

September 17, 2021

Mill Creek Crossing LLC
22833 Bothell Everett Highway, Suite 207
Bothell, Washington 98021

Attn: Mr. Nicholas Echelbarger

Re: September 2021 Groundwater Monitoring Report – Former Prime Cleaners
18001 Bothell Everett Highway
Bothell, Snohomish County, Washington
ZGA Project No. 1001.25
VCP #NW2571

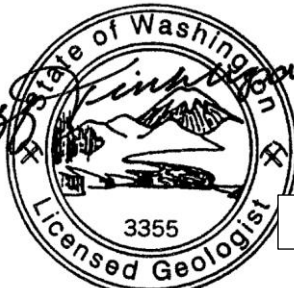
Dear Mr. Echelbarger:

Zipper Geo Associates, LLC (ZGA) is pleased to submit this Groundwater Monitoring Report for the above referenced site. This investigation was performed in general accordance with ZGA's Proposal No. P14297R, dated July 2, 2015 and includes results for sampling events completed in September 2021.

We appreciate the opportunity to perform these services for Mill Creek Crossing LLC. Please contact the undersigned at (425) 582-9928 if you have questions regarding the information provided in the report.

Sincerely,

Zipper Geo Associates, LLC



Signed 9/17/2021

JEFFREY S. TINKLEPAUGH

Jeffrey S. Tinklepaugh, LG
Project Geologist



Signed 9/17/2021

SEAN W. DONNAN

Sean W. Donnan, P.G., L.E.G., L.Hg.
Principal

Attachments: Appendix A – Figures
Appendix B – Laboratory Reports

Introduction

This groundwater monitoring report presents a summary of a groundwater sampling event completed in September 2021. The scope of the monitoring study is generally to sample four groundwater wells (MW-3, MW-4, MW-7, and MW-8) located proximal and downgradient to the former dry cleaning facilities on the southwest part of the Mill Creek Crossing Retail Center. Results from the monitoring study are used to assess trends in concentrations of volatile organic compounds (VOC), particularly tetrachloroethylene (PCE), and its degradational products trichloroethylene (TCE), 1,1-dichloroethene, cis-1,2-dichloroethylene (cis-1,2-DCE), and trans-1,2-dichloroethylene (trans-1,2-DCE), and vinyl chloride. 1,1-dichloroethene and the end-member degradational product vinyl chloride have never been detected at the Site.

Table 1. Project Information

Site Name	Former Prime Cleaners
Site Location/Address	18001 Bothell-Everett Highway
VCP #	NW2571
Sampling Schedule	No fixed schedule
Sampling Dates (this report)	September 3, 2021
Wells Sounded	MW-1 through MW-10
Wells Sampled	MW-3, MW-4, MW-7, and MW-8
Next Sampling Event	TBD

Groundwater Flow

Ten dedicated groundwater monitoring wells are present on or adjoining the Site (MW-1 through MW-10). Depth to groundwater was measured in relation to the north side of the PVC casing of each well. Generally, we observed a southerly trend to groundwater flow, consistent with previous sampling events. Relative groundwater elevations measured during previous sampling events and the event discussed in this report are presented in Table 2. A groundwater contour map for the September 2021 sampling event is attached as Figure 1.

Table 2. Groundwater Elevations

Well ID	Relative Casing Elevation (ft.)	Date of Measurement	Depth to Groundwater (ft.)	Relative Groundwater Elevation (ft.)
MW-1	296.31	08-25-2010	25.22	271.09
		05-09-2011	21.18	275.13
		05-23-2012	22.73	273.58
		03-05-2014	23.95	272.36
		01-09-2017	22.85	273.46
		08-17-2017	24.87	271.44
		11-14-2017	24.66	271.65
		02-13-2018	21.65	274.66
		01-14-2019	23.78	272.53
		04-10-2019	24.04	272.27
		12-03-2020	23.95	272.36
		09-03-2021	26.18	270.13
MW-2	296.47	08-25-2010	25.58	270.89

