Mr. Glenn May
NYSDEC
Division of Environmental Remediation
Region 9
270 Michigan Avenue
Buffalo, NY 14203

Arcadis U.S., Inc.
One Lincoln Center
110 West Fayette Street
Suite 300
Syracuse
New York 13202
Phone: 315 446 9120
Fax: 315 449 0017
www.arcadis.com

Date: March 31, 2021
Our Ref: 30082116
Subject: **2020 Annual Groundwater Sampling Report**
Former Iroquois Gas/Westwood Pharmaceuticals Site
120 Dart Street and 40 Bradley Street, Buffalo, NY (Site)
NYSDEC Site No. 9-15-141A

Dear Mr. May,

On behalf of Bristol-Myers Squibb Company (BMS), Arcadis U.S., Inc (Arcadis) is submitting this groundwater monitoring results report and supporting attachments for the two groundwater sampling events conducted in 2020 at the above-referenced Site.

The semi-annual groundwater monitoring program at the Site is completed in accordance with a verbal request made by Glenn May of the New York State Department of Environmental Conservation (NYSDEC) on August 4, 2015, to Vin Maresco of Arcadis.

Arcadis personnel completed sampling events on September 3, 2020 and December 10, 2020. Groundwater sampling was completed in accordance with the December 2017 Plan for Groundwater Gauging and Sampling and subsequent biannual groundwater monitoring events. The field activities, field observations, and analytical results for groundwater sampling completed during both the September and December 2020 events are described below.

Field Activities

During the 2020 groundwater sampling events, Arcadis gauged Site monitoring wells and piezometers. A water-level meter was used to measure groundwater levels with an accuracy of approximately 0.01 feet.

Eight of the twenty-two Site monitoring well locations were scheduled to be sampled during both events: B3, B6R, B7R, B8R, MWF2, MWF3, MWF4, and P8R. Two monitoring wells, MWF2 and MWF4, were not sampled in September 2020 due to the presence of measurable (0.01 to 0.02 feet) non-aqueous phase liquid (NAPL) observed during well gauging. The remaining wells were purged and sampled using disposable bailers and a three-volume purge technique. Purge water and equipment rinse water were containerized and then treated in the on-Site water treatment plant. Purge and sampling logs are included in **Attachment 1**. Following collection, all samples were packed on ice and submitted to Eurofins TestAmerica, Inc. of Amherst, New York, in accordance with chain-of-custody procedures. During both sampling events, groundwater samples were analyzed for

benzene, toluene, ethylbenzene, and xylene (BTEX) via United States Environmental Protection Agency Method 8260C.

Results

Groundwater Flow Conditions

Groundwater elevation data is provided in **Table 1**. As shown on **Figure 1** (September 2020) and **Figure 2** (December 2020), groundwater flow appears to be in a general westerly direction towards the collection trench. The groundwater elevations and flow direction are consistent with the project historical record. The collection trench acts as a groundwater sink and continues to draw in groundwater for treatment by the on-Site system.

Groundwater Analytical Results

Current and historical groundwater laboratory analytical results for BTEX are summarized in **Table 2**. Current dissolved BTEX concentrations in groundwater are shown on **Figure 3** (September 2020) and **Figure 4** (December 2020). The complete laboratory reports for these sampling events are included as **Attachment 2**.

During the September 2020 sampling event, total BTEX concentrations ranged from below laboratory method detection limits at monitoring wells B3, B6R, and MWF3 to 1,187 micrograms per liter (µg/L) at monitoring well B8R. Samples collected from monitoring wells B7R, B8R, MWF2, MWF4, and P8R exhibited BTEX at concentrations greater than NYSDEC ambient water quality standards and guidance values (SCG) presented in the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1. Results of the September 2020 analytical results are generally consistent with the historical project record.

During the December 2020 sampling event, total BTEX concentrations ranged from non-detect at monitoring wells B3, B6R, and MWF3 to 1,016 µg/L at monitoring well B8R. Samples collected from monitoring wells B7R, B8R, MWF2, MWF4, and P8R exhibited detected BTEX at concentrations greater than NYSDEC ambient water quality SCG presented in the NYSDEC TOGS 1.1.1. Results of the December 2020 analytical results are generally consistent with the results of the previous sampling event and the historical project record.

Groundwater analytical data trends for the eight wells sampled are presented on **Figures 5A** through **5H**. Groundwater sampling results show a general decrease in BTEX concentrations after the groundwater interceptor trench was installed in 2017.

Conclusions and Recommendations

Groundwater samples were collected from the September and December 2020 sampling events to represent current dissolved constituent of concern concentrations in groundwater. Based on this data, and the general consistency of the analytical results, we request the groundwater sampling program be conducted on an annual basis, with sampling completed in the second or third quarter.

The on-Site groundwater treatment system continues to be maintained weekly and, barring occasional maintenance, has been in continual operation. A total of 834,611 gallons of groundwater were extracted, treated, and discharged through the treatment system in 2020. In 2020, approximately 6 gallons of NAPL were recovered by the treatment system, and approximately 55 gallons of NAPL were recovered using an air-lift procedure from

the interceptor trench sump, totaling 61 gallons. NAPL recovery, from both the air lift procedures and treatment system, is shown on **Figure 6**.

If there are any questions regarding this letter, please contact Raymond Wagner of Arcadis at 315.671.9173.

Sincerely,
Arcadis U.S., Inc.

Raymond Wagner
Project Manager

Email: raymondwagner@arcadis.com
Direct Line: 315 671 9173

CC. R. Mator, BMS
J. Alonzo, de maximis, Inc.
T. Alexander, NFG
K. Hoelscher, NFG
V. Maresco, Arcadis

Enclosures:

Tables
Table 1 – Groundwater Elevation Data
Table 2 – Groundwater Analytical Data for VOCs

Figures
Figure 1 – Groundwater Elevation Contour Map, September 3, 2020
Figure 2 – Groundwater Elevation Contour Map, December 9, 2020
Figure 3 – VOC Concentrations Map, September 2-3, 2020
Figure 4 – VOC Concentrations Map, December 9-10, 2020
Figures 5A-5H – BTEX Trends in Sampled Wells
Figure 6 – NAPL Recovery

Attachments
Attachment 1 – Groundwater Purge and Sampling Logs
Attachment 2 – Laboratory Reports

Tables

Table 1
Groundwater Elevation Data
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, New York

ARCADIS Design & Consultancy for natural and built assets

Groundwater Elevation Data					
Well ID	Reference Elevation (ft. amsl)	9/3/2020		December 9, 2020	
		DTW	GWE	DTW	GWE
B19	592.14	10.05	582.09	10.32	581.82
B3	590.74	6.49	584.25	6.85	583.89
B6R	590.86	17.20	573.66	16.68	574.18
B7R	591.59	18.05	573.54	17.57	574.02
B8R	592.16	18.19	573.97	17.60	574.56
MWF1	592.28	8.02	584.26	15.81	576.47
MWF2	594.66	9.12	585.54	8.86	585.80
MWF3	591.66	5.43	586.23	4.62	587.04
MWF4	594.00	15.50	578.50	15.23	578.77
MWF5	589.90	14.05	575.85	20.88	569.02
MWS2	591.89	11.36	580.53	10.86	581.03
MWS4	593.05	13.30	579.75	11.72	581.33
P1	590.77	15.07	575.70	14.78	575.99
P2	591.30	17.25	574.05	16.89	574.41
P6R	590.85	17.22	573.63	16.75	574.10
P7R	591.36	17.47	573.89	17.16	574.20
P8R	591.28	17.86	573.42	17.54	573.74
PF3	591.48	13.00	578.48	12.99	578.49
PF4	591.48	19.40	572.08	18.78	572.70
PF6	592.86	6.54	586.32	5.94	586.92
PS1	592.89	12.27	580.62	18.79	574.10
PS2	593.40	13.01	580.39	12.48	580.92
TP1	591.27	17.56	573.71	17.20	574.07
TP2	589.87	16.16	573.71	15.77	574.10
Pumping Sump in Trench	589.26	16.70	572.56	19.75*	569.51

Notes:
DTW - Depth to water in feet, below top of casing
GWE - Groundwater Elevation, ft. amsl
NM - Not Measured
ft. amsl - feet above mean sea level
* 3.0 ft of NAPL was measured in the pumping sump

Table 2
Groundwater Analytical Data for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, NY

ARCADIS Design & Consultancy for natural and built assets

Well ID	Date	Depth to Water (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m-, p- Xylene (µg/L)	o-Xylene (µg/L)
NYSDEC TOGS 1.1.1 Standards			1	5	5	5	5
B3	12/13/2011	9.75	ND < 0.20	ND < 0.20	ND < 0.20	ND < 0.40	ND < 0.20
	6/28/2012	8.46	ND < 0.20	ND < 0.20	ND < 0.20	ND < 0.40	ND < 0.20
	12/11/2012	10.01	0.099	2.1	0.7	2.7	1
	8/24/2015	NM	NS	NS	NS	NS	NS
	4/27/2016	7.78	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/21/2016	8.85	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	3/29/2017	6.49	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/20/2017	7.5	ND < 0.090	ND < 0.25	ND < 0.30	ND < 0.28	ND < 0.32
	10/23/2018	6.46	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/18/2018	6.67	ND < 0.82	ND < 1.0	ND < 1.5	ND < 1.3	ND < 1.5
	6/12/2019	6.6	ND < 0.82	ND < 1.0	ND < 1.5	ND < 1.3	ND < 1.5
	11/18/2019	6.55	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	9/2/2020	6.49	ND < 1.6	ND < 2.0	ND < 3.0	ND < 2.6	ND < 3.0
	12/9/2020	6.85	ND < 1.6	ND < 2.0	ND < 3.0	ND <2.6	ND < 3.0
B6	12/13/2011	18.21	0.11	0.067	ND < 0.20	ND	ND < 0.20
	6/28/2012	18.59	0.22	ND < 0.20	ND < 0.20	ND	ND < 0.20
	12/11/2012	18.00	0.043	0.22	0.064	0.29	0.068
	8/24/2015	18.51	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	4/27/2016	18.7	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/20/2016	18.58	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	3/28/2017	25.81	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/19/2017	23.27	0.26 J	ND < 0.25	2.2	0.38 J	0.83 J
B6R	10/24/2018	16.94	1	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/17/2018	17.31	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	6/12/2019	16.34	ND < 0.41	ND < 0.51	2	ND < 0.66	ND < 0.76
	11/18/2019	16.97	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	9/3/2020	17.2	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/10/2020	16.68	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
B7	12/13/2011	19.52	0.12	ND < 0.20	ND < 0.20	ND	ND < 0.20
	6/28/2012	20.42	4.7	0.068	0.079	ND	0.11
	12/11/2012	19.16	3.9	0.42	0.13	0.36	0.17
	8/25/2015	19.79	9.8	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	4/27/2016	19.9	6.4	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/21/2016	18.42	12	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	3/28/2017	26.47	5.1	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/20/2017	17.96	56	1.7	38	3.7	12
B7R	10/24/2018	18.01	42	ND < 1.0	6.4	ND < 1.3	1.5 J
	12/17/2018	18.31	38	ND < 1.0	12	ND < 1.3	2.9
	6/12/2019	16.99	18	ND < 0.51	22	1.1 J	6.3
	11/18/2019	17.79	19	0.51 J	18	1.2 J	5.4
	9/3/2020	18.05	25	ND < 0.51	5.2	ND < 0.66	2.2
	12/10/2020	17.57	17	ND < 0.51	2	ND < 0.66	1.6
B8	12/13/2011	18.11	100	1	50	9.3	17
	6/28/2012	18.72	150	1.4	77	6.2	27
	12/11/2012	18.03	51	1.3	23	5.4	13
	8/25/2015	18.41	220	1.7	60	11	36
	4/27/2016	NM	100	ND < 2.0	54	6.3 J	21
	12/20/2016	18.46	450	ND < 5.1	45	ND < 6.6	32
	3/29/2017	25.67	7.5	ND < 0.51	20	3.1	7.5
	12/20/2017	18.48	530	250	830	300	210
B8R	10/23/2018	18.26	620	140	530	160	170
	12/17/2018	18.25	500	75	470	110	130
	6/12/2019	17.15	550	130	580	170	170
	11/18/2019	14.84	NS**	NS**	NS**	NS**	NS**
	9/2/2020	18.19	380	37	530	110	130
	12/9/2020	17.60	300	26	450	110	130

See Notes on Page 3.

Table 2
Groundwater Analytical Data for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, NY

ARCADIS Design & Consultancy for natural and built assets

Well ID	Date	Depth to Water (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m-, p- Xylene (µg/L)	o-Xylene (µg/L)
NYSDEC TOGS 1.1.1 Standards			**1**	**5**	**5**	**5**	**5**
MWF2	12/13/2011	9.74	81	7.3	420	420	290
	6/28/2012	9.45	36	4.5	730	570	380
	12/11/2012	8.90	390	19	800	730	470
	8/25/2015	8.97	44	5.4 J	660	610	420
	4/27/2016	9.22	100	6.1	500	430	310
	12/20/2016	9.39	100	ND < 20	3000	2200	1200
	3/29/2017	9.29	37 J	ND < 20	420	380	310
	12/19/2017	8.88	14	3.5 J	320	200	190
	10/24/2018	9.03	23	ND < 5.1	190	230	180
	12/18/2018	8.8	16	ND < 5.1	140	220	190
	6/12/2019	9.68	26	ND < 5.1	570	230	310
	11/18/2019	8.78	NS**	NS**	NS**	NS**	NS**
	9/3/2020	9.12	NS**	NS**	NS**	NS**	NS**
	12/10/2020	8.86	11	ND < 5.1	260	200	240
MWF3	12/13/2011	4.92	ND < 0.20	ND < 0.20	ND < 0.20	ND < 0.40	ND < 0.20
	6/28/2012	6.00	0.37	ND < 0.20	ND < 0.20	0.13	1.1
	12/11/2012	4.80	0.26	0.35	1.6	2	1.5
	8/24/2015	NM	NS	NS	NS	NS	NS
	4/27/2016	5.16	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/20/2016	5.01	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	3/28/2017	12.19	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/19/2017	5.54	ND < 0.090	ND < 0.25	ND < 0.30	0.28 J	0.76 J
	10/24/2018	5.51	ND < 0.82	ND < 1.0	ND < 1.5	ND < 1.3	ND < 1.5
	12/18/2018	4.55	ND < 0.82	ND < 1.0	ND < 1.5	ND < 1.3	ND < 1.5
	6/12/2019	4.32	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	11/18/2019	4.9	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	9/2/2020	5.43	ND < 1.6	ND < 2.0	ND < 3.0	ND < 2.6	ND < 3.0
	12/9/2020	4.62	ND < 1.6	ND < 2.0	ND < 3.0	ND < 2.6	ND < 3.0
MWF4	12/13/2011	16.47	64	2.1	84	16	54
	6/28/2012	15.96	90	2.9	120	19	73
	12/11/2012	15.45	100	4.2	200	38	99
	8/25/2015	15.51	76	ND < 2.6	72	11	56
	4/27/2016	15.88	53	ND < 2.6	51	11	49
	12/20/2016	15.77	69	2.1	82	13	59
	3/29/2017	16.01	75	2.4	91	13	63
	12/19/2017	16.14	83	3.1	110	14	75
	10/23/2018	14.87	67	2.7 J	120	13	61
	12/17/2018	15.52	81	3.9 J	160 F1	24	89
	6/12/2019	15.5	92	4.7	240	34	120
	11/18/2019	14.92	53	2.4 J	100	18	70
	9/3/2020	15.5	NS**	NS**	NS**	NS**	NS**
	12/10/2020	15.23	64	2.3 J	95	13	69
MWS2	8/24/2015	NM	NS	NS	NS	NS	NS
	4/27/2016	NM	NS	NS	NS	NS	NS
	12/21/2016	18.95	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	3/28/2017	17.99	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/19/2017	11.98	ND < 0.090	ND < 0.25	ND < 0.30	ND < 0.28	ND < 0.32
	10/24/2018	11.24	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/18/2018	10.79	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	6/12/2019	10.66	NS	NS	NS	NS	NS
	11/18/2019	10.57	NS	NS	NS	NS	NS

See Notes on Page 3.

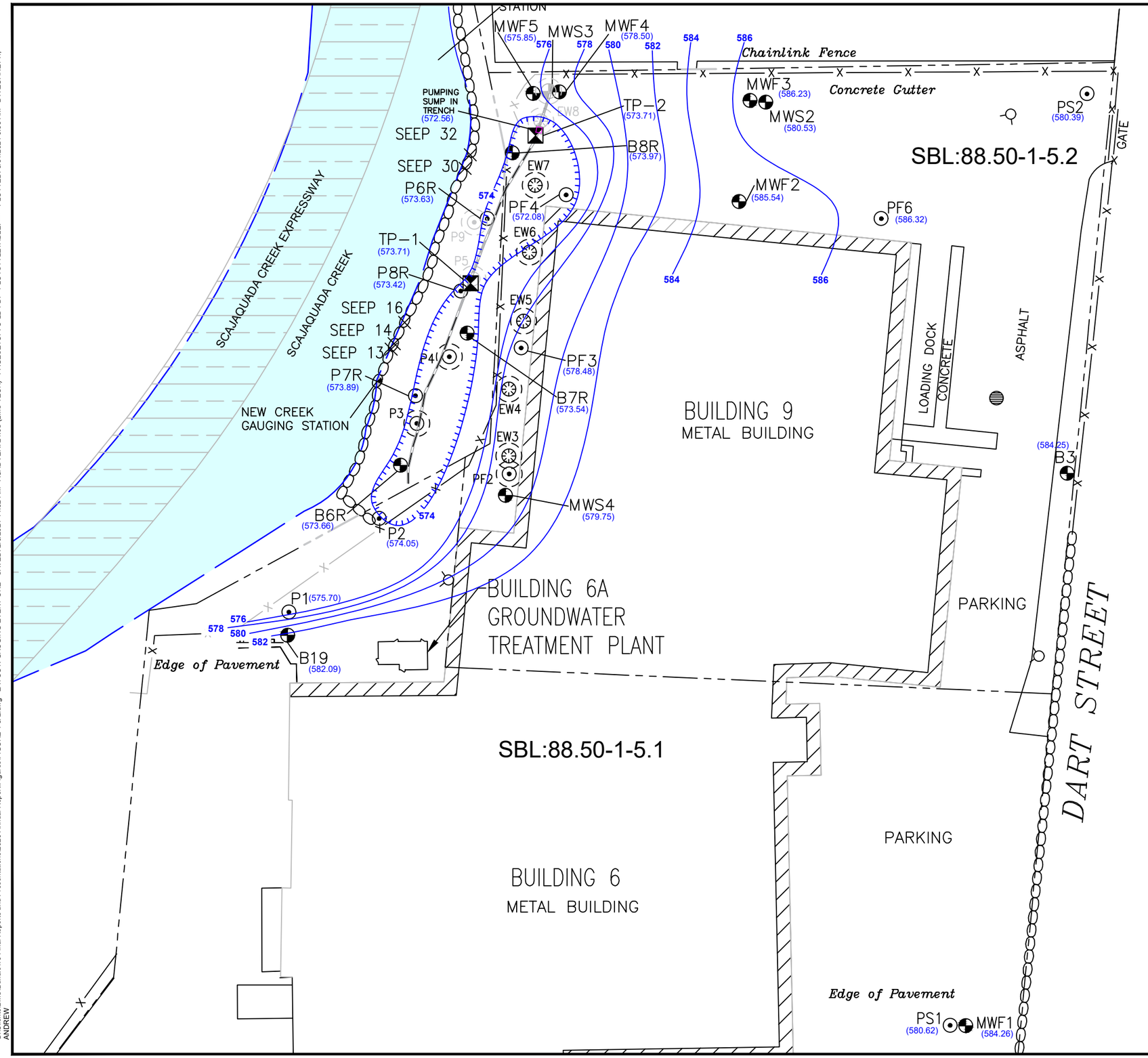
Table 2
Groundwater Analytical Data for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, NY

ARCADIS Design & Consultancy for natural and built assets

Well ID	Date	Depth to Water (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m-, p- Xylene (µg/L)	o-Xylene (µg/L)
NYSDEC TOGS 1.1.1 Standards			**1**	**5**	**5**	**5**	**5**
PS1	12/13/2011	11.02	ND < 0.20	ND < 0.20	ND < 0.20	ND < 0.40	NM
	6/28/2012	11.57	ND < 0.20	ND < 0.20	ND < 0.20	ND < 0.40	NM
	12/11/2012	11.37	0.078	0.1	0.075	ND < 0.40	NM
	8/25/2015	10.03	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	NM
	4/27/2016	11.19	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/22/2016	12.72	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	3/29/2017	11.52	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/20/2017	12.89	ND < 0.090	ND < 0.25	ND < 0.30	ND < 0.28	ND < 0.32
	10/23/2018	11.54	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	12/18/2018	10.48	ND < 0.41	ND < 0.51	ND < 0.74	ND < 0.66	ND < 0.76
	6/12/2019	10.72	NS	NS	NS	NS	NS
	11/18/2019	10.30	NS	NS	NS	NS	NS
	9/3/2020	12.27	NS	NS	NS	NS	NS
	12/9/2020	18.79	NS	NS	NS	NS	NS
P5*	8/25/2015	18.15	84	2.7 J	300	10	NM
	4/27/2016	18.59	14	ND < 2.6	150	8.9 J	36
	12/21/2016	18.5	120	ND < 10	950	45	250
	3/29/2017	18.82	5.4	ND < 1.0	74	5	20
	12/20/2017	NM*	NS*	NS*	NS*	NS*	NS*
P8R	6/12/2019	17.13	130	5.5	240	22	54
	11/18/2019	17.25	200	5.8	380	21	69
	9/3/2020	17.86	160	6.7	260	31	64
	12/10/2020	17.54	150	4.2 J	270	16	76

Notes:
µg/L = micrograms per liter
ft = feet
J = Result is less than the Reporting Limit but greater than or equal to the Method Detection Limit and the concentration is an approximate value.
ND = non detect (value shown is the method detection limit)
NM = not measured
NS = not sampled
F1 = MS and/or MSD Recovery is outside acceptable limits.
TOGS = Technical and Operational Guidance Services
Bolded analytical data represents results above NYSDEC TOGS 1.1.1 Standards.
* Well abandoned
**Well not sampled due to NAPL observed during gauging.

