

2-Propanol was detected at a concentration less than 5 times the reporting limit in sample MANIFOLD. Because the preceding sample contained a concentration of 2-Propanol exceeding the calibration range, the result for this compound in sample MANIFOLD may be biased high.

The hydrocarbon profile present in samples SVE-7, SVE-8 and MANIFOLD did not resemble that of commercial gasoline. Results were calculated using the response factor derived from the gasoline calibration.

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

eurofins | Air Toxics

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

Client Sample ID: SVE-7

Lab ID#: 2010451A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	1.3	1.6	5.0	6.0
TPH ref. to Gasoline (MW=100)	130	970	550	4000

Client Sample ID: SVE-8

Lab ID#: 2010451A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	1.2	1.5	4.6	5.6
TPH ref. to Gasoline (MW=100)	120	3100	500	13000

Client Sample ID: MANIFOLD

Lab ID#: 2010451A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	12	33	29	78
2-Propanol	5.0	10	12	25
2-Butanone (Methyl Ethyl Ketone)	5.0	35	15	100
Tetrahydrofuran	1.2	34	3.6	100
Tetrachloroethene	1.2	2.3	8.4	16
TPH ref. to Gasoline (MW=100)	120	3200	510	13000

Client Sample ID: SVE-6

Lab ID#: 2010451A-05A

No Detections Were Found.

eurofins | Air Toxics

Client Sample ID: SVE-7

Lab ID#: 2010451A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102227**	**Date of Collection: 10/16/20 11:56:00 A**	
Dil. Factor:	**2.67**	**Date of Analysis: 10/23/20 07:42 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.3	Not Detected	4.3	Not Detected
Ethyl Benzene	1.3	Not Detected	5.8	Not Detected
Toluene	1.3	1.6	5.0	6.0
m,p-Xylene	1.3	Not Detected	5.8	Not Detected
o-Xylene	1.3	Not Detected	5.8	Not Detected
Naphthalene	2.7	Not Detected	14	Not Detected
TPH ref. to Gasoline (MW=100)	130	970	550	4000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	111	70-130
4-Bromofluorobenzene	102	70-130

eurofins | Air Toxics

Client Sample ID: SVE-8

Lab ID#: 2010451A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102225**	**Date of Collection: 10/16/20 12:06:00 P**	
Dil. Factor:	**2.46**	**Date of Analysis: 10/23/20 12:29 AM**	

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	1.5	4.6	5.6
m,p-Xylene	1.2	Not Detected	5.3	Not Detected
o-Xylene	1.2	Not Detected	5.3	Not Detected
Naphthalene	2.5	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	120	3100	500	13000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	113	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Client Sample ID: MANIFOLD

Lab ID#: 2010451A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102919**	**Date of Collection:**	**10/16/20 12:18:00 P**
Dil. Factor:	**2.48**	**Date of Analysis:**	**10/29/20 08:34 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	6.1	Not Detected
Freon 114	1.2	Not Detected	8.7	Not Detected
Chloromethane	12	Not Detected	26	Not Detected
Vinyl Chloride	1.2	Not Detected	3.2	Not Detected
1,3-Butadiene	1.2	Not Detected	2.7	Not Detected
Bromomethane	12	Not Detected	48	Not Detected
Chloroethane	5.0	Not Detected	13	Not Detected
Freon 11	1.2	Not Detected	7.0	Not Detected
Ethanol	12	Not Detected	23	Not Detected
Freon 113	1.2	Not Detected	9.5	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Acetone	12	33	29	78
2-Propanol	5.0	10	12	25
Carbon Disulfide	5.0	Not Detected	15	Not Detected
3-Chloropropene	5.0	Not Detected	16	Not Detected
Methylene Chloride	12	Not Detected	43	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Hexane	1.2	Not Detected	4.4	Not Detected
1,1-Dichloroethane	1.2	Not Detected	5.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	5.0	35	15	100
cis-1,2-Dichloroethene	1.2	Not Detected	4.9	Not Detected
Tetrahydrofuran	1.2	34	3.6	100
Chloroform	1.2	Not Detected	6.0	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.8	Not Detected
Cyclohexane	1.2	Not Detected	4.3	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.8	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.8	Not Detected
Benzene	1.2	Not Detected	4.0	Not Detected
1,2-Dichloroethane	1.2	Not Detected	5.0	Not Detected
Heptane	1.2	Not Detected	5.1	Not Detected
Trichloroethene	1.2	Not Detected	6.7	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.7	Not Detected
1,4-Dioxane	5.0	Not Detected	18	Not Detected
Bromodichloromethane	1.2	Not Detected	8.3	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	5.1	Not Detected
Toluene	1.2	Not Detected	4.7	Not Detected
trans-1,3-Dichloropropene	1.2	Not Detected	5.6	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.8	Not Detected
Tetrachloroethene	1.2	2.3	8.4	16
2-Hexanone	5.0	Not Detected	20	Not Detected

