



September 22, 2016



Barbara Bahr
Harborview Cleaners
134 East Grand Avenue
Port Washington, WI 53074

**Subject: Semi-Annual Groundwater Monitoring Report
Harborview Cleaners
134 East Grand Avenue
Port Washington, WI 53074
WDNR BRRTS#: 02-46-548092**

FID # 246063070

Dear Ms. Bahr:

Environmental Forensic Investigations, Inc. (EnviroForensics) is pleased to present this *Semi-Annual Groundwater Monitoring Report* for the Harborview Cleaners facility located at 134 East Grand Avenue in Port Washington, Wisconsin (Site). Site investigation activities are ongoing as required by the Wisconsin Department of Natural Resources (WDNR) per Chapter NR 716 of the Wisconsin Administrative Code (WAC). Groundwater monitoring activities were performed to assess current groundwater conditions, including groundwater flow direction, degree and extent of volatile organic compound (VOC) impacts, and geochemical conditions, with the objective of evaluating natural attenuation as a remedy for groundwater impacts at the Site.

INVESTIGATION ACTIVITIES

Groundwater monitoring activities were performed by EnviroForensics from April 18 to 22 and July 19 to 20, 2016. The monitoring events included groundwater elevation measurements and groundwater sample collection from all existing wells. Monitoring well construction information is summarized on **Table 1**.

Groundwater Elevation Measurements

Groundwater elevation data were collected from five (5) monitoring wells (MW-1 through MW-5) and one (1) piezometer (PZ-1.) The locations of the monitoring wells and piezometer are depicted on **Figure 1**.

Monitoring well covers and caps were removed at least 15 minutes prior to depth to water measurements to allow groundwater in the monitoring wells to equilibrate with atmospheric

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pressure. The depth to water in each well was measured using an electronic water level indicator and recorded on the Groundwater Field Sampling Forms included as **Attachment 1**.

Groundwater Sampling

Groundwater samples were collected from each monitoring well (MW-1 through MW-5) and piezometer PZ-1. Groundwater purging and sampling was conducted by bailing using new disposable bailers, or by standard low-flow (minimal drawdown) procedures if recharge was sufficient. Wells that recharged slowly were purged of three (3) well volumes, or until dry, and allowed to recharge overnight. Water quality parameters including pH, specific conductivity, temperature, oxidation reduction potential (ORP), and dissolved oxygen were measured immediately prior to sample collection and recorded on the Groundwater Field Sampling Forms. Groundwater samples were collected from each well and piezometer in new laboratory-supplied containers.

During each monitoring event, one (1) duplicate sample and one (1) equipment blank were collected for quality control/ quality assurance (QA/QC) purposes, and one (1) trip blank accompanied the sample cooler. All samples were transmitted to a state-certified laboratory and analyzed for VOCs according to U.S. Environmental Protection Agency Test Method 8260B. In addition, samples were collected from MW-1 through MW-5 to characterize geochemical conditions related to natural attenuation processes. Analyses included dissolved iron and manganese; dissolved gases ethene, ethane, and methane; nitrate plus nitrite; chloride; sulfate; and total organic carbon (TOC.) Samples collected from monitoring wells MW-3 and MW-4 during the April 2016 sampling event were also analyzed for dehalococoides (DHC) and DHC functional genes to determine the type and population of naturally occurring microbes. Proper chain-of-custody documentation was maintained at all times.

Investigation-derived media (IDM) generated during this monitoring event, including purge water and decontamination fluid, was stored in sealed and labeled 55-gallon drums staged inside the Site building. A licensed subcontractor was retained to remove the drums and manage IDM disposal.

INVESTIGATION RESULTS

Groundwater Elevation and Flow Direction

Groundwater elevation data collected on April 18 and July 19, 2016 are summarized in **Table 2**. Groundwater elevations measured in each monitoring well during each monitoring event are also presented on **Figures 2 and 3**. Groundwater elevations appear to be randomly distributed across the monitored area. Specific wells may be influenced by laterally discontinuous zones of higher permeability and/or recharge rates may vary widely across the Site to cause this indiscernible water table. Therefore, elevation contours have not been applied to **Figures 2 and 3**. However,

the distribution of contaminants detected in groundwater indicates that shallow groundwater at the Site flows towards the south.

Groundwater Analytical Results

Groundwater analytical data are summarized on **Table 3** and illustrated on **Figure 4**. The complete laboratory reports are provided in **Attachment 2**. VOC concentrations are compared to public health standards listed in WAC Chapter NR 140. Duplicate and equipment blank results associated with the monitoring events demonstrate that the sampling and decontamination methods did not affect analytical data quality.

The highest PCE concentration was detected in a sample collected from monitoring well MW-3 [8.6 micrograms per liter ($\mu\text{g/L}$)] during April 2016. This concentration exceeds the ES of 5 $\mu\text{g/L}$. PCE was also detected in monitoring wells MW-2, MW-4 and MW-5 at concentrations between the laboratory method detection limit and the reporting limit ("J flagged") that exceeded the Preventative Action Limit (PAL) of 0.5 $\mu\text{g/L}$ but were below the ES. VOCs were not detected in samples collected from MW-1 or PZ-1 during either sampling event. No other compounds were detected in the groundwater samples. In addition, in the July 2016 sampling event, all VOC concentrations detected at MW-2, MW-3, MW-4 and MW-5 were below ESs (with the detection at MW-2 also being below the PAL).

