August 24, 2023

Mr. Chang Kim
23886 SE Kent-Kangley Road
Maple Valley, Washington 98038-6848
jbangiek@gmail.com

RE: **Technical Memorandum – Cleanup Progress Report**
4 Corners Cleaners
23886 SE Kent-Kangley Road
Maple Valley, Washington 98038-6848
AEG Atlas Project: 17-126
VCP ID No.: NW3234

Dear Mr. Kim:

AEG Atlas, LLC (AEG) has prepared this Technical Memorandum to provide an update on the progress of cleanup actions for *4 Corners Cleaners*, located at the above-referenced address in Maple Valley, Washington (Site). A soil vapor extraction (SVE) system has been operating at the Site as presented in AEG's Cleanup Action Plan, dated May 29, 2019. The system was designed to extract and remove adsorbed vapor-phase tetrachloroethylene (PCE) and other volatile organic compounds (VOCs) from subsurface soil beneath the building, and treat the vapors using granular activated carbon (GAC). The system also mitigates the potential for vapor intrusion of VOCs detected beneath the dry cleaner space into the indoor air. This memorandum includes a summary of the operation and maintenance (O&M) activities performed to date, a summary of the groundwater monitoring results, and recommendations for continued operations and monitoring for the Site. Figure 1, *Site Location Map*, presents the general vicinity of the Site. The Site's current layout, including soil boring and SVE extraction well locations, are illustrated in Figure 2, *Site Map*.

BACKGROUND

PCE and its anaerobic sequential degradation chain constituents, including trichloroethylene (TCE), cis-1,2-dichloroethylene (DCE), trans-1,2-DCE, and vinyl chloride, are the contaminants of concern (COCs) for the Site. Soil and soil vapor are the media affected. Groundwater was encountered at various depths from 25 to 33 feet below ground surface (bgs) in six of the ten borings and did not contain detectable VOCs. Soil impacts at the Site are likely the result of use and storage of PCE formerly used in the dry cleaner machine and dry-cleaning process.

PCE was the only COC detected in soil above Model Toxics Control Act (MTCA) cleanup levels. PCE exceeded the MTCA Method A cleanup level in AEG soil samples B1-22 (1.8 feet bgs) and

B3-23 (1.9 feet bgs). Both borings were located inside the building. The vertical extent of PCE in these borings could not be determined due to the very dense soils encountered and the limitations of drilling in these soils inside the building. PCE was also detected in boring B-11 at 18 feet bgs, which is outside the building to the north. Soil boring locations are illustrated on Figure 2, *Site Map*.

GROUNDWATER MONITORING

On May 18-20, 2020, AEG constructed four groundwater monitoring wells (MW-1, MW-2, MW-3, and MW-5) to allow for quarterly sampling of Site groundwater to address Ecology's comments. The target depth for the borings was 50 feet below ground surface (bgs) to evaluate the subsurface conditions. On the day of drilling, groundwater was encountered at 35 feet bgs. Samples of soil and groundwater were collected during drilling for field screening and laboratory analyses. Several attempts were made to advance to depth in the area proposed for MW-4; however, refusal was consistently encountered. As such, MW-4 was never installed.

Groundwater monitoring was performed on these wells in July 2022, and in January and July 2023. Groundwater samples collected from the wells were submitted for laboratory analysis for PCE and daughter products using EPA Method 8260. No constituents of concern were detected in groundwater samples above the laboratory detection limits for monitoring wells MW-1, MW-2, MW-3, or MW-5. Analytical results for these sampling events are presented in Table 2, *Summary of Groundwater Analytical Results*.

The calculated groundwater gradient for the Site has ranged from 0.025 to 0.05 feet per foot, and has been generally consistent to the north-northwest as illustrated on Figure 3, *Groundwater Elevation Contour Map 7/14/2022*, Figure 4, *Groundwater Elevation Contour Map 01/12/2023*, and Figure 5, *Groundwater Elevation Contour Map 07/07/2023.* A summary of groundwater elevations is presented as Table 1, *Summary of Groundwater Elevations*.

SVE SYSTEM INSTALLATION

Five SVE wells were installed on August 9 and 10, 2019 by Cascade Drilling, LP (Cascade) using sonic drilling technology. Four SVE wells (SVE-1 through SVE-4) are outside the tenant space and are 15 feet in depth with slotted screens from 2 to 15 feet bgs. SVE-5 was installed inside the tenant space using vacuum extraction to a depth of 3 feet bgs and completed with slotted screen from 6 inches to 3 feet bgs. All wells were sealed at the surface with bentonite and concrete grout.

Sub-slab vapor monitoring points (VP-1 to VP-4) were installed by drilling through the existing concrete slab, placement, and sealing of the stainless steel VaporPin® sampling points. The vapor points were completed with accessible lids in locations for easy monitoring. Vapor monitoring points and SVE well locations are illustrated on Figure 2, *Site Map*.

The SVE system underground conveyance piping installation was completed in August through September 2019, and startup occurred on October 9, 2019. The system was constructed to meet the Site conditions and requirements of the property management company. The system started with GAC filters in-place to be in compliance with the required Puget Sound Clean Air Agency (PSCAA) regulations.

SYSTEM PERFORMANCE AND ONGOING O&M

As of the date of the previous progress report, DH Environmental, Inc. (DHE) has continued routine operations and maintenance (O&M) work and the SVE system has been operating normally. The only system shutdowns have been the result of general power failures and intended shutdowns during sampling events. Routine system O&M is scheduled to occur at the beginning of each month, plus call outs when system alarm notifications are received.

On February 2, 2022, DHE replaced four non-functioning vacuum gauges (SVE 1, 2, 3, 4) on the SVE well manifold. Additionally, testing was conducted on SVE-4 to determine whether the well was under vacuum. Subsequent results determined the well-maintained adequate suction at the wellhead and water was noted in the SVE-4 manifold line. All five vacuum gauges have since properly functioned and provided accurate readings of the vacuum maintained on each well.

Ongoing monitoring noted PCE continued to be present in sub-slab vapors in the southern half of the tenant space following the replacement and testing of the original four SVE wells. As such, on April 10, 2022, DHE mobilized to the Site to install three additional SVE wells (SVE-6, SVE-7, and SVE-8). The addition of these three wells will provide adequate air flow beneath the building foundation to mitigate the exposure to PCE vapors. These additional SVE well locations are illustrated on Figure 2, *Site Map*.

The SVE system is currently operating with wells SVE-4 through SVE-8 and has experienced one unintentional shut down this year due to a power outage. It has since operated as expected and without issues. Past problems involving system shutdowns had typically involved high-water level alarms in the knockout tank. On June 15, 2022, to mitigate the high-water level alarms, DHE installed an auto drain pump in the knockout tank, which discharges the knockout tank water into a 55-gallon drum.

The latest sub-slab vapor and SVE system sampling event was performed on March 23, 2023. Sub-slab vapor samples were collected from all four vapor monitoring points (VP-1 through VP-4). As shown in Table 3, *Summary of Sub-Slab Vapor Analytical Results*, the results indicate that PCE and daughter products were either non-detect or below MTCA Method B cleanup levels.

As of the March 23, 2023, monitoring date, the SVE system had been operational at the Site for 990 days. From the startup date of October 9, 2019, the SVE system has had multiple shutdown

events caused by the previously noted water in the moisture knockout tank, which has since been resolved. Additionally, the SVE system is shut down during routine sub-slab vapor sampling and maintenance.

The carbon filtration was removed from the system in January 2020 and the performance sample location has since been the effluent air from the vacuum system stack output sample port. A 10-minute Summa canister sample was collected from the effluent air on March 24, 2023, to evaluate compliance with the PSCAA maximum allowable emission rates. PCE and related constituents were not detected in the effluent air sample analysis. The analytical results of the effluent sample and potential to emit (PTE) toxic constituents are shown on Table 4, *Potential to Emit Summary*. Results from the air sampling are presented in Appendix A, Supporting Documents, *Laboratory Datasheets*. Approximately 1.388 pounds of halogenated volatile organic compounds (HVOCs) have been removed in vapor phase from the Site to date.

O&M is currently being conducted on a monthly basis by DHE.

RECOMMENDED NEXT STEPS

Based on the recent O&M observations and performance data, AEG recommends the following:

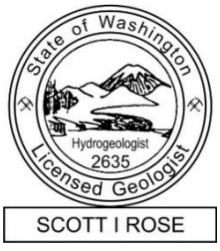
- Shut down the system and check for any rebound of sub-slab vapors.
- Continue system operation as need based on rebound results.
- Perform confirmation sampling once asymptotic conditions are reached.

If you have comments or questions, please contact our office at your convenience at 360.352.9835.

Sincerely,

AEG Atlas, LLC

Scott Rose, L.H.G.
Director of Technical Services



Attachments: Figure 1 – *Vicinity Map*
Figure 2 – *Site Map*
Figure 3 – *Groundwater Elevation Contour Map 07/14/2022*
Figure 4 – *Groundwater Elevation Contour Map 01/12/2023*
Figure 5 – *Groundwater Elevation Contour Map 07/07/2023*

Table 1 – *Summary of Groundwater Elevations*
Table 2 – *Summary of Groundwater Analytical Results*
Table 3 – *Summary of Sub-Slab Vapor Analytical Results*
Table 4 – *Potential to Emit Summary*

Appendix A – Supporting Documents
Laboratory Datasheets

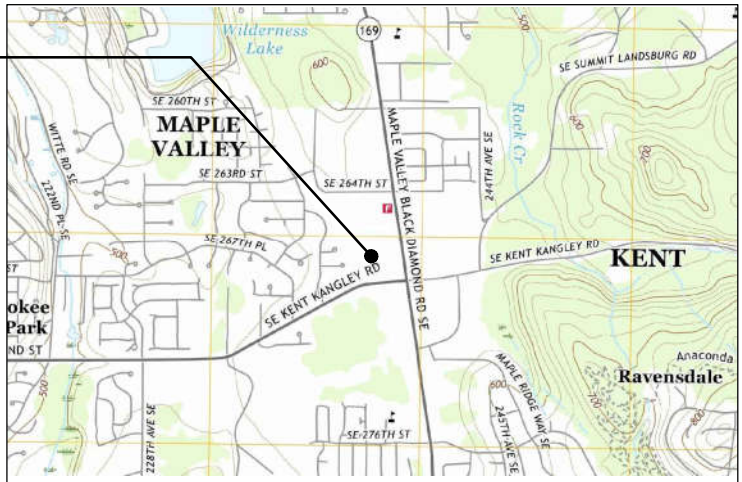
FIGURES

2633 Parkmont Lane SW, Suite A • Olympia, WA • 98502-5751
Phone: 360-352-9835 • Fax: 360-352-8164 • Email: admin@aegwa.com

FILENAME	DRAWN BY		CHECKED BY		APPROVED BY		PROJECT NUMBER
17-126_1701.DWG	ICD	3/22/2017	CS	3/22/2017	CS	3/22/2017	17-126

N
W E
S

PROJECT LOCATION



NOTES

1. THE LOCATIONS OF ALL FEATURES SHOWN ARE APPROXIMATE
2. THIS DRAWING IS FOR INFORMATION PURPOSES. IT IS INTENDED TO ASSIST IN SHOWING FEATURES DISCUSSED IN AN ATTACHED DOCUMENT.

REFERENCE

DRAWING CREATED FROM AERIAL PHOTOGRAPH AND NOTES PROVIDED BY AEG, LLC.
VICINITY IMAGE SOURCE: U.S. GEOLOGICAL SURVEY–2017, 7.5 MINUTE QUADRANGLE MAP
BLACK DIAMOND, WASHINGTON

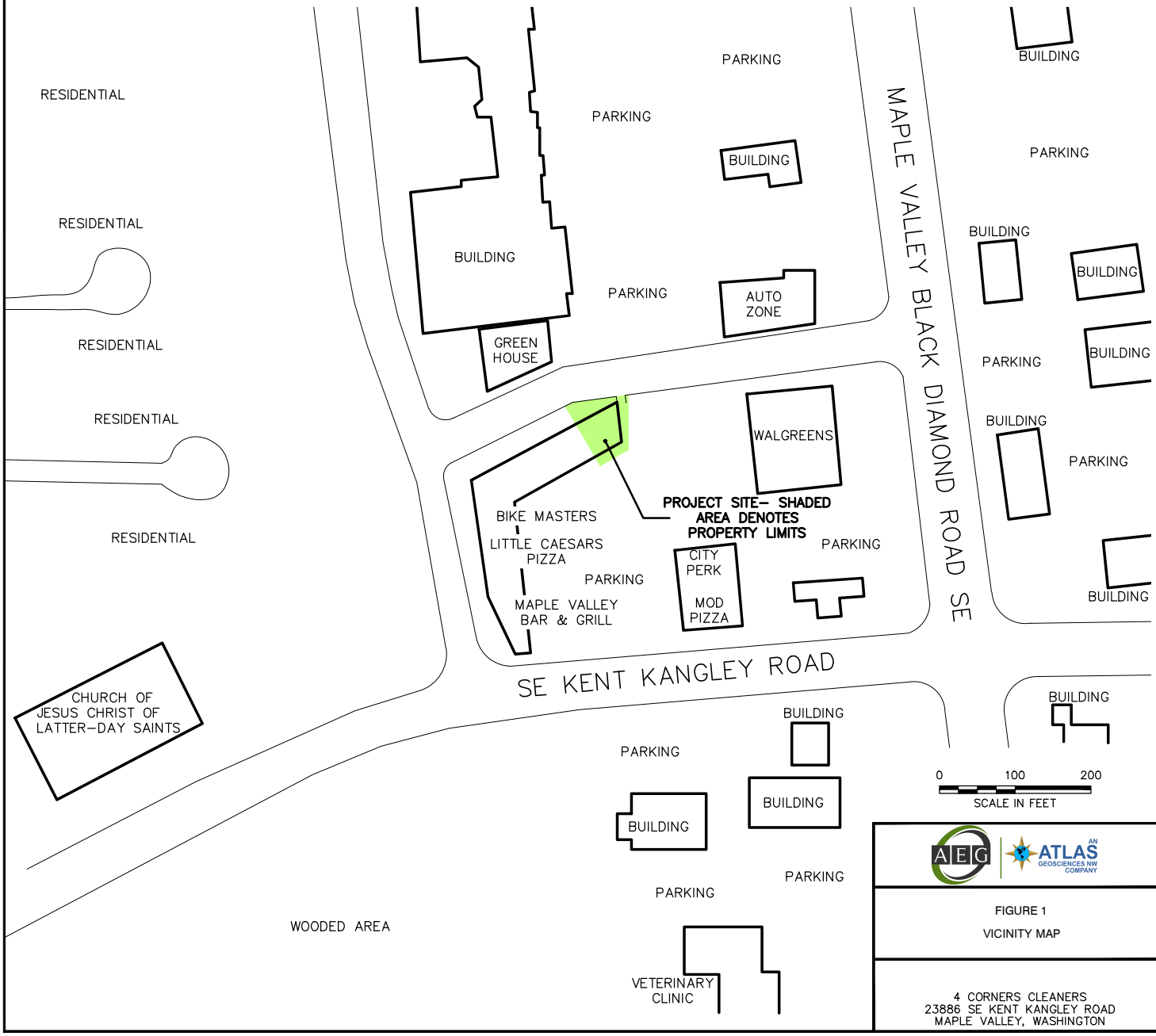


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FIGURE 1
VICINITY MAP

4 CORNERS CLEANERS
23886 SE KENT KANGLEY ROAD
MAPLE VALLEY, WASHINGTON

FILENAME	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER
17-126_VIC-SITE.DWG	JGM 8/18/2023	PH 8/18/2023	SR 8/18/2023	17-126