Figures



LEGEND :

- INTERCEPTOR TRENCH
- PROPERTY BOUNDARY
- FENCE
- SHEET PILE RETAINING WALL
- MONITORING WELL
- ABANDONED MONITORING WELL
- STREAM GAUGE
- SEEP LOCATION
- PIEZOMETER
- ABANDONED PIEZOMETER
- GROUNDWATER EXTRACTION WELL
- ABANDONED GROUNDWATER EXTRACTION WELL
- TRENCH PIEZOMETER
- RECOVERY SUMP
- 580 ——— 580 GROUNDWATER CONTOUR
- (580.00) GROUNDWATER ELEVATION (FT)

NOTE:

1. BASE MAP FROM A GROUNDWATER & ENVIRONMENTAL SERVICES, INC. FIGURE TITLED "PROPOSED GROUNDWATER COLLECTION TRENCH LOCATION MAP" DATED 4/13/2013.

0 100' 200'

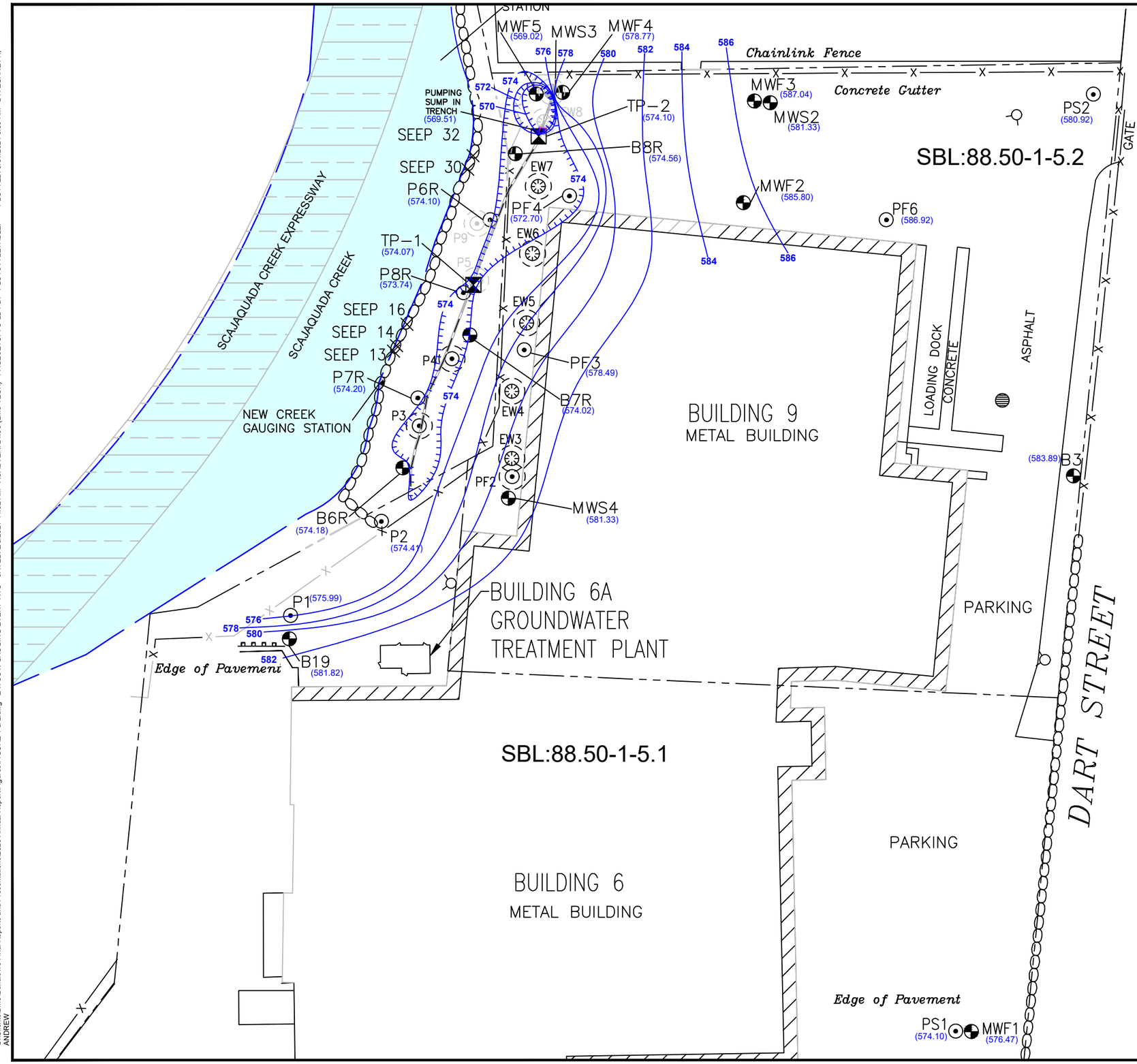
GRAPHIC SCALE

FORMER IROQUOIS GAS/WESTWOOD PHARMACEUTICAL SITE
120 DART ST. AND 40 BRADLEY ST.
BUFFALO, NEW YORK

GROUNDWATER ELEVATION CONTOUR MAP SEPTEMBER 3, 2020

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1



LEGEND :

- INTERCEPTOR TRENCH
- PROPERTY BOUNDARY
- FENCE
- SHEET PILE RETAINING WALL
- MONITORING WELL
- ABANDONED MONITORING WELL
- STREAM GAUGE
- SEEP LOCATION
- PIEZOMETER
- ABANDONED PIEZOMETER
- GROUNDWATER EXTRACTION WELL
- ABANDONED GROUNDWATER EXTRACTION WELL
- TRENCH PIEZOMETER
- RECOVERY SUMP
- 580 —— 580 GROUNDWATER CONTOUR
- (580.00) GROUNDWATER ELEVATION (FT)
- (NM) NOT MEASURED

NOTE:

1. BASE MAP FROM A GROUNDWATER & ENVIRONMENTAL SERVICES, INC. FIGURE TITLED "PROPOSED GROUNDWATER COLLECTION TRENCH LOCATION MAP" DATED 4/13/2013.

0 100' 200'

GRAPHIC SCALE

FORMER IROQUOIS GAS/WESTWOOD PHARMACEUTICAL SITE
120 DART ST. AND 40 BRADLEY ST.
BUFFALO, NEW YORK

GROUNDWATER ELEVATION CONTOUR MAP DECEMBER 9, 2020

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

CITY: SYRACUSE, NY DIV/GROUP: EBC-IM/DV DB: L.POSENAUER PMTM: M.BENOIT LYR:(Opt)ON=*;OFF=*REF*
G:\Clients\BMS\Buffalo\10 Final Reports and Presentations\2020 Annual Report\Figures\FIGURE 1 & 2.dwg LAYOUT: GAUGING EVENT TWO SAVED: 2/5/2021 11:32 AM ACADVER: 21.0S (LMS TECH) PAGESETUP: C-LB-PDF PLOTSTYLETABLE: ---- PLOTTED: 3/31/2021 9:59 AM BY: ZOANETTI, ANDREW

B8R	
DATE SAMPLED	9/2/2020
COMPOUND	RESULT (ug/L)
BENZENE	380
TOLUENE	37
ETHYLBENZENE	530
m,p-XYLENE	110
o-XYLENE	130

P8R	
DATE SAMPLED	9/3/2020
COMPOUND	RESULT (ug/L)
BENZENE	160
TOLUENE	6.7
ETHYLBENZENE	260
m,p-XYLENE	31
o-XYLENE	64

B7R	
DATE SAMPLED	9/3/2020
COMPOUND	RESULT (ug/L)
BENZENE	25
TOLUENE	ND < 0.51
ETHYLBENZENE	5.2
m,p-XYLENE	ND < 0.66
o-XYLENE	2.2

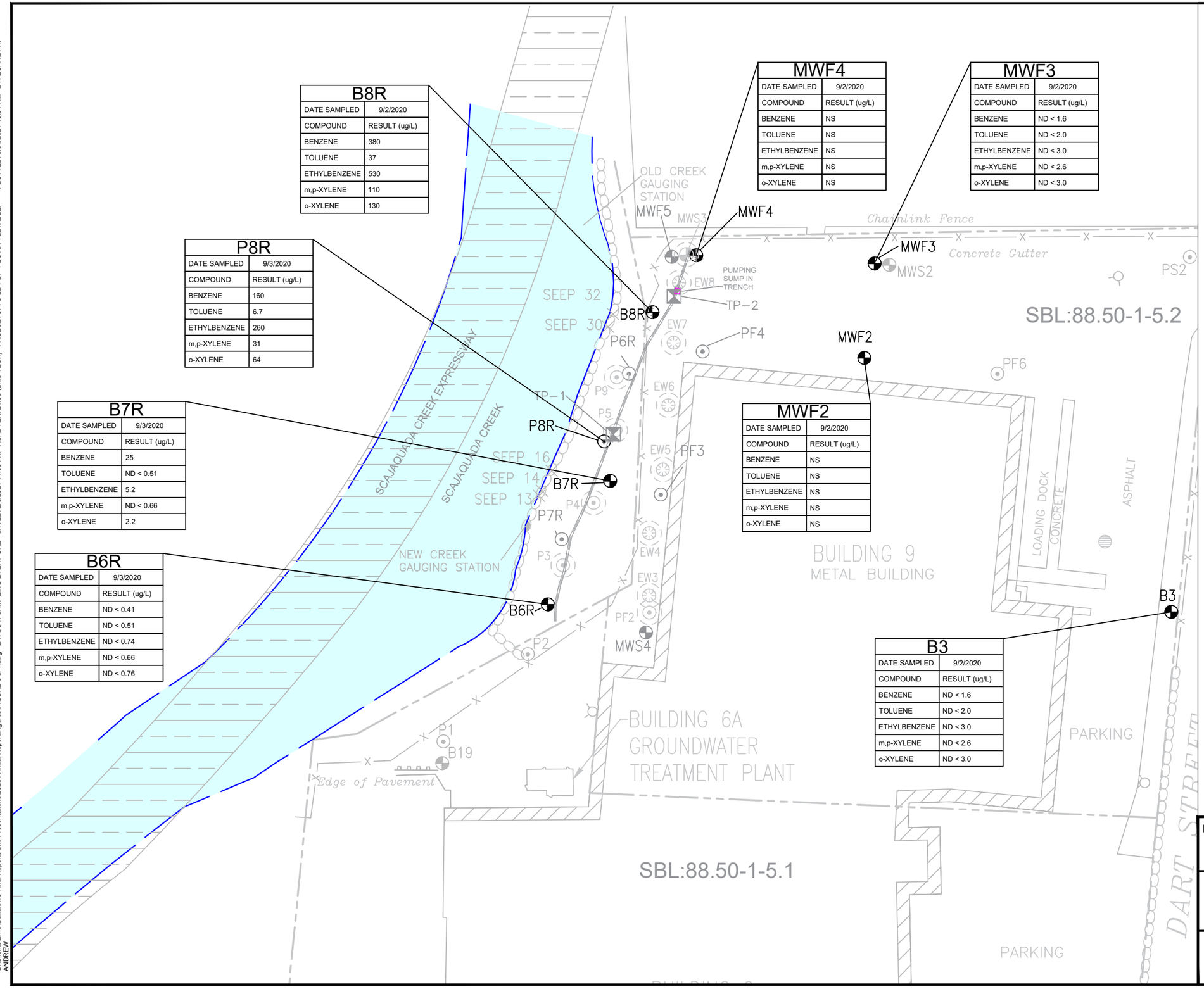
B6R	
DATE SAMPLED	9/3/2020
COMPOUND	RESULT (ug/L)
BENZENE	ND < 0.41
TOLUENE	ND < 0.51
ETHYLBENZENE	ND < 0.74
m,p-XYLENE	ND < 0.66
o-XYLENE	ND < 0.76

MWF4	
DATE SAMPLED	9/2/2020
COMPOUND	RESULT (ug/L)
BENZENE	NS
TOLUENE	NS
ETHYLBENZENE	NS
m,p-XYLENE	NS
o-XYLENE	NS

MWF3	
DATE SAMPLED	9/2/2020
COMPOUND	RESULT (ug/L)
BENZENE	ND < 1.6
TOLUENE	ND < 2.0
ETHYLBENZENE	ND < 3.0
m,p-XYLENE	ND < 2.6
o-XYLENE	ND < 3.0

MWF2	
DATE SAMPLED	9/2/2020
COMPOUND	RESULT (ug/L)
BENZENE	NS
TOLUENE	NS
ETHYLBENZENE	NS
m,p-XYLENE	NS
o-XYLENE	NS

B3	
DATE SAMPLED	9/2/2020
COMPOUND	RESULT (ug/L)
BENZENE	ND < 1.6
TOLUENE	ND < 2.0
ETHYLBENZENE	ND < 3.0
m,p-XYLENE	ND < 2.6
o-XYLENE	ND < 3.0



LEGEND :

- INTERCEPTOR TRENCH
- PROPERTY BOUNDARY
- FENCE
- SHEET PILE RETAINING WALL
- MONITORING WELL
- ABANDONED MONITORING WELL
- STREAM GAUGE
- SEEP LOCATION
- PIEZOMETER
- ABANDONED PIEZOMETER
- GROUNDWATER EXTRACTION WELL
- ABANDONED GROUNDWATER EXTRACTION WELL
- TRENCH PIEZOMETER
- RECOVERY SUMP
- NS NOT SAMPLED
- ND NOT DETECTED
- J ESTIMATED CONCENTRATION

NOTE:

1. BASE MAP FROM A GROUNDWATER & ENVIRONMENTAL SERVICES, INC. FIGURE TITLED "PROPOSED GROUNDWATER COLLECTION TRENCH LOCATION MAP" DATED 4/13/2013.

0 75 150

GRAPHIC SCALE

FORMER IROQUOIS GAS/WESTWOOD PHARMACEUTICAL SITE
120 DART ST. AND 40 BRADLEY ST.
BUFFALO, NEW YORK

VOC CONCENTRATIONS SEPTEMBER 2-3, 2020

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

B8R	
DATE SAMPLED	12/9/2020
COMPOUND	RESULT ug/L
BENZENE	300
TOLUENE	26
ETHYLBENZENE	450
m,p-XYLENE	110
o-XYLENE	130

P8R	
DATE SAMPLED	12/10/2020
COMPOUND	RESULT ug/L
BENZENE	150
TOLUENE	4.2 J
ETHYLBENZENE	270
m,p-XYLENE	16
o-XYLENE	76

B7R	
DATE SAMPLED	12/10/2020
COMPOUND	RESULT ug/L
BENZENE	17
TOLUENE	ND < 0.51
ETHYLBENZENE	2.0
m,p-XYLENE	ND < 0.66
o-XYLENE	1.6

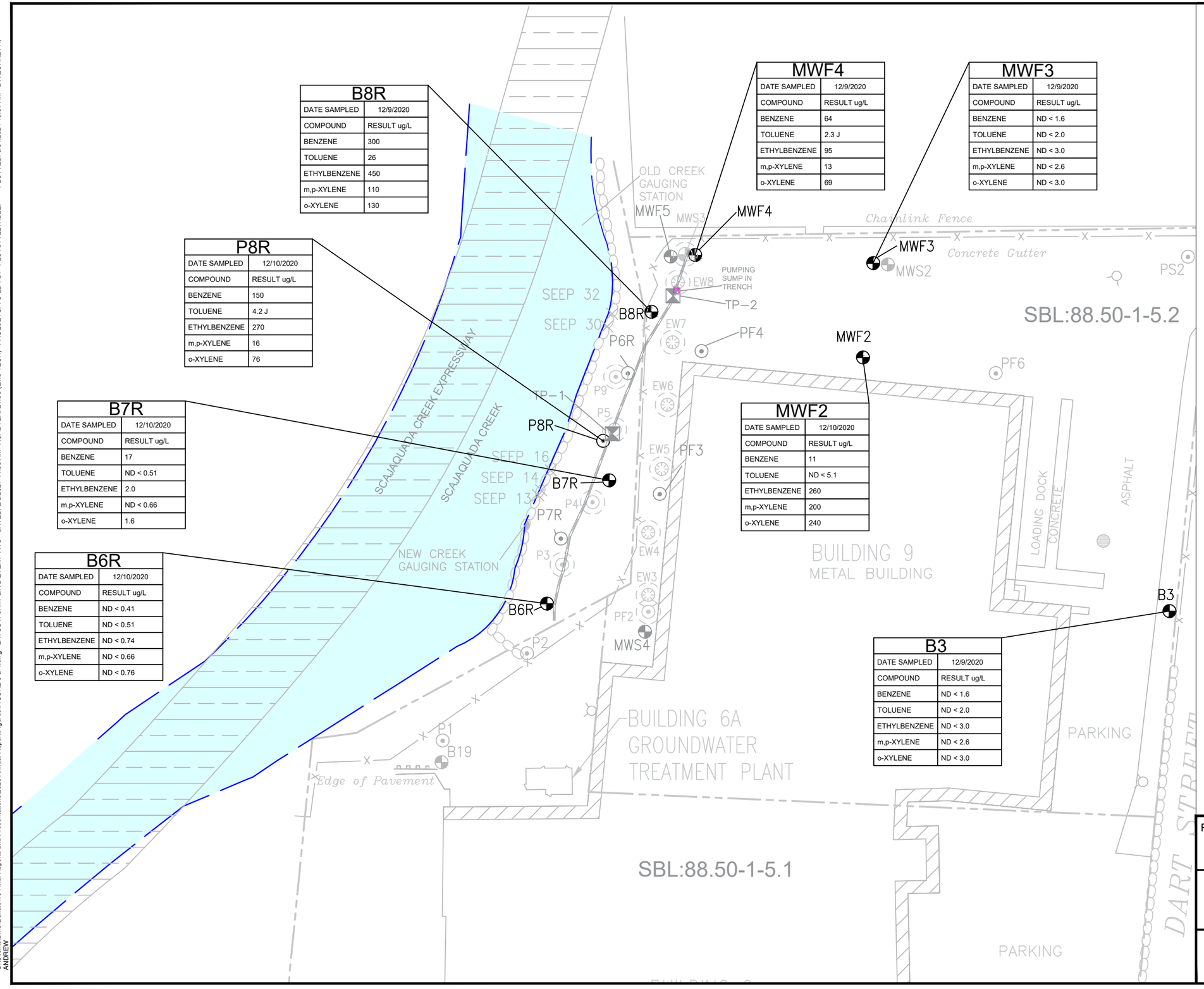
B6R	
DATE SAMPLED	12/10/2020
COMPOUND	RESULT ug/L
BENZENE	ND < 0.41
TOLUENE	ND < 0.51
ETHYLBENZENE	ND < 0.74
m,p-XYLENE	ND < 0.66
o-XYLENE	ND < 0.76

