
PREPARED BY

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N16W23390 Stone Ridge Drive, Suite G
Waukesha, WI 53188



August 23, 2022

John Feeney
Wisconsin Department of Natural Resources
1155 Pilgrim Rd
Plymouth, WI 53074

**Re: Remediation Site Operation, Maintenance, Monitoring & Optimization Report
Harborview Cleaners
134 East Grand Avenue
Port Washington, WI 53073
BRRTS#: 02-46-548092**

Dear Mr. Feeney:

EnviroForensics, LLC (EnviroForensics) is pleased to provide this remediation progress report for Harborview Cleaners located at 134 E. Grand Avenue in Port Washington, Wisconsin (the Site). Remediation activities are ongoing in accordance with Wisconsin Department of Natural Resources (WDNR) NR 700 series rules to address tetrachloroethene (PCE) impacts in the subsurface. This report is being submitted in lieu of WDNR Form 4400-194.

A soil vapor extraction (SVE) system consisting of four (4) extraction wells connected to a blower began operation at the Site in August 2018. The SVE system layout is depicted on **Figure 1**. The system was operated for 13,494 hours through July 11, 2020, at which time it was temporarily shut down in advance of soil and sub-slab vapor confirmation sampling. As reported in the Remediation Progress Update dated February 1, 2021, shallow soil (2-4 feet below ground surface) in the vicinity of the dry cleaning machine was identified as the likely source of continuing vapor impacts beneath the building slab. This location is well within the radius of influence of extraction well SVE-1; however, the screened interval of SVE-1 (4-9 feet below ground surface) was below the zone of higher impact identified by confirmation sampling.

In January 2021, extraction well SVE-1 was modified by raising the screened interval to 16 to 48 inches below the floor surface in order to focus remediation on the shallow soil. After the screen modification, SVE-1 was reconnected to the existing conveyance piping. Additionally, a replacement SVE blower was installed in September 2021.

The SVE system was restarted on April 12, 2022. Operational data is summarized in **Table 1**. Three (3) system effluent samples were collected during the first week of operation to capture the anticipated higher mass removal rate upon restart. The total concentration of volatile organic compounds (VOCs) in the first sample, collected on the day the system was restarted, was more than 10,000 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), indicating extraction from the targeted shallow zone around the modified SVE-1. VOC concentrations detected in samples of the system effluent over time are depicted on the attached **Chart 1**. An overall concentration trend is not apparent because extraction has rotated among groups of wells and individual wells rather than consistent extraction from a single zone.

The average contaminant removal rate for the system between April 12 and June 20 was 0.06 pounds per day. The system has removed approximately 45.9 pounds of VOCs from the subsurface through June 20, 2022. Cumulative VOC mass removed over time is depicted on **Chart 2**.

The SVE system is functioning efficiently and as designed. The relatively high mass removal rate observed since the April 2022 re-start confirms the residual contamination identified by the recent soil sampling is being addressed. Considering Site logistics and clean up objectives, SVE continues to be the most favorable technology for soil remediation. The SVE system will be operated until the total VOC concentration in the effluent is sustained below $1,000 \mu\text{g}/\text{m}^3$.

If you have any questions regarding the results of this progress report, please do not hesitate to call me at (262) 290-4001.

Sincerely,
EnviroForensics, LLC

A handwritten signature in blue ink, appearing to read "Brian Kappen".

Brian Kappen, PG
Project Manager

Attachments:

- Figure 1 – Soil Vapor Extraction System Layout
- Table 1 - Soil Vapor Extraction System Operational Data
- Chart 1 – SVE Effluent VOC Concentration
- Chart 2 – Cumulative VOC Mass Removed

Certification

I, Brian Kappen, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

A handwritten signature in blue ink, appearing to read "Brian Kappen".