N
W E
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LEGEND

MW-1	MONITORING WELL LOCATION
B-1	SOIL BORING LOCATION
SV-1	SUB-SLAB VAPOR SAMPLE LOCATION
SVE-1	SOIL VAPOR EXTRACTION WELL LOCATION
VP-1	VAPOR MONITORING POINT LOCATION

NOTES

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REFERENCE

DRAWING CREATED FROM AERIAL PHOTOGRAPH AND NOTES PROVIDED BY AEG ATLAS, LLC.

0 5 10
SCALE IN FEET

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FIGURE 2

SITE MAP

4 CORNERS CLEANERS
23886 SE KENT KANGLEY ROAD
MAPLE VALLEY, WASHINGTON

FILENAME	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER
17-126_VIC-SITE.DWG	JGM 8/18/2023	PH 8/18/2023	SR 8/18/2023	17-126

N
W E
S

LEGEND

MW-1	MONITORING WELL LOCATION
B-1	SOIL BORING LOCATION
SV-1	SUB-SLAB VAPOR SAMPLE LOCATION
SVE-1	SOIL VAPOR EXTRACTION WELL LOCATION
VP-1	VAPOR MONITORING POINT LOCATION
540.94	GROUNDWATER ELEVATION (FEET)
540.00	INFERRED GROUNDWATER ELEVATION CONTOUR LINE (FEET)
0.025 ft/ft	APPROXIMATE GROUNDWATER GRADIENT DIRECTION (ft/ft)

NOTES

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REFERENCE

DRAWING CREATED FROM AERIAL PHOTOGRAPH AND NOTES PROVIDED BY AEG ATLAS, LLC.

0 5 10
SCALE IN FEET

AEG | AN ATLAS GEOSCIENCES NW COMPANY

FIGURE 3

GROUNDWATER ELEVATION CONTOUR MAP
07/14/2022

4 CORNERS CLEANERS
23886 SE KENT KANGLEY ROAD
MAPLE VALLEY, WASHINGTON

FILENAME	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER
17-126_VIC-SITE.DWG	JGM 8/18/2023	EM 8/18/2023	SR 8/18/2023	17-126

N
W E
S

LEGEND

MW-1	MONITORING WELL LOCATION
B-1	SOIL BORING LOCATION
SV-1	SUB-SLAB VAPOR SAMPLE LOCATION
SVE-1	SOIL VAPOR EXTRACTION WELL LOCATION
VP-1	VAPOR MONITORING POINT LOCATION
543.29	GROUNDWATER ELEVATION (FEET)
542.00	INFERRED GROUNDWATER ELEVATION CONTOUR LINE (FEET)
*	ELEVATION NOT USED IN CONTOURING POSSIBLE ANOMALOUS DATA
0.03 ft/ft	APPROXIMATE GROUNDWATER GRADIENT DIRECTION (ft/ft)

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REFERENCE

DRAWING CREATED FROM AERIAL PHOTOGRAPH AND NOTES PROVIDED BY AEG ATLAS, LLC.

0 5 10
SCALE IN FEET

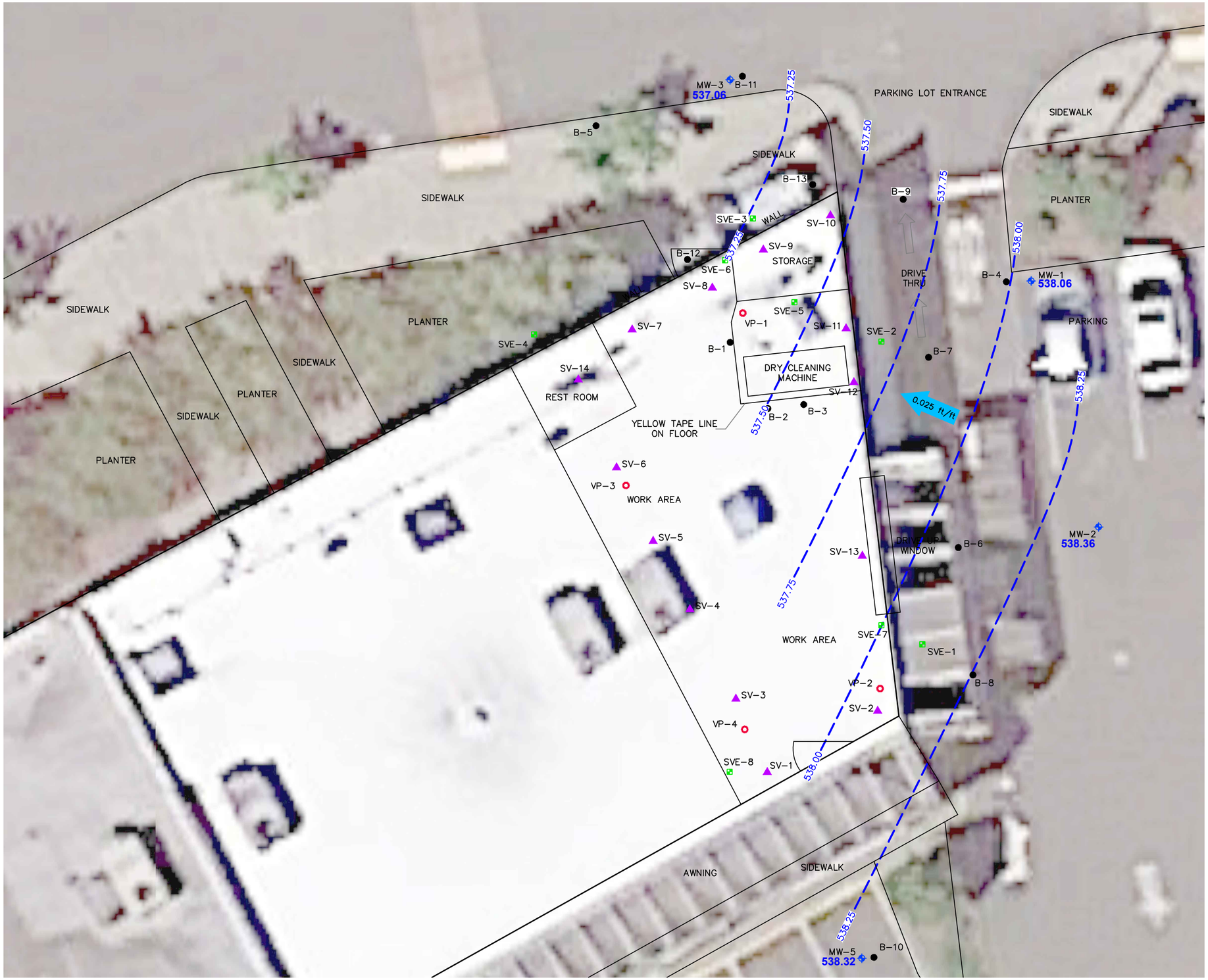
AEG | AN ATLAS GEOSCIENCES NW COMPANY

FIGURE 4

GROUNDWATER ELEVATION CONTOUR MAP
01/12/2023

4 CORNERS CLEANERS
23886 SE KENT KANGLEY ROAD
MAPLE VALLEY, WASHINGTON

FILENAME	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER
17-126_VIC-SITE.DWG	JGM 8/18/2023	PH 8/18/2023	SR 8/18/2023	17-126



N
W E
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LEGEND

MW-1	MONITORING WELL LOCATION
B-1	SOIL BORING LOCATION
SV-1	SUB-SLAB VAPOR SAMPLE LOCATION
SVE-1	SOIL VAPOR EXTRACTION WELL LOCATION
VP-1	VAPOR MONITORING POINT LOCATION
538.06	GROUNDWATER ELEVATION (FEET)
542.00	INFERRED GROUNDWATER ELEVATION CONTOUR LINE (FEET)
0.025 ft/ft	APPROXIMATE GROUNDWATER GRADIENT DIRECTION (ft/ft)

NOTES

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REFERENCE

DRAWING CREATED FROM AERIAL PHOTOGRAPH AND NOTES PROVIDED BY AEG ATLAS, LLC.

0 5 10
SCALE IN FEET

AEG | AN ATLAS GEOSCIENCES NW COMPANY

FIGURE 5

GROUNDWATER ELEVATION CONTOUR MAP
07/07/2023

4 CORNERS CLEANERS
23886 SE KENT KANGLEY ROAD
MAPLE VALLEY, WASHINGTON

TABLES

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Table 1 - Summary of Groundwater Elevations
4 Corners Cleaners (17-126)
Maple Valley, Washington

Well No./ TOC Elevation	Date	Depth to Water	Depth to Free Product	Free Product Thickness	Actual Groundwater Elevation	Change in Elevation
MW-1	6/23/2020	22.67	--	--	540.04	--
562.71	9/14/2020	28.97	--	--	533.74	-6.30
	12/11/2020	20.40	--	--	542.31	8.57
	3/19/2021	20.28	--	--	542.43	0.12
	7/14/2022	21.77	--	--	540.94	-1.49
	1/12/2023	19.42	--	--	543.29	2.35
	7/7/2023	24.65	--	--	538.06	-5.23
MW-2	6/23/2020	22.04	--	--	540.35	--
562.39	9/14/2020	28.29	--	--	534.10	-6.25
	12/11/2020	20.25	--	--	542.14	8.04
	3/19/2021	19.46	--	--	542.93	0.79
	7/14/2022	22.12	--	--	540.27	-2.66
	1/12/2023	20.14	--	--	542.25	1.98
	7/7/2023	24.03	--	--	538.36	-3.89
MW-3	6/23/2020	24.82	--	--	539.06	--
563.88	9/14/2020	31.08	--	--	532.80	-6.26
	12/11/2020	22.22	--	--	541.66	8.86
	3/19/2021	22.25	--	--	541.63	-0.03
	7/14/2022	24.99	--	--	538.89	-2.74
	1/12/2023	21.58	--	--	542.30	3.41
	7/7/2023	26.82	--	--	537.06	-5.24
MW-5	6/23/2020	22.22	--	--	540.50	--
562.72	9/14/2020	28.60	--	--	534.12	-6.38
	12/11/2020	19.75	--	--	542.97	8.85
	3/19/2021	19.41	--	--	543.31	0.34
	7/14/2022	22.03	--	--	540.69	-2.62
	1/12/2023	19.51	--	--	543.21	2.52
	7/7/2023	24.40	--	--	538.32	-4.89

Notes:

All values reported in feet

TOC = Top of casing elevation relative to assigned benchmark.