The results of geochemical analyses are summarized in **Table 4**, and the laboratory reports are included in **Attachment 2**. An evaluation of the geochemical data indicates the following:

- DHC microbes were not detected in the samples collected from MW-3 and MW-4. However, the low concentrations of TCE and cis-1,2-DCE in several samples indicate that some natural attenuation of the groundwater plume is occurring;
- Dissolved oxygen and ORP measurements collected during purging of wells indicate overall aerobic and oxidizing conditions;
- Dissolved gases ethene, ethane, and methane were detected intermittently at low concentrations, but not at sufficient concentrations to have originated from contaminant breakdown;
- Nitrate is present in concentrations above 1 mg/L and sulfate is present at concentrations greater than 20 mg/L, which may compete with the reductive pathway;
- Total manganese concentrations are below 1 mg/L, indicating that anaerobic oxidation of DCE may not be possible; and
- Organic carbon concentrations are relatively low throughout the subsurface indicating that the energy source for contaminant-degrading bacteria, if present, may be limited.

Overall, the geochemical results indicate that complete reductive dechlorination of PCE is unlikely to occur under natural conditions and future breakdown of contaminants released from the soil source may contribute to a groundwater plume.

CONCLUSIONS AND RECOMMENDATIONS

Groundwater elevation data are inconsistent across the Site, and may be influenced by laterally discontinuous zones of higher permeability and/or anthropogenic subsurface features. However, the inferred direction of groundwater flow at the Site is toward the south based on contaminant distribution and proximity to Lake Michigan. An evaluation of the analytical results indicates that, overall, VOC concentrations in groundwater at the Site have decreased since the initial investigation in 2008, and the extent of impacts has remained stable. All VOC concentrations were below ESs during the most recent monitoring event.

Minor concentrations of TCE and/or cis-1,2-DCE were detected in samples collected from two (2) wells, indicating that some degradation of PCE is occurring at the Site. However, samples collected from the same wells did not contain the microbes responsible for reductive dechlorination, and the groundwater geochemistry does not appear to be supportive of natural attenuation.

The magnitude and extent of groundwater contamination is relatively minor, and no exposure pathway for groundwater contact exists. Furthermore, there were no ES exceedances detected during the most recent sampling event in July 2016. Therefore, active remediation of groundwater will likely not be needed for closure. EnviroForensics recommends that:

- Groundwater monitoring should be discontinued until remedial actions are implemented; and
- A Remedial Action Options Report (RAOR) should be developed focusing on soil and soil gas impacts.

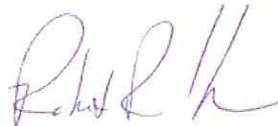
EnviroForensics appreciates the opportunity to provide services on this project. Please contact us if you have any questions about the information presented in this report.

Sincerely,

Environmental Forensic Investigations, Inc.

Handwritten signature of Brian Kappen in blue ink.

Brian Kappen, PG
Project Manager

Handwritten signature of Rob Hoverman in blue ink.

Rob Hoverman, LPG
Regional Manager

Attachments

Copy: John Feeney, Wisconsin Department of Natural Resources

List of Attachments

- Table 1: Monitoring Well Construction Details
- Table 2: Groundwater Elevation Data Summary
- Table 3: Summary of Volatile Organic Compound Concentrations in Groundwater Samples
- Table 4: Groundwater Geochemical Analysis Results Summary

- Figure 1: Groundwater Sample Location Map
- Figure 2: Groundwater Elevations – April 18, 2016
- Figure 3: Groundwater Elevations – July 19, 2016
- Figure 4: Groundwater Sample Analytical Results Summary

- Attachment 1: Groundwater Field Sampling Forms
- Attachment 2: Laboratory Analytical Reports

TABLES

TABLE 1
MONITORING WELL CONSTRUCTION DETAILS

Harborview Cleaners
134 East Grand Avenue
Port Washington, Wisconsin

Well ID	Date Installed	Well Diameter (inches)	Ground Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Top Screen Elevation (feet AMSL)	Bottom Screen Elevation (feet AMSL)	Screened Interval (feet bgs)	Total Depth (feet bgs)
MW-1	12/20/2007	2	591.95	591.69	587.29	572.29	4.6 - 19.6	19.66
MW-2	12/20/2007	2	592.21	591.81	589.61	579.61	2.6 - 12.6	12.60
MW-3	12/20/2007	2	592.90	592.69	588.49	578.49	4.4 - 14.4	14.41
MW-4	12/20/2007	2	594.04	593.84	589.14	579.14	4.9 - 14.9	14.90
MW-5	3/13/2008	2	592.85	592.34	585.14	575.14	7.7 - 17.7	17.71
PZ-1	3/13/2008	2	592.80	592.42	563.44	558.44	29.3 - 34.3	34.36

Notes:

Coordinates are referenced to Wisconsin State Plane, NAD 83, Southern Zone

AMSL = above mean sea level

bgs = below ground surface

NA = Not Available

TOC = top of casing

TABLE 2
GROUNDWATER ELEVATION DATA SUMMARY

Harborview Cleaners
134 East Grand Avenue
Port Washington, Wisconsin

Well ID	Date	TOC Elevation (feet AMSL)	Depth to Water (feet below TOC)	Groundwater Elevation (feet AMSL)
MW-1	4/18/2016	591.69	8.38	583.31
	7/19/2016		8.76	582.93
MW-2	4/18/2016	591.81	8.44	583.37
	7/19/2016		8.71	583.10
MW-3	4/18/2016	592.69	11.19	581.50
	7/19/2016		11.38	581.31
MW-4	4/18/2016	593.84	11.83	582.01
	7/19/2016		12.08	581.76
MW-5	4/18/2016	592.34	10.98	581.36
	7/19/2016		11.14	581.20
PZ-1	4/18/2016	592.42	3.63	588.79
	7/19/2016		8.75	583.67

Notes:

All values are in feet

AMSL = above mean sea level

TOC = top of casing reported in the 2009 Site Investigation Report

TABLE 3
SUMMARY OF VOLATILE ORGANIC COMPOUND CONCENTRATIONS IN GROUNDWATER SAMPLES
 Harborview Cleaners
 134 East Grand Avenue
 Port Washington, Wisconsin

Boring/ Monitoring well Identification	Sample Depth (feet)	Sample Date	Consultant	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Toluene	Benzene	n-Butylbenzene	Chloroethane	p-Isopropyltoluene	Naphthalene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
Enforcement Standard				5	5	70	100	1,000	5	NE	400	NE	100	480	480
Preventive Action Limit				0.5	0.5	7	20	200	1	NE	80	NE	10	96	96
K-1	12	11/21/2006	Konicek	30	4.0	50	1	<0.67	0.63	<0.93	<0.97	<0.67	<0.74	<0.97	<0.83
K-2	12	11/20/2006	Konicek	26	0.77	<0.83	<0.89	1.2	0.59	<0.93	<0.97	<0.67	<0.74	<0.97	<0.83
SB-1W	15	12/3/2015	EnviroForensics	1.25 J	<0.47	<0.45	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5
SB-3W	15	12/3/2015	EnviroForensics	36	5.5	13.1	1.59 J	0.70 J	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5
MW-1	16-19	1/11/2008	Konicek	<0.45	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		4/9/2008	Konicek	<0.45	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		4/13/2008	Konicek	<0.45	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		8/14/2008	Konicek	<0.45	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.99
		11/12/2008	Konicek	<0.45	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.89	<0.97	<0.83
		4/22/2016	EnviroForensics	<0.49	<0.47	<0.45	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5
7/20/2016	EnviroForensics	<0.49	<0.47	<0.45	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5		
MW-2	9-12	1/24/2008	Konicek	1.4	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	0.84	<0.67	<0.74	<0.97	<0.83
		4/9/2008	Konicek	1	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		4/13/2008	Konicek	1.4	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		8/14/2008	Konicek	3.6	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.99
		11/12/2008	Konicek	4.4	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.89	<0.97	<0.83
		4/22/2016	EnviroForensics	1.01 J	<0.47	<0.45	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5
7/20/2016	EnviroForensics	0.49 J	<0.47	<0.45	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5		
MW-3	11-14	12/26/2007	Konicek	15	0.57 Q	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		4/9/2008	Konicek	62	1.8	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		4/13/2008	Konicek	75.5	1.9	1.1	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		8/14/2008	Konicek	35.1	1.5	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		8/14/08D	Konicek	34.3	1.1	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		11/12/2008	Konicek	32.5	0.85 J	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.89	<0.97	<0.83
		4/22/2016	EnviroForensics	8.6	0.97 J	5.1	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5
		7/20/2016	EnviroForensics	4.4	1.15 J	5.3	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5