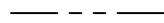














Senior Geologist

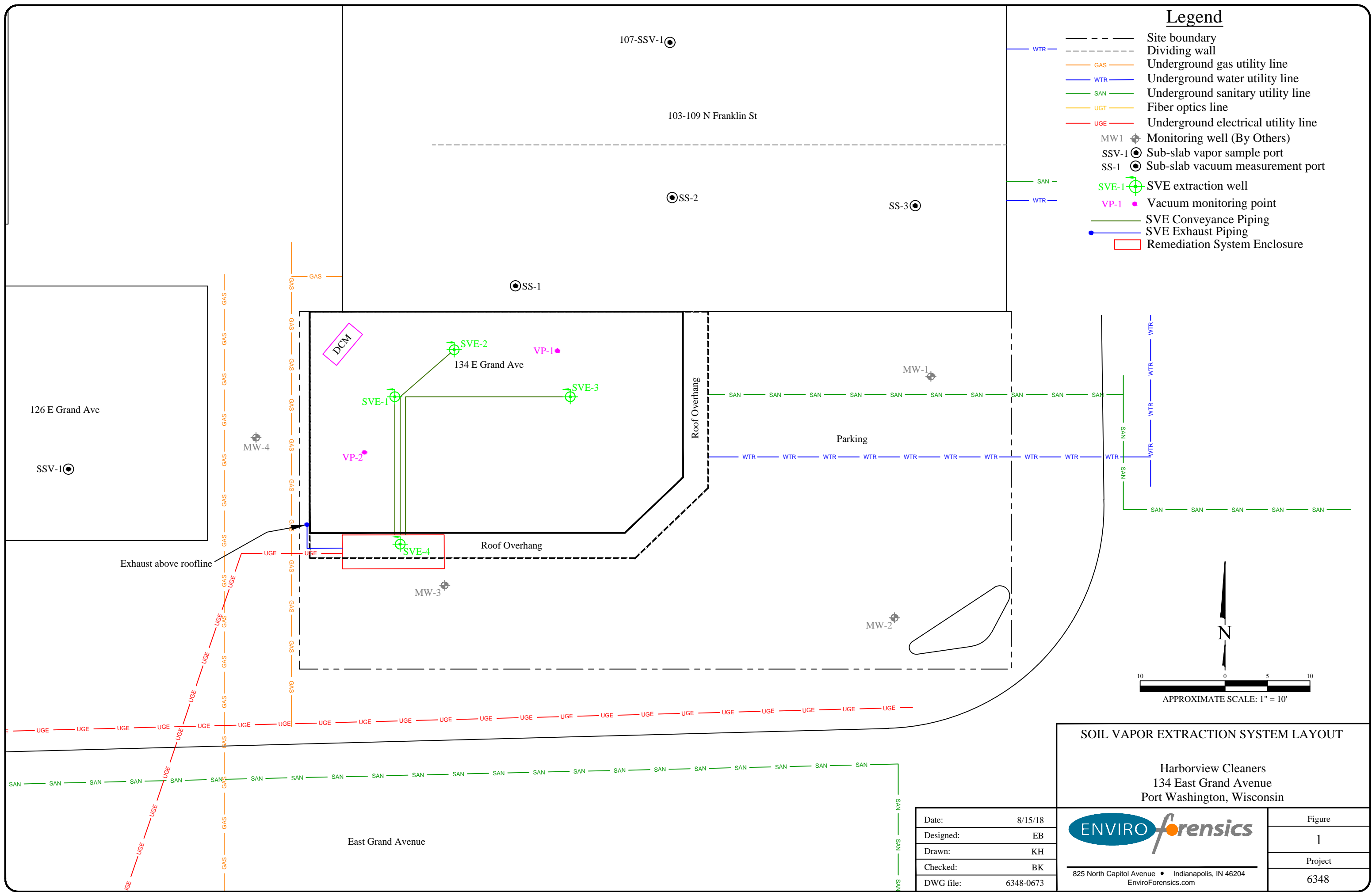
Signature and title

8/23/22

Date

Legend

-  Site boundary
-  Dividing wall
-  GAS — Underground gas utility line
-  WTR — Underground water utility line
-  SAN — Underground sanitary utility line
-  UGT — Fiber optics line
-  UGE — Underground electrical utility line
-  MW1 — Monitoring well (By Others)
-  SSV-1 — Sub-slab vapor sample port
-  SS-1 — Sub-slab vacuum measurement port
-  SVE-1 — SVE extraction well
-  VP-1 — Vacuum monitoring point
-  — SVE Conveyance Piping
-  — SVE Exhaust Piping
-  — Remediation System Enclosure



SOIL VAPOR EXTRACTION SYSTEM LAYOUT

Harborview Cleaners
 134 East Grand Avenue
 Port Washington, Wisconsin



825 North Capitol Avenue • Indianapolis, IN 46204
 EnviroForensics.com

Date:	8/15/18
Designed:	EB
Drawn:	KH
Checked:	BK
DWG file:	6348-0673

Figure	1
Project	6348

TABLE 1
SOIL VAPOR EXTRACTION SYSTEM OPERATIONAL DATA
Harborview Cleaners
134 E. Grand Avenue, Port Washington, Wisconsin