-- = Not measured, not available, or not applicable

Table 2 - Summary of Groundwater Analytical Results
4 Corners Cleaners (17-126)
Maple Valley, Washington

Sample Number	Date Collected	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
Boring Groundwater Data						
B4-W	7/17/2018	<1.0	<1.0	<1.0	<1.0	<0.2
B5-W	7/17/2018	<1.0	<1.0	<1.0	<1.0	<0.2
B6-W	7/18/2018	<1.0	<1.0	<1.0	<1.0	<0.2
B7-W	7/18/2018	<1.0	<1.0	<1.0	<1.0	<0.2
B8-W	7/19/2018	<1.0	<1.0	<1.0	<1.0	<0.2
B9-W	7/19/2018	<1.0	<1.0	<1.0	<1.0	<0.2
Monitoring Well Groundwater Data[1]						
MW-1	6/23/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	9/14/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	12/11/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	3/19/2021	<1.0	<0.4	<1.0	<1.0	<0.2
	7/15/2022	<1.0	<0.4	<1.0	<1.0	<0.2
	1/12/2023	<1.0	<0.4	<1.0	<1.0	<0.2
	7/7/2023	<1.0	<0.4	<1.0	<1.0	<0.2
MW-2	6/23/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	9/14/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	12/11/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	3/19/2021	<1.0	<0.4	<1.0	<1.0	<0.2
	7/15/2022	<1.0	<0.4	<1.0	<1.0	<0.2
	1/12/2023	<1.0	<0.4	<1.0	<1.0	<0.2
	7/7/2023	<1.0	<0.4	<1.0	<1.0	<0.2
MW-3	6/23/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	9/14/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	12/11/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	3/19/2021	<1.0	<0.4	<1.0	<1.0	<0.2
	7/15/2022	<1.0	<0.4	<1.0	<1.0	<0.2
	1/12/2023	<1.0	<0.4	<1.0	<1.0	<0.2
	7/7/2023	<1.0	<0.4	<1.0	<1.0	<0.2
MW-5	6/23/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	9/14/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	12/11/2020	<1.0	<0.4	<1.0	<1.0	<0.2
	3/19/2021	<1.0	<0.4	<1.0	<1.0	<0.2
	7/15/2022	<1.0	<0.4	<1.0	<1.0	<0.2
	1/12/2023	<1.0	<0.4	<1.0	<1.0	<0.2
	7/7/2023	<1.0	<0.4	<1.0	<1.0	<0.2
PQL		1.0	0.4/1.0	1.0	1.0	0.2
MTCA Method A Cleanup Levels		5.0	5.0	160*	16*	0.2

Notes:
All values present are micrograms per liter (µg/L)
-- = Not analyzed for constituent
< = Not detected at the listed laboratory detection limits
PQL = Practical Quantification Limit (laboratory detection limit)
Red Bold indicates the detected concentration exceeds Ecology MTCA Method A cleanup level
Bold indicates the detected concentration is below Ecology MTCA Method A cleanup levels
PCE = Tetrachloroethene
TCE = Trichloroethene
DCE = Dichloroethene
[1]Refusal was consistently encountered throughout the area proposed for well MW-4; it was never installed.
* MTCA Method B cleanup level; Method A cleanup level not established

Table 3 - Summary of Sub-Slab Vapor Analytical Results
4 Corners Cleaners
Maple Valley, Washington

Sample Number	Depth Collected (feet)	Date Collected	PCE and Daughter Products					Other Detected Volatile Organic Compounds		
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Dichloro-difluoromethane	1,1,2-Trichloroethane
SV-1	SUB-SLAB	3/31/2017	1,600	<10	<10	<10	<10	<10	<10	<10
SV-2	SUB-SLAB	3/31/2017	1,800	<10	<10	<10	<10	<10	8,600	<10
SV-3	SUB-SLAB	3/31/2017	1,500	<10	<10	<10	<10	<10	12,000	<10
SV-4	SUB-SLAB	3/31/2017	790	<10	<10	<10	<10	<10	15,000	<10
SV-5	SUB-SLAB	3/31/2017	940	<10	<10	<10	<10	<10	8,200	<10
SV-6	SUB-SLAB	3/31/2017	850	<10	<10	<10	<10	<10	7,200	<10
SV-7	SUB-SLAB	3/31/2017	1,700	<10	<10	<10	<10	<10	870	<10
SV-8	SUB-SLAB	3/31/2017	1,100	<10	<10	<10	<10	<10	290	<10
SV-9	SUB-SLAB	3/31/2017	2,800	<10	<10	<10	<10	310	2,500	<10
SV-10	SUB-SLAB	3/31/2017	2,100	<10	<10	<10	<10	31,000	3,100	380
SV-11	SUB-SLAB	3/31/2017	6,300	<10	<10	<10	<10	<10	2,800	<10
SV-12	SUB-SLAB	3/31/2017	2,600	<10	<10	<10	<10	<10	3,400	<10
SV-13	SUB-SLAB	3/31/2017	180	<10	<10	<10	<10	<10	9,000	<10
SV-14	SUB-SLAB	3/31/2017	2,600	<10	<10	<10	<10	<10	610	<10
SVE SYSTEM STARTUP OCTOBER 9, 2019										
VP-1[1]	SUB-SLAB	10/9/2019	586	4.48	<0.793	<0.793	<0.511	--	--	--
		12/16/2019	4.03	1.95	<0.793	<0.793	<0.511	--	--	--
		1/16/2020	264E	3.18	<0.793	<0.793	<0.511	--	--	--
		2/25/2020	198	3.92	<0.793	<0.793	<0.511	--	--	--
		3/16/2020	270	3.7	<2.7	<2.7	<1.7	--	--	--
		5/20/2020	570	4.3	<5.6	<5.6	<3.6	--	--	--
		7/8/2020	580	4.6	<2.8	<2.8	<1.8	--	--	--
		8/26/2020	42	<1.0	<1.5	<1.5	<0.97	--	--	<0.41
		9/16/2020	<45	<0.71	<2.6	<2.6	<1.7	--	--	<0.36
		12/17/2020	420	2.7	<8.3	<8.3	<5.4	--	--	<1.1
		4/20/2021	150	1.8	<2.5	<2.5	<1.6	--	--	<0.34
		6/21/2021	53	1.2	<2.8	<2.8	<1.8	--	--	--
		8/17/2021	68	<2.1	<7.9	<7.9	<5.1	--	--	<1.1
		11/2/2021	240	1.8	<2.5	<2.5	<1.6	--	--	<0.35
		5/9/2022	<28	<0.44	<1.6	<1.6	<1.0	--	--	--
		10/6/2022	<39	<0.62	<2.3	<2.3	<1.5	--	--	--
		3/23/2023	69	1.1	<2.3	<2.3	<1.5	--	--	--
VP-2[1]	SUB-SLAB	10/9/2019	<2.03	<1.07	<0.793	<0.793	<0.511	--	--	--
		12/16/2019	4.77	<1.07	<0.793	<0.793	<0.511	--	--	--
		1/16/2020	101	1.49	<0.793	<0.793	<0.511	--	--	--
		2/25/2020	72	<1.07	<0.793	<0.793	<0.511	--	--	--
		3/16/2020	66	<1.07	<2.7	<2.7	<1.7	--	--	--
		5/20/2020	230	<1.8	<2.7	<2.7	<1.7	--	--	--
		7/8/2020	170	<1.9	<2.8	<2.8	<1.8	--	--	--
		8/26/2020	120	<2.7	<4	<4	<2.6	--	--	<5.5
		9/16/2020	<44	<0.7	<2.6	<2.6	<1.7	--	--	<0.35
		12/17/2020	87	<1.1	<4.0	<4	<2.6	--	--	<0.55
		4/20/2021	190	0.76	<2.3	<2.3	<1.5	--	--	<0.32
		6/21/2021	86	0.78	<2.3	<2.3	<1.5	--	--	--
		8/17/2021	53	<0.75	<2.8	<2.8	<1.8	--	--	<0.38
		11/2/2021	79	<0.73	<2.7	<2.7	<1.7	--	--	<0.37
		5/9/2022	<35	0.90	<2	<2	<1.3	--	--	--
		10/6/2022	<38	<0.6	<2.2	<2.2	<1.4	--	--	--
		3/23/2023	<39	2.40	<2.3	<2.3	<1.5	--	--	--

Table 3 - Summary of Sub-Slab Vapor Analytical Results
4 Corners Cleaners
Maple Valley, Washington

Sample Number	Depth Collected (feet)	Date Collected	PCE and Daughter Products					Other Detected Volatile Organic Compounds		
			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Dichloro-difluoromethane	1,1,2-Trichloroethane
VP-3[1]	SUB-SLAB	10/9/2019	**743**	**1.32**	<0.793	<0.793	<0.511	--	--	--
		12/16/2019	**2.53**	<1.07	<0.793	<0.793	<0.511	--	--	--
		1/16/2020	**423**	<1.07	<0.793	<0.793	<0.511	--	--	--
		2/25/2020	**457**	**1.13**	<0.793	<0.793	<0.511	--	--	--
		3/16/2020	**960**	<9.4	<14	<14	<8.9	--	--	--
		5/20/2020	**1,300**	<9.4	<14	<14	<8.9	--	--	--
		7/8/2020	**970**	<3.8	<5.6	<5.6	<3.6	--	--	--
		8/26/2020	**420**	**1.8**	<1.6	<1.6	<1.6	--	--	<0.44
		9/16/2020	**720**	<5.6	<21	<21	<13	--	--	<2.8
		12/17/2020	**690**	<2.1	<7.9	<7.9	<5.1	--	--	<1.1
		4/20/2021	**890 ve**	**1.6**	<2.3	<2.3	<1.5	--	--	<0.32
		6/21/2021	**830 ve**	**1.8**	<2.6	<2.6	<1.7	--	--	--
		8/17/2021	**720**	**2.6**	<8.3	<8.3	<5.4	--	--	<1.1
		11/2/2021	**950**	**1.0**	<2.7	<2.7	<1.7	--	--	<0.37
		5/9/2022	**65**	**1.1**	<1.9	<1.9	<1.2	--	--	--
		10/6/2022	**78**	**1.3**	<2.3	<2.3	<1.5	--	--	--
		3/23/2023	**260**	<0.92	<3.4	<3.4	<2.2	--	--	--
VP-4[1]	SUB-SLAB	7/8/2020	<32	<1.3	<1.9	<1.9	<1.2	--	--	--
		8/26/2020	**290**	<13	<19	<19	<13	--	--	<13
		9/16/2020	**56**	<2.4	<3.4	<2.4	<1.5	--	--	<0.33
		12/17/2020	**400**	<2.1	<7.9	<7.9	<5.1	--	--	<1.1
		4/20/2021	**340**	**1.2**	<2.9	<2.9	<1.8	--	--	<0.39
		6/21/2021	**280**	**0.8**	<2.5	<2.5	<1.6	--	--	--
		8/17/2021	**72**	<1.1	<3.9	<3.9	<2.5	--	--	<0.54
		11/2/2021	**370**	<0.68	<2.5	<2.5	<1.6	--	--	<0.34
		5/9/2022	<31	<0.49	<1.8	<1.8	<1.2	--	--	--
		10/6/2022	<37	<0.58	<2.1	<2.1	<1.4	--	--	--
		3/23/2023	<56	<0.89	<3.3	<3.3	<2.1	--	--	--
PQL			PQL Varies					10.0	10.0	PQL varies
MTCA Method B Sub-Slab Screening Levels			321	12.3	NL	NL	9.33	3.62	1,520	5.21

Notes:
[1] - Collected from the permanent vapor monitoring point.
All values are presented in micrograms per cubic meter (µg/m³)
< = Not detected at the listed laboratory detection limits
ve =The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
PQL = Practical Quantification Limit (laboratory detection limit)
NL = Not Listed; no sub-slab screening levels have been established for this constituent
Red Bold indicates the detected concentration exceeds Ecology MTCA Method B sub-slab screening level
Bold indicates the detected concentration is below Ecology MTCA Method B sub-slab screening levels
PCE = Tetrachloroethene
TCE = Trichloroethene
DCE = Dichloroethene

Table 4 - Potential to Emit Summary
4 Corners Cleaners
Maple Valley, Washington

Date	Sample ID	Contaminant	Laboratory Sample Results parts per million volume (ppmv)	Molecular Weight (1) grams per - mole (g/mole)	Flowrate Measured (2) cubic feet per minute (cfm)	Potential To Emit Estimated pounds per day (lb/day)	*Maximum Allowable Emission Rate pounds per day (lb/day)
1/16/2020	**INPUT**	Tetrachloroethene (PCE)	0.0229	165.85	120	0.0016785	***2.74***
14:08:00	Trichloroethene (TCE)						***1.37***
Flow Temp = 60 F							
50-inches W.C.			Estimated Total Pounds of Total HVOCs Removed 10/9/2019 to 12/17/19				**0.420000**
Total System Vacuum			Estimated Total Pounds of Total HVOCs Removed 1/14/2020 to 1/31/20				**0.046998**
2/25/2020	**INPUT**	Tetrachloroethene (PCE)	0.0450	165.85	120	0.0032983	
9:27:00	Trichloroethene (TCE)						
Flow Temp = 60 F							
50-inches W.C.							
Total System Vacuum			Estimated Total Pounds of Total HVOCs Removed 2/1/20 to 3/5/20				**0.108845**
3/16/2020	**OUPUT**	Tetrachloroethene (PCE)	0.0023	165.85	120	0.0001686	
10:34:00	Trichloroethene (TCE)		0.00019	131.4	120	0.0000110	
Flow Temp = 60 F							
50-inches W.C.							
Total System Vacuum			Estimated Total Pounds of Total HVOCs Removed 3/16/20 to 4/09/20				**0.005927**
5/20/2020	**OUPUT**	Tetrachloroethene (PCE)	0.0003	165.85	120	0.0000220	
11:56:00	Trichloroethene (TCE)		0.006	131.4	120	0.0003484	
Flow Temp = 60 F							
50-inches W.C.							
Total System Vacuum			Estimated Total Pounds of Total HVOCs Removed 4/10/2020 to 5/20/20				**0.015187**
7/8/2020	**OUPUT**	Tetrachloroethene (PCE)	0.0056	165.85	120	0.0004105	
11:56:00	Trichloroethene (TCE)		0.006	131.4	120	0.0003484	
Flow Temp = 60 F							
50-inches W.C.							
Total System Vacuum			Estimated Total Pounds of Total HVOCs Removed 5/20/2020 to 7/8/20				**0.037186**
8/20/2020	**4CC-Inlet SVE**	Tetrachloroethene (PCE)	0.0014	165.85	110	0.0000941	
13:16:00	Trichloroethene (TCE)		0.000	131.4	110	0.0000106	
Flow Temp = 55 F							
55-inches W.C.							
Total System Vacuum			Estimated Total Pounds of Total HVOCs Removed 7/8/2020 to 8/20/20				**0.004503**
9/16/2020	**Effluent-091620**	Tetrachloroethene (PCE)	0.0034	165.85	120	0.0002492	
11:56:00	Trichloroethene (TCE)		0.000	131.4	120	0.0000075	
Flow Temp = 60 F							
50-inches W.C.							
Total System Vacuum			Estimated Total Pounds of Total HVOCs Removed 8/20/2020 to 9/16/20				**0.006932**
12/17/2020	**Influent-121720**	Tetrachloroethene (PCE)	0.0110	165.85	120	0.0008063	
13:20:00	Trichloroethene (TCE)		0.000	131.4	120	0.0000093	
Flow Temp = 60 F							
55-inches W.C.							
Total System Vacuum			Estimated Total Pounds of Total HVOCs Removed 9/16/20 to 12/17/20				**0.075031**
4/21/2021	**SVE-0UT-42021**	Tetrachloroethene (PCE)	0.0360	165.85	120	0.0026387	
15:50:00	Trichloroethene (TCE)		0.000	131.4	120	0.0000134	
Flow Temp = 60 F							
55-inches W.C.							
Total System Vacuum			Estimated Total Pounds of Total HVOCs Removed 12/17/20 to 04/21/21				**0.331503**