Well ID	Relative Casing Elevation (ft.)	Date of Measurement	Depth to Groundwater (ft.)	Relative Groundwater Elevation (ft.)
		05-09-2011	21.61	274.86
		05-23-2012	22.97	273.50
		03-05-2014	24.28	272.19
		01-09-2017	23.14	273.33
		08-17-2017	25.57	270.90
		11-14-2017	25.15	271.32
		02-13-2018	22.00	274.47
		01-14-2019	24.05	272.42
		04-10-2019	24.40	272.07
		12-03-2020	24.30	272.17
		09-03-2021	26.57	269.90
MW-3	296.96	08-25-2010	26.17	270.79
		05-09-2011	22.21	274.75
		05-23-2012	23.49	273.47
		03-05-2014	24.88	272.08
		01-09-2017	23.66	273.30
		08-17-2017	26.10	270.86
		11-14-2017	25.69	271.27
		02-13-2018	22.45	274.51
		01-14-2019	24.53	272.43
		04-10-2019	24.92	272.04
		12-09-2019	26.53	270.43
		12-03-2020	24.82	272.14
		09-03-2021	27.15	269.81
		MW-4	296.56	08-25-2010
05-09-2011	21.77			274.79
05-23-2012	23.10			273.46
03-05-2014	24.47			272.09
01-09-2017	23.21			273.35
08-17-2017	25.67			270.89
11-14-2017	25.32			271.24
02-13-2018	22.10			274.46
01-14-2019	24.16			272.40
04-10-2019	24.53			272.03
MW-4 (cont'd)	12-09-2019	26.12		270.44
	12-03-2020	24.44		272.12
	09-03-2021	26.73		269.83
MW-5	289.85	08-25-2010		18.71
		05-09-2011	14.96	274.89
		05-23-2012	16.18	273.67
		03-05-2014	17.49	272.36
		01-09-2017	17.36	272.49
		08-17-2017	18.71	271.14
		11-14-2017	18.51	271.34
		02-13-2018	15.52	274.33
		01-14-2019	17.59	272.26

Well ID	Relative Casing Elevation (ft.)	Date of Measurement	Depth to Groundwater (ft.)	Relative Groundwater Elevation (ft.)
		04-10-2019	17.64	272.21
		12-03-2020	17.85	272.00
		09-03-2021	19.93	269.92
MW-6	289.94	08-25-2010	18.91	271.03
		05-09-2011	15.06	274.88
		05-23-2012	16.30	273.64
		03-05-2014	17.54	272.40
		01-09-2017	16.44	273.50
		08-17-2017	18.81	271.13
		11-14-2017	18.71	271.23
		02-13-2018	15.53	274.41
		01-14-2019	17.64	272.30
		04-10-2019	17.66	272.28
		12-03-2020	17.77	272.17
		09-03-2021	19.92	270.02
MW-7	289.72	08-25-2010	19.14	270.58
		05-09-2011	15.22	274.50
		05-23-2012	16.41	273.31
		03-05-2014	17.85	271.87
		01-09-2017	16.61	273.11
		08-17-2017	19.11	270.61
		11-14-2017	18.68	271.04
		02-13-2018	15.51	274.21
		01-14-2019	17.52	272.20
		04-10-2019	17.84	271.88
		12-03-2020	17.84	271.88
		09-03-2021	20.07	269.65
MW-8	290.56	08-25-2010	Not Installed	
		05-09-2011	16.02	274.54
		05-23-2012	17.21	273.35
		03-05-2014	18.69	271.87
		01-09-2017	17.47	273.09
		08-17-2017	19.91	270.65
		11-14-2017	19.46	271.10
		02-13-2018	16.30	274.26
		01-14-2019	18.30	272.26
		04-10-2019	18.61	271.95
MW-8 (cont'd)		12-09-2019	20.28	270.28
		12-03-2020	18.81	271.75
		09-03-2021	20.91	269.65
MW-9	298.90	08-25-2010	Not Installed	
		05-09-2011		
		05-23-2012		
		03-05-2014	26.30	272.60
		01-09-2017	25.10	273.80
		08-17-2017	27.55	271.35

Well ID	Relative Casing Elevation (ft.)	Date of Measurement	Depth to Groundwater (ft.)	Relative Groundwater Elevation (ft.)
		11-14-2017	27.52	271.38
		02-13-2018	24.35	274.55
		01-14-2019	26.43	272.47
		04-10-2019	26.73	272.17
		12-03-2020	26.75	272.15
		09-03-2021	29.09	269.81
MW-10	297.49	08-25-2010	Not Installed	
		05-09-2011		
		05-23-2012		
		03-05-2014	25.19	272.30
		01-12-2017	24.17	273.32
		08-18-2017	26.21	271.28
		11-14-2017	25.91	271.58
		02-13-2018	22.85	274.64
		01-14-2019	24.94	272.55
		04-10-2019	25.25	272.24
		12-03-2020	25.19	272.30
		09-03-2021	27.42	270.07

Groundwater Sampling and Analysis

Each groundwater monitoring well was purged using a portable bladder pump equipped with a disposable bladder and dedicated tubing. The pump was lowered gently into the water column to a depth that corresponded with the highest concentration of PCE observed in that well in soil during the remedial investigations. If no PCE was measured in soil in a well, the pump was set at the mid-point of the screen. Flow rates were maintained at approximately 0.1 to 0.3 liters per minute. During the purging process, groundwater quality parameters including temperature, electrical conductivity (EC), pH, turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured at regular intervals using a Horiba U-22 water-quality meter equipped with a flow cell. Purging at a given well was considered complete when: DO and turbidity were within +/- 10% variance; pH was within +/- 0.1 variance; EC was within +/- 3% variance; and ORP was within +/- 10 mV. All non-disposable pump components were decontaminated after sampling by rinsing with potable water, scrubbing in a solution of Alconox™ and potable water, and a final rinse with distilled water. Purge water and decontamination water were stored in a sealed, labeled 50-gallon drum at the Site and are awaiting classification and off-site disposal.