MWF4	
DATE SAMPLED	12/9/2020
COMPOUND	RESULT ug/L
BENZENE	64
TOLUENE	2.3 J
ETHYLBENZENE	95
m,p-XYLENE	13
o-XYLENE	69

MWF3	
DATE SAMPLED	12/9/2020
COMPOUND	RESULT ug/L
BENZENE	ND < 1.6
TOLUENE	ND < 2.0
ETHYLBENZENE	ND < 3.0
m,p-XYLENE	ND < 2.6
o-XYLENE	ND < 3.0

MWF2	
DATE SAMPLED	12/10/2020
COMPOUND	RESULT ug/L
BENZENE	11
TOLUENE	ND < 5.1
ETHYLBENZENE	260
m,p-XYLENE	200
o-XYLENE	240

B3	
DATE SAMPLED	12/9/2020
COMPOUND	RESULT ug/L
BENZENE	ND < 1.6
TOLUENE	ND < 2.0
ETHYLBENZENE	ND < 3.0
m,p-XYLENE	ND < 2.6
o-XYLENE	ND < 3.0



LEGEND :

- INTERCEPTOR TRENCH
- PROPERTY BOUNDARY
- FENCE
- SHEET PILE RETAINING WALL
- MONITORING WELL
- ABANDONED MONITORING WELL
- STREAM GAUGE
- SEEP LOCATION
- PIEZOMETER
- ABANDONED PIEZOMETER
- GROUNDWATER EXTRACTION WELL
- ABANDONED GROUNDWATER EXTRACTION WELL
- TRENCH PIEZOMETER
- RECOVERY SUMP
- NS NOT SAMPLED
- ND NOT DETECTED
- J ESTIMATED CONCENTRATION

NOTE:

1. BASE MAP FROM A GROUNDWATER & ENVIRONMENTAL SERVICES, INC. FIGURE TITLED "PROPOSED GROUNDWATER COLLECTION TRENCH LOCATION MAP" DATED 4/13/2013.

0 75 150

GRAPHIC SCALE

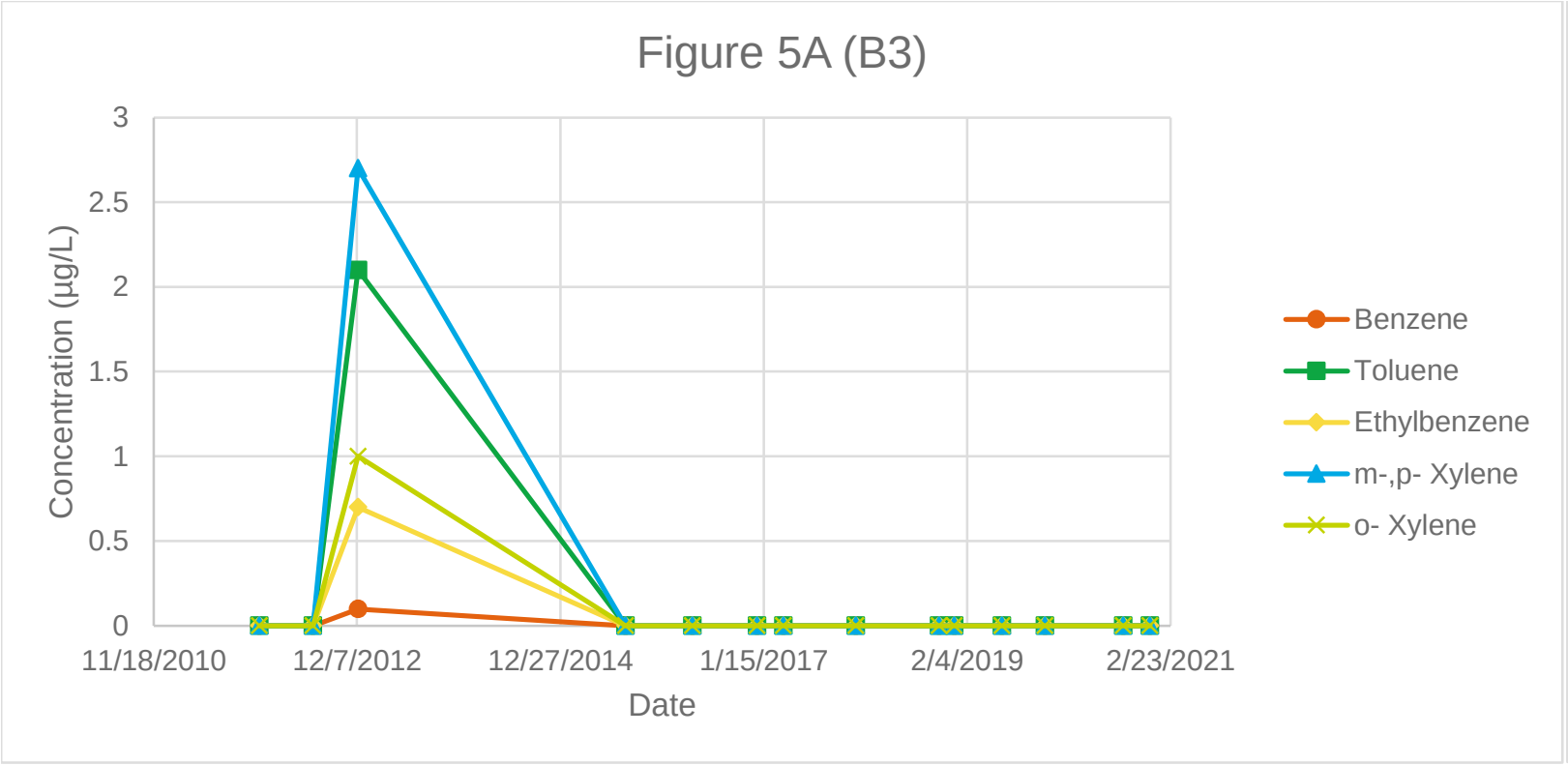
FORMER IROQUOIS GAS/WESTWOOD PHARMACEUTICAL SITE
120 DART ST. AND 40 BRADLEY ST.
BUFFALO, NEW YORK

VOC CONCENTRATIONS DECEMBER 9-10, 2020

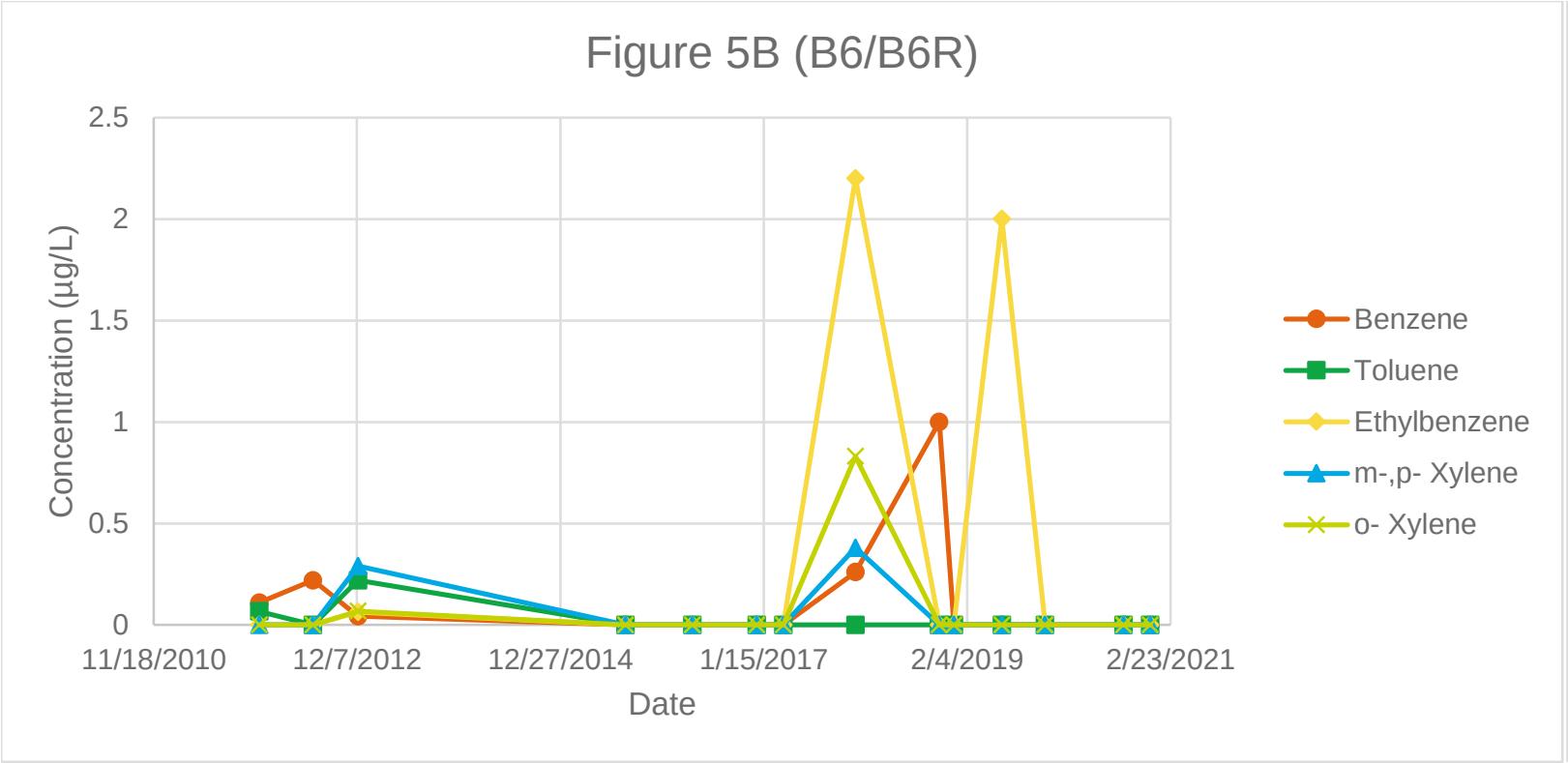
ARCADIS Design & Consultancy for natural and built assets

FIGURE 4

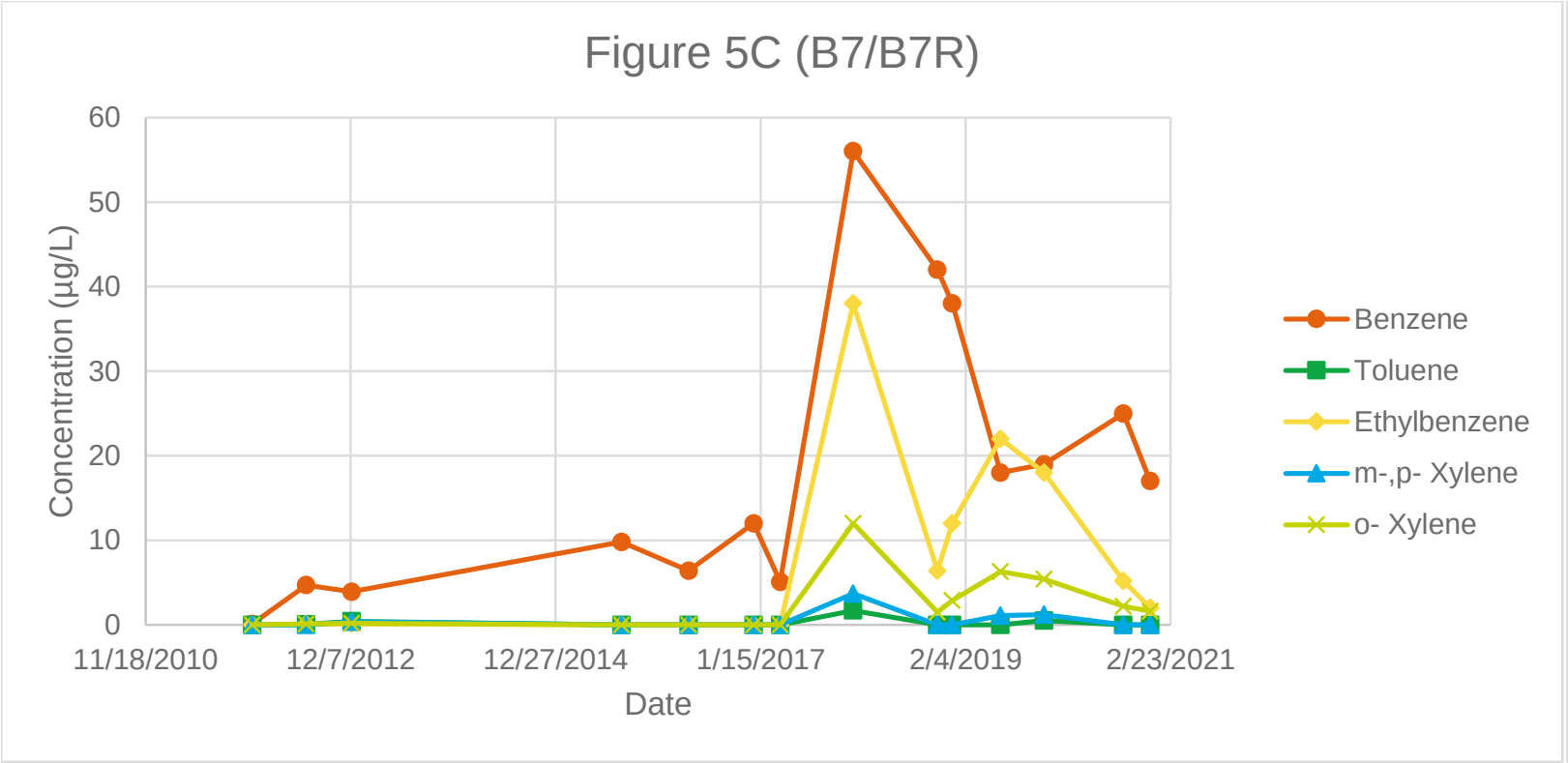
Groundwater Analytical Data Trends for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, New York



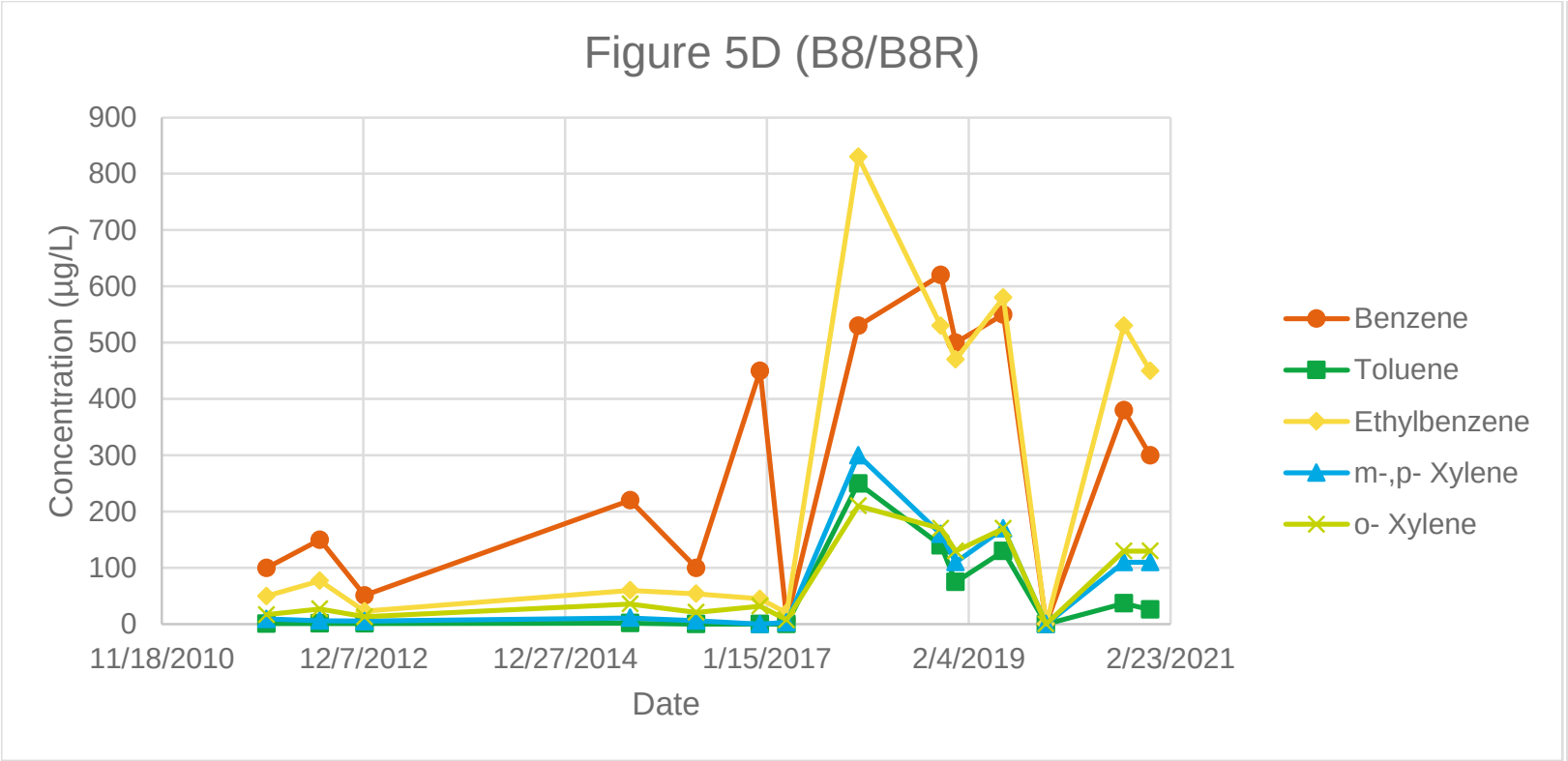
Groundwater Analytical Data Trends for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, New York