Table 4 - Potential to Emit Summary
4 Corners Cleaners
Maple Valley, Washington

Date	Sample ID	Contaminant	Laboratory Sample Results parts per million volume (ppmv)	Molecular Weight (1) grams per - mole (g/mole)	Flowrate Measured (2) cubic feet per minute (cfm)	Potential To Emit Estimated pounds per day (lb/day)	*Maximum Allowable Emission Rate pounds per day (lb/day)
8/17/2021	**INF-08122021**	Tetrachloroethene (PCE)	0.0043	165.85	120	0.0003152	
	13:20:00	Trichloroethene (TCE)	0.000	131.4	120	0.0000081	
	Flow Temp = 60 F						
	55-inches W.C.						
	Total System Vacuum		Estimated Total Pounds of Total HVOCs Removed 04/21/21 to 08/17/2021				**0.037827**
11/2/2021	**INF-110221**	Tetrachloroethene (PCE)	0.0066	165.85	120	0.0004838	
	12:38:00	Trichloroethene (TCE)	0.000	131.4	120	0.0000075	
	Flow Temp = 60 F						
	55-inches W.C.						
	Total System Vacuum		Estimated Total Pounds of Total HVOCs Removed 08/17/21 to 11/02/21				**0.037831**
5/9/2022	**SVE-IN**	Tetrachloroethene (PCE)	0.0047	165.85	120	0.0003445	
	12:30:00	Trichloroethene (TCE)	0.000	131.4	120	0.0000055	
	Flow Temp = 60 F						
	55-inches W.C.						
	Total System Vacuum		Estimated Total Pounds of Total HVOCs Removed 11/02/21 to 05/09/22				**0.065791**
3/24/2023	**SVE-IN**	Tetrachloroethene (PCE)	0.0082	165.85	120	0.0006003	
	12:52:00	Trichloroethene (TCE)	0.000	131.4	120	0.0000093	
	Flow Temp = 60 F						
	55-inches W.C.						
	Total System Vacuum		Estimated Total Pounds of Total HVOCs Removed 05/09/22 to 03/24/2023				**0.194459**
			Estimated Total Pounds of Total HVOCs Removed 990 Days Operating				**1.388018**

Notes:

CFM = Flow rate of gas (standard cubic feet per minute)
PPMV = Concentration of gas in parts per million by volume
1 Pound = 453.6 grams
1 Liter = 0.03531 cubic feet
1 Mole of gas = 24.46 Liters volume at STP (77"F and 29.92 "w.c.)
ft/min = feet per minute
inches W.C. = Inches of Water Column

* PSCAA Maximum Allowable Emission Rate for soil and groundwater remediation projects involving <15 pounds per year of benzene or vinyl chloride, <500 pounds per year of perchloroethylene (PCE) , and <1,000 pounds per year of toxic air contaminants. *(ref. PSCAA, Regulation I, Section 6.03)*

TO CALCULATE TOTAL POUNDS REMOVED:

TOTAL LBS	=	**MW** g	x	1 lb	x	1 mole	x	1 L	x	**SCFM** std cu ft	x **CONC** ppmv
REMOVED		1 mole		453.6 g		24.46 std L		0.03531 cu ft		min	$1x10^6$ /ppmv

(1) = Taken from the National Institute for Occupational Safety and Health (NIOSH) Pocket Guide to Chemical Hazards.
(2) = Velocity estimated from FPZ Blower Model SCL-K05 flow curves based on 40 inches W.C. vacuum at the system inlet.

APPENDIX A

Supporting Documents
Laboratory Datasheets

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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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January 21, 2022

Scott Rose, Project Manager
AEG
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

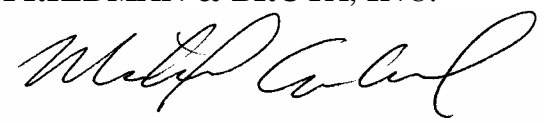
Dear Mr Rose

Included are the results from the testing of material submitted on January 13, 2022 from the 4-Corners Cleaners 17-126, F&BI 201161 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
c: AEG A/P
AEG0121R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 13, 2022 by Friedman & Bruya, Inc. from the AEG 4-Corners Cleaners 17-126, F&BI 201161 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	AEG
201161 -01	4C-CARBON-011222-01
201161 -02	4C-KOW-011222-02

The 8260D calibration standard failed the acceptance criteria for methylene chloride. The data were flagged accordingly.

All quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	4C-CARBON-011222-01	Client:	AEG
Date Received:	01/13/22	Project:	4-Corners Cleaners 17-126, F&BI 201161
Date Extracted:	01/18/22	Lab ID:	201161-01
Date Analyzed:	01/18/22	Data File:	011810.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	90	109
Toluene-d8	94	89	112
4-Bromofluorobenzene	114	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5 ca	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	AEG
Date Received:	Not Applicable	Project:	4-Corners Cleaners 17-126, F&BI 201161
Date Extracted:	01/18/22	Lab ID:	02-119 mb
Date Analyzed:	01/18/22	Data File:	011805.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	90	109
Toluene-d8	96	89	112
4-Bromofluorobenzene	100	84	115

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5 ca	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<1	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<1	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	4C-KOW-011222-02	Client:	AEG
Date Received:	01/13/22	Project:	4-Corners Cleaners 17-126, F&BI 201161
Date Extracted:	01/14/22	Lab ID:	201161-02
Date Analyzed:	01/18/22	Data File:	018010.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	85	117
Toluene-d8	97	88	112
4-Bromofluorobenzene	105	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	AEG
Date Received:	Not Applicable	Project:	4-Corners Cleaners 17-126, F&BI 201161
Date Extracted:	01/14/22	Lab ID:	02-113 mb
Date Analyzed:	01/14/22	Data File:	011407.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	RF

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	78	126
Toluene-d8	98	87	115
4-Bromofluorobenzene	94	92	112

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<0.5
trans-1,3-Dichloropropene	<0.4	Naphthalene	<1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 01/21/22
Date Received: 01/13/22
Project: 4-Corners Cleaners 17-126, F&BI 201161

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 201161-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	1	<0.5	5 ip	5 ip	10-142	0
Chloromethane	mg/kg (ppm)	1	<0.5	19	21	10-126	10
Vinyl chloride	mg/kg (ppm)	1	<0.05	13	12	10-138	8
Bromomethane	mg/kg (ppm)	1	<0.5	33	28	10-163	16
Chloroethane	mg/kg (ppm)	1	<0.5	24	25	10-176	4
Trichlorofluoromethane	mg/kg (ppm)	1	<0.5	14	14	10-176	0
Acetone	mg/kg (ppm)	5	<5	54	53	10-163	2
1,1-Dichloroethene	mg/kg (ppm)	1	<0.05	13	12	10-160	8
Hexane	mg/kg (ppm)	1	<0.25	4 ip	4 ip	10-137	0
Methylene chloride	mg/kg (ppm)	1	<0.5	0 ip	0 ip	10-156	
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	<0.05	43	43	21-145	0
trans-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	8 ip	8 ip	14-137	0
1,1-Dichloroethane	mg/kg (ppm)	1	<0.05	23	22	19-140	4
2,2-Dichloropropane	mg/kg (ppm)	1	<0.05	27	28	10-158	4
cis-1,2-Dichloroethene	mg/kg (ppm)	1	<0.05	12 ip	11 ip	25-135	9
Chloroform	mg/kg (ppm)	1	<0.05	19 ip	18 ip	21-145	5
2-Butanone (MEK)	mg/kg (ppm)	5	<1	40	38	19-147	5
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	<0.05	18	18	12-160	0
1,1,1-Trichloroethane	mg/kg (ppm)	1	<0.05	18	19	10-156	5
1,1-Dichloropropene	mg/kg (ppm)	1	<0.05	6 ip	6 ip	17-140	0
Carbon tetrachloride	mg/kg (ppm)	1	<0.05	12	13	9-164	8
Benzene	mg/kg (ppm)	1	<0.03	3 ip	3 ip	29-129	0
Trichloroethene	mg/kg (ppm)	1	<0.02	4 ip	4 ip	21-139	0
1,2-Dichloropropane	mg/kg (ppm)	1	<0.05	15 ip	15 ip	30-135	0
Bromodichloromethane	mg/kg (ppm)	1	<0.05	13 ip	12 ip	23-155	8
Dibromomethane	mg/kg (ppm)	1	<0.05	18 ip	17 ip	23-145	6
4-Methyl-2-pentanone	mg/kg (ppm)	5	<1	28	27	24-155	4
cis-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	9 ip	8 ip	28-144	12
Toluene	mg/kg (ppm)	1	<0.05	2 ip	2 ip	35-130	0
trans-1,3-Dichloropropene	mg/kg (ppm)	1	<0.05	8 ip	7 ip	26-149	13
1,1,2-Trichloroethane	mg/kg (ppm)	1	<0.05	14	14	10-205	0
2-Hexanone	mg/kg (ppm)	5	<0.5	15	14 ip	15-166	7
1,3-Dichloropropane	mg/kg (ppm)	1	<0.05	15 ip	13 ip	31-137	14
Tetrachloroethene	mg/kg (ppm)	1	<0.025	2 ip	2 ip	20-133	0
Dibromochloromethane	mg/kg (ppm)	1	<0.05	11 ip	10 ip	28-150	10
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	<0.05	10 ip	10 ip	28-142	0
Chlorobenzene	mg/kg (ppm)	1	<0.05	1 ip	1 ip	32-129	0
Ethylbenzene	mg/kg (ppm)	1	<0.05	2 ip	2 ip	32-137	0
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	10 ip	10 ip	31-143	0
m,p-Xylene	mg/kg (ppm)	2	<0.1	1 ip	1 ip	34-136	0
o-Xylene	mg/kg (ppm)	1	<0.05	1 ip	2 ip	33-134	67 ip
Styrene	mg/kg (ppm)	1	<0.05	1 ip	1 ip	35-137	0
Isopropylbenzene	mg/kg (ppm)	1	<0.05	2 ip	2 ip	31-142	0
Bromoform	mg/kg (ppm)	1	<0.05	7 ip	8 ip	21-156	13
n-Propylbenzene	mg/kg (ppm)	1	<0.05	1 ip	1 ip	23-146	0
Bromobenzene	mg/kg (ppm)	1	<0.05	1 ip	2 ip	34-130	67 ip
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	<0.05	1 ip	2 ip	18-149	67 ip
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	<0.05	13 ip	14 ip	28-140	7
1,2,3-Trichloropropane	mg/kg (ppm)	1	<0.05	13 ip	13 ip	25-144	0
2-Chlorotoluene	mg/kg (ppm)	1	<0.05	1 ip	2 ip	31-134	67 ip
4-Chlorotoluene	mg/kg (ppm)	1	<0.05	1 ip	2 ip	31-136	67 ip
tert-Butylbenzene	mg/kg (ppm)	1	<0.05	3 ip	3 ip	30-137	0
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	<0.05	1 ip	2 ip	10-182	67 ip
sec-Butylbenzene	mg/kg (ppm)	1	<0.05	2 ip	2 ip	23-145	0
p-Isopropyltoluene	mg/kg (ppm)	1	<0.05	1 ip	1 ip	21-149	0
1,3-Dichlorobenzene	mg/kg (ppm)	1	<0.05	1 ip	2 ip	30-131	67 ip
1,4-Dichlorobenzene	mg/kg (ppm)	1	<0.05	1 ip	2 ip	29-129	67 ip
1,2-Dichlorobenzene	mg/kg (ppm)	1	<0.05	1 ip	2 ip	31-132	67 ip
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	<0.5	5 ip	6 ip	11-161	18
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	<0.25	1 ip	1 ip	22-142	0
Hexachlorobutadiene	mg/kg (ppm)	1	<0.25	4 ip	4 ip	10-142	0
Naphthalene	mg/kg (ppm)	1	<0.05	1 ip	1 ip	14-157	0
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	<0.25	1 ip	1 ip	20-144	0

Date of Report: 01/21/22
Date Received: 01/13/22
Project: 4-Corners Cleaners 17-126, F&BI 201161