Groundwater samples were collected after parameter stabilization into laboratory-supplied glass 40-mL VOA vials preserved with hydrochloric acid. Sample containers were labeled with the well ID, the project name, the project number, the date, and the time of collection. Sample containers were immediately stored in a chilled cooler pending transport to the analytical laboratory. Sample containers were transported in a chilled cooler under chain of custody procedure to Friedman and Bruya Inc. (FBI) in Seattle, a Washington State accredited analytical laboratory.

The analytical results are summarized in Table 3, and are compared to cleanup levels defined in the Model Toxics Control Act (WAC 173-340).

Groundwater Sampling Analytical Results (September 2021)

The following results were drawn from the analysis of groundwater samples collected from MW-3, MW-4, MW-7, and MW-8. MW-1, MW-2, MW-5, MW-6, MW-9, and MW-10 were not sampled during this groundwater monitoring event. The executed chain-of-custody forms and laboratory analytical certificates are provided in Appendix B. Analytical results were compared to applicable cleanup standards established under Chapter 70A.305 RCW and its implementing regulations, the Model Toxics Control Act, Chapter 173-340 WAC (collectively, MTCA).

- PCE was detected at concentrations that exceeded the MTCA Method A cleanup level (5 µg/L) in two of the four monitoring wells sampled during this event. Concentrations of detectable PCE in each well were as follows: MW-3 (3.1 µg/L); MW-4 (20 µg/L and duplicate 19 µg/L); MW-7 (not detected above laboratory method reporting limits of 1 µg/L) and MW-8 (13 µg/L).

Other analytes were not detected above their respective reporting detection limits (RDLs) in MW-3, MW-4, MW-7, and MW-8.

Table 3. Groundwater Analytical Results

Monitoring Well	Date	Volatile Organic Compounds (µg/L)			
		PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE
MW-1	06-17-09	12	ND<1	4.8	ND<1
	08-10-10	ND<1	3.2	1.4	ND<1
	05-10-11	1.3	ND<1	ND<1	ND<1
	05-23-12	ND<2	ND<2	ND<2	ND<2
	03-05-14	ND<2	ND<2	ND<2	ND<2
	01-11-17	0.508	ND<1	ND<1	ND<1
	08-18-17	0.431	ND<1	ND<1	ND<1
	11-15-17	0.231	ND<0.5	ND<0.5	ND<0.5
	02-13-18	0.300	ND<0.5	ND<0.5	ND<0.5
	01-14-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-2	04-10-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	06-16-09	ND<1	ND<1	ND<1	ND<1
	08-12-10	ND<1	ND<1	ND<1	ND<1
	05-10-11	ND<1	ND<1	ND<1	ND<1
	05-24-12	ND<2	ND<2	ND<2	ND<2
	03-05-14	ND<2	ND<2	ND<2	ND<2
	01-11-17	ND<1	ND<1	ND<1	ND<1
	08-17-17	ND<1	ND<1	ND<1	ND<1
	11-14-17	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02-13-18	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-3	01-14-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04-10-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	06-17-09	6.6	ND<1	ND<1	ND<1
	08-12-10	6.4	ND<1	ND<1	ND<1
	05-10-11	9.3	ND<1	ND<1	ND<1
	05-24-12	15	ND<2	ND<2	ND<2
	03-07-14	5.6	ND<2	ND<2	ND<2
	01-12-17	9.28	ND<1	ND<1	ND<1
	08-21-17	2.81	ND<1	ND<1	ND<1
	11-16-17	4.96	ND<0.5	ND<0.5	ND<0.5
	02-14-18	6.78	ND<0.5	ND<0.5	ND<0.5
	01-15-19	4.44	ND<0.5	ND<0.5	ND<0.5
	04-11-19	2.51	ND<0.5	ND<0.5	ND<0.5
	12-09-19	3.22	ND<0.5	ND<0.5	ND<0.5
	12-03-20	23.6	ND<0.5	ND<0.5	ND<0.5
	09-03-21	3.1	ND<0.5	ND<1	ND<1
MTCA Method A Cleanup Level		5 ^A	5 ^A	16 ^B	160 ^B
MTCA Method B Groundwater Screening Level for Vapor Intrusion		24	1.5	16	160