Date	Time	System Runtime	VFD Setting	System Vacuum	Conveyance Line Vacuum				Exhaust Pressure	Inlet Filter Differential Pressure	Exhaust Differential Pressure	Calculated Flow Rate	Intake Temperature	Exhaust Temperature	Effluent VOC Concentration
		Panel Display	Panel Display	AWS	1	2	3	4	Exhaust Pipe	Filter Housing	Pitot Tube		AWS	Exhaust Pipe	Exhaust Port
		Hours	Hertz	in Hg	in Hg				in H ₂ O	in H ₂ O	in H ₂ O	SCFM	°F	°F	µg/m ³
08/13/18	1103	3.5	60.0	-6.0	-7.0	0.0	-7.0	0.0	8.0	0.0	2.2	324	--	143	13,197
08/14/18	1100	26.4	60.0	-5.5	-7.0	0.0	-8.0	0.0	9.0	0.0	2.2	323	--	145	4,956
08/15/18	1345	50.6	50.0	-2.0	-2.0	-1.5	-1.8	-1.8	4.0	0.0	2.2	330	--	109	803
09/12/18	1333	187.8	51.2	-2.0	-3.0	-2.0	-2.0	-2.5	8.0	0.0	2.2	331	68	110	5,344
09/18/18	950	328.2	51.2	-2.0	-2.5	-2.0	-2.0	-2.0	8.0	0.0	2.1	327	63	103	536
09/25/18	1520	501.7	51.2	-5.0	-6.0	0.0	-5.5	0.0	5.0	0.0	1.7	288	65	123	319
10/01/18	1050	641.2	51.2	-3.2	0.0	-3.0	0.0	-3.0	7.0	0.0	2.0	217	57	110	397
10/08/18	1210	687.9	51.2	-5.6	-6.0	0.0	-5.5	0.0	5.0	0.0	1.7	290	60	116	612
11/12/18	1207	1,503.9	51.2	-1.5	-2.5	-1.5	-2.0	-2.0	7.0	0.0	2.2	340	48	82	437
12/07/18	1220	2,129.0	51.2	-3.1	0.0	-3.0	-3.0	0.0	6.0	0.0	2.1	330	49	88	1,280
01/10/19	1315	2,946.0	60.0	-3.3	0.0	-2.5	-3.0	0.0	7.5	0.0	2.8	369	48	96	1,280
02/14/19	924	3,781.3	59.0	-3.7	0.0	0.0	-3.0	-3.5	7.0	0.0	2.6	365	40	94	1,660
03/13/19	733	4,427.2	60.0	-5.0	0.0	-4.5	0.0	0.0	4.0	0.0	2.3	338	45	110	3,440
04/16/19	1235	5,247.8	60.0	-3.0	0.0	-2.5	-3.0	0.0	6.0	0.0	2.6	360	49	106	1,220
05/16/19	1024	5,965.7	60.0	-6.3	0.0	0.0	0.0	-6.7	2.4	0.0	2.0	311	45	123	732
06/13/19	1031	6,252.5	60.0	-8.0	0.0	0.0	-8.5	0.0	1.0	0.0	1.8	287	58	156	1,020