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	1	47	10-146
Chloromethane	mg/kg (ppm)	1	68	27-133
Vinyl chloride	mg/kg (ppm)	1	77	22-139
Bromomethane	mg/kg (ppm)	1	85	38-114
Chloroethane	mg/kg (ppm)	1	88	9-163
Trichlorofluoromethane	mg/kg (ppm)	1	85	10-196
Acetone	mg/kg (ppm)	5	89	52-141
1,1-Dichloroethene	mg/kg (ppm)	1	100	47-128
Hexane	mg/kg (ppm)	1	95	43-142
Methylene chloride	mg/kg (ppm)	1	68	10-184
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	1	91	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	1	93	67-129
1,1-Dichloroethane	mg/kg (ppm)	1	93	68-115
2,2-Dichloropropane	mg/kg (ppm)	1	118	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	1	98	72-127
Chloroform	mg/kg (ppm)	1	94	66-120
2-Butanone (MEK)	mg/kg (ppm)	5	91	30-197
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	96	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	1	92	62-131
1,1-Dichloropropene	mg/kg (ppm)	1	95	69-128
Carbon tetrachloride	mg/kg (ppm)	1	81	60-139
Benzene	mg/kg (ppm)	1	97	71-118
Trichloroethene	mg/kg (ppm)	1	91	63-121
1,2-Dichloropropane	mg/kg (ppm)	1	92	72-127
Bromodichloromethane	mg/kg (ppm)	1	82	57-126
Dibromomethane	mg/kg (ppm)	1	99	62-123
4-Methyl-2-pentanone	mg/kg (ppm)	5	96	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	1	91	67-122
Toluene	mg/kg (ppm)	1	106	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	1	99	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	1	98	64-115
2-Hexanone	mg/kg (ppm)	5	100	33-152
1,3-Dichloropropane	mg/kg (ppm)	1	105	72-130
Tetrachloroethene	mg/kg (ppm)	1	110	72-114
Dibromochloromethane	mg/kg (ppm)	1	89	55-121
1,2-Dibromoethane (EDB)	mg/kg (ppm)	1	109	74-132
Chlorobenzene	mg/kg (ppm)	1	104	76-111
Ethylbenzene	mg/kg (ppm)	1	108	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	1	94	64-121
m,p-Xylene	mg/kg (ppm)	2	112	78-122
o-Xylene	mg/kg (ppm)	1	107	77-124
Styrene	mg/kg (ppm)	1	105	74-126
Isopropylbenzene	mg/kg (ppm)	1	108	76-127
Bromoform	mg/kg (ppm)	1	84	56-132
n-Propylbenzene	mg/kg (ppm)	1	113	74-124
Bromobenzene	mg/kg (ppm)	1	111	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	1	109	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	1	111	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	1	107	61-137
2-Chlorotoluene	mg/kg (ppm)	1	109	74-121
4-Chlorotoluene	mg/kg (ppm)	1	112	75-122
tert-Butylbenzene	mg/kg (ppm)	1	112	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	1	110	76-125
sec-Butylbenzene	mg/kg (ppm)	1	114	71-130
p-Isopropyltoluene	mg/kg (ppm)	1	115	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	1	113	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	1	111	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	1	107	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	1	88	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	1	112	64-135
Hexachlorobutadiene	mg/kg (ppm)	1	121	50-153
Naphthalene	mg/kg (ppm)	1	108	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	1	112	63-138

Date of Report: 01/21/22
Date Received: 01/13/22
Project: 4-Corners Cleaners 17-126, F&BI 201161

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 201163-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	102	50-150
Chloromethane	ug/L (ppb)	10	<10	84	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	103	50-150
Bromomethane	ug/L (ppb)	10	<5	115	50-150
Chloroethane	ug/L (ppb)	10	<1	107	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	112	50-150
Acetone	ug/L (ppb)	50	<50	72	50-150
1,1-Dichloroethene	ug/L (ppb)	10	<1	96	50-150
Hexane	ug/L (ppb)	10	<5	79	50-150
Methylene chloride	ug/L (ppb)	10	<5	58	50-150
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	95	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	102	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	95	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	147	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	103	50-150
Chloroform	ug/L (ppb)	10	<1	100	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	78	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	98	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	104	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	92	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	102	50-150
Benzene	ug/L (ppb)	10	<0.35	96	50-150
Trichloroethene	ug/L (ppb)	10	2.0	92	50-150
1,2-Dichloropropane	ug/L (ppb)	10	<1	83	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	102	50-150
Dibromomethane	ug/L (ppb)	10	<1	99	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	89	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	84	50-150
Toluene	ug/L (ppb)	10	<1	96	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	82	50-150
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	94	50-150
2-Hexanone	ug/L (ppb)	50	<10	77	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	90	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	109	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	96	50-150
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	97	50-150
Chlorobenzene	ug/L (ppb)	10	<1	96	50-150
Ethylbenzene	ug/L (ppb)	10	<1	96	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	102	50-150
m,p-Xylene	ug/L (ppb)	20	<2	98	50-150
o-Xylene	ug/L (ppb)	10	<1	97	50-150
Styrene	ug/L (ppb)	10	<1	95	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	97	50-150
Bromoform	ug/L (ppb)	10	<5	92	50-150
n-Propylbenzene	ug/L (ppb)	10	<1	89	50-150
Bromobenzene	ug/L (ppb)	10	<1	86	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	92	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	89	50-150
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	85	50-150
2-Chlorotoluene	ug/L (ppb)	10	<1	89	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	82	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	89	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	89	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	88	50-150
p-Isopropyltoluene	ug/L (ppb)	10	<1	93	50-150
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	90	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	91	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	89	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	86	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	87	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	82	50-150
Naphthalene	ug/L (ppb)	10	<1	85	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	90	50-150

Date of Report: 01/21/22
Date Received: 01/13/22
Project: 4-Corners Cleaners 17-126, F&BI 201161

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	92	89	46-206	3
Chloromethane	ug/L (ppb)	10	82	84	70-142	2
Vinyl chloride	ug/L (ppb)	10	97	97	70-130	0
Bromomethane	ug/L (ppb)	10	108	107	56-197	1
Chloroethane	ug/L (ppb)	10	102	102	70-130	0
Trichlorofluoromethane	ug/L (ppb)	10	106	104	70-130	2
Acetone	ug/L (ppb)	50	72	71	10-140	1
1,1-Dichloroethene	ug/L (ppb)	10	90	91	70-130	1
Hexane	ug/L (ppb)	10	80	80	54-136	0
Methylene chloride	ug/L (ppb)	10	68	69	43-134	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	91	91	70-130	0
trans-1,2-Dichloroethene	ug/L (ppb)	10	95	96	70-130	1
1,1-Dichloroethane	ug/L (ppb)	10	91	91	70-130	0
2,2-Dichloropropane	ug/L (ppb)	10	142 vo	135 vo	70-130	5
cis-1,2-Dichloroethene	ug/L (ppb)	10	98	98	70-130	0
Chloroform	ug/L (ppb)	10	96	99	70-130	3
2-Butanone (MEK)	ug/L (ppb)	50	88	77	17-154	13
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	95	95	70-130	0
1,1,1-Trichloroethane	ug/L (ppb)	10	99	99	70-130	0
1,1-Dichloropropene	ug/L (ppb)	10	89	90	70-130	1
Carbon tetrachloride	ug/L (ppb)	10	100	98	70-130	2
Benzene	ug/L (ppb)	10	93	92	70-130	1
Trichloroethene	ug/L (ppb)	10	91	91	70-130	0
1,2-Dichloropropane	ug/L (ppb)	10	83	78	70-130	6
Bromodichloromethane	ug/L (ppb)	10	83	88	70-130	6
Dibromomethane	ug/L (ppb)	10	94	100	70-130	6
4-Methyl-2-pentanone	ug/L (ppb)	50	92	94	68-130	2
cis-1,3-Dichloropropene	ug/L (ppb)	10	88	86	69-131	2
Toluene	ug/L (ppb)	10	98	97	70-130	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	90	87	70-130	3
1,1,2-Trichloroethane	ug/L (ppb)	10	95	95	70-130	0
2-Hexanone	ug/L (ppb)	50	85	84	45-138	1
1,3-Dichloropropane	ug/L (ppb)	10	91	105	70-130	14
Tetrachloroethene	ug/L (ppb)	10	109	108	70-130	1
Dibromochloromethane	ug/L (ppb)	10	102	103	60-148	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	98	97	70-130	1
Chlorobenzene	ug/L (ppb)	10	101	100	70-130	1
Ethylbenzene	ug/L (ppb)	10	100	100	70-130	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	101	100	70-130	1
m,p-Xylene	ug/L (ppb)	20	101	101	70-130	0
o-Xylene	ug/L (ppb)	10	100	100	70-130	0
Styrene	ug/L (ppb)	10	100	100	70-130	0
Isopropylbenzene	ug/L (ppb)	10	101	101	70-130	0
Bromoform	ug/L (ppb)	10	101	100	69-138	1
n-Propylbenzene	ug/L (ppb)	10	94	94	70-130	0
Bromobenzene	ug/L (ppb)	10	92	90	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	96	97	70-130	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	93	93	70-130	0
1,2,3-Trichloropropane	ug/L (ppb)	10	91	89	70-130	2
2-Chlorotoluene	ug/L (ppb)	10	97	95	70-130	2
4-Chlorotoluene	ug/L (ppb)	10	91	89	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	96	93	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	96	94	70-130	2
sec-Butylbenzene	ug/L (ppb)	10	97	95	70-130	2
p-Isopropyltoluene	ug/L (ppb)	10	100	99	70-130	1
1,3-Dichlorobenzene	ug/L (ppb)	10	95	94	70-130	1
1,4-Dichlorobenzene	ug/L (ppb)	10	96	95	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	96	94	70-130	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	90	89	70-130	1
1,2,4-Trichlorobenzene	ug/L (ppb)	10	95	95	70-130	0
Hexachlorobutadiene	ug/L (ppb)	10	99	96	70-130	3
Naphthalene	ug/L (ppb)	10	93	92	70-130	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	97	95	70-130	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

~~201172~~ 201161

SAMPLE CHAIN OF CUSTODY

01-13-22

A01/VW1/VS1

Report To Scott Rose

Company AEG, LLC.

Address 2633 Parkmont Lane SW, Suite A

City, State, ZIP Olympia, WA 98522

Phone 360-352-9835 Email SROSE@AEGWA.COM

SAMPLERS (signature) [signature]

PROJECT NAME	PO #
4-Corners Cleaners	17-126
REMARKS Project Specific RLs - Yes / No	INVOICE TO AEG

Page # ______ of ______

TURNAROUND TIME
X Standard Turnaround
RUSH______
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Archive Samples
Other______

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Notes
4C-CARBON-011222-01	01A-E	1/12/22	1500	solid/carbon	5				X			
4C-KOW-011222-02	02A-C	1/12/22	1515	W	3				X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Tony Behnick	AEG/DWG	1/13/22	
Received by: [signature]	Ann Wong	FRB	1/13/22	1317
Relinquished by:				
Received by:		Samples received at 6 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

June 8, 2022

Scott Rose, Project Manager
AEG
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Dear Mr Rose:

Included are the results from the testing of material submitted on May 20, 2022 from the 4-Corners Cleaners 17-126, F&BI 205354 project. There are 9 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: AEG A/P
AEG0608R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 20, 2022 by Friedman & Bruya, Inc. from the AEG 4-Corners Cleaners 17-126, F&BI 205354 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	AEG
205354 -01	SVE-IN
205354 -02	VP-1
205354 -03	VP-2
205354 -04	VP-3
205354 -05	VP-4

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVE-IN	Client:	AEG
Date Received:	05/20/22	Project:	4-Corners Cleaners 17-126
Date Collected:	05/09/22	Lab ID:	205354-01 1/4.7
Date Analyzed:	05/26/22	Data File:	052612.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.2	<0.47
trans-1,2-Dichloroethene	<1.9	<0.47
cis-1,2-Dichloroethene	<1.9	<0.47
Trichloroethene	<0.51	<0.094
Tetrachloroethene	<32	<4.7

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1	Client:	AEG
Date Received:	05/20/22	Project:	4-Corners Cleaners 17-126
Date Collected:	05/09/22	Lab ID:	205354-02 1/4.1
Date Analyzed:	05/26/22	Data File:	052613.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1	<0.41
trans-1,2-Dichloroethene	<1.6	<0.41
cis-1,2-Dichloroethene	<1.6	<0.41
Trichloroethene	<0.44	<0.082
Tetrachloroethene	<28	<4.1

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2	Client:	AEG
Date Received:	05/20/22	Project:	4-Corners Cleaners 17-126
Date Collected:	05/09/22	Lab ID:	205354-03 1/5.1
Date Analyzed:	05/26/22	Data File:	052614.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	90	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.3	<0.51
trans-1,2-Dichloroethene	<2	<0.51
cis-1,2-Dichloroethene	<2	<0.51
Trichloroethene	0.90	0.17
Tetrachloroethene	<35	<5.1

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-3	Client:	AEG
Date Received:	05/20/22	Project:	4-Corners Cleaners 17-126
Date Collected:	05/09/22	Lab ID:	205354-04 1/4.8
Date Analyzed:	05/26/22	Data File:	052615.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.2	<0.48
trans-1,2-Dichloroethene	<1.9	<0.48
cis-1,2-Dichloroethene	<1.9	<0.48
Trichloroethene	1.1	0.20
Tetrachloroethene	65	9.6

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-4	Client:	AEG
Date Received:	05/20/22	Project:	4-Corners Cleaners 17-126
Date Collected:	05/09/22	Lab ID:	205354-05 1/4.6
Date Analyzed:	05/26/22	Data File:	052616.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.2	<0.46
trans-1,2-Dichloroethene	<1.8	<0.46
cis-1,2-Dichloroethene	<1.8	<0.46
Trichloroethene	<0.49	<0.092
Tetrachloroethene	<31	<4.6

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	AEG
Date Received:	Not Applicable	Project:	4-Corners Cleaners 17-126
Date Collected:	Not Applicable	Lab ID:	02-1228 MB
Date Analyzed:	05/26/22	Data File:	052611.D
Matrix:	Air	Instrument:	GCMS8
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	89	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
Trichloroethene	<0.11	<0.02
Tetrachloroethene	<6.8	<1