eurofins | Air Toxics

Client Sample ID: MANIFOLD

Lab ID#: 2010451A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102919**	**Date of Collection: 10/16/20 12:18:00 P**	
Dil. Factor:	**2.48**	**Date of Analysis: 10/29/20 08:34 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	9.5	Not Detected
Chlorobenzene	1.2	Not Detected	5.7	Not Detected
Ethyl Benzene	1.2	Not Detected	5.4	Not Detected
m,p-Xylene	1.2	Not Detected	5.4	Not Detected
o-Xylene	1.2	Not Detected	5.4	Not Detected
Styrene	1.2	Not Detected	5.3	Not Detected
Bromoform	1.2	Not Detected	13	Not Detected
Cumene	1.2	Not Detected	6.1	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.5	Not Detected
Propylbenzene	1.2	Not Detected	6.1	Not Detected
4-Ethyltoluene	1.2	Not Detected	6.1	Not Detected
1,3,5-Trimethylbenzene	1.2	Not Detected	6.1	Not Detected
1,2,4-Trimethylbenzene	1.2	Not Detected	6.1	Not Detected
1,3-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.4	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.4	Not Detected
1,2,4-Trichlorobenzene	5.0	Not Detected	37	Not Detected
Hexachlorobutadiene	5.0	Not Detected	53	Not Detected
Naphthalene	2.5	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	120	3200	510	13000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	93	70-130

eurofins | Air Toxics

Client Sample ID: SVE-6

Lab ID#: 2010451A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102226**	**Date of Collection: 10/16/20 1:45:00 PM**	
Dil. Factor:	**5.27**	**Date of Analysis: 10/23/20 12:53 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.6	Not Detected	8.4	Not Detected
Ethyl Benzene	2.6	Not Detected	11	Not Detected
Toluene	2.6	Not Detected	9.9	Not Detected
m,p-Xylene	2.6	Not Detected	11	Not Detected
o-Xylene	2.6	Not Detected	11	Not Detected
Naphthalene	5.3	Not Detected	28	Not Detected
TPH ref. to Gasoline (MW=100)	260	Not Detected	1100	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2010451A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102206**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/22/20 12:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	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
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	105	70-130

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2010451A-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102906**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/20 01:36 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	5.0	Not Detected	9.4	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

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2010451A-06B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102906**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/20 01:36 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	100	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	88	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 2010451A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102202**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/22/20 10:05 AM**	

Compound	%Recovery
Benzene	94
Ethyl Benzene	101
Toluene	88
m,p-Xylene	111
o-Xylene	114
Naphthalene	107
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	106	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 2010451A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102902**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/20 11:09 AM**

Compound	%Recovery
Freon 12	90
Freon 114	93
Chloromethane	82
Vinyl Chloride	86
1,3-Butadiene	86
Bromomethane	89
Chloroethane	87
Freon 11	90
Ethanol	90
Freon 113	85
1,1-Dichloroethene	95
Acetone	84
2-Propanol	92
Carbon Disulfide	89
3-Chloropropene	90
Methylene Chloride	85
Methyl tert-butyl ether	96
trans-1,2-Dichloroethene	96
Hexane	94
1,1-Dichloroethane	91
2-Butanone (Methyl Ethyl Ketone)	95
cis-1,2-Dichloroethene	100
Tetrahydrofuran	92
Chloroform	93
1,1,1-Trichloroethane	95
Cyclohexane	99
Carbon Tetrachloride	95
2,2,4-Trimethylpentane	105
Benzene	88
1,2-Dichloroethane	88
Heptane	99
Trichloroethene	91
1,2-Dichloropropane	86
1,4-Dioxane	99
Bromodichloromethane	90
cis-1,3-Dichloropropene	98
4-Methyl-2-pentanone	99
Toluene	89
trans-1,3-Dichloropropene	102
1,1,2-Trichloroethane	89
Tetrachloroethene	90
2-Hexanone	108