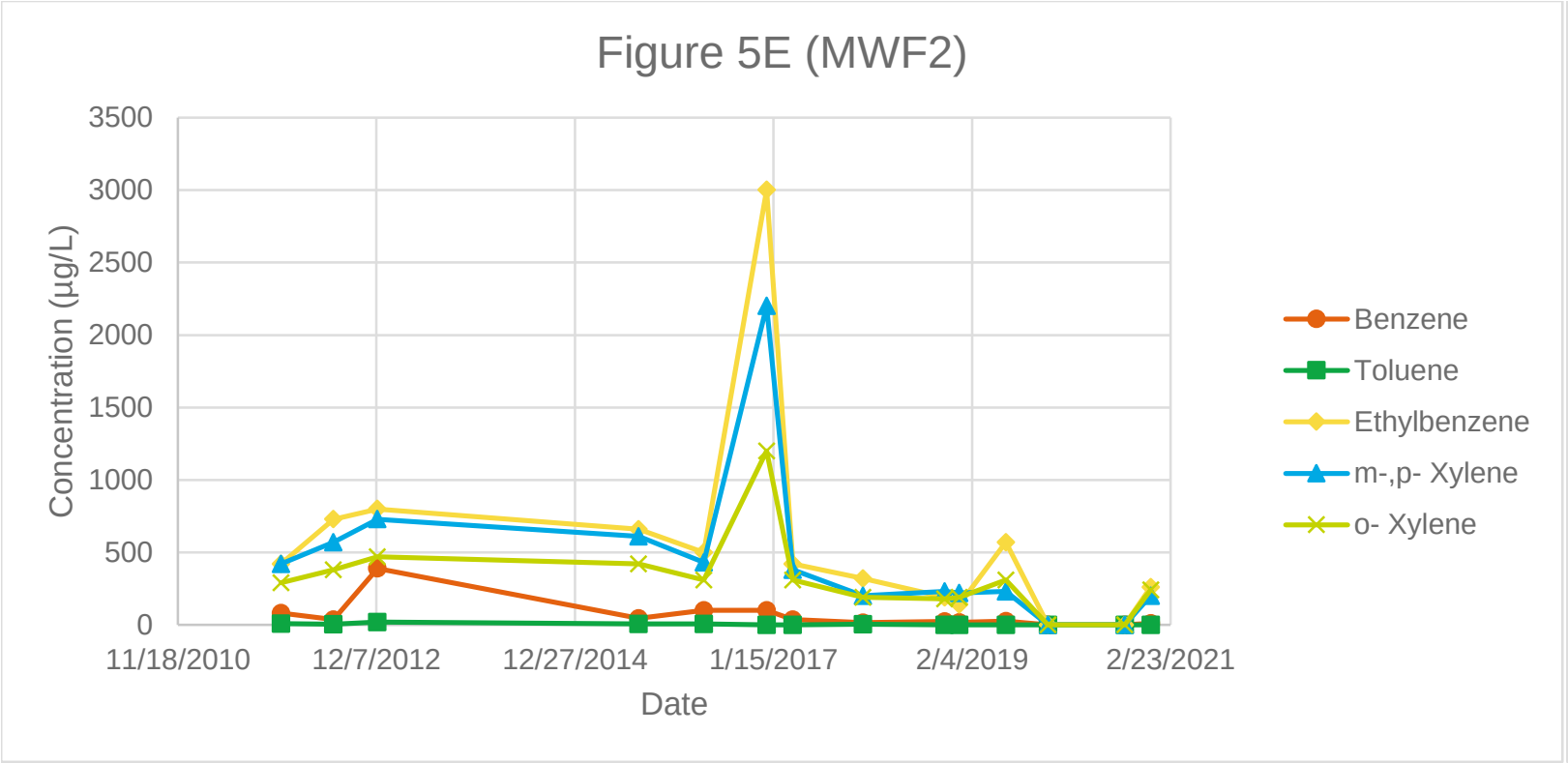
Groundwater Analytical Data Trends for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, New York



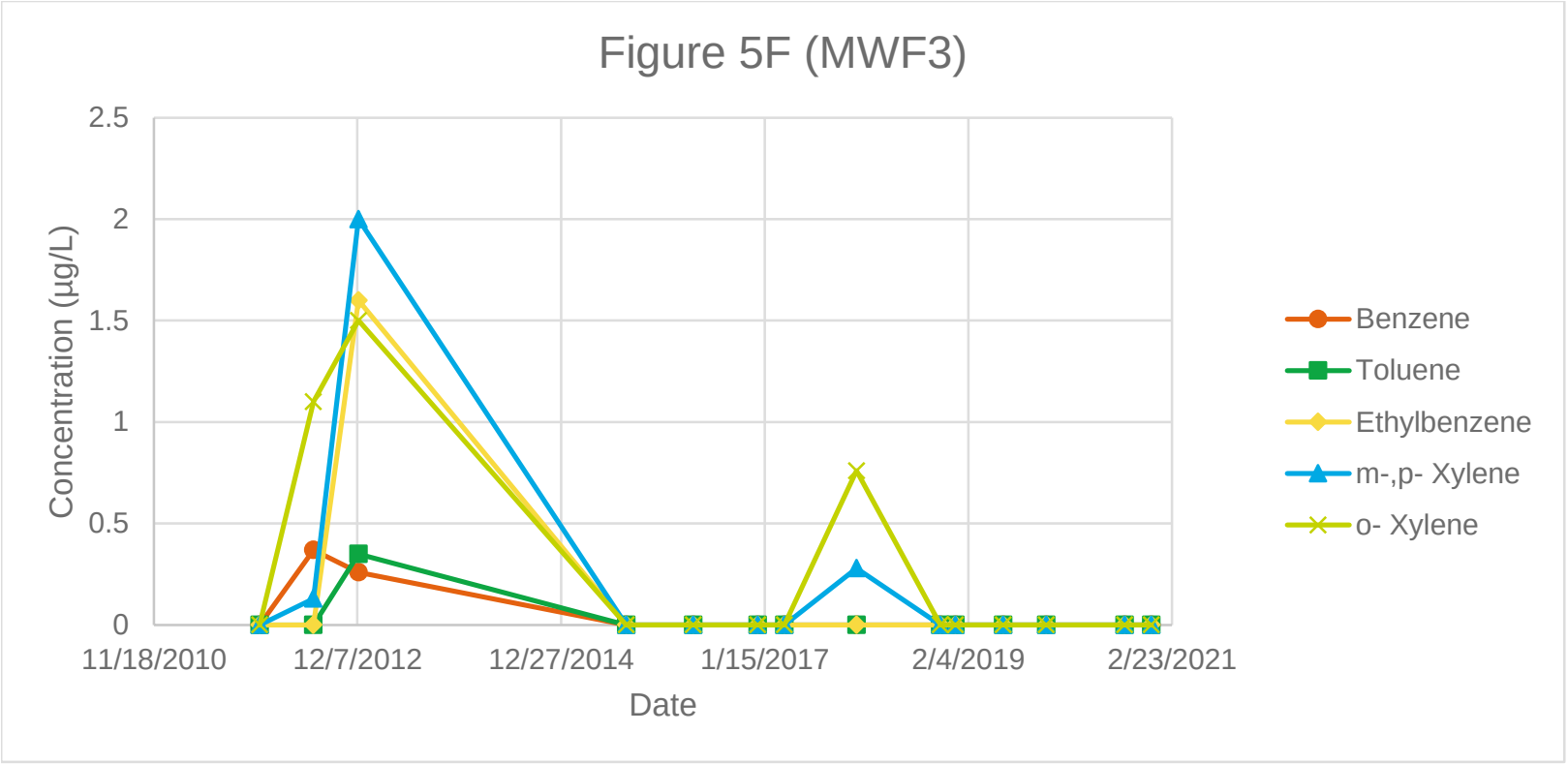
Groundwater Analytical Data Trends for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, New York



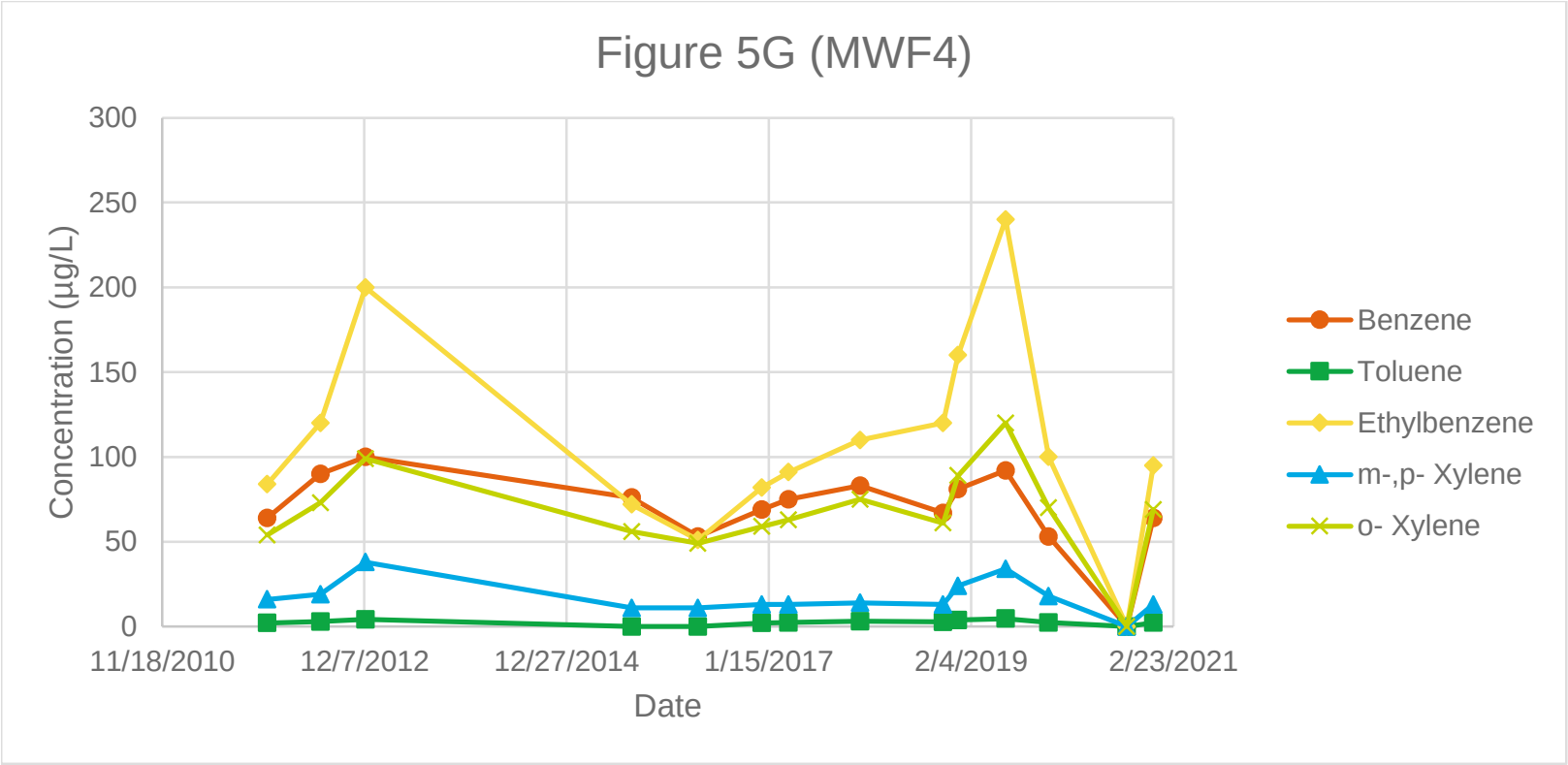
Groundwater Analytical Data Trends for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, New York



Groundwater Analytical Data Trends for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, New York



Groundwater Analytical Data Trends for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, New York



Groundwater Analytical Data Trends for VOCs
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, New York

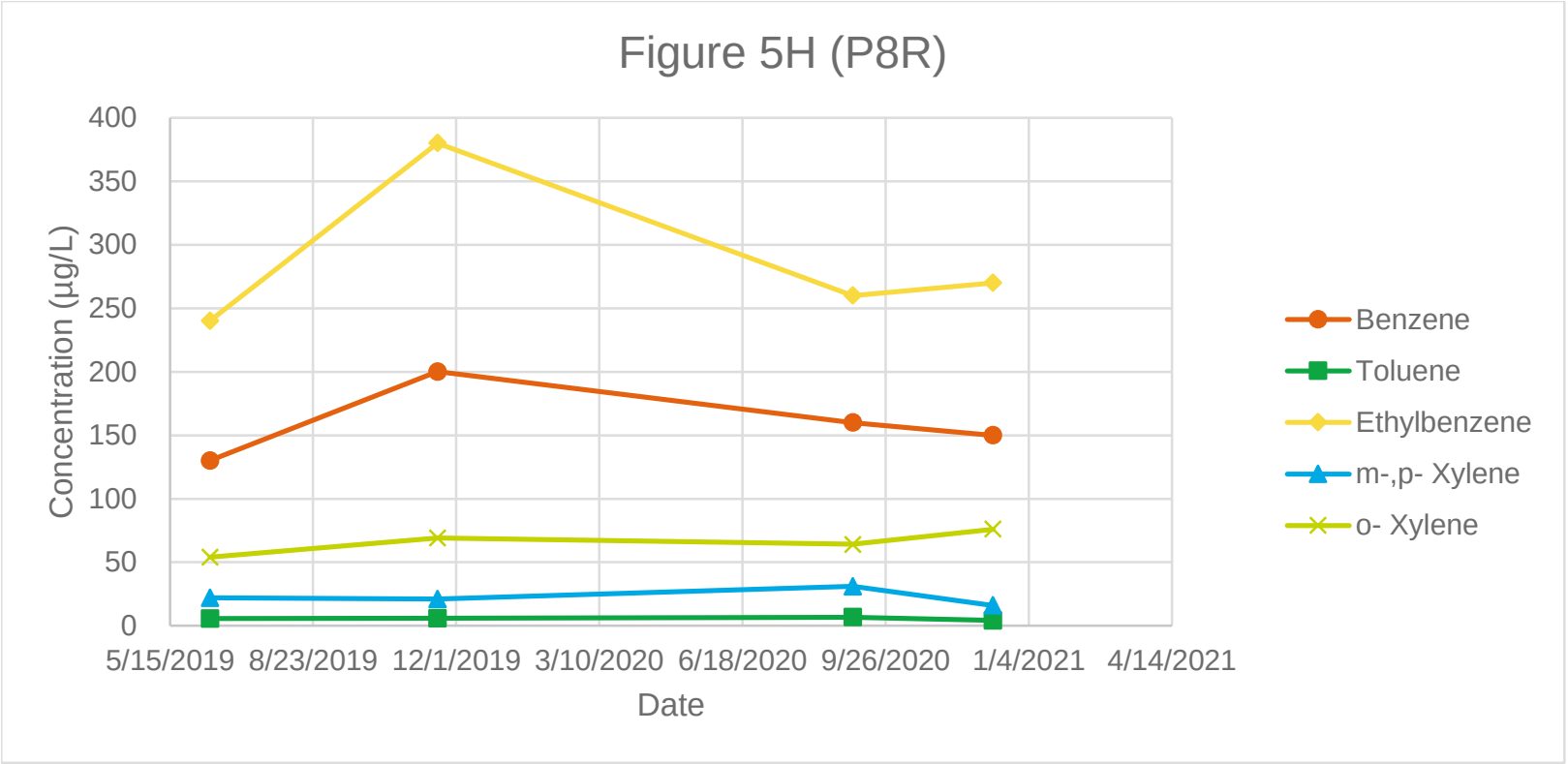
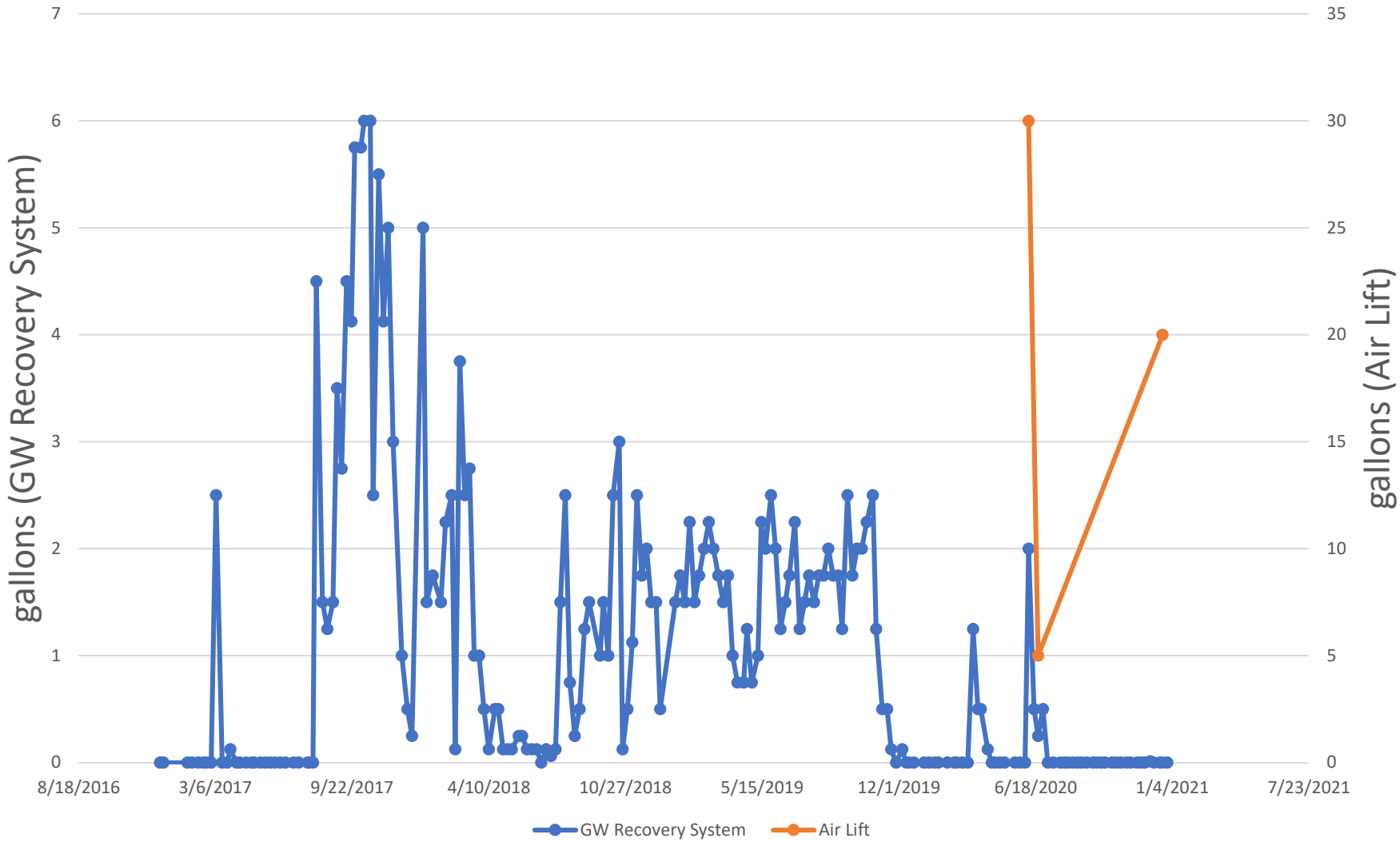


Figure 6
NAPL Recovery
Former Iroquois Gas/Westwood Pharmaceutical Site
120 Dart St. and 40 Bradley St., Buffalo, NY



Attachment 1

Groundwater Purge and Sampling Logs

ARCADIS Design & Consultancy for natural and built assets

Table 1
Summary of Gauging and Sampling Locations and Laboratory Analyses

Groundwater Monitoring Plan
Iroquois Gas/Westwood Pharmaceuticals Terrestrial Site No. 915141A
120 Dart Street and 40 Bradley Street, Buffalo, NY