Date of Report: 06/08/22
Date Received: 05/20/22
Project: 4-Corners Cleaners 17-126, F&BI 205354

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 205435-01 1/4.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Vinyl chloride	ug/m3	<1.2	<1.2	nm
trans-1,2-Dichloroethene	ug/m3	<1.9	<1.9	nm
cis-1,2-Dichloroethene	ug/m3	<1.9	<1.9	nm
Trichloroethene	ug/m3	0.78	0.61	24
Tetrachloroethene	ug/m3	1,100	1,000	10

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	ug/m3	35	96	70-130
trans-1,2-Dichloroethene	ug/m3	54	104	70-130
cis-1,2-Dichloroethene	ug/m3	54	98	70-130
Trichloroethene	ug/m3	73	104	70-130
Tetrachloroethene	ug/m3	92	116	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

205354

SAMPLE CHAIN OF CUSTODY

5/20/22

Page # 1 of 1

Report To Scott Rose
Company AEG
Address 2633 Parkmont Lane SW suite A
City, State, ZIP Olympia, WA 98502
Phone 360-352-9825 Email SROSE@AEGINC.com

SAMPLERS (*signature*)

PROJECT NAME & ADDRESS: 4-Corners Cleanup
PO # 17-126

NOTES: PCE/TCE & DAUGHTER PRODUCTS
INVOICE TO: AEG

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Default: Clean after 3 days
☐ Archive (Fee may apply)

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium	PCE/TCE Daughter products	Notes
SVE-IN	01	3254	304	IA / (SG)	5/19/22	28"	1230	6"	1238			X			X	collected from manifold valve sample port.
VP-1	02	3256	259	IA / (SG)	5/19/22	26"	1301	3"	1309			X			X	valve stuck - NOT opened all 6" closed @ 3"
VP-2	03	2433	64	IA / (SG)	5/19/22	28"	1241	6"	1249			X			X	
VP-3	04	3251	255	IA / SG	5/19/22	28"	1312	6"	1319			X			X	
VP-4	05	3250	55	IA / (SG)	5/19/22	28"	1251	6"	1259			X			X	
				IA / SG												
				IA / SG												
				IA / SG												

SVE system shut off for SG Testing

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Tony Rebmann	AEG	5/20/22	
Received by: Windy Madden	Windy Madden	F+BI	5/20/22	11:09
Relinquished by:				
Received by:		Samples received at 17 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

3012 16th Avenue West
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fbi@isomedia.com
www.friedmanandbruya.com

October 17, 2022

Scott Rose, Project Manager
AEG
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Dear Mr Rose:

Included are the results from the testing of material submitted on October 6, 2022 from the 4-Corners Cleaner 17-126, F&BI 210077 project. There are 8 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: AEG A/P
AEG1017R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on October 6, 2022 by Friedman & Bruya, Inc. from the AEG 4-Corners Cleaner 17-126, F&BI 210077 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	AEG
210077 -01	VP-4
210077 -02	VP-2
210077 -03	VP-3
210077 -04	VP-1

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-4	Client:	AEG
Date Received:	10/06/22	Project:	4-Corners Cleaner 17-126, F&BI 210077
Date Collected:	10/06/22	Lab ID:	210077-01 1/5.4
Date Analyzed:	10/11/22	Data File:	101115.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.4	<0.54
trans-1,2-Dichloroethene	<2.1	<0.54
cis-1,2-Dichloroethene	<2.1	<0.54
Trichloroethene	<0.58	<0.11
Tetrachloroethene	<37	<5.4

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2	Client:	AEG
Date Received:	10/06/22	Project:	4-Corners Cleaner 17-126, F&BI 210077
Date Collected:	10/06/22	Lab ID:	210077-02 1/5.6
Date Analyzed:	10/11/22	Data File:	101116.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.4	<0.56
trans-1,2-Dichloroethene	<2.2	<0.56
cis-1,2-Dichloroethene	<2.2	<0.56
Trichloroethene	<0.6	<0.11
Tetrachloroethene	<38	<5.6

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-3	Client:	AEG
Date Received:	10/06/22	Project:	4-Corners Cleaner 17-126, F&BI 210077
Date Collected:	10/06/22	Lab ID:	210077-03 1/5.9
Date Analyzed:	10/11/22	Data File:	101117.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.5	<0.59
trans-1,2-Dichloroethene	<2.3	<0.59
cis-1,2-Dichloroethene	<2.3	<0.59
Trichloroethene	1.3	0.24
Tetrachloroethene	78	11

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1	Client:	AEG
Date Received:	10/06/22	Project:	4-Corners Cleaner 17-126, F&BI 210077
Date Collected:	10/06/22	Lab ID:	210077-04 1/5.8
Date Analyzed:	10/11/22	Data File:	101118.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.5	<0.58
trans-1,2-Dichloroethene	<2.3	<0.58
cis-1,2-Dichloroethene	<2.3	<0.58
Trichloroethene	<0.62	<0.12
Tetrachloroethene	<39	<5.8

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	AEG
Date Received:	Not Applicable	Project:	4-Corners Cleaner 17-126, F&BI 210077
Date Collected:	Not Applicable	Lab ID:	02-2308 mb
Date Analyzed:	10/11/22	Data File:	101111.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
Trichloroethene	<0.11	<0.02
Tetrachloroethene	<6.8	<1

Date of Report: 10/17/22
Date Received: 10/06/22
Project: 4-Corners Cleaner 17-126, F&BI 210077

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 210122-01 1/4.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Vinyl chloride	ug/m3	<1.2	<1.2	nm
trans-1,2-Dichloroethene	ug/m3	<1.9	<1.9	nm
cis-1,2-Dichloroethene	ug/m3	<1.9	<1.9	nm
Trichloroethene	ug/m3	0.96	0.91	5
Tetrachloroethene	ug/m3	<32	<32	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	ug/m3	35	107	70-130
trans-1,2-Dichloroethene	ug/m3	54	104	70-130
cis-1,2-Dichloroethene	ug/m3	54	101	70-130
Trichloroethene	ug/m3	73	106	70-130
Tetrachloroethene	ug/m3	92	105	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

210077

SAMPLE CHAIN OF CUSTODY

10/06/22

Page # ___ of ___

Report To: Scott Rose

Company: AEG

Address: 7633 Parkmont Lane SW Ste A

City, State, ZIP: Olympia, WA 98522

Phone: 360-352-9835 Email: srose@aeginc.com

SAMPLERS (signature)	
PROJECT NAME & ADDRESS: 4-Corners Cleaners	PO #: 17-126
NOTES: PCE/TCE & Daughter Products	INVOICE TO: AEG

TURNAROUND TIME
- [x] Standard
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Default: Clean following final report delivery
- [ ] Hold (Fee may apply):

SAMPLE INFORMATION / ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium	PCE/TCE & Daughter Products	Notes
VP-4	01	3483	65	IA / SG (circled)	10/6/22	28"	1303	5"	1313			X			X	
VP-2	02	2298	51	IA / SG (circled)	10/6/22	29"	1315	5"	1325			X			X	
VP-3	03	3672	303	IA / SG (circled)	10/6/22	28"	1347	5"	1357			X			X	
~~VP-4~~ VP-1 (line struck through)		3673	304	IA / SG (circled)	10/6/22	30"	1328					X	NO SAMPLE			vacuum valve/gauge may be malfunctioning
~~SVE-IN~~ VP-1	04	3252	69	IA / SG (circled)	10/6/22	28"	1333	5"	1343			X			X	
				IA / SG												
				IA / SG												
				IA / SG												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Tony Bannick	AEG	10/6/22	
Received by:	[signature]	ANH PHAN	F&B	10/06/22	15:42
Relinquished by:					
Received by:			Samples received at 21 °C		

FORMS\COC\COCTO-15.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

5500 4th Avenue South
Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 31, 2023

Scott Rose, Project Manager
AEG
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Dear Mr Rose:

Included are the results from the testing of material submitted on March 24, 2023 from the 4-Corners Cleaners Maple Valley, WA 17-126, F&BI 303407 project. There are 9 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: AEG A/P
AEG0331R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 24, 2023 by Friedman & Bruya, Inc. from the AEG 4-Corners Cleaners Maple Valley, WA 17-126, F&BI 303407 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	AEG
303407 -01	VP-1
303407 -02	VP-2
303407 -03	VP-4
303407 -04	SVE-IN
303407 -05	VP-3

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-1	Client:	AEG
Date Received:	03/24/23	Project:	4-Corners Cleaners Maple Valley
Date Collected:	03/23/23	Lab ID:	303407-01 1/5.7
Date Analyzed:	03/29/23	Data File:	032827.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	88	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.5	<0.57
trans-1,2-Dichloroethene	<2.3	<0.57
cis-1,2-Dichloroethene	<2.3	<0.57
Trichloroethene	1.1	0.21
Tetrachloroethene	69	10

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-2	Client:	AEG
Date Received:	03/24/23	Project:	4-Corners Cleaners Maple Valley
Date Collected:	03/23/23	Lab ID:	303407-02 1/5.8
Date Analyzed:	03/29/23	Data File:	032826.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	87	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<1.5	<0.58
trans-1,2-Dichloroethene	<2.3	<0.58
cis-1,2-Dichloroethene	<2.3	<0.58
Trichloroethene	2.4	0.45
Tetrachloroethene	<39	<5.8

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-4	Client:	AEG
Date Received:	03/24/23	Project:	4-Corners Cleaners Maple Valley
Date Collected:	03/23/23	Lab ID:	303407-03 1/8.3
Date Analyzed:	03/29/23	Data File:	032829.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	82	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<2.1	<0.83
trans-1,2-Dichloroethene	<3.3	<0.83
cis-1,2-Dichloroethene	<3.3	<0.83
Trichloroethene	<0.89	<0.17
Tetrachloroethene	<56	<8.3

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVE-IN	Client:	AEG
Date Received:	03/24/23	Project:	4-Corners Cleaners Maple Valley
Date Collected:	03/23/23	Lab ID:	303407-04 1/8.2
Date Analyzed:	03/29/23	Data File:	032828.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	85	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<2.1	<0.82
trans-1,2-Dichloroethene	<3.3	<0.82
cis-1,2-Dichloroethene	<3.3	<0.82
Trichloroethene	<0.88	<0.16
Tetrachloroethene	<56	<8.2

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	VP-3	Client:	AEG
Date Received:	03/24/23	Project:	4-Corners Cleaners Maple Valley
Date Collected:	03/23/23	Lab ID:	303407-05 1/8.6
Date Analyzed:	03/29/23	Data File:	032830.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	86	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<2.2	<0.86
trans-1,2-Dichloroethene	<3.4	<0.86
cis-1,2-Dichloroethene	<3.4	<0.86
Trichloroethene	<0.92	<0.17
Tetrachloroethene	260	38

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	AEG
Date Received:	Not Applicable	Project:	4-Corners Cleaners Maple Valley
Date Collected:	Not Applicable	Lab ID:	03-0682 MB
Date Analyzed:	03/28/23	Data File:	032811.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	81	70	130

Compounds:	Concentration ug/m3	ppbv
Vinyl chloride	<0.26	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
Trichloroethene	<0.11	<0.02
Tetrachloroethene	<6.8	<1

Date of Report: 03/31/23
Date Received: 03/24/23
Project: 4-Corners Cleaners Maple Valley, WA 17-126, F&BI 303407

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 303447-01 1/5.2 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Vinyl chloride	ug/m3	<1.3	<1.3	nm
trans-1,2-Dichloroethene	ug/m3	<2.1	<2.1	nm
cis-1,2-Dichloroethene	ug/m3	<2.1	<2.1	nm
Trichloroethene	ug/m3	<0.56	<0.56	nm
Tetrachloroethene	ug/m3	<35	<35	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	ug/m3	35	88	70-130
trans-1,2-Dichloroethene	ug/m3	54	94	70-130
cis-1,2-Dichloroethene	ug/m3	54	88	70-130
Trichloroethene	ug/m3	73	110	70-130
Tetrachloroethene	ug/m3	92	128	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

303407

SAMPLE CHAIN OF CUSTODY

03/24/23 [redacted]

—

[redacted] SCOTT ROSE

Company AEG- ATLAN

Address 2633 Parkmont Lane SW Suite A

City, State, ZIP Olympia, WA 98522

Phone 360-352-9835 Email SROSE@AEGINC.com

SAMPLERS (*signature*)

PROJECT NAME & ADDRESS
4-Corners Cleaners
MAPLE VALLEY, WA

PO #
17-126

NOTES:
PCE/TCE & Daughter Products

INVOICE TO
AEG

Page # ____ of ____

TURNAROUND TIME
Standard (circled)
RUSH____
Rush charges authorized by:

SAMPLE DISPOSAL
Default: Clean following final report delivery
Hold (Fee may apply):____

SAMPLE INFORMATION / ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium	PCE/TCE/DAUGHTER PRODUCTS	Notes
VP-1	01	3254	206	IA / SG (SG circled)	3/23/23	27"	1236	5"	1246			X			X	
VP-2	02	3389	220	IA / SG (SG circled)	3/23/23	29"	1212	5"	1222			X			X	
~~VP-3~~		~~2295~~	~~228~~	~~IA / SG~~ (SG circled)	~~3/23/23~~	~~29"~~	~~1212~~		~~1222~~			~~X~~			~~X~~	3/23/23
VP-4	03	2307	231	IA / SG (SG circled)	3/23/23	30"	1200	5"	1210			X			X	
SVE-IN	04	2294	204	IA / SG (SG circled)	3/23/23	28"	1252	5"	1302			X			X	
VP-3	05	2295	228	IA / SG (SG circled)	3/23/23	26"	1224	5"	1234			X			X	shut off for testing after revisit
				IA / SG												
				IA / SG												