Monitoring Well	Date	Volatile Organic Compounds (µg/L)			
		PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE
MW-4	10-31-07	45	ND<1	ND<1	ND<1
	06-16-09	170	ND<1	ND<1	ND<1
	08-12-10	140	ND<1	ND<1	ND<1
	05-10-11	110	ND<1	ND<1	ND<1
	05-24-12	140	ND<2	ND<2	ND<2
	03-07-14	44	ND<2	ND<2	ND<2
	01-13-17	96.1	ND<1	ND<1	ND<1
	01-13-17 DUP	95.8	ND<1	ND<1	ND<1
	08-21-17	76.5	ND<1	ND<1	ND<1
	11-16-17	50.8	ND<0.5	ND<0.5	ND<0.5
	11-16-17 DUP	56.9	ND<0.5	ND<0.5	ND<0.5
	02-14-18	28.5	ND<0.5	ND<0.5	ND<0.5
	01-15-19	10.7	ND<0.5	ND<0.5	ND<0.5
	01-15-19 DUP	10.6	ND<0.5	ND<0.5	ND<0.5
	04-11-19	22.5	ND<0.5	ND<0.5	ND<0.5
	04-11-19 DUP	21.8	ND<0.5	ND<0.5	ND<0.5
	12-09-19	42.9	ND<0.5	ND<0.5	ND<0.5
	12-09-19 DUP	40.9	ND<0.5	ND<0.5	ND<0.5
	12-04-20	18.6	ND<0.5	ND<0.5	ND<0.5
	12-04-20 Dup	17.3	ND<0.5	ND<0.5	ND<0.5
	09-03-21	20	ND<0.5	ND<1	ND<1
	09-03-21 Dup	19	ND<0.5	ND<1	ND<1
MW-5	08-10-10	0.61	ND<1	ND<1	ND<1
	05-09-11	0.60	ND<1	ND<1	ND<1
	03-06-14	ND<2	ND<2	ND<2	ND<2
	01-12-17	ND<1	ND<1	ND<1	ND<1
	08-18-17	0.281	ND<1	ND<1	ND<1
	11-15-17	0.259	ND<0.5	ND<0.5	ND<0.5
	02-13-18	0.220	ND<0.5	ND<0.5	ND<0.5
	01-15-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-6	08-10-10	ND<1	ND<1	ND<1	ND<1
	05-09-11	2.2	ND<1	ND<1	ND<1
	03-06-14	4.7	ND<2	ND<2	ND<2
	01-12-17	1.07	ND<1	ND<1	ND<1
	08-21-17	0.674	ND<1	ND<1	ND<1
	11-15-17	2.37	ND<0.5	ND<0.5	ND<0.5
	02-14-18	3.21	ND<0.5	ND<0.5	ND<0.5
	01-15-19	2.04	ND<0.5	ND<0.5	ND<0.5
	04-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MTCA Method A Cleanup Level		5 ^A	5 ^A	16 ^B	160 ^B
MTCA Method B Groundwater Screening Level for Vapor Intrusion		24	1.5	16	160

Monitoring Well	Date	Volatile Organic Compounds (µg/L)			
		PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE
MW-7	08-10-10	0.55	ND<1	ND<1	ND<1
	05-09-11	ND<1	ND<1	ND<1	ND<1
	03-06-14	8.0	ND<2	ND<2	ND<2
	01-12-17	0.948	ND<1	ND<1	ND<1
	08-21-17	1.49	ND<1	ND<1	ND<1
	11-15-17	3.8	ND<0.5	ND<0.5	ND<0.5
	02-14-18	1.93	ND<0.5	ND<0.5	ND<0.5
	01-15-19	3.88	ND<0.5	ND<0.5	ND<0.5
	04-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-8	09-03-21	ND<1	ND<0.5	ND<1	ND<1
	05-10-11	22	ND<1	ND<1	ND<1
	05-24-12	36	ND<2	ND<2	ND<2
	03-07-14	13	ND<2	ND<2	ND<2
	01-13-17	26.4	ND<1	ND<1	ND<1
	08-21-17	25.1	ND<1	ND<1	0.250
	11-16-17	19.2	ND<0.5	ND<0.5	ND<0.5
	02-14-18	16.1	ND<0.5	ND<0.5	ND<0.5
	02-14-18 DUP	14.7	ND<0.5	ND<0.5	ND<0.5
	01-15-19	12.1	ND<0.5	ND<0.5	ND<0.5
	04-11-19	14.3	ND<0.5	ND<0.5	ND<0.5
	12-09-19	17.5	ND<0.5	ND<0.5	ND<0.5
MW-9	12-04-20	6.45	ND<0.5	ND<0.5	ND<0.5
	09-03-21	13	ND<0.5	ND<1	ND<1
	03-05-14	ND<2	ND<2	ND<2	ND<2
	01-11-17	ND<1	ND<1	ND<1	ND<1
	08-18-17	ND<1	ND<1	ND<1	ND<1
	11-14-17	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02-13-18	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01-14-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MW-10	04-10-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	03-06-14	ND<2	ND<2	ND<2	ND<2
	01-12-17	ND<1	ND<1	ND<1	ND<1
	08-18-17	ND<1	ND<1	ND<1	ND<1
	11-14-17	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02-13-18	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01-14-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MTCA Method A Cleanup Level		5 ^A	5 ^A	16 ^B	160 ^B
MTCA Method B Groundwater Screening Level for Vapor Intrusion		24	1.5	16	160