0900
9/2/20

Bottom Condition

NAPL Y/N	Well ID	DTW	DTB	Groundwater Sample Collection	
		Groundwater Monitoring Wells			
N	B19	16.05	X 21.86		MB
N	B3	6.49	X 16.42	X	HB
N	B6R	17.20	X 30.75	X	MB
N	B7R	18.05	X 29.90	X	MB
N	B8R	18.19	X 29.84	X	MB
N	MWF1	8.02	X 19.90		HB
Y 9.11	MWF2	9.12	X 30.56	X	MG
N	MWF3	5.43	X 19.19	X	SB
Y 15.48	MWF4	15.60	X 23.30	X	HB
Y 14.02	MWF5	14.05	X —		MB
N	MWS2	11.34	X 83.28		SB
N	MWS4	13.30	X 84.19		SB
Y 15.05	P1	15.07	X 22.25		SB
N	P2	17.25	X 27.53		SB
N	P6R	17.22	X 20.57		SB
N	P7R	17.47	X 28.95		MB
N	P8R	17.86	X 30.76	X	MB
N	PF3	13.89	X 25.23		SB
Y 19.37	PF4	19.40	X —		—
N	PF6	6.54	X 27.16		MB
N	PS1	12.27	X 46.75		SB
N	TP1	17.56	X 27.09		SB
N	TP2	16.16	X 23.21		SB
N	B5	9.32	18.00		HB
N	PS2	13.01	42.64		SB
2.50' From Bottom	Recovery well	16.16	30.90		HB
—	Bridge	10.15	—		—

ARCADIS

Water Sampling Log

Project: BMS Buffalo | Project No.:

Site Location: Buffalo | Date: 9/2/20

Well No.: B3 | Replicate No.: — | Weather: 77°F Light Rain

Sampling Personnel: JTG/MH | Sampling Time: Begin: ~~1333~~ 1458 | End: 1502

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	~~6.49~~ 16.42
Depth to Water (ft bmp)	6.49
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	9.93
Casing Diameter	2"
Gallons in Well	1.61
Gallons Purged Prior to Sampling	4.83
Pump Intake Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin: 1335 End: 1459

Field Parameters

Color: Grey/Brown

Odor: No Odor

Appearance: Suspended Solids

	I	1V	2V	3V
pH (s.u.)				
Conductivity (mS/cm) or (µmhos/cm)[1]				
Temperature (°C)				
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)	-	-	-	-
Time				
DTW (ft bmp)				

Remarks: Well Dry @ 4gal, Return Bail .83gal. And Sample @ 1500 (Sample Time: 1500) Final Well Depth:

Parameter	Container	No.	Preservative
BTEX	VOA	3	None

PID Reading: N/A

Well Casing Volumes

Gal./Ft. 1[illegible]" = 0.08 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65
1[illegible]" = 0.09 | 2-½" = 0.26 | 3-½" = 0.50 | 6" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS Buffalo — Project No.:

Site Location: Buffalo NY — Date: 9/3/2020

Well No.: BGR — Replicate No.: — — Weather: overcast, 70 °F

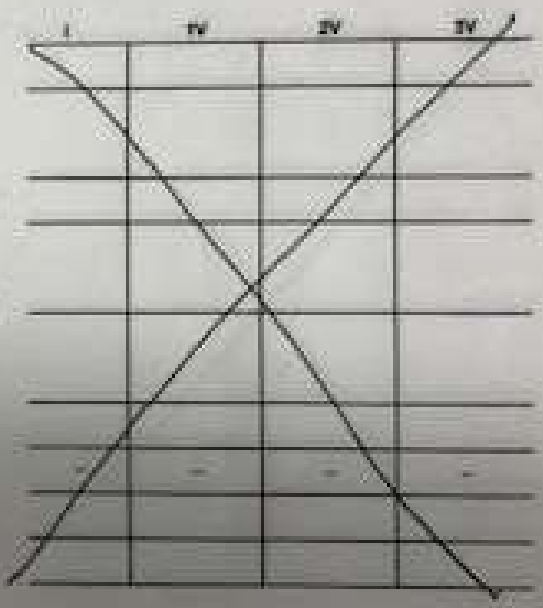
Sampling Personnel: MMH / JG — Sampling Time: Begin 0912 — End 0915

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	30.75
Depth to Water (ft bmp)	17.20
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	13.55
Casing Diameter	2"
Gallons in Well	2.16
Gallons Purged Prior to Sampling	6.5
Pump Intake Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin 0857 End 0913

Field Parameters

Color	Clear
Odor	No odor
Appearance	Clear
pH (s.u.)	
Conductivity (mS/cm) or (µohos/cm) [1]	
Temperature (°C)	
DO (mg/L)	
ORP (mV)	
Turbidity (NTU)	
Time	
DTW (ft bmp)	



Remarks: Time Sample Depth: 0914
Final Depth: 17.22

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCl

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1" = 0.04	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/4" = 0.06	2 1/2" = 0.26	3 1/2" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS Buffalo | Project No.:

Site Location: Buffalo, NY | Date: 9/3/2020

Well No.: B7R | Replicate No.: — | Weather: overcast, 70°F

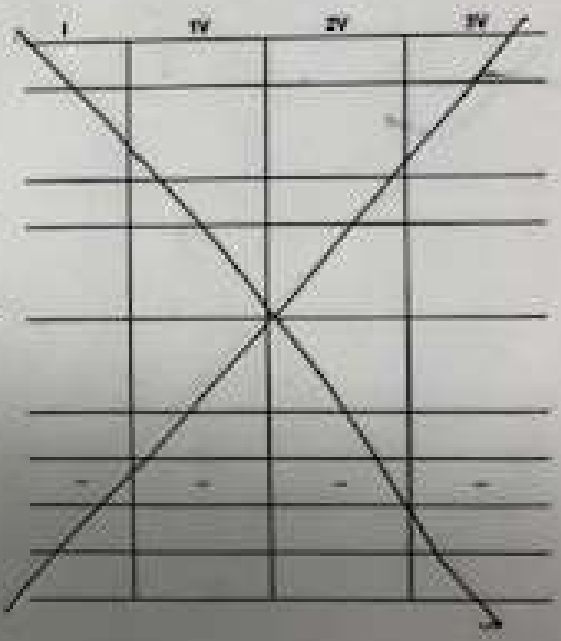
Sampling Personnel: MMH/JG | Sampling Time: Begin 0935 | End 0938

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	29.90
Depth to Water (ft bmp)	18.05
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	11.85
Casing Diameter	2"
Gallons in Well	1.896
Gallons Purged	
Prior to Sampling	5.7
Pump Intake	—
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin 0926 End 0935

Field Parameters

Color	clear
Odor	NO Oder
Appearance	clear
pH (s.u.)	
Conductivity (mS/cm) or (µmhos/cm)	
Temperature (°C)	
DO (mg/L)	
ORP (mV)	
Turbidity (NTU)	
Time	
DTW (ft bmp)	



Remarks: Sample Time: 0937
Final Depth: 18.09

Parameter	Container	No.	Preservative
BTEX	40A	3	None

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1" = 0.05	2" = 0.16	3" = 0.37	4" = 0.65
	1 1/4" = 0.09	2 1/2" = 0.26	3 1/2" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS Buffalo | Project No.:

Site Location: Buffalo, NY | Date: 9/2/20

Well No.: BRR | Replicate No.: — | Weather: 73°F Sun/clouds

Sampling Personnel: JTG/MAH | Sampling Time: Begin 1439 | End 1443

Purge Data

Measuring Point (Identified)	TOC
Sounded Well Depth (ft bmp)	29.94
Depth to Water (ft bmp)	18.19
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	11.75
Casing Diameter	2"
Gallons in Well	1.91
Gallons Purged Prior to Sampling	5.73
Pump Intake Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (lpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin 1427 End 1430

Field Parameters

Color: Clear

Odor: Odor Yes

Appearance: Clear / Sheen

	I	II	III	IV
pH (s.u.)				
Conductivity (mS/cm) or (µmho/cm) *				
Temperature (°C)				
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)	-	-	-	-
Time				
DTW (ft bmp)				

Remarks: Final Depth: 18.19
Sample Time: 1441

Parameter	Container	No.	Preservative
BTEX	VOA	3	Above

PID Reading: NA

Well Casing Volumes

Gal./Ft.				
	1"* = 0.05	2" = 0.16	3" = 0.37	4" = 0.65
	1 = 0.09	2½" = 0.26	3½" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS Buffalo | Project No.:

Site Location: Buffalo, NY | Date: 9/2/20

Well No.: MW-E3 | Replicate No.: — | Weather: Cloudy 73°F

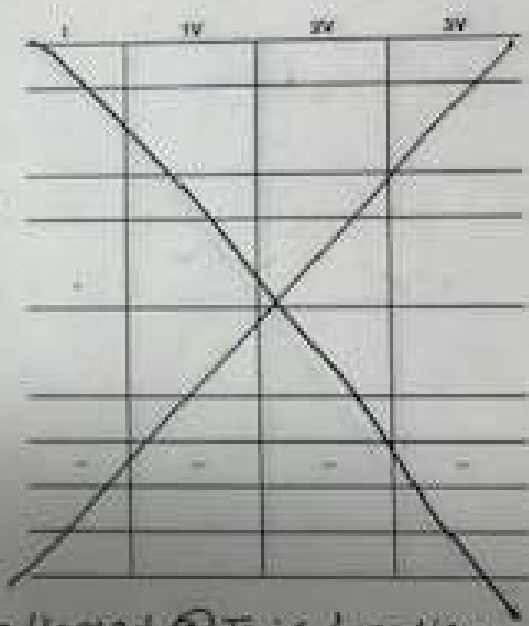
Sampling Personnel: JTG / MMH | Sampling Time: Begin 1355 | End 1400

Purge Data

Measuring Point (describe)	TOC
Recorded Well Depth (ft bmp)	19.19
Depth to Water (ft bmp)	5.43
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	13.76
Casing Diameter	2"
Gallons in Well	2.24
Gallons Purged	
Prior to Sampling	6.72
Pump Intake	—
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin 1345 End 1355

Field Parameters

Color	Brown
Odor	No Odor
Appearance	Suspended Solids
pH (s.u.)	
Conductivity (mS/cm) or (µmhos/cm)	
Temperature (°C)	
DO (mg/L)	
ORP (mV)	
Turbidity (NTU)	
Time	
DTW (ft bmp)	



Remarks: Final Depth: 6.40 * Dup Collected @ This Location
Sample Time: 1358

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCl
BTEX	VOA	3	HCl

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1" = 0.05	2" = 0.16	3" = 0.37	4" = 0.65
	1.25" = 0.08	2.5" = 0.25	3.5" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS Buffalo | Project No.:

Site Location: Buffalo, NY | Date: 9/3/2020

Well No.: PBR | Replicate No.: — | Weather: overcast, 70°F

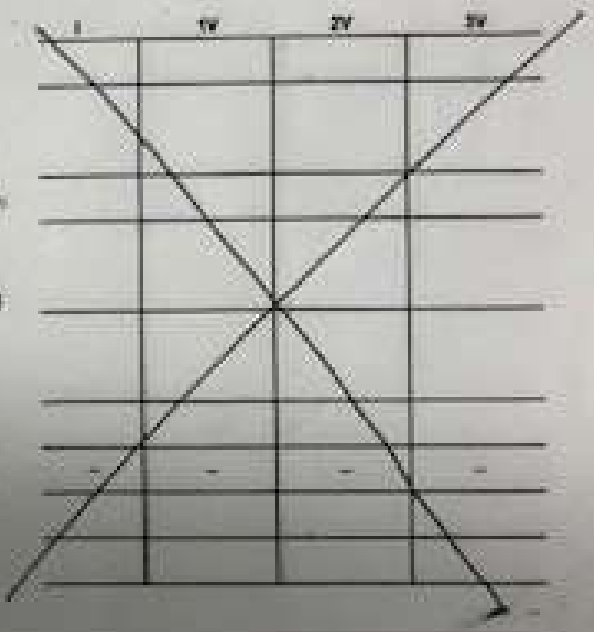
Sampling Personnel: MMH/JO | Sampling Time: Begin 1018 | End 1023

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	30.76
Depth to Water (ft bmp)	17.86
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	12.9
Casing Diameter	2"
Gallons in Well	2.06
Gallons Purged	
Prior to Sampling	6.2
Pump Intake	—
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin 1005 End 1018

Field Parameters

Color	Clear
Odor	Strong Petroleum like odors
Appearance	Clear
pH (s.u.)	
Conductivity (millisiemens/cm or umhos/cm)	
Temperature (°C)	
DO (mg/L)	
ORP (mV)	
Turbidity (NTU)	
Time	
DTW (ft bmp)	



Remarks: Sample Time: 1020
Final Depth: 20.51

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCl

PID Reading: N/A

Well Casing Volumes

Gal./Ft.			
1" = 0.04	2" = 0.16	3" = 0.37	4" = 0.65
1.25" = 0.06	2.5" = 0.25	3.5" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS for natural and built assets

12/9/2020

JT6/MMH

Well ID	Gauge DTW	Groundwater Sample DTW	Collection	DTB	Notes
B19	X				
B3	X	6.85	X	16.23	MB
B6R	X	16.66	X	30.69	SB
B7R	X	17.57	X	29.70	SB
B8R	X	17.60	X	29.86	NAPL (29.86)
MWF1	X	15.81		19.73	SB
MWF2	X	8.86	X	—	NAPL
MWF3	X	4.62	X	19.20	SB
MWF4	X	15.23	X	23.28	SB Thick NAPL Bottom
MWF5	X	20.88		29.28	MB
MWS2	X	10.86		83.05	MB
MWS4	X	11.72		84.78	SB
P1	X	14.78		15.28	HB
P2	X	16.89		27.58	SB
P6R	X	16.75		30.52	
P7R	X	17.16		29.99	SB
P8R	X	17.54	X	30.75	SB
PF3	X	12.99		25.30	MB
PF4	X	18.78		—	NAPL
PF6	X	5.94		27.17	SB
PS1	X	18.79		46.61	SB
TP1	X	17.20		27.06	SB
TP2	X	15.77		23.24	SB

Bridge - 9.50 DTW

B5 9.07 DTW / 11.81 DTB HB

PS2 12.48 DTW / 92.21 DTB

B19 10.32 / 21.98

Vault 19.75 DTW / NAPL Thickness: 3.0'

~~☆ DTB Add 0.28'~~

~~22.96~~ ~~84.50~~ 25.02 ~~30.41~~

~~8.86~~

~~4.62~~

ARCADIS

Water Sampling Log

Project: Bars Buffalo — Project No: —

Site Location: Buffalo, NY — Date: 12/9/20

Well No: B3 — Replicate No: — — Weather: Overcast, 33°F

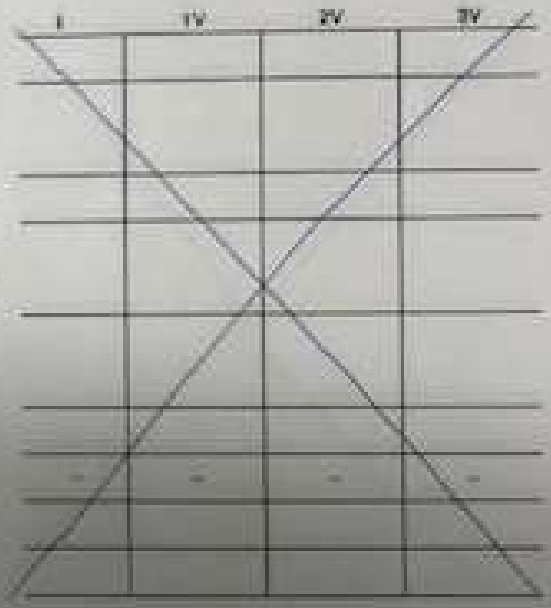
Sampling Personnel: JTG/mmH — Sampling Time: Begin: 1 — End: —

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	16.42
Depth to Water (ft bmp)	6.55
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	9.87
Casing Diameter	2"
Gallons in Well	1.60
Gallons Purged	
Prior to Sampling	4.80
Pump Intake	—
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Packer
Sampling Method	Packer
Purge Time: Begin	1128 End 1200

Field Parameters

Color	Light Brown
Odor	None
Appearance	Some Suspended Solids
pH (s.u.)	
Conductivity (mS/cm) or (umhos/cm) *	
Temperature (°C)	
DO (mg/L)	
ORP (mV)	
Turbidity (NTU)	
Time	
DTW (ft bmp)	



Remarks: Dry @ 3 volumes. Allow to recharge prior to sampling
Final DTW = 8.03

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCl

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1" = 0.04	2" = 0.16	3" = 0.37	4" = 0.65
	1.25" = 0.06	2.50" = 0.25	3.50" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS Buffalo — Project No:

Site Location: Buffalo — Date: 12/10/20

Well No: BGR — Replicate No: — — Weather: 37°F overcast

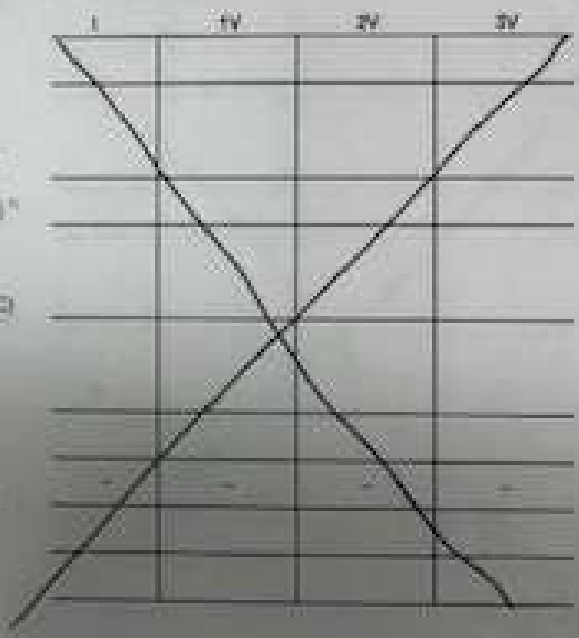
Sampling Personnel: JTG/MMH — Sampling Time: Begin: 0915 — End: 0928

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	30.69
Depth to Water (ft bmp)	17.01
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	13.68
Casing Diameter	2"
Gallons in Well	2.22
Gallons Purged	X 3 = 6.66
Prior to Sampling	
Pump Intake	—
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin 0855 End 1915

Field Parameters

Color	Clear → Light brown
Odor	None
Appearance	Clear top to cloudy bottom
pH (s.u.)	
Conductivity (mS/cm) or (umhos/cm) [1]	
Temperature (°C)	
DO (mg/L)	
ORP (mV)	
Turbidity (NTU)	
Time	
DTW (ft bmp)	



Remarks: Final DTW: 17.04

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCL

PID Reading: N/A

Well Casing Volumes

Gal./Ft. 1" = 0.05 — 2" = 0.16 — 3" = 0.37 — 4" = 0.65
1.5" = 0.09 — 2.5" = 0.25 — 3.5" = 0.50 — 6" = 1.47

1: Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS Project No.:

Site Location: Buffalo Date: 12/10/20

Well No.: B7R Replicate No.: — Weather: 39°F Overcast

Sampling Personnel: STG/MMH Sampling Time: Begin 0945 End 0950

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	29.70
Depth to Water (ft bmp)	17.82
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	11.88
Casing Diameter	2"
Gallons in Well	1.9
Gallons Purged	
Prior to Sampling	5.7
Pump Intake	—
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin 0922 End 0943