07/16/19	1335	6,765.1	60.0	-5.0	0.0	-5.5	0.0	0.0	2.0	0.0	2.8	380	57	90	3,603
08/16/19	1000	7,500.4	60.0	-2.8	0.0	-2.9	-3.0	0.0	4.5	0.0	2.8	370	63	119	799
09/26/19	910	8,154.9	60.0	-4.4	-5.4	0.0	0.0	-5.0	2.2	0.0	2.5	350	54	120	1,970
10/22/19	1020	8,278.7	60.0	-5.2	0.0	-5.2	0.0	0.0	2.5	0.0	2.3	333	57	124	4,100
11/21/19	911	8,998.5	60.0	-5.7	-5.2	0.0	-5.2	0.0	2.0	0.0	2.3	335	48	117	3,633
12/16/19	1050	9,516.8	60.0	-4.7	0.0	-4.9	0.0	0.0	NM	0.0	2.4	347	47	112	1,350
01/13/20	1117	10,188.8	60.0	-7.9	0.0	0.0	-8.0	0.0	11.2	0.0	2.0	309	48	148	10,100
02/18/20	1325	11,054.8	60.0	-4.3	5.5	0.0	0.0	5.0	11.0	0.0	2.5	356	35	108	1,980
03/24/20	1100	11,079.2	60.0	-7.3	0.0	0.0	-7.5	0.0	8.2	0.0	2.0	312	47	128	--
04/13/20	1617	11,564.2	60.0	-7.3	0.0	0.0	-7.5	0.0	8.0	0.0	1.9	301	47	137	1,740
05/12/20	1040	12,245.5	60.0	-2.4	0.0	-2.7	-2.8	0.0	12.5	0.0	2.8	369	50	104	1,790
06/15/20	1150	12,994.2	60.0	-4.4	-5.0	0.0	0.0	-4.8	10.0	0.0	2.6	360	50	117	3,443
07/11/20	1200	13,494.0	60.0	-4.4	-5.0	0.0	0.0	-4.8	10.0	0.0	2.6	360	50	117	3,443
04/12/22	1433	13,495.4	60.0	-4.0	-5.3	0.0	0.0	-4.9	10.7	0.0	2.5	358	42	104	10,515
04/13/22	1345	13,518.5	60.0	-3.5	-5.0	0.0	0.0	-4.5	11.3	0.0	2.5	357	41	107	5,240
04/19/22	915	13,658.0	60.0	-3.7	-4.8	0.0	0.0	-4.6	11.4	0.0	2.6	366	37	99	3,500
05/17/22	745	14,328.0	50.0	-4.0	-5.0	0.0	0.0	-4.5	11.5	0.0	2.6	360	50	116	787
06/20/22	940	14,781.1	60.0	-8.0	-9.0	0.0	0.0	-1.5	7.4	0.0	1.8	290	58	150	8,260

Notes:

- in Hg = inches of mercury
- in H₂O = inches of water
- µg/m³ = micrograms per cubic meter
- = reading or sample not collected
- AWS = Air-water separator
- NM = not measured due to gauge malfunction
- SCFM = Standard cubic feet per minute