Monitoring Well	Date	Volatile Organic Compounds (µg/L)			
		PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE
Equipment Blank	08-12-10	ND<1	ND<1	ND<1	ND<1
	01-13-17	ND<1	ND<1	ND<1	ND<1
	11-16-17	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	02-14-18	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	01-15-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	04-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	09-03-21	ND<1	ND<0.5	ND<1	ND<1
DPE Groundwater Effluent	03-08-17	0.748	ND<1	ND<1	ND<1
	11-12-17	0.286	ND<0.5	ND<0.5	ND<0.5
	01-11-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	05-16-19	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MTCA Method A Cleanup Level		5^A	5^A	16^B	160^B
MTCA Method B Groundwater Screening Level for Vapor Intrusion		24	1.5	16	160

ug/L: micrograms per liter (parts-per-billion); ND<: Not detected above indicated laboratory reporting detection limit; Shaded values exceed MTCA Method A cleanup levels. ^A: Method A cleanup level. ^B: Method B cleanup level. Please refer to Appendix C for the complete set of analytes and analytical results for VOC.

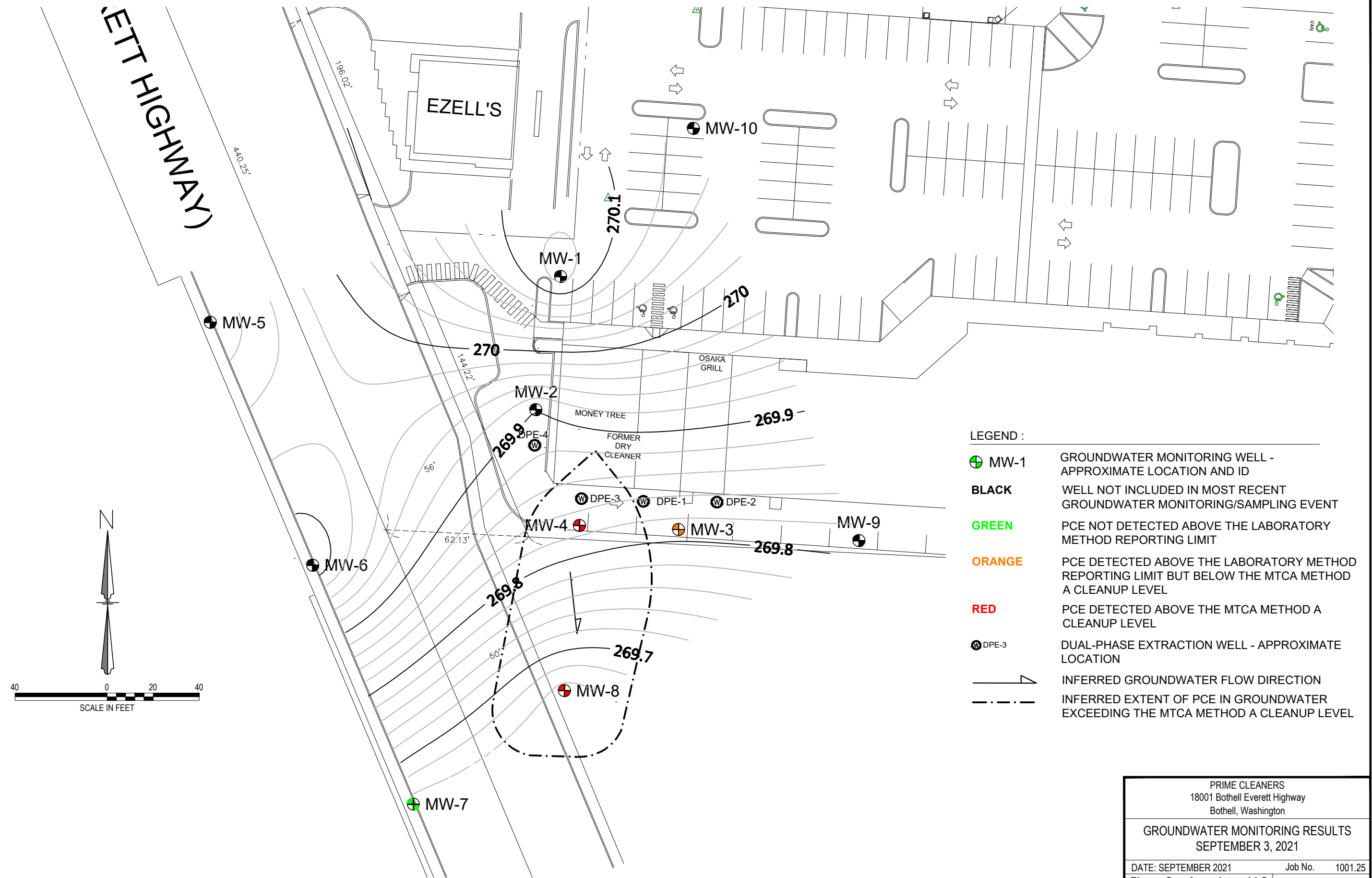
Conclusions

ZGA completed a groundwater monitoring sampling event in September 2021. Historically, PCE has exceeded MTCA Method A cleanup levels in MW-3, MW-4 and MW-8. The concentration of PCE in MW-3 did not exceed the MTCA Method A cleanup level while the concentrations of PCE in MW-4 and MW-8 remain above MTCA Method A cleanup levels.