Field Parameters

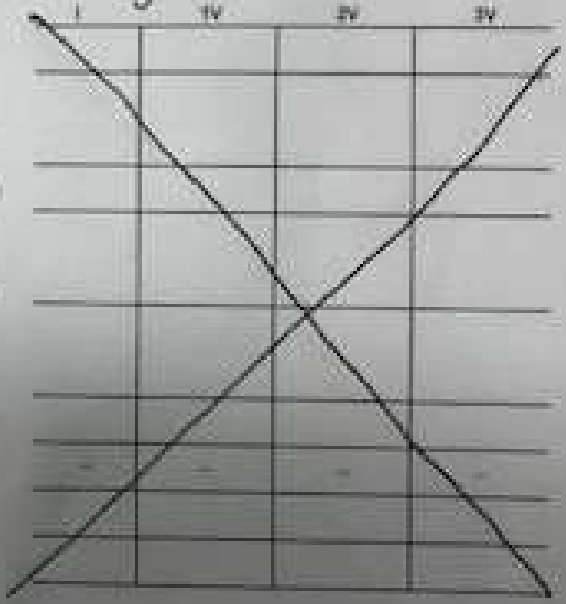
Color: Clear → Black

Odor:

Appearance: Clear → Turbid

3 volumes = 5.7 gals

	1	1V	2V	3V
pH (s.u.)				
Conductivity (mS/cm) or (µmhos/cm) [1]				
Temperature (°C)				
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)				
Time				
DTW (ft bmp)				



Remarks: Final depth 17.86

Parameter	Container	No.	Preservative
BTEX	DoA	3	HCl

PID Reading: N/A

Post Casing Volumes

Gal./Ft. 1" = 0.04, 1.25" = 0.06, 2" = 0.16, 3" = 0.37, 4" = 0.65, 5" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS Buffalo — Project No: —

Site Location: Buffalo NY — Date: 12/9/20

Well No: BMW — Duplicate No: — — Weather: Overcast, 33°F

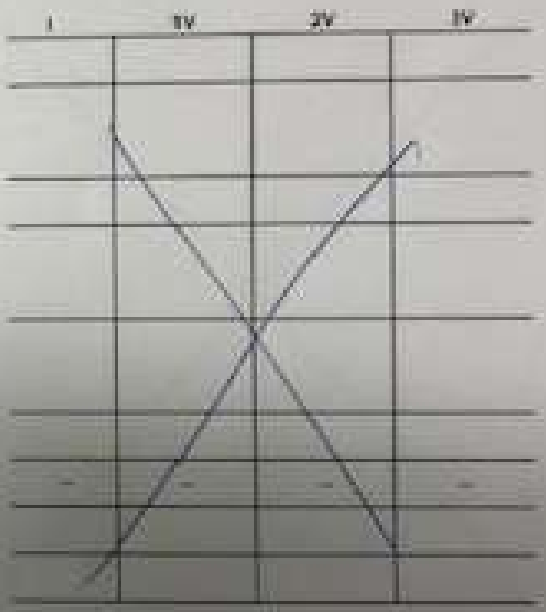
Sampling Personnel: JTG/mmH — Sampling Time: Begin 1315 — End 1320

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	29.86
Depth to Water (ft bmp)	17.60
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	12.26
Casing Diameter	2"
Gallons in Well	1.99
Gallons Purged: Prior to Sampling	6.00
Pump Intake:	—
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	
Sampling Method	
Purge Time: Begin	1304 End 1314

Field Parameters

Color	Clear, Darker gray w/ depth
Odor	Fish like odors
Appearance	Surface Sheen, Small Weak Bubbles
pH (s.u.)	
Conductivity (mS/cm) or (umhos/cm) [1]	
Temperature (°C)	
DO (mg/L)	
ORP (mV)	
Turbidity (NTU)	
Time	
DTW (ft bmp)	



Remarks: Final DTW = 18.96

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCL

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1" = 0.04	2" = 0.16	3" = 0.37	4" = 0.65
	1.25" = 0.06	2.5" = 0.25	3.5" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS — Project No.: MWFY

Site Location: Buffalo — Date: 12/10/20

Well No.: ~~MW~~ MWFZ — Replicate No.: — — Weather: overcast, 42°F

Sampling Personnel: JTC/MMH — Sampling Time: Begin 1230 — End 1235

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	23.28
Depth to Water (ft bmp)	15.45
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	7.8
Casing Diameter	2"
Gallons in Well	1.25
Gallons Purged Prior to Sampling	3.75
Pump Intake Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin 1205 End 1225

Field Parameters

Color: Clear → grey

Odor: Pet like odors

Appearance: NAPL on water + suspended silts

	I	1V	2V	3V
pH (s.u.)				
Conductivity (mS/cm) or (µmhos/cm) [1]				
Temperature (°C)				
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)	-	-	-	-
Time				
DTW (ft bmp)				

Remarks: Final Water Depth = 20.44

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCL

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47

[1] Circle one unit type

ARCADIS

Water Sampling Log

Project	BMS Buffalo	Project No.	
Site Location	Buffalo, NY	Date	12/4/2020
Well No.	MW-F3	Replicate No.	—
		Weather	overcast 33° F
Sampling Personnel	JTG/MMH	Sampling Time	Begin 1224 End 1228

Purge Data		Field Parameters	
Measuring Point (describe)	TOC	Color	Brown
Sounded Well Depth (ft bmp)	19.10	Odor	Slight Sulfur Odor
Depth to Water (ft bmp)	4.90	Appearance	Some Suspended Solids
Depth to Packer (ft bmp)	—		
Water Column in Well (ft)	14.20		
Casing Diameter	2"		
Gallons in Well	2.30		
Gallons Purged Prior to Sampling	6.9		
Pump Intake Setting (ft bmp)	—		
Packer Pressure (psi)	—		
Pumping Rate (gpm)	—		
Evacuation Method	Bailer		
Sampling Method	Bailer		
Purge Time	Begin 1205 End 1222		

	I	1V	2V	3V
pH (s.u.)				
Conductivity (mS/cm) or (µmhos/cm)[1]				
Temperature (°C)				
DO (mg/L)				
ORP (mV)				
Turbidity (NTU)	-	-	-	-
Time				
DTW (ft bmp)				

Remarks: * Dup Collected Here (Dup-1)
Final DTW = 7.13

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCL

PID Reading: N/A

Gal./Ft.	Well Casing Volumes			
	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

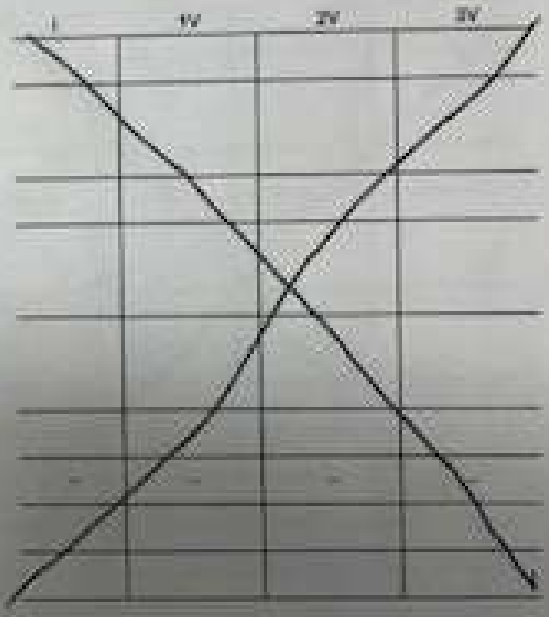
Project: BMS
Project No: MWFZ
Site Location: Buffalo
Date: 12/10/20
Well No: MWF4
Replicate No: —
Weather: 40°F Overcast
Sampling Personnel: JTG/MMH
Sampling Time: Begin 1138 End 1140

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	23.28
Depth to Water (ft bmp)	9.08
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	14.20
Casing Diameter	2"
Gallons in Well	2.31 x 3 = 6.93
Gallons Purged: Prior to Sampling	
Pump Intake	—
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin 1130 End 1137

Field Parameters

Color	clear w/ Globuals
Odor	yes
Appearance	Clear
pH (s.u.)	
Conductivity (mS/cm) or (umhos/cm)	
Temperature (°C)	
DO (mg/L)	
ORP (mV)	
Turbidity (NTU)	
Time	
DTW (ft bmp)	



Remarks: Final DTW:
NAPL On Bailer

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCL

PID Reading: N/A

Well Casing Volumes

Gal/Ft				
	1" = 0.04	2" = 0.16	3" = 0.37	4" = 0.65
	1.25" = 0.06	2.5" = 0.25	3.5" = 0.50	6" = 1.47

1) Circle one unit type

ARCADIS

Water Sampling Log

Project: BMS | Project No:

Site Location: Buffalo | Date: 12/10/20

Well No: PSR | Replicate No: — | Weather: Partly Cloudy, 41°F

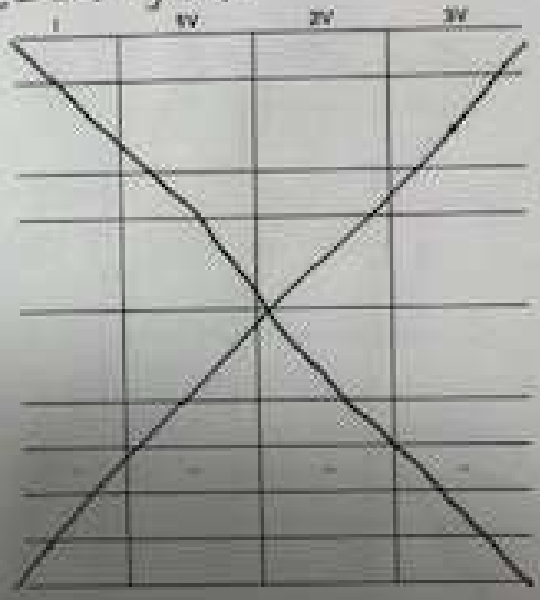
Sampling Personnel: JTG / MMH | Sampling Time | Begin: 1015 | End: 1020

Purge Data

Measuring Point (describe)	TOC
Sounded Well Depth (ft bmp)	30.75
Depth to Water (ft bmp)	~~25.29~~ 17.84
Depth to Packer (ft bmp)	—
Water Column in Well (ft)	12.91 ~~ow 5.54~~
Casing Diameter	2"
Gallons in Well	2.06 ~~5.54 8.86~~
Gallons Purged	
Prior to Sampling	6.2
Pump Intake	—
Setting (ft bmp)	—
Packer Pressure (psi)	—
Pumping Rate (gpm)	—
Evacuation Method	Bailer
Sampling Method	Bailer
Purge Time	Begin: 0953 End: 1014

Field Parameters

Color	Clear (Start) → Light Grey (END)
Odor	Moderate Pet. like odors.
Appearance	Clear to Cloudy
	6.2
	3 volume = ~~2.06~~ gallons
pH (s.u.)	
Conductivity (mS/cm) or (µmhos/cm) [1]	
Temperature (°C)	
DO (mg/L)	
ORP (mV)	
Turbidity (NTU)	
Time	
DTW (ft bmp)	



Remarks:

Parameter	Container	No.	Preservative
BTEX	VOA	3	HCL

PID Reading: N/A

Well Casing Volumes

Gal./Ft.				
	1" = 0.05	2" = 0.16	3" = 0.37	4" = 0.65
	1.25" = 0.08	2.5" = 0.25	3.5" = 0.50	6" = 1.47

1) Circle one unit type

Attachment 2

Laboratory Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-174665-1
Client Project/Site: BMS Buffalo - Groundwaters

For:
ARCADIS U.S. Inc
One Lincoln Center
110 West Fayette St, Suite 300
Syracuse, New York 13202

Attn: Mr. Raymond Wagner

Authorized for release by:
9/11/2020 5:38:16 PM

Judy Stone, Senior Project Manager
(484)685-0868
Judy.Stone@Eurofinset.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S. Inc
Job ID: 480-174665-1
Project/Site: BMS Buffalo - Groundwaters

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 480-174665-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-174665-1

Receipt
The samples were received on 9/3/2020 11:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8º C.

GC/MS VOA
Method 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: P8R (480-174665-1) and B8R (480-174665-7). Elevated reporting limits (RLs) are provided.

Method 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: FD-090220-1 (480-174665-4), MW-F3 (480-174665-5) and B3 (480-174665-6). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S. Inc
Job ID: 480-174665-1
Project/Site: BMS Buffalo - Groundwaters

Client Sample ID: P8R — Lab Sample ID: 480-174665-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	160		5.0	2.1	ug/L	5		8260C	Total/NA
Toluene	6.7		5.0	2.6	ug/L	5		8260C	Total/NA
Ethylbenzene	260		5.0	3.7	ug/L	5		8260C	Total/NA
m-Xylene & p-Xylene	31		10	3.3	ug/L	5		8260C	Total/NA
o-Xylene	64		5.0	3.8	ug/L	5		8260C	Total/NA
Xylenes, Total	95		10	3.3	ug/L	5		8260C	Total/NA
Total BTEX	520		10	5.0	ug/L	5		8260C	Total/NA

Client Sample ID: B7R — Lab Sample ID: 480-174665-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	25		1.0	0.41	ug/L	1		8260C	Total/NA
Ethylbenzene	5.2		1.0	0.74	ug/L	1		8260C	Total/NA
o-Xylene	2.2		1.0	0.76	ug/L	1		8260C	Total/NA
Xylenes, Total	2.2		2.0	0.66	ug/L	1		8260C	Total/NA
Total BTEX	32		2.0	1.0	ug/L	1		8260C	Total/NA

Client Sample ID: B6R — Lab Sample ID: 480-174665-3

No Detections.

Client Sample ID: FD-090220-1 — Lab Sample ID: 480-174665-4

No Detections.

Client Sample ID: MW-F3 — Lab Sample ID: 480-174665-5

No Detections.

Client Sample ID: B3 — Lab Sample ID: 480-174665-6

No Detections.

Client Sample ID: B8R — Lab Sample ID: 480-174665-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	380		8.0	3.3	ug/L	8		8260C	Total/NA
Toluene	37		8.0	4.1	ug/L	8		8260C	Total/NA
Ethylbenzene	530		8.0	5.9	ug/L	8		8260C	Total/NA
m-Xylene & p-Xylene	110		16	5.3	ug/L	8		8260C	Total/NA
o-Xylene	130		8.0	6.1	ug/L	8		8260C	Total/NA
Xylenes, Total	240		16	5.3	ug/L	8		8260C	Total/NA
Total BTEX	1200		16	8.0	ug/L	8		8260C	Total/NA

Client Sample ID: TB-090320 — Lab Sample ID: 480-174665-8

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: P8R
Lab Sample ID: 480-174665-1

Date Collected: 09/03/20 10:20
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**160**		5.0	2.1	ug/L			09/04/20 13:10	5
Toluene	**6.7**		5.0	2.6	ug/L			09/04/20 13:10	5
Ethylbenzene	**260**		5.0	3.7	ug/L			09/04/20 13:10	5
m-Xylene & p-Xylene	**31**		10	3.3	ug/L			09/04/20 13:10	5
o-Xylene	**64**		5.0	3.8	ug/L			09/04/20 13:10	5
Xylenes, Total	**95**		10	3.3	ug/L			09/04/20 13:10	5
Total BTEX	**520**		10	5.0	ug/L			09/04/20 13:10	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*09/04/20 13:10*	*5*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*09/04/20 13:10*	*5*
4-Bromofluorobenzene (Surr)	*101*		*73 - 120*		*09/04/20 13:10*	*5*
Dibromofluoromethane (Surr)	*103*		*75 - 123*		*09/04/20 13:10*	*5*

Client Sample ID: B7R
Lab Sample ID: 480-174665-2

Date Collected: 09/03/20 09:37
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**25**		1.0	0.41	ug/L			09/04/20 13:35	1
Toluene	ND		1.0	0.51	ug/L			09/04/20 13:35	1
Ethylbenzene	**5.2**		1.0	0.74	ug/L			09/04/20 13:35	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			09/04/20 13:35	1
o-Xylene	**2.2**		1.0	0.76	ug/L			09/04/20 13:35	1
Xylenes, Total	**2.2**		2.0	0.66	ug/L			09/04/20 13:35	1
Total BTEX	**32**		2.0	1.0	ug/L			09/04/20 13:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*09/04/20 13:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*		*09/04/20 13:35*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*09/04/20 13:35*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 123*		*09/04/20 13:35*	*1*

Client Sample ID: B6R
Lab Sample ID: 480-174665-3

Date Collected: 09/03/20 09:14
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			09/04/20 13:59	1
Toluene	ND		1.0	0.51	ug/L			09/04/20 13:59	1
Ethylbenzene	ND		1.0	0.74	ug/L			09/04/20 13:59	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			09/04/20 13:59	1
o-Xylene	ND		1.0	0.76	ug/L			09/04/20 13:59	1
Xylenes, Total	ND		2.0	0.66	ug/L			09/04/20 13:59	1
Total BTEX	ND		2.0	1.0	ug/L			09/04/20 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/04/20 13:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*77 - 120*		*09/04/20 13:59*	*1*

Client Sample ID: B6R
Lab Sample ID: 480-174665-3

Date Collected: 09/03/20 09:14
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*09/04/20 13:59*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 123*		*09/04/20 13:59*	*1*

Client Sample ID: FD-090220-1
Lab Sample ID: 480-174665-4

Date Collected: 09/02/20 00:00
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		8.0	3.3	ug/L			09/04/20 14:23	8
Toluene	ND		8.0	4.1	ug/L			09/04/20 14:23	8
Ethylbenzene	ND		8.0	5.9	ug/L			09/04/20 14:23	8
m-Xylene & p-Xylene	ND		16	5.3	ug/L			09/04/20 14:23	8
o-Xylene	ND		8.0	6.1	ug/L			09/04/20 14:23	8
Xylenes, Total	ND		16	5.3	ug/L			09/04/20 14:23	8
Total BTEX	ND		16	8.0	ug/L			09/04/20 14:23	8

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*09/04/20 14:23*	*8*
1,2-Dichloroethane-d4 (Surr)	*103*		*77 - 120*		*09/04/20 14:23*	*8*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*09/04/20 14:23*	*8*
Dibromofluoromethane (Surr)	*101*		*75 - 123*		*09/04/20 14:23*	*8*

Client Sample ID: MW-F3
Lab Sample ID: 480-174665-5

Date Collected: 09/02/20 13:58
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		4.0	1.6	ug/L			09/04/20 14:48	4
Toluene	ND		4.0	2.0	ug/L			09/04/20 14:48	4
Ethylbenzene	ND		4.0	3.0	ug/L			09/04/20 14:48	4
m-Xylene & p-Xylene	ND		8.0	2.6	ug/L			09/04/20 14:48	4
o-Xylene	ND		4.0	3.0	ug/L			09/04/20 14:48	4
Xylenes, Total	ND		8.0	2.6	ug/L			09/04/20 14:48	4
Total BTEX	ND		8.0	4.0	ug/L			09/04/20 14:48	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*09/04/20 14:48*	*4*
1,2-Dichloroethane-d4 (Surr)	*107*		*77 - 120*		*09/04/20 14:48*	*4*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*09/04/20 14:48*	*4*
Dibromofluoromethane (Surr)	*103*		*75 - 123*		*09/04/20 14:48*	*4*

Client Sample ID: B3
Lab Sample ID: 480-174665-6

Date Collected: 09/02/20 15:00
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		4.0	1.6	ug/L			09/04/20 15:12	4
Toluene	ND		4.0	2.0	ug/L			09/04/20 15:12	4

Client Sample ID: B3
Lab Sample ID: 480-174665-6

Date Collected: 09/02/20 15:00
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		4.0	3.0	ug/L			09/04/20 15:12	4
m-Xylene & p-Xylene	ND		8.0	2.6	ug/L			09/04/20 15:12	4
o-Xylene	ND		4.0	3.0	ug/L			09/04/20 15:12	4
Xylenes, Total	ND		8.0	2.6	ug/L			09/04/20 15:12	4
Total BTEX	ND		8.0	4.0	ug/L			09/04/20 15:12	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*09/04/20 15:12*	*4*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*		*09/04/20 15:12*	*4*
4-Bromofluorobenzene (Surr)	*95*		*73 - 120*		*09/04/20 15:12*	*4*
Dibromofluoromethane (Surr)	*104*		*75 - 123*		*09/04/20 15:12*	*4*