TABLE 3
SUMMARY OF VOLATILE ORGANIC COMPOUND CONCENTRATIONS IN GROUNDWATER SAMPLES

Harborview Cleaners
 134 East Grand Avenue
 Port Washington, Wisconsin

Boring/ Monitoring well Identification	Sample Depth (feet)	Sample Date	Consultant	Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Toluene	Benzene	n-Butylbenzene	Chloromethane	p-Isopropyltoluene	Naphthalene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
Enforcement Standard				5	5	70	100	1,000	5	NE	400	NE	100	480	480
Preventive Action Limit				0.5	0.5	7	20	200	1	NE	80	NE	10	96	96
MW-4	12-15	12/26/2007	Konicek	5.3	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		4/9/2008	Konicek	3.1	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		4/13/2008	Konicek	3.8	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		8/14/2008	Konicek	6.1	<0.48	1.4	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		11/12/2008	Konicek	2.2	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.89	<0.97	<0.83
		4/22/2016	EnviroForensics	0.78 J	<0.47	1.19 J	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5
		7/20/2016	EnviroForensics	1.0 J	<0.47	0.68 J	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5
MW-5	11-17	4/9/2008	Konicek	1.1	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		4/13/2008	Konicek	0.63 J	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		4/13/08D	Konicek	0.78 J	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		8/14/2008	Konicek	2.5	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	<0.83
		11/12/2008	Konicek	2.6	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.89	<0.97	<0.83
		11/12/08D	Konicek	3.1	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.89	<0.97	<0.83
		4/22/2016	EnviroForensics	1.34 J	<0.47	<0.45	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5
7/20/2016	EnviroForensics	1.27 J	<0.47	<0.45	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5		
PZ-1	29-34	4/9/2008	Konicek	<0.45	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	1.1	1.2 J	3.4	8.2
		4/13/2008	Konicek	<0.45	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	1.1
		8/14/2008	Konicek	<0.45	<0.48	<0.83	<0.89	<0.67	<0.41	<0.93	<0.24	<0.67	<0.74	<0.97	1.6
		11/12/2008	Konicek	<0.45	<0.48	<0.83	<0.89	<0.67	<0.41	8.3	<0.24	<0.67	<0.89	<0.97	3.8
		4/22/2016	EnviroForensics	<0.49	<0.47	<0.45	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5
		7/20/2016	EnviroForensics	<0.49	<0.47	<0.45	<0.54	<0.44	<0.44	<1	<1.9	<1.1	<1.6	<1.6	<1.5

Notes:

All concentrations reported in micrograms per liter µg/l

Samples analyzed using EPA SW-846 Method 8260

Bolded values are above detection limits

Bolded and Orange Shaded values indicates an exceedance of the Public Health Enforcement Standard

Bolded and Blue Shaded values indicates an exceedance the Public Health Preventive Action Limit

bgs = below ground surface

D = Duplicate sample

J = Estimated concentration between the Method Detection Limit and the Reporting Limit

NE = Not Established

Q = Concentration between the limit of detection and the limit of concentration

TABLE 4
GROUNDWATER GEOCHEMICAL ANALYSIS RESULTS SUMMARY

Harborview Cleaners
 134 East Grand Avenue
 Port Washington, Wisconsin

Monitoring Well Identification	Sample Date	Dissolved Gases			Inorganic/ Physical Parameters								Dehalococoides			
		Ethane (µg/L)	Ethene (µg/L)	Methane (µg/L)	Dissolved Iron (mg/L)	Dissolved Manganese (µg/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Total Organic Carbon (TOC) (mg/L)	Dissolved Oxygen (mg/L) *	Oxidation-Reduction Potential (mV)	DHC (cells/mL)	teeA Reductase (cells/mL)	BAY1 Vinyl Chloride Reductase (cells/mL)	Vinyl Chloride Reductase (cells/mL)
MW-1	04/22/16	<0.5	<0.5	<1	<0.04	<4.5	102	0.168 J	111	1.51	10.76	218	--	--	--	--
	07/20/16	<0.5	<0.5	2.0 J	0.07 J	4.5 J	100.0	<0.11	138.0	1.31	9.04	78	--	--	--	--
MW-2	04/22/16	<0.5	<0.5	<1	<0.04	<4.5	542	0.311 J	134	1.52	10.62	82	--	--	--	--
	07/20/16	<0.5	<0.5	2.0 J	<0.04	6.6 J	469.2	0.92	144.6	1.62	8.70	64	--	--	--	--
MW-3	04/22/16	<0.5	1.08 J	4.28	<0.04	<4.5	772	1.895	65.1	2.83	10.29	189	<2.70	<2.70	<2.70	<2.70
	07/20/16	<0.5	1.6	5.9	0.67	36.5	811.3	2.04	60.9	20.2	8.86	111	--	--	--	--
MW-4	04/22/16	<0.5	<0.5	1.20 J	<0.04	52.0	1,164	0.628	94.4	3.69	10.87	215	<0.9	<0.9	<0.9	<0.9
	07/20/16	<0.5	<0.5	<1	0.11 J	28.0	675.7	1.08	61.4	2.75	2.33	147	--	--	--	--
MW-5	04/22/16	<0.5	<0.5	1.29 J	0.04 J	51.0	2,497	5.87	113	5.70	11.77	121	--	--	--	--
	07/20/16	<0.5	<0.5	2.9 J	<0.04	22.0	1,721.0	4.17	78.5	4.60	0.23	22	--	--	--	--
PZ-1	04/22/16	--	--	--	--	--	--	--	--	--	11.01	4	--	--	--	--
	07/20/16	--	--	--	--	--	--	--	--	--	9.60	9	--	--	--	--

Notes:

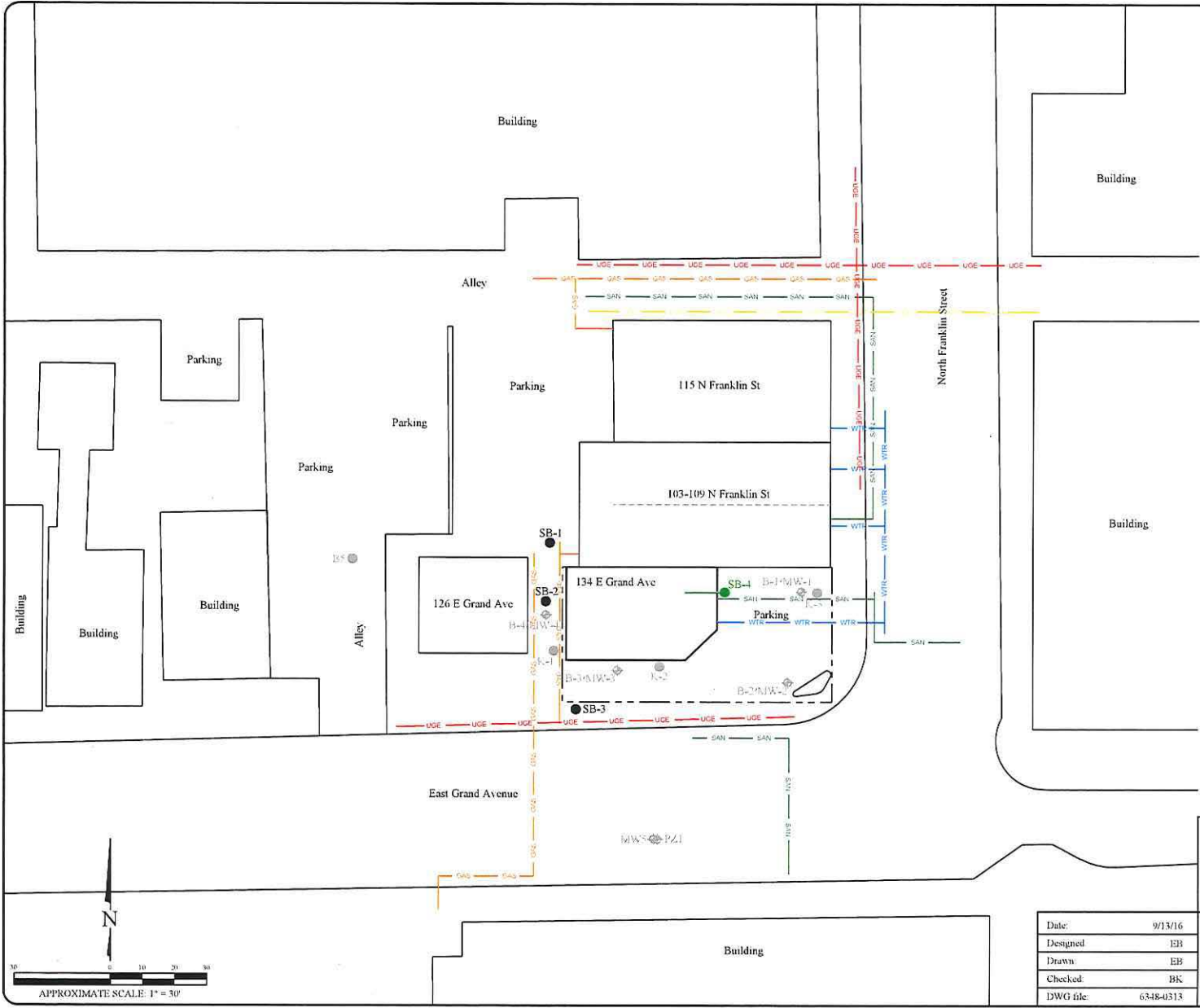
Bolded values are above detection limits

* = Dissolved oxygen concentrations above 10 mg/L are not typically observed in groundwater. Malfunction of probe/sensor suspected.

-- = Not Analyzed

J = Analyte concentration detected between the laboratory Method Detection Limit and Reporting Limit

FIGURES

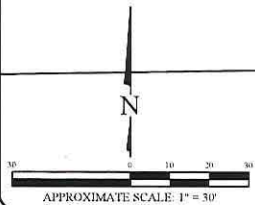


Legend

- Site boundary
- - - - - Dividing wall
- GAS --- Underground gas utility line
- WTR --- Underground water utility line
- SAN --- Underground sanitary utility line
- FIBER --- Fiber optics line
- UGE --- Underground electrical utility line
- MW-1 Monitoring well (By Others)
- B-5 Boring (By Others)
- SB-1 Direct push soil boring
- SB-4 Directional soil boring