The reported concentrations of PCE have never exceeded the MTCA Method B Screening Level for Vapor Intrusion in MW-3 and has not exceeded the Screening Level in MW-8 for seven consecutive sampling events. The Screening Level was not exceeded in two of the last three sampling events in MW-4.

APPENDIX A

Figures



CONTOUR INTERVAL = 0.02 FEET

PRIME CLEANERS 18001 Bothell Everett Highway Bothell, Washington		
GROUNDWATER MONITORING RESULTS SEPTEMBER 3, 2021		
DATE: SEPTEMBER 2021	Job No.	1001.25
Zipper Geo Associates, LLC 19019 36th Ave. W., Suite E Lynnwood, WA	FIGURE	1
		SHT. 1 of 1

Appendix B

Laboratory Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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September 14, 2021

Sean Donnan, Project Manager
Zipper Geo Associates, LLC
19019 36th Ave W, Suite E
Lynnwood, WA 98036

Dear Mr Donnan:

Included are the results from the testing of material submitted on September 3, 2021 from the Prime Cleaners 1001.25, F&BI 109091 project. There are 11 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: Jeff Tinklepaugh, Kaelin Newman
ZGA0914R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 3, 2020 by Friedman & Bruya, Inc. from the Zipper Geo Associates, LLC Prime Cleaners 1001.25 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Zipper Geo Associates, LLC</u>
109091 -01	MW3_09032021
109091 -02	MW4_09032021
109091 -03	MW7_09032021
109091 -04	MW8_09032021
109091 -05	Equip. Blank
109091 -06	Dup.

Several compounds in the 8260D laboratory control sample and laboratory control sample duplicate failed the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW3_09032021	Client:	Zipper Geo Associates, LLC
Date Received:	09/03/21	Project:	Prime Cleaners 1001.25, F&BI 109091
Date Extracted:	09/08/21	Lab ID:	109091-01
Date Analyzed:	09/08/21	Data File:	090813.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	85	117
Toluene-d8	103	88	112
4-Bromofluorobenzene	102	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	3.1
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 jl	Ethylbenzene	<1
Acetone	<50 jl	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 jl	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 jl		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: MW4_09032021	Client: Zipper Geo Associates, LLC
Date Received: 09/03/21	Project: Prime Cleaners 1001.25, F&BI 109091
Date Extracted: 09/08/21	Lab ID: 109091-02
Date Analyzed: 09/08/21	Data File: 090814.D
Matrix: Water	Instrument: GCMS13
Units: ug/L (ppb)	Operator: WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	85	117
Toluene-d8	99	88	112
4-Bromofluorobenzene	102	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	20
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 jl	Ethylbenzene	<1
Acetone	<50 jl	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 jl	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 jl		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW7_09032021	Client:	Zipper Geo Associates, LLC
Date Received:	09/03/21	Project:	Prime Cleaners 1001.25, F&BI 109091
Date Extracted:	09/08/21	Lab ID:	109091-03
Date Analyzed:	09/08/21	Data File:	090815.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	85	117
Toluene-d8	99	88	112
4-Bromofluorobenzene	103	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 jl	Ethylbenzene	<1
Acetone	<50 jl	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 jl	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	1.2	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 jl		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW8_09032021	Client:	Zipper Geo Associates, LLC
Date Received:	09/03/21	Project:	Prime Cleaners 1001.25, F&BI 109091
Date Extracted:	09/08/21	Lab ID:	109091-04
Date Analyzed:	09/08/21	Data File:	090816.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	85	117
Toluene-d8	100	88	112
4-Bromofluorobenzene	102	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	13
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 jl	Ethylbenzene	<1
Acetone	<50 jl	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 jl	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 jl		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: Equip. Blank	Client: Zipper Geo Associates, LLC
Date Received: 09/03/21	Project: Prime Cleaners 1001.25, F&BI 109091
Date Extracted: 09/08/21	Lab ID: 109091-05
Date Analyzed: 09/08/21	Data File: 090817.D
Matrix: Water	Instrument: GCMS13
Units: ug/L (ppb)	Operator: WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	85	117
Toluene-d8	102	88	112
4-Bromofluorobenzene	102	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 jl	Ethylbenzene	<1
Acetone	<50 jl	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 jl	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 jl		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Dup.	Client:	Zipper Geo Associates, LLC
Date Received:	09/03/21	Project:	Prime Cleaners 1001.25, F&BI 109091
Date Extracted:	09/08/21	Lab ID:	109091-06
Date Analyzed:	09/08/21	Data File:	090818.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	85	117
Toluene-d8	98	88	112
4-Bromofluorobenzene	102	90	111