Client Sample ID: B8R
Lab Sample ID: 480-174665-7

Date Collected: 09/02/20 14:41
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**380**		8.0	3.3	ug/L			09/04/20 15:36	8
Toluene	**37**		8.0	4.1	ug/L			09/04/20 15:36	8
Ethylbenzene	**530**		8.0	5.9	ug/L			09/04/20 15:36	8
m-Xylene & p-Xylene	**110**		16	5.3	ug/L			09/04/20 15:36	8
o-Xylene	**130**		8.0	6.1	ug/L			09/04/20 15:36	8
Xylenes, Total	**240**		16	5.3	ug/L			09/04/20 15:36	8
Total BTEX	**1200**		16	8.0	ug/L			09/04/20 15:36	8

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*09/04/20 15:36*	*8*
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*		*09/04/20 15:36*	*8*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*09/04/20 15:36*	*8*
Dibromofluoromethane (Surr)	*97*		*75 - 123*		*09/04/20 15:36*	*8*

Client Sample ID: TB-090320
Lab Sample ID: 480-174665-8

Date Collected: 09/03/20 00:00
Matrix: Water
Date Received: 09/03/20 11:30

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			09/04/20 16:00	1
Toluene	ND		1.0	0.51	ug/L			09/04/20 16:00	1
Ethylbenzene	ND		1.0	0.74	ug/L			09/04/20 16:00	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			09/04/20 16:00	1
o-Xylene	ND		1.0	0.76	ug/L			09/04/20 16:00	1
Xylenes, Total	ND		2.0	0.66	ug/L			09/04/20 16:00	1
Total BTEX	ND		2.0	1.0	ug/L			09/04/20 16:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*80 - 120*		*09/04/20 16:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*09/04/20 16:00*	*1*
4-Bromofluorobenzene (Surr)	*91*		*73 - 120*		*09/04/20 16:00*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 123*		*09/04/20 16:00*	*1*

Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: BMS Buffalo - Groundwaters

Job ID: 480-174665-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DCA	BFB	DBFM
Lab Sample ID	Client Sample ID	(80-120)	(77-120)	(73-120)	(75-123)
480-174665-1	P8R	96	101	101	103
480-174665-2	B7R	95	100	102	99
480-174665-3	B6R	93	100	99	101
480-174665-4	FD-090220-1	96	103	98	101
480-174665-5	MW-F3	95	107	98	103
480-174665-6	B3	90	102	95	104
480-174665-7	B8R	95	98	100	97
480-174665-8	TB-090320	95	101	91	103
LCS 480-548280/6	Lab Control Sample	101	97	100	100
MB 480-548280/8	Method Blank	96	102	94	97

Surrogate Legend

TOL = Toluene-d8 (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-548280/8
Matrix: Water
Analysis Batch: 548280

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			09/04/20 12:35	1
Toluene	ND		1.0	0.51	ug/L			09/04/20 12:35	1
Ethylbenzene	ND		1.0	0.74	ug/L			09/04/20 12:35	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			09/04/20 12:35	1
o-Xylene	ND		1.0	0.76	ug/L			09/04/20 12:35	1
Xylenes, Total	ND		2.0	0.66	ug/L			09/04/20 12:35	1
Total BTEX	ND		2.0	1.0	ug/L			09/04/20 12:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*09/04/20 12:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*		*09/04/20 12:35*	*1*
4-Bromofluorobenzene (Surr)	*94*		*73 - 120*		*09/04/20 12:35*	*1*
Dibromofluoromethane (Surr)	*97*		*75 - 123*		*09/04/20 12:35*	*1*

Lab Sample ID: LCS 480-548280/6
Matrix: Water
Analysis Batch: 548280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			25.0	27.2		ug/L		109	71 - 124		
Toluene			25.0	25.0		ug/L		100	80 - 122		
Ethylbenzene			25.0	25.4		ug/L		101	77 - 123		
m-Xylene & p-Xylene			25.0	26.6		ug/L		106	76 - 122		
o-Xylene			25.0	25.6		ug/L		102	76 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*97*		*77 - 120*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*
Dibromofluoromethane (Surr)	*100*		*75 - 123*

QC Association Summary

Client: ARCADIS U.S. Inc
Job ID: 480-174665-1
Project/Site: BMS Buffalo - Groundwaters

GC/MS VOA

Analysis Batch: 548280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-174665-1	P8R	Total/NA	Water	8260C	
480-174665-2	B7R	Total/NA	Water	8260C	
480-174665-3	B6R	Total/NA	Water	8260C	
480-174665-4	FD-090220-1	Total/NA	Water	8260C	
480-174665-5	MW-F3	Total/NA	Water	8260C	
480-174665-6	B3	Total/NA	Water	8260C	
480-174665-7	B8R	Total/NA	Water	8260C	
480-174665-8	TB-090320	Total/NA	Water	8260C	
MB 480-548280/8	Method Blank	Total/NA	Water	8260C	
LCS 480-548280/6	Lab Control Sample	Total/NA	Water	8260C	

Lab Chronicle

Client: ARCADIS U.S. Inc
Job ID: 480-174665-1
Project/Site: BMS Buffalo - Groundwaters

Client Sample ID: P8R
Lab Sample ID: 480-174665-1
Date Collected: 09/03/20 10:20
Matrix: Water
Date Received: 09/03/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		5	548280	09/04/20 13:10	RJF	TAL BUF

Client Sample ID: B7R
Lab Sample ID: 480-174665-2
Date Collected: 09/03/20 09:37
Matrix: Water
Date Received: 09/03/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	548280	09/04/20 13:35	RJF	TAL BUF

Client Sample ID: B6R
Lab Sample ID: 480-174665-3
Date Collected: 09/03/20 09:14
Matrix: Water
Date Received: 09/03/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	548280	09/04/20 13:59	RJF	TAL BUF

Client Sample ID: FD-090220-1
Lab Sample ID: 480-174665-4
Date Collected: 09/02/20 00:00
Matrix: Water
Date Received: 09/03/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		8	548280	09/04/20 14:23	RJF	TAL BUF

Client Sample ID: MW-F3
Lab Sample ID: 480-174665-5
Date Collected: 09/02/20 13:58
Matrix: Water
Date Received: 09/03/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	548280	09/04/20 14:48	RJF	TAL BUF

Client Sample ID: B3
Lab Sample ID: 480-174665-6
Date Collected: 09/02/20 15:00
Matrix: Water
Date Received: 09/03/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	548280	09/04/20 15:12	RJF	TAL BUF

Client Sample ID: B8R
Lab Sample ID: 480-174665-7
Date Collected: 09/02/20 14:41
Matrix: Water
Date Received: 09/03/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		8	548280	09/04/20 15:36	RJF	TAL BUF

Lab Chronicle

Client: ARCADIS U.S. Inc
Job ID: 480-174665-1
Project/Site: BMS Buffalo - Groundwaters

Client Sample ID: TB-090320
Lab Sample ID: 480-174665-8

Date Collected: 09/03/20 00:00
Matrix: Water
Date Received: 09/03/20 11:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	548280	09/04/20 16:00	RJF	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Job ID: 480-174665-1
Project/Site: BMS Buffalo - Groundwaters

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	04-02-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	Total BTEX

Method Summary

Client: ARCADIS U.S. Inc
Job ID: 480-174665-1
Project/Site: BMS Buffalo - Groundwaters

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
5030C	Purge and Trap	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: ARCADIS U.S. Inc
Job ID: 480-174665-1
Project/Site: BMS Buffalo - Groundwaters

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-174665-1	P8R	Water	09/03/20 10:20	09/03/20 11:30	
480-174665-2	B7R	Water	09/03/20 09:37	09/03/20 11:30	
480-174665-3	B6R	Water	09/03/20 09:14	09/03/20 11:30	
480-174665-4	FD-090220-1	Water	09/02/20 00:00	09/03/20 11:30	
480-174665-5	MW-F3	Water	09/02/20 13:58	09/03/20 11:30	
480-174665-6	B3	Water	09/02/20 15:00	09/03/20 11:30	
480-174665-7	B8R	Water	09/02/20 14:41	09/03/20 11:30	
480-174665-8	TB-090320	Water	09/03/20 00:00	09/03/20 11:30	

eurofins | QC

CHAIN OF CUSTODY

Page 1 of 1

Lab LIMS No:

MATRIX CODES

DW: DRINKING WATER
GW: GROUND WATER
WW: WASTEWATER
SO: SOIL
SL: SLUDGE
OIL: OIL
SOL: NON SOIL SOLID
MI: MISCELLANEOUS
X: OTHER

~~702 Electronic Drive~~ Phone: 215-355-3900
~~Horsham, PA 19044-0962~~ Fax: 215-355-7231

Bill to/Report to (if different)

Sampling Site Address (if different) Include State: BMS Buffalo NY

Client/Acct. No. Arcadis
Address One Lincoln Center
110 West Fayette St Suite 300
City/State/Zip Syracuse, NY 13202
Phone/Fax 315 880 1324
Client Contact: Ray Wagner

P.O. No. 30049063 PWSID #:
Quote #
e-mail: Raymond.wagner@arcadis.com

LAB USE ONLY:

___ Ascorbic/HCL Vials # ___ HCl Vials
___ $Na_2S_2O_3$ ___
___ Na OH/Zn acetate pH ___
___ HNO_3 pH ___
___ H_2SO_4 pH ___
___ NaOH pH ___
___ Unpreserved
___ HCl # ___ NH4Cl # ___ MeOH
___ DI Water

ANALYSIS REQUESTED

Field pH, Temp (°C), DO, Cl2, Cond. etc.

LAB USE ONLY

PROJECT / FIELD ID	Collection Date	Collection Military Time	GRAB	COMP	Matrix Code	Number of Containers Total	H_2SO_4	HCl	Vials	HNO_3	NaOH	Znac	UNPRE	BACT
P8R	9/3/20	1020	x		GW	3		x						
B7R	9/3/20	0937	x			3		x						
B6R	9/3/20	0914	x			3		x						
FD-090220-1	9/2/20	–	x			3		x						
MW-F3	9/2/20	1358	x			3		x						
B3	9/2/20	1500	x			3		x						
B8R	9/2/20	1441	x			3		x						
TB-090320	9/3/20	–	x			2		x						

BTEX by 8260C

480-174665 Chain of Custody

SAMPLED BY: (Name/Company) Marcus Hagan + Jason Gutkowski (Arcadis)

TAT: ☒ STANDARD (10 DAY)
or DUE DATE ___/___/___

Report Format: ☐ Standard ☐ NJ-RDD ☐ SRP-RDD ☐ Standard + QC ☐ Forms ☐ EDD

Please call for pricing and availability for rush (<10 day) turnaround and for all but standard reporting format.

Field Parameters Analyzed By:
Initials | Date/Time:

SAMPLE CUSTODY EXCHANGES MUST BE DOCUMENTED BELOW. USE FULL LEGAL SIGNATURE, DATE AND MILITARY TIME (24 HOUR CLOCK, I.E. 8AM IS 0800, 4 PM IS 1600)

RELINQUISHED BY SAMPLER	DATE	TIME	RECEIVED BY	DATE	TIME
1. Arcadis	9/3/20	1130	1.	9/3/20	1136
RELINQUISHED BY 2.	DATE	TIME	RECEIVED BY 2.	DATE	TIME
RELINQUISHED BY 3.	DATE	TIME	RECEIVED BY 3.	DATE	TIME
RELINQUISHED BY 4.	DATE	TIME	RECEIVED BY 4.	DATE	TIME
RELINQUISHED BY 5.	DATE	TIME	RECEIVED BY 5.	DATE	TIME

DELIVERY: ☐ EQC COURIER ☐ CLIENT ☐ UPS ☐ FEDEX ☐ OTHER ___

Custody Seal Number

Rec'd Temp.: ___ Initials: ___ Ice Y / N Location: ___

COMMENTS:

Temp 3.8 #1 ICE

Hazardous: yes / no

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 480-174665-1

Login Number: 174665

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Sabuda, Brendan D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8 #1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-179235-1
Client Project/Site: Iroquois Gas/Westwood Pharm.

For:
ARCADIS U.S. Inc
One Lincoln Center
110 West Fayette St, Suite 300
Syracuse, New York 13202

Attn: Mr. Raymond Wagner

Authorized for release by:
12/17/2020 5:59:06 PM

Judy Stone, Senior Project Manager
(484)685-0868
Judy.Stone@Eurofinset.com

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Job ID: 480-179235-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-179235-1

Receipt
The samples were received on 12/10/2020 1:52 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.0º C.

GC/MS VOA
Method 8260C: The following samples were collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The samples were analyzed within the 7-day holding time specified for unpreserved samples: MWF2 (480-179235-7), (480-179235-A-7 MS) and (480-179235-A-7 MSD). Sample pH is 7.

Method 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: MWF4 (480-179235-2), B8R (480-179235-4), P8R (480-179235-6), MWF2 (480-179235-7), (480-179235-A-7 MS) and (480-179235-A-7 MSD). Elevated reporting limits (RLs) are provided.

Method 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: B3 (480-179235-1), F3 (480-179235-5) and DUP-1 (480-179235-9). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Client Sample ID: B3 — Lab Sample ID: 480-179235-1

No Detections.

Client Sample ID: MWF4 — Lab Sample ID: 480-179235-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	64		4.0	1.6	ug/L	4		8260C	Total/NA
Toluene	2.3	J	4.0	2.0	ug/L	4		8260C	Total/NA
Ethylbenzene	95		4.0	3.0	ug/L	4		8260C	Total/NA
m-Xylene & p-Xylene	13		8.0	2.6	ug/L	4		8260C	Total/NA
o-Xylene	69		4.0	3.0	ug/L	4		8260C	Total/NA
Xylenes, Total	82		8.0	2.6	ug/L	4		8260C	Total/NA
Total BTEX	240		8.0	4.0	ug/L	4		8260C	Total/NA

Client Sample ID: B7R — Lab Sample ID: 480-179235-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	17		1.0	0.41	ug/L	1		8260C	Total/NA
Ethylbenzene	2.0		1.0	0.74	ug/L	1		8260C	Total/NA
o-Xylene	1.6		1.0	0.76	ug/L	1		8260C	Total/NA
Xylenes, Total	1.6	J	2.0	0.66	ug/L	1		8260C	Total/NA
Total BTEX	21		2.0	1.0	ug/L	1		8260C	Total/NA

Client Sample ID: B8R — Lab Sample ID: 480-179235-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	300		8.0	3.3	ug/L	8		8260C	Total/NA
Toluene	26		8.0	4.1	ug/L	8		8260C	Total/NA
Ethylbenzene	450		8.0	5.9	ug/L	8		8260C	Total/NA
m-Xylene & p-Xylene	110		16	5.3	ug/L	8		8260C	Total/NA
o-Xylene	130		8.0	6.1	ug/L	8		8260C	Total/NA
Xylenes, Total	240		16	5.3	ug/L	8		8260C	Total/NA
Total BTEX	1000		16	8.0	ug/L	8		8260C	Total/NA

Client Sample ID: F3 — Lab Sample ID: 480-179235-5

No Detections.

Client Sample ID: P8R — Lab Sample ID: 480-179235-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	150		5.0	2.1	ug/L	5		8260C	Total/NA
Toluene	4.2	J	5.0	2.6	ug/L	5		8260C	Total/NA
Ethylbenzene	270		5.0	3.7	ug/L	5		8260C	Total/NA
m-Xylene & p-Xylene	16		10	3.3	ug/L	5		8260C	Total/NA
o-Xylene	76		5.0	3.8	ug/L	5		8260C	Total/NA
Xylenes, Total	92		10	3.3	ug/L	5		8260C	Total/NA
Total BTEX	520		10	5.0	ug/L	5		8260C	Total/NA

Client Sample ID: MWF2 — Lab Sample ID: 480-179235-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	11		10	4.1	ug/L	10		8260C	Total/NA
Ethylbenzene	260		10	7.4	ug/L	10		8260C	Total/NA
m-Xylene & p-Xylene	200		20	6.6	ug/L	10		8260C	Total/NA
o-Xylene	240		10	7.6	ug/L	10		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Buffalo

Client Sample ID: MWF2 (Continued) — Lab Sample ID: 480-179235-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	440		20	6.6	ug/L	10		8260C	Total/NA
Total BTEX	710		20	10	ug/L	10		8260C	Total/NA

Client Sample ID: B6R — Lab Sample ID: 480-179235-8

No Detections.

Client Sample ID: DUP-1 — Lab Sample ID: 480-179235-9

No Detections.

Client Sample ID: TB-121020-1 — Lab Sample ID: 480-179235-10

No Detections.

This Detection Summary does not include radiochemical test results.

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Client Sample ID: B3
Lab Sample ID: 480-179235-1
Date Collected: 12/09/20 13:30
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		4.0	1.6	ug/L			12/11/20 16:15	4
Toluene	ND		4.0	2.0	ug/L			12/11/20 16:15	4
Ethylbenzene	ND		4.0	3.0	ug/L			12/11/20 16:15	4
m-Xylene & p-Xylene	ND		8.0	2.6	ug/L			12/11/20 16:15	4
o-Xylene	ND		4.0	3.0	ug/L			12/11/20 16:15	4
Xylenes, Total	ND		8.0	2.6	ug/L			12/11/20 16:15	4
Total BTEX	ND		8.0	4.0	ug/L			12/11/20 16:15	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*86*		*80 - 120*		*12/11/20 16:15*	*4*
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*		*12/11/20 16:15*	*4*
4-Bromofluorobenzene (Surr)	*94*		*73 - 120*		*12/11/20 16:15*	*4*
Dibromofluoromethane (Surr)	*96*		*75 - 123*		*12/11/20 16:15*	*4*

Client Sample ID: MWF4
Lab Sample ID: 480-179235-2
Date Collected: 12/10/20 12:30
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**64**		4.0	1.6	ug/L			12/12/20 00:29	4
Toluene	**2.3**	**J**	4.0	2.0	ug/L			12/12/20 00:29	4
Ethylbenzene	**95**		4.0	3.0	ug/L			12/12/20 00:29	4
m-Xylene & p-Xylene	**13**		8.0	2.6	ug/L			12/12/20 00:29	4
o-Xylene	**69**		4.0	3.0	ug/L			12/12/20 00:29	4
Xylenes, Total	**82**		8.0	2.6	ug/L			12/12/20 00:29	4
Total BTEX	**240**		8.0	4.0	ug/L			12/12/20 00:29	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/12/20 00:29*	*4*
1,2-Dichloroethane-d4 (Surr)	*113*		*77 - 120*		*12/12/20 00:29*	*4*
4-Bromofluorobenzene (Surr)	*107*		*73 - 120*		*12/12/20 00:29*	*4*
Dibromofluoromethane (Surr)	*110*		*75 - 123*		*12/12/20 00:29*	*4*

Client Sample ID: B7R
Lab Sample ID: 480-179235-3
Date Collected: 12/10/20 09:45
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**17**		1.0	0.41	ug/L			12/12/20 00:53	1
Toluene	ND		1.0	0.51	ug/L			12/12/20 00:53	1
Ethylbenzene	**2.0**		1.0	0.74	ug/L			12/12/20 00:53	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			12/12/20 00:53	1
o-Xylene	**1.6**		1.0	0.76	ug/L			12/12/20 00:53	1
Xylenes, Total	**1.6**	**J**	2.0	0.66	ug/L			12/12/20 00:53	1
Total BTEX	**21**		2.0	1.0	ug/L			12/12/20 00:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/12/20 00:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*77 - 120*		*12/12/20 00:53*	*1*

Client Sample ID: B7R
Lab Sample ID: 480-179235-3
Date Collected: 12/10/20 09:45
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*109*		*73 - 120*		*12/12/20 00:53*	*1*
Dibromofluoromethane (Surr)	*106*		*75 - 123*		*12/12/20 00:53*	*1*