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 2010451A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102902**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/20 11:09 AM**	

Compound	%Recovery
Dibromochloromethane	96
1,2-Dibromoethane (EDB)	96
Chlorobenzene	92
Ethyl Benzene	96
m,p-Xylene	106
o-Xylene	109
Styrene	106
Bromoform	92
Cumene	101
1,1,2,2-Tetrachloroethane	89
Propylbenzene	98
4-Ethyltoluene	101
1,3,5-Trimethylbenzene	99
1,2,4-Trimethylbenzene	101
1,3-Dichlorobenzene	91
1,4-Dichlorobenzene	92
alpha-Chlorotoluene	104
1,2-Dichlorobenzene	92
1,2,4-Trichlorobenzene	92
Hexachlorobutadiene	86
Naphthalene	104
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 2010451A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102203**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/22/20 10:29 AM**	

Compound	%Recovery	Method Limits
Benzene	99	70-130
Ethyl Benzene	104	70-130
Toluene	91	70-130
m,p-Xylene	116	70-130
o-Xylene	116	70-130
Naphthalene	118	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	111	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	103	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 2010451A-08AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102204**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/22/20 10:54 AM**	

Compound	%Recovery	Method Limits
Benzene	99	70-130
Ethyl Benzene	102	70-130
Toluene	93	70-130
m,p-Xylene	112	70-130
o-Xylene	118	70-130
Naphthalene	122	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	104	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 2010451A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/20 11:33 AM**	

Compound	%Recovery	Method Limits
Freon 12	96	70-130
Freon 114	98	70-130
Chloromethane	91	70-130
Vinyl Chloride	93	70-130
1,3-Butadiene	88	70-130
Bromomethane	92	70-130
Chloroethane	94	70-130
Freon 11	96	70-130
Ethanol	80	70-130
Freon 113	90	70-130
1,1-Dichloroethene	102	70-130
Acetone	88	70-130
2-Propanol	101	70-130
Carbon Disulfide	95	70-130
3-Chloropropene	96	70-130
Methylene Chloride	90	70-130
Methyl tert-butyl ether	101	70-130
trans-1,2-Dichloroethene	102	70-130
Hexane	101	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	100	70-130
cis-1,2-Dichloroethene	109	70-130
Tetrahydrofuran	97	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	98	70-130
Cyclohexane	104	70-130
Carbon Tetrachloride	101	70-130
2,2,4-Trimethylpentane	110	70-130
Benzene	93	70-130
1,2-Dichloroethane	93	70-130
Heptane	102	70-130
Trichloroethene	97	70-130
1,2-Dichloropropane	90	70-130
1,4-Dioxane	105	70-130
Bromodichloromethane	95	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	103	70-130
Toluene	92	70-130
trans-1,3-Dichloropropene	106	70-130
1,1,2-Trichloroethane	92	70-130
Tetrachloroethene	95	70-130
2-Hexanone	112	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 2010451A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/20 11:33 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	99	70-130
1,2-Dibromoethane (EDB)	100	70-130
Chlorobenzene	94	70-130
Ethyl Benzene	99	70-130
m,p-Xylene	112	70-130
o-Xylene	112	70-130
Styrene	107	70-130
Bromoform	97	70-130
Cumene	102	70-130
1,1,2,2-Tetrachloroethane	91	70-130
Propylbenzene	100	70-130
4-Ethyltoluene	103	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	104	70-130
1,3-Dichlorobenzene	92	70-130
1,4-Dichlorobenzene	95	70-130
alpha-Chlorotoluene	106	70-130
1,2-Dichlorobenzene	92	70-130
1,2,4-Trichlorobenzene	100	70-130
Hexachlorobutadiene	98	70-130
Naphthalene	112	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	98	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 2010451A-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/20 11:58 AM**	