Chart 1

SVE Effluent VOC Concentration

Harborview Cleaners - 134 E. Grand Avenue, Port Washington, Wisconsin

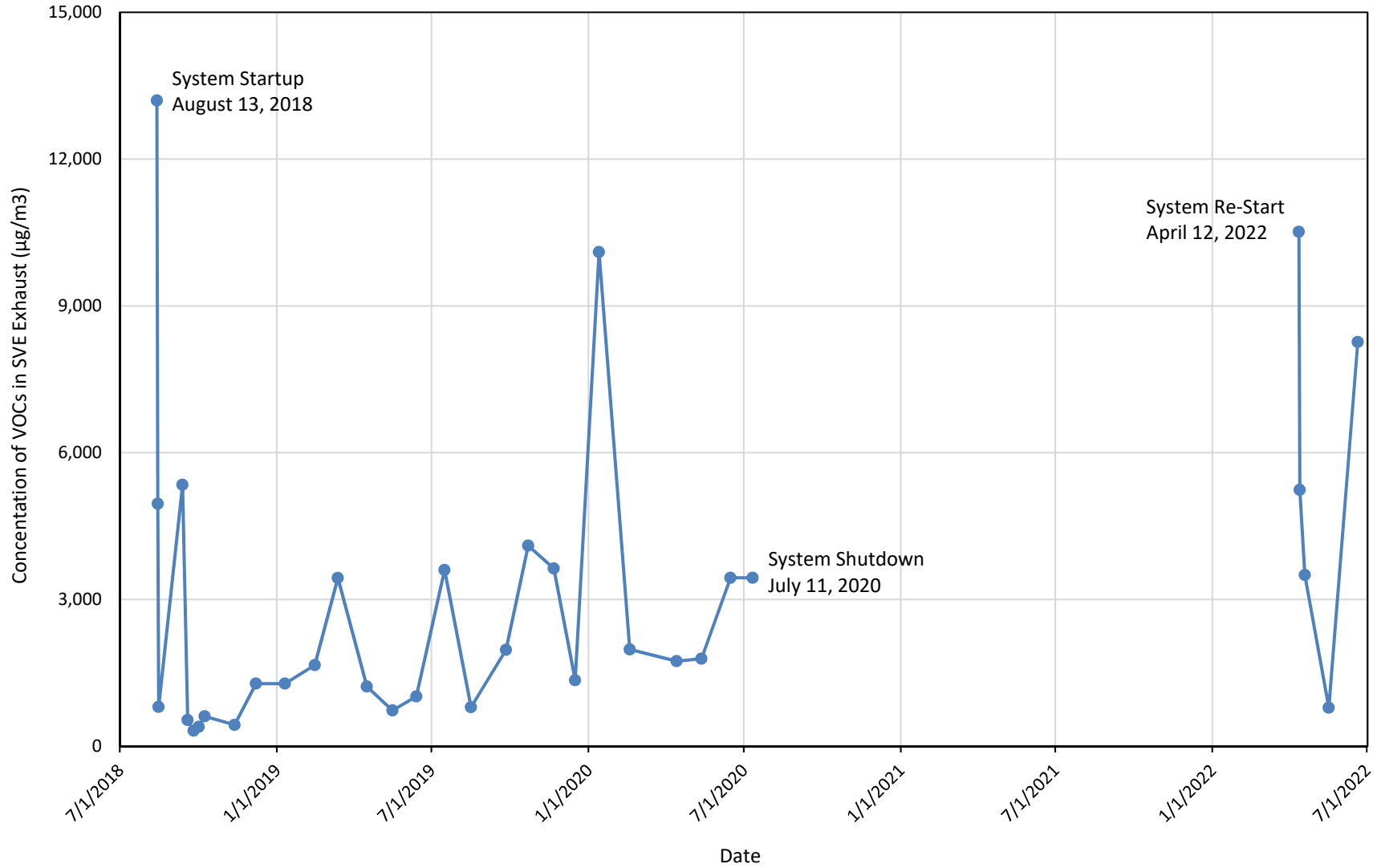


Chart 2
Cumulative VOC Mass Removed
Harborview Cleaners - 134 E. Grand Avenue, Port Washington, Wisconsin

