



Environmental Resources Group

28003 Center Oaks Court • Suite 106 • Wixom, MI • 48393
Phone: 248-773-7986 • Fax: 248-924-3108

August 26, 2020

Mr. Paul Bucholtz
Lansing District Office
Remediation and Redevelopment Division
Constitution Hall
525 West Allegan Street,
Lansing, MI 48909

**RE: Gilkey Creek Groundwater – Surface Water Interface (GSI) Sampling Results
 Site #12920 - Davison Road Industrial Land
 Davison and Donegal Road, Burton, Genesee County, Michigan
 Facility ID No: 25000447**

Dear Mr. Bucholtz:

Environmental Resources Group, LLC (ERG) has prepared the following memorandum on behalf of RACER Trust (RACER) for the property located at Davison and Donegal Road in Burton, Genesee County, Michigan (Site). The purpose of this memorandum is to provide the results of the Gilkey Creek GSI sampling event that occurred at the Site between July 22-24, 2020. The field work was completed in accordance with the Work Plan that was previously submitted in June 2020. Any deviations from this work plan are provided in this memo. Interpretation of the results from both this event, the December 2020 GSI sampling event and the two previous events (September 2018 and April 2019) will be provided in a report following the December 2020 event, if deemed appropriate based on the sampling results. This report will also include findings from the Granger Drain GSI sampling event, once an acceptable scope of work is determined.

SCOPE OF WORK

ERG completed the following scope of work during this GSI sampling event:

- Resampling of the six porewater locations from April 2019 – PW-1 through PW-6, using low-flow procedures. During this event, porewater samples were able to be collected from locations PW-1, PW-2, PW-3, and PW-5. This was the first event that a sample was able to be collected from PW-5, where a small, approximately 2" sand seam was located with the PushPoint sampler due to the noticeable grain size change between the sand and the surrounding silt.



- Measurement of Gilkey Creek surface water elevations and porewater sample locations using GPS. Porewater sample locations were also marked with stakes to allow easier resampling of the same locations in the December 2020 event.
- Groundwater gauging of all monitoring wells across the Site. Porewater elevations were also collected from PW-1, PW-2, PW-3, and PW-5.
- Low-flow sampling and collection of water stability parameters from SB/MW-11-12, SB/MW-15-14, SB/MW-9/12, SB/MW-7-12, TMW-1, SB/MW-16-14, SB/MW-19-19, SB/MW-17-19, and TMW-9. Arsenic samples were collected from these locations to better correlate arsenic concentrations (total and dissolved) in the monitoring wells with those from porewater samples nearby. *Due to a clogged screen in TMW-6, SB/MW-11-12 (approximately 85 feet east) was sampled during this event.*
- Collection of surface water samples from Gilkey Creek near porewater sample locations, analyzed for total and dissolved arsenic. Three surface water samples were collected during this event, one each at the downstream (near PW-1 and 2), middle (near PW-3 and 4), and upstream (near PW-5 and 6) portions of Gilkey Creek within the Site.

GSI INVESTIGATION RESULTS

The results of the Gilkey Creek GSI investigation are provided below and divided into the following tasks: porewater and groundwater gauging, porewater sampling, monitoring well sampling and surface water sampling. An updated Site map from this sampling event is provided in Figure 1. Additionally, it should be noted that, based on field observations, the City of Burton has improved/repared the east-west sanitary sewer that runs through the Site. ERG gathered GPS coordinates of the newly installed sanitary manholes and updated the Site map to reflect the new construction.

SURFACE WATER, POREWATER AND GROUNDWATER GAUGING

ERG completed gauging of all monitoring wells at the Site on July 22, 2020. Porewater and surface water elevations were collected during the porewater sampling that was completed on July 23 and 24, 2020. Because no precipitation occurred during the field event, ERG believes that comparison of the porewater elevations, surface water, and groundwater elevations is valid, even though they were gathered on different days. Groundwater elevations, porewater elevations, and surface water elevations gathered during this event are provided in Table 1. The groundwater and porewater elevations were interpolated using spatial analysis to produce the groundwater contour map provided in Figure 2. Groundwater elevations were lower than the previous two groundwater gauging events (April 2019 and December 2018) and slightly higher than those collected during the September 2018 porewater sampling event. As shown in the figure, groundwater flow is generally towards Gilkey Creek throughout the Site. Groundwater capture is likely still occurring adjacent to Granger Drain, however, the recent repair of the sanitary sewer has more than likely ceased any groundwater capture near the sewer. Finally, comparing the groundwater and porewater elevations to the nearby surface water elevations, it appears that the creek is likely hydraulically connected to the groundwater near PW-1 and PW-2 (downstream) and PW-5



(upstream), where the porewater elevations are higher or nearly the same as the nearby surface water elevations.

POREWATER SAMPLING RESULTS

The results from the sampling of PW-1, PW-2, PW-3, and PW-5 are provided in Table 2 and Figure 3, with the laboratory analytical results included in Appendix 3. Historical laboratory analytical data is also provided in Table 2. Similar to previous event, no water was able to be purged from PW-4 and PW-6. During this event, porewater sample locations PW-1, PW-2, and PW-5 contained both total and dissolved arsenic above the GSI criteria, and PW-3 did not contain any exceedances. PW-1 and PW-5 contained higher concentrations of both total and dissolved arsenic than what has been seen in previous events, as listed below:

- PW-1-20: 46 µg/L Total Arsenic, 45 µg/L Dissolved Arsenic
- PW-5-20: 80 µg/L Total Arsenic, 70 µg/L Dissolved Arsenic

Review of the water quality parameter results in Appendix 4 (with Oxidation-Reduction Potential (ORP) included in Table 2) indicates that the porewater sampled was under reducing conditions during this event. During the previous two events, porewater in the downstream area of PW-1 and PW-2 was under oxidizing conditions. The change of porewater in this area to reducing conditions may be the cause of the higher arsenic concentrations encountered during this event, with the switch of geochemical conditions causing arsenic to enter solution. Re-sampling of these locations in December 2020 will be especially helpful in determining if this is the case.