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	19
Vinyl chloride	<0.02	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 jl	Ethylbenzene	<1
Acetone	<50 jl	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 jl	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 jl		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Zipper Geo Associates, LLC
Date Received:	Not Applicable	Project:	Prime Cleaners 1001.25, F&BI 109091
Date Extracted:	09/08/21	Lab ID:	01-2011 mb
Date Analyzed:	09/08/21	Data File:	090809.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	WE

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	112	85	117
Toluene-d8	110	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 jl	Ethylbenzene	<1
Acetone	<50 jl	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 jl	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 jl		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/14/21

Date Received: 09/03/21

Project: Prime Cleaners 1001.25, F&BI 109091

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

Laboratory Code: 109091-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance Criteria
				Recovery MS	
Dichlorodifluoromethane	ug/L (ppb)	10	<1	96	50-150
Chloromethane	ug/L (ppb)	10	<10	96	50-150
Vinyl chloride	ug/L (ppb)	10	<0.02	98	16-176
Bromomethane	ug/L (ppb)	10	<5	99	10-193
Chloroethane	ug/L (ppb)	10	<1	85	50-150
Trichlorofluoromethane	ug/L (ppb)	10	<1	107	50-150
Acetone	ug/L (ppb)	50	<50	51	15-179
1,1-Dichloroethene	ug/L (ppb)	10	<1	107	50-150
Hexane	ug/L (ppb)	10	<5	82	49-161
Methylene chloride	ug/L (ppb)	10	<5	103	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	81	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	97	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	87	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	56	10-335
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	95	50-150
Chloroform	ug/L (ppb)	10	<1	97	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	62	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<0.2	99	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	91	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	93	50-150
Carbon tetrachloride	ug/L (ppb)	10	<0.5	82	50-150
Benzene	ug/L (ppb)	10	<0.35	90	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	90	43-133
1,2-Dichloropropane	ug/L (ppb)	10	<1	91	50-150
Bromodichloromethane	ug/L (ppb)	10	<0.5	93	50-150
Dibromomethane	ug/L (ppb)	10	<1	97	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	96	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	87	48-145
Toluene	ug/L (ppb)	10	<1	99	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	82	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	<0.5	100	50-150
2-Hexanone	ug/L (ppb)	50	<10	75	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	100	50-150
Tetrachloroethene	ug/L (ppb)	10	3.1	97 b	50-150
Dibromochloromethane	ug/L (ppb)	10	<0.5	95	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	100	50-150
Chlorobenzene	ug/L (ppb)	10	<1	97	50-150
Ethylbenzene	ug/L (ppb)	10	<1	97	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	94	50-150
m,p-Xylene	ug/L (ppb)	20	<2	96	50-150
o-Xylene	ug/L (ppb)	10	<1	97	50-150
Styrene	ug/L (ppb)	10	<1	98	50-150
Isopropylbenzene	ug/L (ppb)	10	<1	98	50-150
Bromoform	ug/L (ppb)	10	<5	83	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	94	50-150
Bromobenzene	ug/L (ppb)	10	<1	99	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	95	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<0.2	104	10-235
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	100	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	98	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	96	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	93	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	95	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	90	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	89	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	97	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	97	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	98	50-150
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	95	50-150
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	88	50-150
Hexachlorobutadiene	ug/L (ppb)	10	<0.5	87	42-150
Naphthalene	ug/L (ppb)	10	<1	98	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	91	44-155