Samples received at 20 °C

Friedman & Bruya, Inc.
5500 4th Avenue South
Seattle, WA 98108
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Tony Bechnick	AEG	3/24/23	
Received by: [signature]	ANH PHAN	F&B	03/24/23	11:56
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

July 21, 2022

Scott Rose
Associated Environmental Group, LLC
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Dear Mr. Rose:

Please find enclosed the analytical data report for the 4 Corners Cleaners project located in Maple Valley, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

4 CORNERS CLEANERS PROJECT
AEG, LLC
Maple Valley, Washington
Libby Project # L22G056
Client Project # 17-126

Volatile Organic Compounds by EPA Method 8260D in Water

Sample Description		Method Blank	MW-1	MW-2	MW-3	MW-5	MW-5 Dup
Date Sampled		N/A	7/15/2022	7/15/2022	7/15/2022	7/15/2022	7/15/2022
Date Analyzed	PQL (µg/L)	7/19/2022 (µg/L)	7/19/2022 (µg/L)	7/19/2022 (µg/L)	7/19/2022 (µg/L)	7/19/2022 (µg/L)	7/19/2022 (µg/L)
Vinyl Chloride (VC)	0.2	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.5	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd	nd
cis -1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.4	nd	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	nd	nd	nd	nd	nd
Surrogate Recovery							
Dibromofluoromethane		120	130	108	122	121	121
1,2-Dichloroethane-d4		130	130	128	127	126	124
Toluene-d8		86	88	51 S	86	89	90
4-Bromofluorobenzene		78	83	86	83	79	80

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.
"S" Spike compound recovery is outside acceptance limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 65% TO 135%

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

4 CORNERS CLEANERS PROJECT
AEG, LLC
Maple Valley, Washington
Libby Project # L22G056
Client Project # 17-126

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Water

Matrix Spike Sample Identification: MW-5

Date Analyzed: 7/19/2022

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Limits Recovery (%)	Data Flag
Vinyl Chloride (VC)	5.0	3.4	3.9	69	78	12.3	65-135	
1,1-Dichloroethene	5.0	5.4	6.0	109	120	9.6	65-135	
trans-1,2-Dichloroethene	5.0	6.2	6.2	125	123	1.3	65-135	
cis-1,2-Dichloroethene	5.0	5.9	5.9	117	117	0.0	65-135	
Trichloroethene (TCE)	5.0	4.8	5.1	97	101	4.8	65-135	
Tetrachloroethene (PCE)	5.0	5.7	6.3	113	127	11.2	65-135	

Surrogate Recovery (%)	MS	MSD		
Dibromofluoromethane	122	136	65-135	S
1,2-Dichloroethane-d4	132	102	65-135	
Toluene-d8	92	78	65-135	
4-Bromofluorobenzene	110	100	65-135	

ACCEPTABLE RPD IS 35%
"S" Spike recovery outside accepted recovery limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

Date Analyzed: 7/19/2022

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	LCS Recovery Limits (%)	Data Flag
Vinyl Chloride (VC)	5.0	5.2	103	80-120	
1,1-Dichloroethene	5.0	4.8	96	80-120	
trans-1,2-Dichloroethene	5.0	5.1	102	80-120	
cis-1,2-Dichloroethene	5.0	4.8	97	80-120	
Trichloroethene (TCE)	5.0	4.2	84	80-120	
Tetrachloroethene (PCE)	5.0	4.8	95	80-120	

Surrogate Recovery			
Dibromofluoromethane	178	65-135	S
1,2-Dichloroethane-d4	135	65-135	
Toluene-d8	88	65-135	
4-Bromofluorobenzene	109	65-135	

"S" Spike compound recovery is outside acceptance limits.

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

4 CORNERS CLEANERS PROJECT
AEG, LLC
Libby Project # L22G056
Date Received 7/18/22 11:50

Received By JC

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	0.4 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	2.1 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies?	☐ Yes	☐ No	☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 7/15/22 Page: 1 of 1

Client: AEG

Project Manager: Scott Rose

Address: 2633 Parkmount Lane SW, Suite A

Project Name: 4 Corners Cleaners

City: Olympia State: WA Zip: 98502

Location: 23886 Se Kent-Kangley Rd City, State: Maple Valley, WA

Phone: (360) 352-9835 Fax: (360) 352-8164

Collector: Jonah Davis Date of Collection: 7/15/22

Client Project # 17-126

Email: Srose@AEGWA.com

	Sample Number	Depth	Time	Sample Type	Container Type	PCE/TCE w/ Daughter Pr														Field Notes
1	MW-1	—	1158	G	Vocs	X														
2	MW-2	—	1255	↓	↓	X														
3	MW-3	—	1129	↓	↓	X														
4	MW-5	—	1226	↓	↓	X														
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
	7/15/22 @ 1430		7/15/22 1430
	7/18/22 1150		7/18/22 1150

Sample Receipt

Good Condition? Y N

Temp. °C

Seals Intact? Y N N/A

Total Number of Containers

Remarks:

TAT: 24HR 48HR 5-DAY

Libby Environmental, Inc.
3322 South Bay Road NE • Olympia, WA 98506-2957

January 18, 2023

Scott Rose
AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Dear Scott Rose:

Please find enclosed the analytical data report for the 4 Corners Cleaners project located in Maple Valley, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@gmail.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 01/12/23 Page: 1 of 1

Client: AEG

Project Manager: Scott Rose

Address: 2633 Parkmount Lane SW, Suite A

Project Name: 4 Corners Cleaners

City: Olympia State: WA Zip: 98502

Location: 23886 Se Kent-Kangley Rd City, State: Maple Valley, WA

Phone: (360) 352-9835 Fax: (360) 352-8164

Collector: Christina Mroz Date of Collection: 01/12/23

Client Project # 17-126

Email: Srose@AEGWA.com

	Sample Number	Depth	Time	Sample Type	Container Type	PCE/TCE w/ Daughter Pr															Field Notes
1	MW-1	—	0811	GW	VOA	X															
2	MW-2	—	0907	↓	↓	X															
3	MW-3	—	1008	↓	↓	X															
4	MW-5	—	0938	↓	↓	X															
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					
16																					
17																					

Relinquished by:	Date / Time	Received by:	Date / Time
	1/12/23 1140		1/12/23 1140
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:

TAT: 24HR 48HR (5-DAY)

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

4 CORNERS CLEANERS PROJECT
AEG an Atlas Geosciences NW Company
Maple Valley, Washington
Libby Project # L23A043
Client Project # 17-126

Volatile Organic Compounds by EPA Method 8260D in Water

Sample Description		Method Blank	MW-1	MW-2	MW-3	MW-5
Date Sampled		N/A	1/12/2023	1/12/2023	1/12/2023	1/12/2023
Date Analyzed	PQL (µg/L)	1/15/2023 (µg/L)	1/15/2023 (µg/L)	1/15/2023 (µg/L)	1/15/2023 (µg/L)	1/15/2023 (µg/L)
Vinyl Chloride (VC)	0.2	nd	nd	nd	nd	nd
1,1-Dichloroethene	0.5	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd
cis -1,2-Dichloroethene	1.0	nd	nd	nd	nd	nd
Trichloroethene (TCE)	0.4	nd	nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	nd	nd	nd	nd
Surrogate Recovery	Acceptable Limits (%)					
Dibromofluoromethane	27-188	107	105	106	111	109
1,2-Dichloroethane-d4	17-212	99	98	101	105	102
Toluene-d8	41-142	96	95	95	94	96
4-Bromofluorobenzene	47-167	90	90	91	85	93

"nd" Indicates not detected at listed detection limit.
"int" Indicates that interference prevents determination.

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

4 CORNERS CLEANERS PROJECT
AEG an Atlas Geosciences NW Company
Maple Valley, Washington
Libby Project # L23A043
Client Project # 17-126

QA/QC for Volatile Organic Compounds by EPA Method 8260D in Water

Matrix Spike Sample Identification: L23A042-07
Date Analyzed: 1/15/2023

	Spiked Conc. (µg/L)	MS Response (µg/L)	MSD Response (µg/L)	MS Recovery (%)	MSD Recovery (%)	RPD (%)	Recovery Limits (%)	Data Flag
Vinyl chloride	5.0	4.1	4.2	82	84	2.4	10-234	
1,1-Dichloroethene	5.0	4.9	5.4	97	108	10.5	15-233	
trans-1,2-Dichloroethene	5.0	5.0	5.3	100	105	4.8	54-165	
cis-1,2-Dichloroethene	5.0	5.1	5.1	102	103	1.0	35-167	
Trichloroethene (TCE)	5.0	5.7	5.6	114	112	2.4	64-141	
Tetrachloroethene (PCE)	5.0	6.2	6.1	124	122	1.8	42-173	

Surrogate Recovery (%)	MS	MSD	
Dibromofluoromethane	108	109	27-188
1,2-Dichloroethane-d4	100	98	17-212
Toluene-d8	96	98	41-142
4-Bromofluorobenzene	97	96	47-167

ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY: Sherry Chilcutt

Laboratory Control Sample

Date Analyzed: 1/15/2023

	Spiked Conc. (µg/L)	LCS Response (µg/L)	LCS Recovery (%)	Recovery Limits (%)	Data Flag
Vinyl chloride	5.0	4.0	80	15-226	
1,1-Dichloroethene	5.0	5.1	102	38-193	
trans-1,2-Dichloroethene	5.0	5.5	109	53-156	
cis-1,2-Dichloroethene	5.0	5.2	104	10-219	
Trichloroethene (TCE)	5.0	6.0	120	37-121	
Tetrachloroethene (PCE)	5.0	6.6	133	46-159	

Surrogate Recovery			
Dibromofluoromethane	109	27-188	
1,2-Dichloroethane-d4	96	17-212	
Toluene-d8	98	41-142	
4-Bromofluorobenzene	97	47-167	

ANALYSES PERFORMED BY: Sherry Chilcutt

Libby Environmental, Inc.

3322 South Bay Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@gmail.com

4 CORNERS CLEANERS PROJECT
AEG an Atlas Geosciences NW Company
Libby Project # L23A043
Date Received 1/12/23 11:40

Received By AR

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	0.2 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	0.6 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☐ Yes ☐ No ☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____

Libby Environmental, Inc.

3322 South Bay Road NE • Olympia, WA 98506-2957

Phone (360) 352-2110 • libbyenv@gmail.com

July 13, 2023

Scott Rose
AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

RE: 4 Corners Cleaners
Work Order Number: L23G015

Enclosed are the results of analyses for samples received by our laboratory on 7/7/2023.

Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of within 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please feel free to contact us. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry Chilcutt
Senior Chemist

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Date: 7/7/23 Page: 1 of 1

Client: AEG

Project Manager: Scott Rose

Address: 2633 Parkmount Lane SW, Suite A

Project Name: 4 Corners Cleaners

City: Olympia State: WA Zip: 98502

Location: 23886 Se Kent-Kangley Rd City, State: Maple Valley, WA

Phone: (360) 352-9835 Fax: (360) 352-8164

Collector: Aimee Rice Date of Collection: 7/7/23

Client Project # 17-126

Email: Srose@AEGWA.com

	Sample Number	Depth	Time	Sample Type	Container Type	PCE/TCE w/ Daughter Pr														Field Notes
1	MW-1	—	1045	GW	VOA	X														
2	MW-2	—	1018	↓	↓	X														
3	MW-3	—	0856	↓	↓	X														
4	MW-5	—	0935	↓	↓	X														
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	7/7/23 @ 1300	[signature]	7-7-23 1300
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.			°C
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:

TAT: 24HR 48HR (5-DAY)

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

AEG an Atlas Geosciences NW Company	**Project:** 4 Corners Cleaners	**City/State:** Maple Valley, WA
2633 Parkmont Lane SW, Suite A	**Project Number:** 17-126	**Work Order:** L23G015
Olympia, WA 98502	**Project Manager:** Scott Rose	**Reported:** 07/13/2023 16:07

Notes and Definitions

Item	Definition
RL	Reporting Limit
ND	Analyte NOT DETECTED at or above the reporting limit
DET	Analyte DETECTED at or above the reporting limit
Qual	Qualifier

All results reported on an "as received" basis unless indicated by "Dry"

Work Order Sample Summary

Lab ID	Sample	Matrix	Date Sampled	Date Received
L23G015-01	MW-1	Water	07/07/2023	07/07/2023
L23G015-02	MW-2	Water	07/07/2023	07/07/2023
L23G015-03	MW-3	Water	07/07/2023	07/07/2023
L23G015-04	MW-5	Water	07/07/2023	07/07/2023

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: 4 Corners Cleaners
Project Number: 17-126
Project Manager: Scott Rose

City/State: Maple Valley, WA
Work Order: L23G015
Reported: 07/13/2023 16:07

Sample Results

Client Sample ID: MW-1

Lab ID: L23G015-01 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Vinyl Chloride (SIM)	ND		0.20	ug/L	07/11/2023	AR
1,1-Dichloroethene	ND		0.50	ug/L	07/11/2023	AR
trans-1,2-Dichloroethene	ND		1.0	ug/L	07/11/2023	AR
cis-1,2-Dichloroethene	ND		1.0	ug/L	07/11/2023	AR
Trichloroethene (SIM)	ND		0.40	ug/L	07/11/2023	AR
Tetrachloroethene (SIM)	ND		1.0	ug/L	07/11/2023	AR
Surrogate: Dibromofluoromethane	*105%*		*22.9-220*		*07/11/2023*	*AR*
Surrogate: 1,2-Dichloroethane-d4	*94.4%*		*32.2-196*		*07/11/2023*	*AR*
Surrogate: Toluene-d8	*97.8%*		*47.3-146*		*07/11/2023*	*AR*
Surrogate: 4-Bromofluorobenzene	*94.4%*		*38.4-136*		*07/11/2023*	*AR*