GROUNDWATER SAMPLE LOCATION MAP

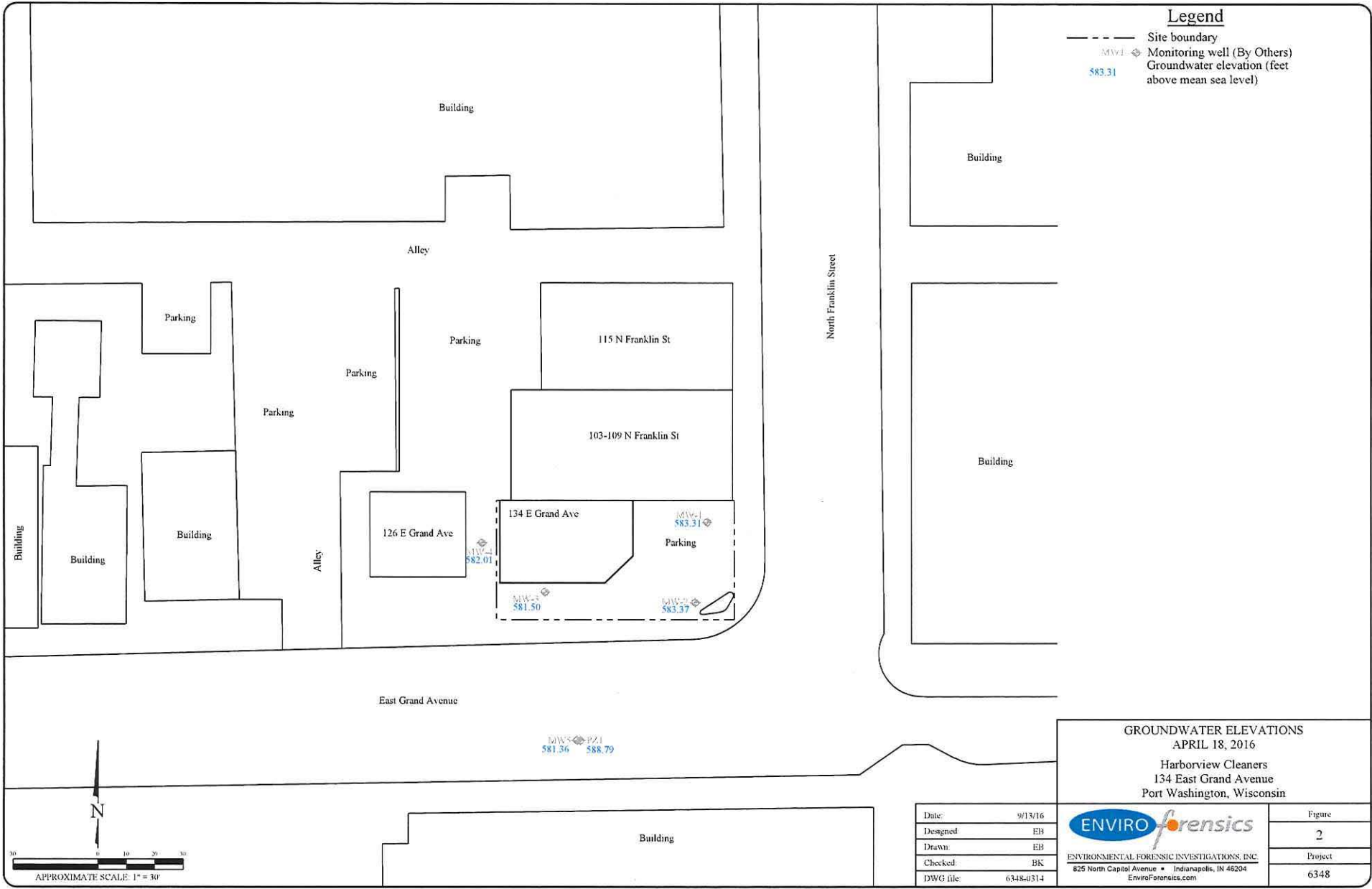
Harborview Cleaners
 134 East Grand Avenue
 Port Washington, Wisconsin



Date:	9/13/16
Designed:	EB
Drawn:	EB
Checked:	BK
DWG file:	6348-0313

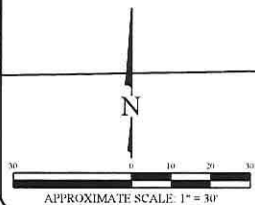
ENVIROforensics
 ENVIRONMENTAL FORENSIC INVESTIGATIONS, INC.
 825 North Capitol Avenue • Indianapolis, IN 46204
 EnviroForensics.com

Figure	1
Project	
6348	



Legend

- Site boundary
- MW-1 Monitoring well (By Others)
- 883.31 Groundwater elevation (feet above mean sea level)