Compound	%Recovery	Method Limits
Freon 12	94	70-130
Freon 114	97	70-130
Chloromethane	88	70-130
Vinyl Chloride	93	70-130
1,3-Butadiene	88	70-130
Bromomethane	92	70-130
Chloroethane	94	70-130
Freon 11	95	70-130
Ethanol	75	70-130
Freon 113	88	70-130
1,1-Dichloroethene	99	70-130
Acetone	86	70-130
2-Propanol	100	70-130
Carbon Disulfide	94	70-130
3-Chloropropene	95	70-130
Methylene Chloride	89	70-130
Methyl tert-butyl ether	99	70-130
trans-1,2-Dichloroethene	101	70-130
Hexane	99	70-130
1,1-Dichloroethane	95	70-130
2-Butanone (Methyl Ethyl Ketone)	99	70-130
cis-1,2-Dichloroethene	107	70-130
Tetrahydrofuran	96	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	97	70-130
Cyclohexane	104	70-130
Carbon Tetrachloride	100	70-130
2,2,4-Trimethylpentane	110	70-130
Benzene	92	70-130
1,2-Dichloroethane	89	70-130
Heptane	102	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	90	70-130
1,4-Dioxane	101	70-130
Bromodichloromethane	93	70-130
cis-1,3-Dichloropropene	103	70-130
4-Methyl-2-pentanone	103	70-130
Toluene	91	70-130
trans-1,3-Dichloropropene	105	70-130
1,1,2-Trichloroethane	90	70-130
Tetrachloroethene	95	70-130
2-Hexanone	110	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 2010451A-08BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**a102904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/29/20 11:58 AM**	

Compound	%Recovery	Method Limits
Dibromochloromethane	97	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	93	70-130
Ethyl Benzene	99	70-130
m,p-Xylene	109	70-130
o-Xylene	109	70-130
Styrene	106	70-130
Bromoform	95	70-130
Cumene	102	70-130
1,1,2,2-Tetrachloroethane	92	70-130
Propylbenzene	99	70-130
4-Ethyltoluene	102	70-130
1,3,5-Trimethylbenzene	99	70-130
1,2,4-Trimethylbenzene	105	70-130
1,3-Dichlorobenzene	93	70-130
1,4-Dichlorobenzene	93	70-130
alpha-Chlorotoluene	107	70-130
1,2-Dichlorobenzene	92	70-130
1,2,4-Trichlorobenzene	102	70-130
Hexachlorobutadiene	100	70-130
Naphthalene	115	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	100	70-130

eurofins | Air Toxics

Analysis Request /Canister Chain of Custody

For Laboratory Use Only

PID: ________ Workorder #: 2010451

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

page 1 of 1

Client: EES ENVIRONMENTAL
Project Name: PP #112
Project Manager: CHRIS RHEA Project # 1179-04
Sampler: PIERRE THIEME
Site Name: PP #112

Special Instructions/Notes:

Turnaround Time (Rush surcharges may apply): Standard X Rush ______ (specify)

Lab ID	Field Sample Identification(Location)	Can #	Flow Controller #	Start Sampling Information Date	Start Sampling Information Time	Stop Sampling Information Date	Stop Sampling Information Time	Canister Vacuum/Pressure Initial (in Hg)	Canister Vacuum/Pressure Final (in Hg)	Lab Use Only Receipt	Lab Use Only Final (psig) Gas: N_2 / He	Requested Analyses: Gx TO15	BTEX+N TO15	FULL LIST VOC's TO15	HOLD
01A	SVE-7	1L2667	23833	10-16-20	1150	10-16-20	1156	27	6.5			X	X		
02A	SVE-8	1L1833	24219	↓	1201	↓	1206	26	6.0			X	X		
03A	MANIFOLD	3054	24693	↓	1212	↓	1218	27	6.5					X	
	STACK	1L2877	24316	↓	1220	↓	1225	27.5	2.0						X
05A	SVE-6	1L2440	24914	↓	1340	↓	1345	27	6.5			X	X		

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
[signature] EES	10-16-20	1450	[signature] EA	10/20/20	0930

Lab Use Only

Shipper Name: UPS | Custody Seals Intact? Yes No (None) | [initials]