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: 4 Corners Cleaners
Project Number: 17-126
Project Manager: Scott Rose

City/State: Maple Valley, WA
Work Order: L23G015
Reported: 07/13/2023 16:07

Sample Results (Continued)

Client Sample ID: MW-2

Lab ID: L23G015-02 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Vinyl Chloride (SIM)	ND		0.20	ug/L	07/11/2023	AR
1,1-Dichloroethene	ND		0.50	ug/L	07/11/2023	AR
trans-1,2-Dichloroethene	ND		1.0	ug/L	07/11/2023	AR
cis-1,2-Dichloroethene	ND		1.0	ug/L	07/11/2023	AR
Trichloroethene (SIM)	ND		0.40	ug/L	07/11/2023	AR
Tetrachloroethene (SIM)	ND		1.0	ug/L	07/11/2023	AR
Surrogate: Dibromofluoromethane	*108%*		*22.9-220*		*07/11/2023*	*AR*
Surrogate: 1,2-Dichloroethane-d4	*95.8%*		*32.2-196*		*07/11/2023*	*AR*
Surrogate: Toluene-d8	*99.8%*		*47.3-146*		*07/11/2023*	*AR*
Surrogate: 4-Bromofluorobenzene	*89.0%*		*38.4-136*		*07/11/2023*	*AR*

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: 4 Corners Cleaners
Project Number: 17-126
Project Manager: Scott Rose

City/State: Maple Valley, WA
Work Order: L23G015
Reported: 07/13/2023 16:07

Sample Results (Continued)

Client Sample ID: MW-3

Lab ID: L23G015-03 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Vinyl Chloride (SIM)	ND		0.20	ug/L	07/11/2023	AR
1,1-Dichloroethene	ND		0.50	ug/L	07/11/2023	AR
trans-1,2-Dichloroethene	ND		1.0	ug/L	07/11/2023	AR
cis-1,2-Dichloroethene	ND		1.0	ug/L	07/11/2023	AR
Trichloroethene (SIM)	ND		0.40	ug/L	07/11/2023	AR
Tetrachloroethene (SIM)	ND		1.0	ug/L	07/11/2023	AR
Surrogate: Dibromofluoromethane	*111%*		*22.9-220*		*07/11/2023*	*AR*
Surrogate: 1,2-Dichloroethane-d4	*96.0%*		*32.2-196*		*07/11/2023*	*AR*
Surrogate: Toluene-d8	*102%*		*47.3-146*		*07/11/2023*	*AR*
Surrogate: 4-Bromofluorobenzene	*87.0%*		*38.4-136*		*07/11/2023*	*AR*

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: 4 Corners Cleaners
Project Number: 17-126
Project Manager: Scott Rose

City/State: Maple Valley, WA
Work Order: L23G015
Reported: 07/13/2023 16:07

Sample Results (Continued)

Client Sample ID: MW-5

Lab ID: L23G015-04 (Water)

Analyte	Result	Qual	RL	Units	Date Analyzed	Analyst Initials
Volatile Organic Compounds by EPA Method 8260D						
Vinyl Chloride (SIM)	ND		0.20	ug/L	07/11/2023	AR
1,1-Dichloroethene	ND		0.50	ug/L	07/11/2023	AR
trans-1,2-Dichloroethene	ND		1.0	ug/L	07/11/2023	AR
cis-1,2-Dichloroethene	ND		1.0	ug/L	07/11/2023	AR
Trichloroethene (SIM)	ND		0.40	ug/L	07/11/2023	AR
Tetrachloroethene (SIM)	ND		1.0	ug/L	07/11/2023	AR
Surrogate: Dibromofluoromethane	*109%*		*22.9-220*		*07/11/2023*	*AR*
Surrogate: 1,2-Dichloroethane-d4	*99.3%*		*32.2-196*		*07/11/2023*	*AR*
Surrogate: Toluene-d8	*101%*		*47.3-146*		*07/11/2023*	*AR*
Surrogate: 4-Bromofluorobenzene	*92.8%*		*38.4-136*		*07/11/2023*	*AR*

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: 4 Corners Cleaners
Project Number: 17-126
Project Manager: Scott Rose

City/State: Maple Valley, WA
Work Order: L23G015
Reported: 07/13/2023 16:07

Quality Control

Volatile Organic Compounds by EPA Method 8260D

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BXG0032 - VOA										
Blank (BXG0032-BLK1)					Prepared & Analyzed: 7/11/2023					
Vinyl Chloride (SIM)	ND		0.20	ug/L						
1,1-Dichloroethene	ND		0.50	ug/L						
trans-1,2-Dichloroethene	ND		1.0	ug/L						
cis-1,2-Dichloroethene	ND		1.0	ug/L						
Trichloroethene (SIM)	ND		0.40	ug/L						
Tetrachloroethene (SIM)	ND		1.0	ug/L						
Surrogate: Dibromofluoromethane			*22.2*	*ug/L*	*20.0*		*111*	*22.9-220*		
Surrogate: 1,2-Dichloroethane-d4			*20.2*	*ug/L*	*20.0*		*101*	*32.2-196*		
Surrogate: Toluene-d8			*20.4*	*ug/L*	*20.0*		*102*	*47.3-146*		
Surrogate: 4-Bromofluorobenzene			*18.2*	*ug/L*	*20.0*		*91.0*	*38.4-136*		
LCS (BXG0032-BS1)					Prepared & Analyzed: 7/11/2023					
Vinyl Chloride (SIM)	5.01		0.20	ug/L	5.00		100	44.2-183		
1,1-Dichloroethene	5.17		0.50	ug/L	5.00		103	39.6-181		
trans-1,2-Dichloroethene	4.82		1.0	ug/L	5.00		96.5	39.6-177		
cis-1,2-Dichloroethene	5.18		1.0	ug/L	5.00		104	29.5-182		
Trichloroethene (SIM)	4.57		0.40	ug/L	5.00		91.4	28.8-130		
Tetrachloroethene (SIM)	4.72		1.0	ug/L	5.00		94.5	30.4-159		
Surrogate: Dibromofluoromethane			*21.5*	*ug/L*	*20.0*		*107*	*22.9-220*		
Surrogate: 1,2-Dichloroethane-d4			*19.7*	*ug/L*	*20.0*		*98.6*	*32.2-196*		
Surrogate: Toluene-d8			*21.7*	*ug/L*	*20.0*		*108*	*47.3-146*		
Surrogate: 4-Bromofluorobenzene			*22.6*	*ug/L*	*20.0*		*113*	*38.4-136*		
Duplicate (BXG0032-DUP1)		**Parent: L23G023-02RE2**			Prepared & Analyzed: 7/11/2023					
Vinyl Chloride (SIM)	ND		0.20	ug/L		ND				35
1,1-Dichloroethene	ND		0.50	ug/L		ND				35
trans-1,2-Dichloroethene	ND		1.0	ug/L		ND				35
cis-1,2-Dichloroethene	ND		1.0	ug/L		ND				35
Trichloroethene (SIM)	ND		0.40	ug/L		ND				35
Tetrachloroethene (SIM)	ND		1.0	ug/L		ND				35
Surrogate: Dibromofluoromethane			*22.4*	*ug/L*	*20.0*		*112*	*22.9-220*		
Surrogate: 1,2-Dichloroethane-d4			*20.0*	*ug/L*	*20.0*		*100*	*32.2-196*		
Surrogate: Toluene-d8			*20.4*	*ug/L*	*20.0*		*102*	*47.3-146*		
Surrogate: 4-Bromofluorobenzene			*20.8*	*ug/L*	*20.0*		*104*	*38.4-136*		

AEG an Atlas Geosciences NW Company
2633 Parkmont Lane SW, Suite A
Olympia, WA 98502

Project: 4 Corners Cleaners
Project Number: 17-126
Project Manager: Scott Rose

City/State: Maple Valley, WA
Work Order: L23G015
Reported: 07/13/2023 16:07

Quality Control
(Continued)

Volatile Organic Compounds by EPA Method 8260D (Continued)

Analyte	Result	Qual	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Duplicate (BXG0032-DUP2)		**Parent: L23G015-01RE1**			Prepared & Analyzed: 7/11/2023					
Vinyl Chloride (SIM)	ND		0.20	ug/L		ND				35
1,1-Dichloroethene	ND		0.50	ug/L		ND				35
trans-1,2-Dichloroethene	ND		1.0	ug/L		ND				35
cis-1,2-Dichloroethene	ND		1.0	ug/L		ND				35
Trichloroethene (SIM)	ND		0.40	ug/L		ND				35
Tetrachloroethene (SIM)	ND		1.0	ug/L		ND				35
Surrogate: Dibromofluoromethane			*22.6*	*ug/L*	*20.0*		*113*	*22.9-220*		
Surrogate: 1,2-Dichloroethane-d4			*20.0*	*ug/L*	*20.0*		*100*	*32.2-196*		
Surrogate: Toluene-d8			*20.3*	*ug/L*	*20.0*		*102*	*47.3-146*		
Surrogate: 4-Bromofluorobenzene			*17.2*	*ug/L*	*20.0*		*86.2*	*38.4-136*		
Matrix Spike (BXG0032-MS1)		**Parent: L23G023-02RE2**			Prepared & Analyzed: 7/11/2023					
Vinyl Chloride (SIM)	5.10		0.20	ug/L	5.00	ND	102	10.7-223		
1,1-Dichloroethene	5.27		0.50	ug/L	5.00	ND	105	21.7-199		
trans-1,2-Dichloroethene	4.46		1.0	ug/L	5.00	ND	89.3	10-216		
cis-1,2-Dichloroethene	4.52		1.0	ug/L	5.00	ND	90.3	10-246		
Trichloroethene (SIM)	4.50		0.40	ug/L	5.00	ND	89.9	25.2-172		
Tetrachloroethene (SIM)	4.56		1.0	ug/L	5.00	ND	91.1	43.2-139		
Surrogate: Dibromofluoromethane			*20.2*	*ug/L*	*20.0*		*101*	*22.9-220*		
Surrogate: 1,2-Dichloroethane-d4			*18.8*	*ug/L*	*20.0*		*93.8*	*32.2-196*		
Surrogate: Toluene-d8			*19.9*	*ug/L*	*20.0*		*99.6*	*47.3-146*		
Surrogate: 4-Bromofluorobenzene			*22.7*	*ug/L*	*20.0*		*113*	*38.4-136*		
Matrix Spike Dup (BXG0032-MSD1)		**Parent: L23G023-02RE2**			Prepared & Analyzed: 7/11/2023					
Vinyl Chloride (SIM)	5.23		0.20	ug/L	5.00	ND	105	10.7-223	2.46	35
1,1-Dichloroethene	5.45		0.50	ug/L	5.00	ND	109	21.7-199	3.28	35
trans-1,2-Dichloroethene	4.63		1.0	ug/L	5.00	ND	92.6	10-216	3.61	35
cis-1,2-Dichloroethene	4.87		1.0	ug/L	5.00	ND	97.3	10-246	7.46	35
Trichloroethene (SIM)	4.40		0.40	ug/L	5.00	ND	88.1	25.2-172	2.07	35
Tetrachloroethene (SIM)	4.34		1.0	ug/L	5.00	ND	86.7	43.2-139	4.95	35
Surrogate: Dibromofluoromethane			*21.1*	*ug/L*	*20.0*		*105*	*22.9-220*		
Surrogate: 1,2-Dichloroethane-d4			*19.5*	*ug/L*	*20.0*		*97.5*	*32.2-196*		
Surrogate: Toluene-d8			*20.2*	*ug/L*	*20.0*		*101*	*47.3-146*		
Surrogate: 4-Bromofluorobenzene			*22.0*	*ug/L*	*20.0*		*110*	*38.4-136*		

Libby Environmental, Inc.

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4 CORNERS CLEANERS PROJECT
AEG an Atlas Geosciences NW Company
Libby Project # L23G015
Date Received 7/7/2023
Time Received 1:00 PM

Received By SC

Sample Receipt Checklist

Chain of Custody

1. Is the Chain of Custody is complete?	☑ Yes	☐ No	
2. How was the sample delivered?	☑ Hand Delivered	☐ Picked Up	☐ Shipped

Log In

3. Cooler or Shipping Container is present.	☑ Yes	☐ No	☐ N/A
4. Cooler or Shipping Container is in good condition.	☑ Yes	☐ No	☐ N/A
5. Cooler or Shipping Container has Custody Seals present.	☐ Yes	☑ No	☐ N/A
6. Was an attempt made to cool the samples?	☑ Yes	☐ No	☐ N/A
7. Temperature of cooler (0°C to 8°C recommended)	0.3 °C		
8. Temperature of sample(s) (0°C to 8°C recommended)	6.4 °C		
9. Did all containers arrive in good condition (unbroken)?	☑ Yes	☐ No	
10. Is it clear what analyses were requested?	☑ Yes	☐ No	
11. Did container labels match Chain of Custody?	☑ Yes	☐ No	
12. Are matrices correctly identified on Chain of Custody?	☑ Yes	☐ No	
13. Are correct containers used for the analysis indicated?	☑ Yes	☐ No	
14. Is there sufficient sample volume for indicated analysis?	☑ Yes	☐ No	
15. Were all containers properly preserved per each analysis?	☑ Yes	☐ No	
16. Were VOA vials collected correctly (no headspace)?	☑ Yes	☐ No	☐ N/A
17. Were all holding times able to be met?	☑ Yes	☐ No	

Discrepancies/ Notes

18. Was client notified of all discrepancies? ☐ Yes ☐ No ☑ N/A

Person Notified: _____ Date: _____

By Whom: _____ Via: _____

Regarding: _____

19. Comments. _____