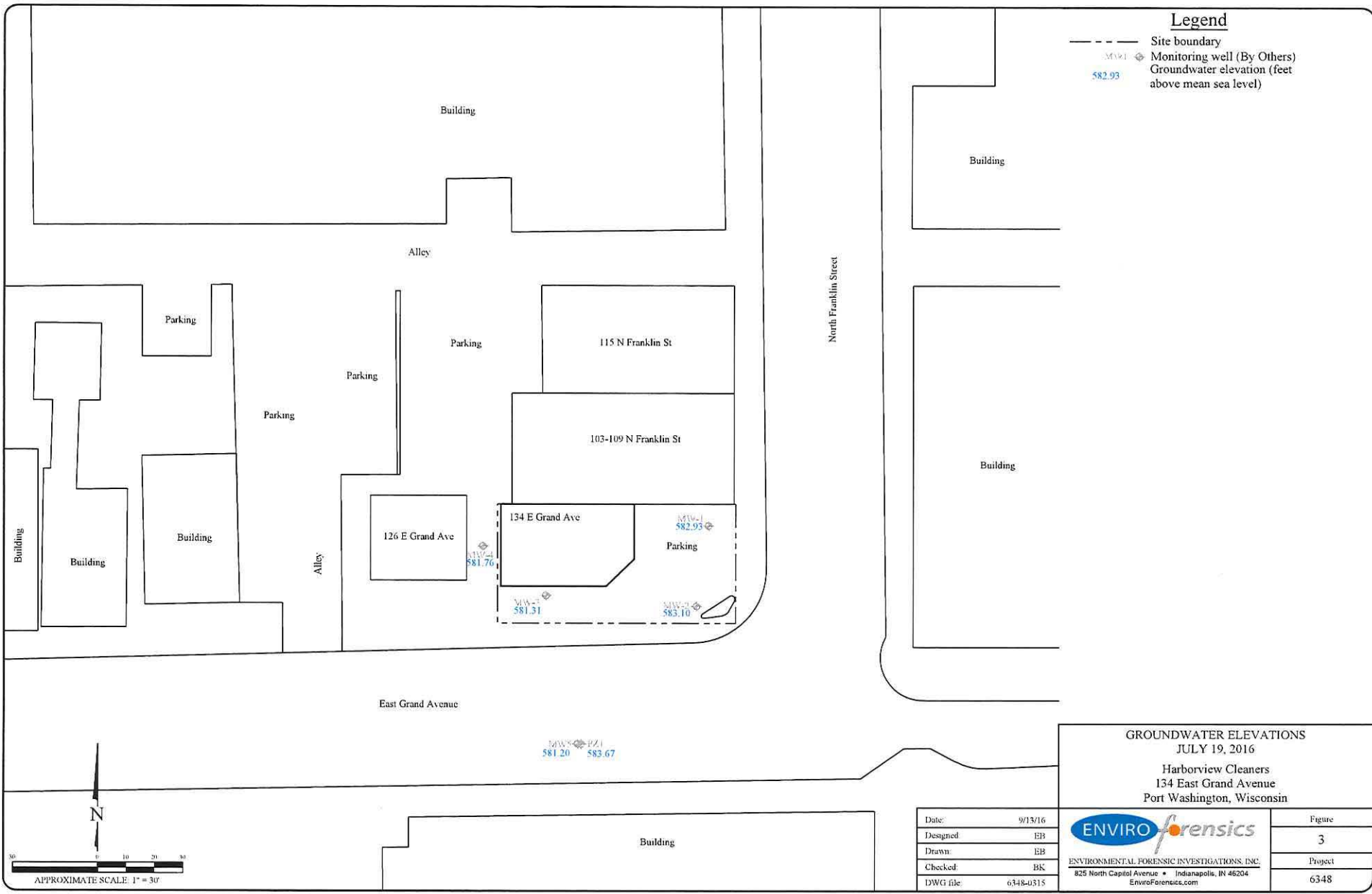
GROUNDWATER ELEVATIONS
APRIL 18, 2016

Harborview Cleaners
134 East Grand Avenue
Port Washington, Wisconsin

Date:	9/13/16
Designed:	EB
Drawn:	EB
Checked:	BK
DWG file:	6348-0314

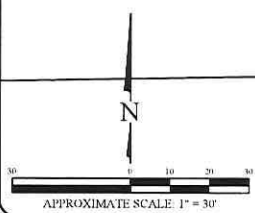
ENVIRONMENTAL FORENSIC INVESTIGATIONS, INC.
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure	2
Project	6348



Legend

- Site boundary
- MW-1 Monitoring well (By Others)
- 582.93 Groundwater elevation (feet above mean sea level)