Client Sample ID: B8R
Lab Sample ID: 480-179235-4
Date Collected: 12/09/20 13:15
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**300**		8.0	3.3	ug/L			12/11/20 16:40	8
Toluene	**26**		8.0	4.1	ug/L			12/11/20 16:40	8
Ethylbenzene	**450**		8.0	5.9	ug/L			12/11/20 16:40	8
m-Xylene & p-Xylene	**110**		16	5.3	ug/L			12/11/20 16:40	8
o-Xylene	**130**		8.0	6.1	ug/L			12/11/20 16:40	8
Xylenes, Total	**240**		16	5.3	ug/L			12/11/20 16:40	8
Total BTEX	**1000**		16	8.0	ug/L			12/11/20 16:40	8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*92*		*80 - 120*		*12/11/20 16:40*	*8*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*		*12/11/20 16:40*	*8*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*12/11/20 16:40*	*8*
Dibromofluoromethane (Surr)	*94*		*75 - 123*		*12/11/20 16:40*	*8*

Client Sample ID: F3
Lab Sample ID: 480-179235-5
Date Collected: 12/09/20 12:23
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		4.0	1.6	ug/L			12/11/20 17:05	4
Toluene	ND		4.0	2.0	ug/L			12/11/20 17:05	4
Ethylbenzene	ND		4.0	3.0	ug/L			12/11/20 17:05	4
m-Xylene & p-Xylene	ND		8.0	2.6	ug/L			12/11/20 17:05	4
o-Xylene	ND		4.0	3.0	ug/L			12/11/20 17:05	4
Xylenes, Total	ND		8.0	2.6	ug/L			12/11/20 17:05	4
Total BTEX	ND		8.0	4.0	ug/L			12/11/20 17:05	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*89*		*80 - 120*		*12/11/20 17:05*	*4*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*		*12/11/20 17:05*	*4*
4-Bromofluorobenzene (Surr)	*99*		*73 - 120*		*12/11/20 17:05*	*4*
Dibromofluoromethane (Surr)	*96*		*75 - 123*		*12/11/20 17:05*	*4*

Client Sample ID: P8R
Lab Sample ID: 480-179235-6
Date Collected: 12/10/20 10:15
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**150**		5.0	2.1	ug/L			12/12/20 01:17	5
Toluene	**4.2**	**J**	5.0	2.6	ug/L			12/12/20 01:17	5

Client Sample ID: P8R
Lab Sample ID: 480-179235-6

Date Collected: 12/10/20 10:15
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**270**		5.0	3.7	ug/L			12/12/20 01:17	5
m-Xylene & p-Xylene	**16**		10	3.3	ug/L			12/12/20 01:17	5
o-Xylene	**76**		5.0	3.8	ug/L			12/12/20 01:17	5
Xylenes, Total	**92**		10	3.3	ug/L			12/12/20 01:17	5
Total BTEX	**520**		10	5.0	ug/L			12/12/20 01:17	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/12/20 01:17*	*5*
1,2-Dichloroethane-d4 (Surr)	*106*		*77 - 120*		*12/12/20 01:17*	*5*
4-Bromofluorobenzene (Surr)	*106*		*73 - 120*		*12/12/20 01:17*	*5*
Dibromofluoromethane (Surr)	*106*		*75 - 123*		*12/12/20 01:17*	*5*

Client Sample ID: MWF2
Lab Sample ID: 480-179235-7

Date Collected: 12/10/20 11:38
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**11**		10	4.1	ug/L			12/12/20 01:41	10
Toluene	ND		10	5.1	ug/L			12/12/20 01:41	10
Ethylbenzene	**260**		10	7.4	ug/L			12/12/20 01:41	10
m-Xylene & p-Xylene	**200**		20	6.6	ug/L			12/12/20 01:41	10
o-Xylene	**240**		10	7.6	ug/L			12/12/20 01:41	10
Xylenes, Total	**440**		20	6.6	ug/L			12/12/20 01:41	10
Total BTEX	**710**		20	10	ug/L			12/12/20 01:41	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/12/20 01:41*	*10*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*12/12/20 01:41*	*10*
4-Bromofluorobenzene (Surr)	*108*		*73 - 120*		*12/12/20 01:41*	*10*
Dibromofluoromethane (Surr)	*108*		*75 - 123*		*12/12/20 01:41*	*10*

Client Sample ID: B6R
Lab Sample ID: 480-179235-8

Date Collected: 12/10/20 09:15
Matrix: Water
Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			12/12/20 02:05	1
Toluene	ND		1.0	0.51	ug/L			12/12/20 02:05	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/12/20 02:05	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			12/12/20 02:05	1
o-Xylene	ND		1.0	0.76	ug/L			12/12/20 02:05	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/12/20 02:05	1
Total BTEX	ND		2.0	1.0	ug/L			12/12/20 02:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/12/20 02:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*12/12/20 02:05*	*1*
4-Bromofluorobenzene (Surr)	*106*		*73 - 120*		*12/12/20 02:05*	*1*
Dibromofluoromethane (Surr)	*106*		*75 - 123*		*12/12/20 02:05*	*1*

Client Sample ID: DUP-1

Lab Sample ID: 480-179235-9

Date Collected: 12/09/20 00:00

Matrix: Water

Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		4.0	1.6	ug/L			12/12/20 18:13	4
Toluene	ND		4.0	2.0	ug/L			12/12/20 18:13	4
Ethylbenzene	ND		4.0	3.0	ug/L			12/12/20 18:13	4
m-Xylene & p-Xylene	ND		8.0	2.6	ug/L			12/12/20 18:13	4
o-Xylene	ND		4.0	3.0	ug/L			12/12/20 18:13	4
Xylenes, Total	ND		8.0	2.6	ug/L			12/12/20 18:13	4
Total BTEX	ND		8.0	4.0	ug/L			12/12/20 18:13	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/12/20 18:13*	*4*
1,2-Dichloroethane-d4 (Surr)	*102*		*77 - 120*		*12/12/20 18:13*	*4*
4-Bromofluorobenzene (Surr)	*105*		*73 - 120*		*12/12/20 18:13*	*4*
Dibromofluoromethane (Surr)	*104*		*75 - 123*		*12/12/20 18:13*	*4*

Client Sample ID: TB-121020-1

Lab Sample ID: 480-179235-10

Date Collected: 12/10/20 00:00

Matrix: Water

Date Received: 12/10/20 13:52

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			12/12/20 02:28	1
Toluene	ND		1.0	0.51	ug/L			12/12/20 02:28	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/12/20 02:28	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			12/12/20 02:28	1
o-Xylene	ND		1.0	0.76	ug/L			12/12/20 02:28	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/12/20 02:28	1
Total BTEX	ND		2.0	1.0	ug/L			12/12/20 02:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*80 - 120*		*12/12/20 02:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*77 - 120*		*12/12/20 02:28*	*1*
4-Bromofluorobenzene (Surr)	*113*		*73 - 120*		*12/12/20 02:28*	*1*
Dibromofluoromethane (Surr)	*109*		*75 - 123*		*12/12/20 02:28*	*1*

Surrogate Summary

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DCA	BFB	DBFM
Lab Sample ID	Client Sample ID	(80-120)	(77-120)	(73-120)	(75-123)
480-179235-1	B3	86	98	94	96
480-179235-2	MWF4	102	113	107	110
480-179235-3	B7R	102	104	109	106
480-179235-4	B8R	92	102	104	94
480-179235-5	F3	89	99	99	96
480-179235-6	P8R	99	106	106	106
480-179235-7	MWF2	102	105	108	108
480-179235-7 MS	MWF2	102	108	111	97
480-179235-7 MSD	MWF2	104	109	113	101
480-179235-8	B6R	102	105	106	106
480-179235-9	DUP-1	102	102	105	104
480-179235-10	TB-121020-1	103	107	113	109
LCS 480-562857/5	Lab Control Sample	87	93	93	90
LCS 480-562937/5	Lab Control Sample	105	109	111	104
LCS 480-563004/5	Lab Control Sample	102	98	103	102
MB 480-562857/8	Method Blank	90	99	98	98
MB 480-562937/7	Method Blank	102	108	106	113
MB 480-563004/7	Method Blank	102	101	104	104

Surrogate Legend

TOL = Toluene-d8 (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-562857/8
Matrix: Water
Analysis Batch: 562857

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			12/11/20 11:12	1
Toluene	ND		1.0	0.51	ug/L			12/11/20 11:12	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/11/20 11:12	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			12/11/20 11:12	1
o-Xylene	ND		1.0	0.76	ug/L			12/11/20 11:12	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/11/20 11:12	1
Total BTEX	ND		2.0	1.0	ug/L			12/11/20 11:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*12/11/20 11:12*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*77 - 120*		*12/11/20 11:12*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*12/11/20 11:12*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 123*		*12/11/20 11:12*	*1*

Lab Sample ID: LCS 480-562857/5
Matrix: Water
Analysis Batch: 562857

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			25.0	23.9		ug/L		96	71 - 124		
Toluene			25.0	22.7		ug/L		91	80 - 122		
Ethylbenzene			25.0	23.4		ug/L		94	77 - 123		
m-Xylene & p-Xylene			25.0	23.6		ug/L		94	76 - 122		
o-Xylene			25.0	23.8		ug/L		95	76 - 122		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*87*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*93*		*77 - 120*
4-Bromofluorobenzene (Surr)	*93*		*73 - 120*
Dibromofluoromethane (Surr)	*90*		*75 - 123*

Lab Sample ID: MB 480-562937/7
Matrix: Water
Analysis Batch: 562937

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			12/11/20 22:30	1
Toluene	ND		1.0	0.51	ug/L			12/11/20 22:30	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/11/20 22:30	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			12/11/20 22:30	1
o-Xylene	ND		1.0	0.76	ug/L			12/11/20 22:30	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/11/20 22:30	1
Total BTEX	ND		2.0	1.0	ug/L			12/11/20 22:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/11/20 22:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*77 - 120*		*12/11/20 22:30*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-562937/7
Matrix: Water
Analysis Batch: 562937

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		73 - 120		12/11/20 22:30	1
Dibromofluoromethane (Surr)	113		75 - 123		12/11/20 22:30	1

Lab Sample ID: LCS 480-562937/5
Matrix: Water
Analysis Batch: 562937

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	24.8		ug/L		99	71 - 124
Toluene	25.0	25.6		ug/L		103	80 - 122
Ethylbenzene	25.0	26.4		ug/L		105	77 - 123
m-Xylene & p-Xylene	25.0	26.8		ug/L		107	76 - 122
o-Xylene	25.0	26.7		ug/L		107	76 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	105		80 - 120
1,2-Dichloroethane-d4 (Surr)	109		77 - 120
4-Bromofluorobenzene (Surr)	111		73 - 120
Dibromofluoromethane (Surr)	104		75 - 123

Lab Sample ID: 480-179235-7 MS
Matrix: Water
Analysis Batch: 562937

Client Sample ID: MWF2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	11		250	264		ug/L		101	71 - 124
Toluene	ND		250	256		ug/L		102	80 - 122
Ethylbenzene	260		250	496		ug/L		93	77 - 123
m-Xylene & p-Xylene	200		250	444		ug/L		98	76 - 122
o-Xylene	240		250	489		ug/L		101	76 - 122

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	108		77 - 120
4-Bromofluorobenzene (Surr)	111		73 - 120
Dibromofluoromethane (Surr)	97		75 - 123

Lab Sample ID: 480-179235-7 MSD
Matrix: Water
Analysis Batch: 562937

Client Sample ID: MWF2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	11		250	250		ug/L		95	71 - 124	6	13
Toluene	ND		250	252		ug/L		101	80 - 122	2	15
Ethylbenzene	260		250	490		ug/L		91	77 - 123	1	15
m-Xylene & p-Xylene	200		250	437		ug/L		95	76 - 122	2	16
o-Xylene	240		250	478		ug/L		96	76 - 122	2	16

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-179235-7 MSD
Client Sample ID: MWF2
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 562937

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	*104*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*109*		*77 - 120*
4-Bromofluorobenzene (Surr)	*113*		*73 - 120*
Dibromofluoromethane (Surr)	*101*		*75 - 123*

Lab Sample ID: MB 480-563004/7
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 563004

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.41	ug/L			12/12/20 10:59	1
Toluene	ND		1.0	0.51	ug/L			12/12/20 10:59	1
Ethylbenzene	ND		1.0	0.74	ug/L			12/12/20 10:59	1
m-Xylene & p-Xylene	ND		2.0	0.66	ug/L			12/12/20 10:59	1
o-Xylene	ND		1.0	0.76	ug/L			12/12/20 10:59	1
Xylenes, Total	ND		2.0	0.66	ug/L			12/12/20 10:59	1
Total BTEX	ND		2.0	1.0	ug/L			12/12/20 10:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*102*		*80 - 120*		*12/12/20 10:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*		*12/12/20 10:59*	*1*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*12/12/20 10:59*	*1*
Dibromofluoromethane (Surr)	*104*		*75 - 123*		*12/12/20 10:59*	*1*

Lab Sample ID: LCS 480-563004/5
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 563004

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	24.8		ug/L		99	71 - 124
Toluene	25.0	25.5		ug/L		102	80 - 122
Ethylbenzene	25.0	25.6		ug/L		102	77 - 123
m-Xylene & p-Xylene	25.0	25.1		ug/L		100	76 - 122
o-Xylene	25.0	25.9		ug/L		103	76 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*98*		*77 - 120*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*
Dibromofluoromethane (Surr)	*102*		*75 - 123*

QC Association Summary

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

GC/MS VOA

Analysis Batch: 562857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-179235-1	B3	Total/NA	Water	8260C	
480-179235-4	B8R	Total/NA	Water	8260C	
480-179235-5	F3	Total/NA	Water	8260C	
MB 480-562857/8	Method Blank	Total/NA	Water	8260C	
LCS 480-562857/5	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 562937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-179235-2	MWF4	Total/NA	Water	8260C	
480-179235-3	B7R	Total/NA	Water	8260C	
480-179235-6	P8R	Total/NA	Water	8260C	
480-179235-7	MWF2	Total/NA	Water	8260C	
480-179235-8	B6R	Total/NA	Water	8260C	
480-179235-10	TB-121020-1	Total/NA	Water	8260C	
MB 480-562937/7	Method Blank	Total/NA	Water	8260C	
LCS 480-562937/5	Lab Control Sample	Total/NA	Water	8260C	
480-179235-7 MS	MWF2	Total/NA	Water	8260C	
480-179235-7 MSD	MWF2	Total/NA	Water	8260C	

Analysis Batch: 563004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-179235-9	DUP-1	Total/NA	Water	8260C	
MB 480-563004/7	Method Blank	Total/NA	Water	8260C	
LCS 480-563004/5	Lab Control Sample	Total/NA	Water	8260C	

Lab Chronicle

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Client Sample ID: B3
Lab Sample ID: 480-179235-1
Date Collected: 12/09/20 13:30
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	562857	12/11/20 16:15	CRL	TAL BUF

Client Sample ID: MWF4
Lab Sample ID: 480-179235-2
Date Collected: 12/10/20 12:30
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	562937	12/12/20 00:29	WJD	TAL BUF

Client Sample ID: B7R
Lab Sample ID: 480-179235-3
Date Collected: 12/10/20 09:45
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	562937	12/12/20 00:53	WJD	TAL BUF

Client Sample ID: B8R
Lab Sample ID: 480-179235-4
Date Collected: 12/09/20 13:15
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		8	562857	12/11/20 16:40	CRL	TAL BUF

Client Sample ID: F3
Lab Sample ID: 480-179235-5
Date Collected: 12/09/20 12:23
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	562857	12/11/20 17:05	CRL	TAL BUF

Client Sample ID: P8R
Lab Sample ID: 480-179235-6
Date Collected: 12/10/20 10:15
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		5	562937	12/12/20 01:17	WJD	TAL BUF

Client Sample ID: MWF2
Lab Sample ID: 480-179235-7
Date Collected: 12/10/20 11:38
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	562937	12/12/20 01:41	WJD	TAL BUF

Lab Chronicle

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Client Sample ID: B6R
Lab Sample ID: 480-179235-8

Date Collected: 12/10/20 09:15
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	562937	12/12/20 02:05	WJD	TAL BUF

Client Sample ID: DUP-1
Lab Sample ID: 480-179235-9

Date Collected: 12/09/20 00:00
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		4	563004	12/12/20 18:13	CRL	TAL BUF

Client Sample ID: TB-121020-1
Lab Sample ID: 480-179235-10

Date Collected: 12/10/20 00:00
Matrix: Water
Date Received: 12/10/20 13:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	562937	12/12/20 02:28	WJD	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Laboratory: Eurofins TestAmerica, Buffalo

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10026	04-01-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	Total BTEX

Method Summary

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
5030C	Purge and Trap	SW846	TAL BUF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

Sample Summary

Client: ARCADIS U.S. Inc
Job ID: 480-179235-1
Project/Site: Iroquois Gas/Westwood Pharm.

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-179235-1	B3	Water	12/09/20 13:30	12/10/20 13:52	
480-179235-2	MWF4	Water	12/10/20 12:30	12/10/20 13:52	
480-179235-3	B7R	Water	12/10/20 09:45	12/10/20 13:52	
480-179235-4	B8R	Water	12/09/20 13:15	12/10/20 13:52	
480-179235-5	F3	Water	12/09/20 12:23	12/10/20 13:52	
480-179235-6	P8R	Water	12/10/20 10:15	12/10/20 13:52	
480-179235-7	MWF2	Water	12/10/20 11:38	12/10/20 13:52	
480-179235-8	B6R	Water	12/10/20 09:15	12/10/20 13:52	
480-179235-9	DUP-1	Water	12/09/20 00:00	12/10/20 13:52	
480-179235-10	TB-121020-1	Water	12/10/20 00:00	12/10/20 13:52	

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone: 716-691-2600 Fax: 716-691-7991

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: JTG/MMH	Lab PM: Stone, Judy L	Carrier Tracking No(s):	COC No: 480-153874-34153.1
Client Contact: Jason Gutkowski	Phone: 585-203-7186	E-Mail: Judy.Stone@Eurofinset.com	State of Origin:	Page: Page 1 of 1
Company: ARCADIS U.S., Inc.	PWSID:			Job #:

Address: One Lincoln Center 110 West Fayette St. Suite 300
City: Syracuse
State, Zip: NY, 13202
Phone: 315-671-9173(Tel) 315-446-8053(Fax)
Email: jason.gutkowski@arcadis.com
Project Name: Iroquois Gas/Westwood Pharm.
Site:

Due Date Requested:
TAT Requested (days): Standard
Compliance Project: Δ Yes Δ No
PO #: 30049063.00001 (until Jan 2021)
WO #: Project- 30049063.00003
Project #: 48011056
SSOW#:

Analysis Requested

480-179235 Chain of Custody

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - BTEX - 8260	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
B3	12/9/20	1330	G	W			X	3	
MWF4	12/10/20	1230	G	W			X	3	
B7R	12/10/20	0945	G	W			X	3	
B8R	12/9/20	1315	G	W			X	3	
F3	12/9/20	1223	G	W			X	3	
P8R	12/10/20	1015	G	W			X	3	
MWF2	12/10/20	1138	G	W			X	3	
B6R	12/10/20	0915	G	W			X	3	
DUP-1	12/9/20	–	G	W			X	3	
TB-121020-1	12/10/20	–	G	W			X	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Arcadis	12/10/20 1352	Arcadis		12/10/20 1352	TA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 2.6 #1 TCF

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 480-179235-1

Login Number: 179235

List Source: Eurofins TestAmerica, Buffalo

List Number: 1

Creator: Sabuda, Brendan D

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0 #1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	