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/14/21

Date Received: 09/03/21

Project: Prime Cleaners 1001.25, F&BI 109091

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 LCS/D	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	89	94	70-130	5
Chloromethane	ug/L (ppb)	10	97	87	70-130	11
Vinyl chloride	ug/L (ppb)	10	98	87	70-130	12
Bromomethane	ug/L (ppb)	10	133	118	28-182	12
Chloroethane	ug/L (ppb)	10	88	80	70-130	10
Trichlorofluoromethane	ug/L (ppb)	10	73	69 vo	70-130	6
Acetone	ug/L (ppb)	50	36 vo	31 vo	42-155	15
1,1-Dichloroethene	ug/L (ppb)	10	96	89	70-130	8
Hexane	ug/L (ppb)	10	94	75	50-161	22 vo
Methylene chloride	ug/L (ppb)	10	60	58	29-192	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	83	71	70-130	16
trans-1,2-Dichloroethene	ug/L (ppb)	10	101	90	70-130	12
1,1-Dichloroethane	ug/L (ppb)	10	95	84	70-130	12
2,2-Dichloropropane	ug/L (ppb)	10	80	68 vo	70-130	16
cis-1,2-Dichloroethene	ug/L (ppb)	10	100	89	70-130	12
Chloroform	ug/L (ppb)	10	100	89	70-130	12
2-Butanone (MEK)	ug/L (ppb)	50	50	52	50-157	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	101	90	70-130	12
1,1,1-Trichloroethane	ug/L (ppb)	10	96	82	70-130	16
1,1-Dichloropropene	ug/L (ppb)	10	102	92	70-130	10
Carbon tetrachloride	ug/L (ppb)	10	84	74	70-130	13
Benzene	ug/L (ppb)	10	94	83	70-130	12
Trichloroethene	ug/L (ppb)	10	96	85	70-130	12
1,2-Dichloropropane	ug/L (ppb)	10	92	83	70-130	10
Bromodichloromethane	ug/L (ppb)	10	97	86	70-130	12
Dibromomethane	ug/L (ppb)	10	94	87	70-130	8
4-Methyl-2-pentanone	ug/L (ppb)	50	90	82	70-130	9
cis-1,3-Dichloropropene	ug/L (ppb)	10	94	81	70-130	15
Toluene	ug/L (ppb)	10	104	91	70-130	13
trans-1,3-Dichloropropene	ug/L (ppb)	10	88	76	70-130	15
1,1,2-Trichloroethane	ug/L (ppb)	10	102	89	70-130	14
2-Hexanone	ug/L (ppb)	50	70	61 vo	69-130	14
1,3-Dichloropropane	ug/L (ppb)	10	100	89	70-130	12
Tetrachloroethene	ug/L (ppb)	10	106	93	70-130	13
Dibromochloromethane	ug/L (ppb)	10	100	84	63-142	17
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	100	87	70-130	14
Chlorobenzene	ug/L (ppb)	10	101	88	70-130	14
Ethylbenzene	ug/L (ppb)	10	101	89	70-130	13
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	98	83	70-130	17
m,p-Xylene	ug/L (ppb)	20	100	88	70-130	13
o-Xylene	ug/L (ppb)	10	100	87	70-130	14
Styrene	ug/L (ppb)	10	101	88	70-130	14
Isopropylbenzene	ug/L (ppb)	10	102	88	70-130	15
Bromoform	ug/L (ppb)	10	92	77	50-157	18
n-Propylbenzene	ug/L (ppb)	10	100	91	70-130	9
Bromobenzene	ug/L (ppb)	10	100	90	70-130	11
1,3,5-Trimethylbenzene	ug/L (ppb)	10	98	89	52-150	10
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	101	90	70-130	12
1,2,3-Trichloropropane	ug/L (ppb)	10	95	84	70-130	12
2-Chlorotoluene	ug/L (ppb)	10	101	91	70-130	10
4-Chlorotoluene	ug/L (ppb)	10	100	90	70-130	11
tert-Butylbenzene	ug/L (ppb)	10	96	88	70-130	9
1,2,4-Trimethylbenzene	ug/L (ppb)	10	98	89	70-130	10
sec-Butylbenzene	ug/L (ppb)	10	94	86	70-130	9
p-Isopropyltoluene	ug/L (ppb)	10	93	86	70-130	8
1,3-Dichlorobenzene	ug/L (ppb)	10	101	90	70-130	12
1,4-Dichlorobenzene	ug/L (ppb)	10	100	88	70-130	13
1,2-Dichlorobenzene	ug/L (ppb)	10	99	88	70-130	12
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	90	79	70-130	13
1,2,4-Trichlorobenzene	ug/L (ppb)	10	90	81	70-130	11
Hexachlorobutadiene	ug/L (ppb)	10	94	86	70-130	9
Naphthalene	ug/L (ppb)	10	90	81	70-130	11
1,2,3-Trichlorobenzene	ug/L (ppb)	10	89	80	69-143	11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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.

Self-Tinkerpaugh
Sean Dorman

09-193-71

11-13

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Page # 1 of 1
TURNAROUND TIME

standard turnaround

ISH

charges authorized by:

SAMPLE DISPOSAL

archive samples

her

Default: Dispose after 30 days

SAMPLERS (signature)		<i>[Signature]</i>
PROJECT NAME	Prime Cleaners	PO # 1001-25
REMARKS		INVOICE TO ZGA
Project specific RLS? - Yes / No		

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED							Notes	
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082		
MW3-09032021	01 A-C	9/3/21	1404	GAL	3				X	X				
MW4-09032021	02		1506						X	X				
MW5-09032021	03		1212						X	X				
MW8-09032021	04		1301						X	X				
Equip. Blank	05		1532						X	X				
Dup.	06		0000											

Ph. (206) 285-8282

DATE	TIME
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15.24

17/5/21	10.07
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7/3/21 15:54

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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7/3/21 16.20

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