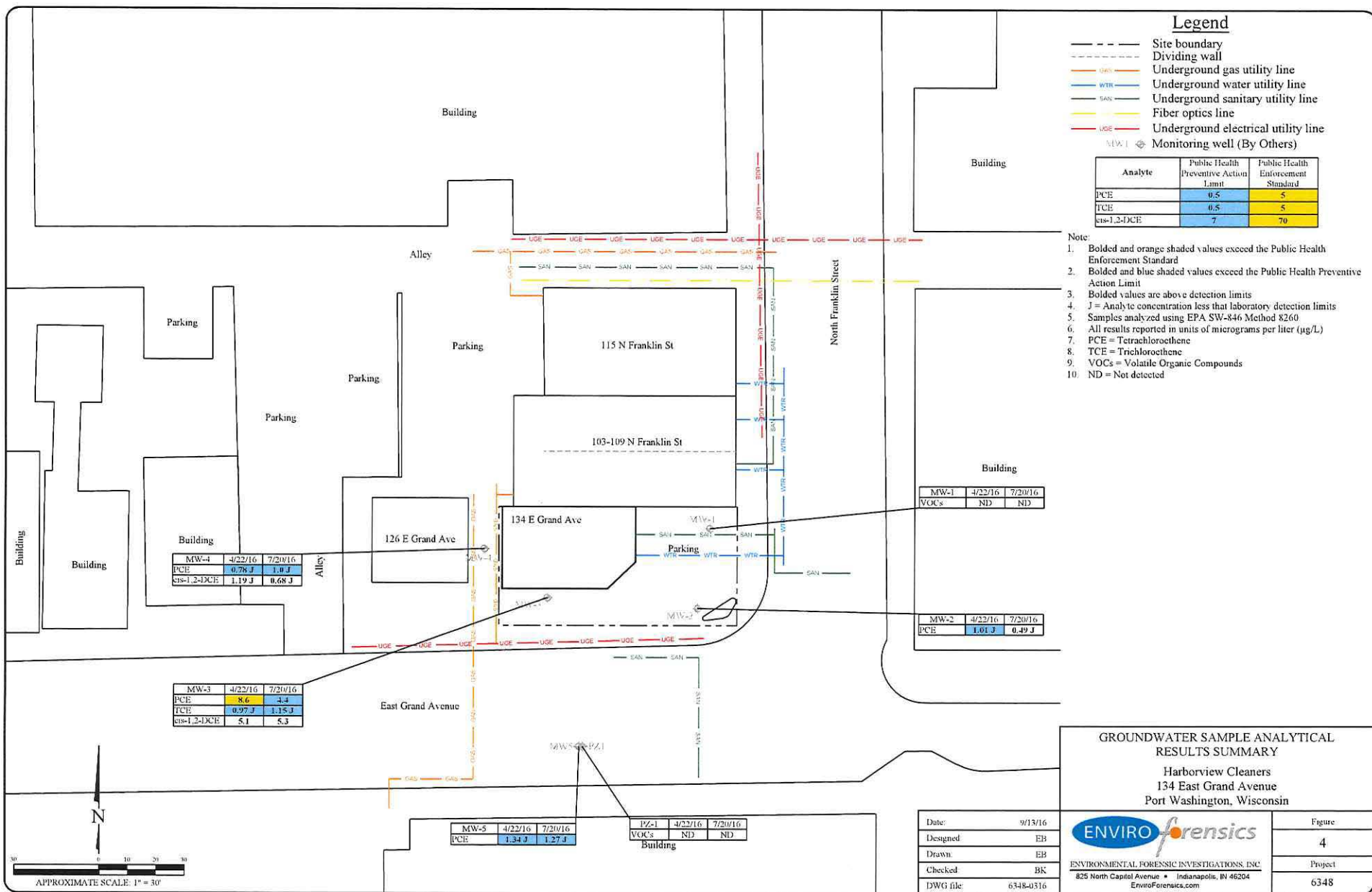


GROUNDWATER ELEVATIONS
 JULY 19, 2016
 Harborview Cleaners
 134 East Grand Avenue
 Port Washington, Wisconsin

Date:	9/13/16
Designed:	EB
Drawn:	EB
Checked:	BK
DWG file:	6348-0315

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 ENVIRONMENTAL FORENSIC INVESTIGATIONS, INC.
 825 North Capitol Avenue • Indianapolis, IN 46204
 EnviroForensics.com

Figure	3
Project	
6348	



Legend

- Site boundary
- - - Dividing wall
- GAS --- Underground gas utility line
- WTR --- Underground water utility line
- SAN --- Underground sanitary utility line
- FIBER --- Fiber optics line
- UGE --- Underground electrical utility line
- MW-1 Monitoring well (By Others)

Analyte	Public Health Preventive Action Limit	Public Health Enforcement Standard
PCE	0.5	5
TCE	0.5	5
cis-1,2-DCE	7	70

- Note:
1. Bolded and orange shaded values exceed the Public Health Enforcement Standard
 2. Bolded and blue shaded values exceed the Public Health Preventive Action Limit
 3. Bolded values are above detection limits
 4. J = Analyte concentration less than laboratory detection limits
 5. Samples analyzed using EPA SW-846 Method 8260
 6. All results reported in units of micrograms per liter (µg/L)
 7. PCE = Tetrachloroethene
 8. TCE = Trichloroethene
 9. VOCs = Volatile Organic Compounds
 10. ND = Not detected

MW-1	4/22/16	7/20/16
PCE	0.78 J	1.0 J
cis-1,2-DCE	1.19 J	0.68 J

MW-1	4/22/16	7/20/16
VOCs	ND	ND

MW-2	4/22/16	7/20/16
PCE	1.01 J	0.49 J

MW-3	4/22/16	7/20/16
PCE	8.6	4.4
TCE	0.97 J	1.15 J
cis-1,2-DCE	5.1	5.3

MW-5	4/22/16	7/20/16
PCE	1.34 J	1.27 J

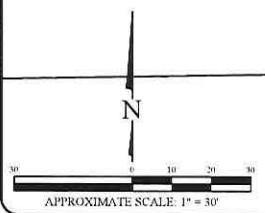
PZ-1	4/22/16	7/20/16
VOCs	ND	ND

Date:	9/13/16
Designed:	EB
Drawn:	EB
Checked:	BK
DWG file:	6348-0316

GROUNDWATER SAMPLE ANALYTICAL RESULTS SUMMARY

Harborview Cleaners
134 East Grand Avenue
Port Washington, Wisconsin

	Figure
	4
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	6348





ATTACHMENT 1

GROUNDWATER FIELD SAMPLING FORMS