MONITORING WELL GROUNDWATER SAMPLING RESULTS

The sample results from SB/MW-11-12, SB/MW-15-14, SB/MW-9-12, SB/MW-7-12, TMW-1, SB/MW-16-14, SB/MW-19-19, SB/MW-17-19, and TMW-9 are provided in Table 2 and Figure 3, with the laboratory analytical results included in Appendix 3. Historical laboratory analytical data is also provided in Table 2. During this event arsenic was detected at six of the eight wells that were sampled. Neither total nor dissolved arsenic was detected at SB/MW-7-12 and SB/MW-19-19. Of the six wells that contained arsenic above detection limits, SB/MW-16-14, SB/MW-17-19, and TMW-9 contained arsenic above the GSI criteria, as listed below:

- SB/MW-16-14: 35 µg/L Total Arsenic, 23 µg/L Dissolved Arsenic
- SB/MW-17-19: 28 µg/L Total Arsenic, 19 µg/L Dissolved Arsenic
- TMW-9: 13 µg/L Total Arsenic, 1 µg/L Dissolved Arsenic

Review of the water quality parameter results in Appendix 4 (with ORP summarized in Table 2) indicates that the groundwater in the monitoring wells sampled was generally under oxidizing conditions during this event, with the exception of SB/MW-16-14 and SB/MW-17-19, which were under reducing conditions.



This reducing condition appears to correspond to the higher arsenic concentrations detected at both monitoring wells. The results at TMW-9 may be antithetical to this observation, however ERG believes that the flow cell was having sensor issues during the sampling of TMW-9, with parameter results that are dissimilar from anything else sampled at the Site. Re-sampling of these locations in December 2020 will be required to determine the effect of oxidizing/reducing conditions on arsenic concentrations in monitoring wells.

SURFACE WATER SAMPLING RESULTS

The sample results from SW-1-20, SW-2-20, and SW-3-20 are provided in Table 2 and Figure 3, with the laboratory analytical results included in Appendix 3. While total and dissolved arsenic were detected at all three locations, no samples contained concentrations that were above the GSI criteria. Additionally, there was no appreciable change in arsenic concentrations between the upstream and downstream of Gilkey Creek within the Site.

Review of the water quality parameter results in Appendix 4 indicates that the surface water is under oxidizing and heavily aerobic conditions, as would be expected in a flowing surface water body.

CONCLUSIONS

While the final report will include more in-depth interpretations of the sample results from all events, ERG believes that several conclusions can be drawn from the review of the results from this event, as described below:

- During this event, the water quality parameters of the porewater appeared to be more similar to the nearby groundwater than during previous events. This may indicate that no surface water and groundwater mixing was occurring in the porewater sample locations during this event.
- The discovery of a small sand seam at PW-5 (similar to what was found at PW-3 in April 2019) indicates that groundwater discharge to Gilkey Creek in the middle and upstream portions of the Site may be limited to where these sand seams exist. Due to the difficulty of locating these seams, it is unknown how many exist or their definite locations and continuity. However, ERG will continue to sample these locations in December 2020 to gain an understanding of the arsenic concentrations in the two sand seams located thus far.
- There appears to be a correlation between higher arsenic concentrations and reducing groundwater conditions, as seen in PW-1-20, PW-2-20, PW-5-20, SB/MW-16-14, and SB/MW-17-19. While it has previously been stated by EGLE that the landfilling activities at the Site could be causing these reducing conditions (based on experience at other landfills), the existence of reducing conditions and arsenic concentrations above criteria at SB/MW-17-19, on the opposite side of Gilkey Creek from the fill material and SB/MW-16-14, a significant distance from the fill material, appear to contradict this statement. This may indicate that the reducing conditions, and therefore the higher arsenic concentrations, are naturally occurring in the shallow groundwater



within the Site and may vary at different times. For example, during previous events, porewater in the area of PW-1 and PW-2 (downstream) was under oxidizing conditions and contained lower concentrations of total and dissolved arsenic. During this event, the reducing conditions extended to this area and resulted in higher arsenic concentrations (especially dissolved arsenic). Given the existence of reducing conditions on the south side of Gilkey Creek at SB/MW-17-19, natural processes appear to control the redox conditions of the groundwater at the Site.

FUTURE SAMPLING EVENTS AND REPORTING

An additional sampling event with the same scope of work as the event described above is tentatively scheduled for the week of December 7-11, 2020.

Following receipt of the laboratory reports from the December 2020 event, a short technical memorandum will be prepared to summarize the results, similar to the above. The technical memorandum will be submitted to EGLE. Following submittal of the December 2020 memorandum, the results of all events will be discussed with EGLE and RACER Trust to evaluate the regulatory direction of the Site and the format of the final report.

Thank you for your assistance with this matter. If you have any questions regarding this Scope of Work, please contact us at 248-773-7986.

Sincerely,

ENVIRONMENTAL RESOURCES GROUP, LLC

A handwritten signature in dark ink that reads "Susan Graves". The signature is written in a cursive, flowing style.

Susan Graves
Project Manager

CC: David Favero
Taylor Vergin

Enc. Appendix 1 - Figures

Figure 1 – Site Map

Figure 2 – Groundwater Contour Map – July 2020

Figure 3 – Groundwater, Porewater, and Surface Water Analytical Map

Appendix 2 - Tables

Table 1 – Groundwater Elevation Data – July 2020

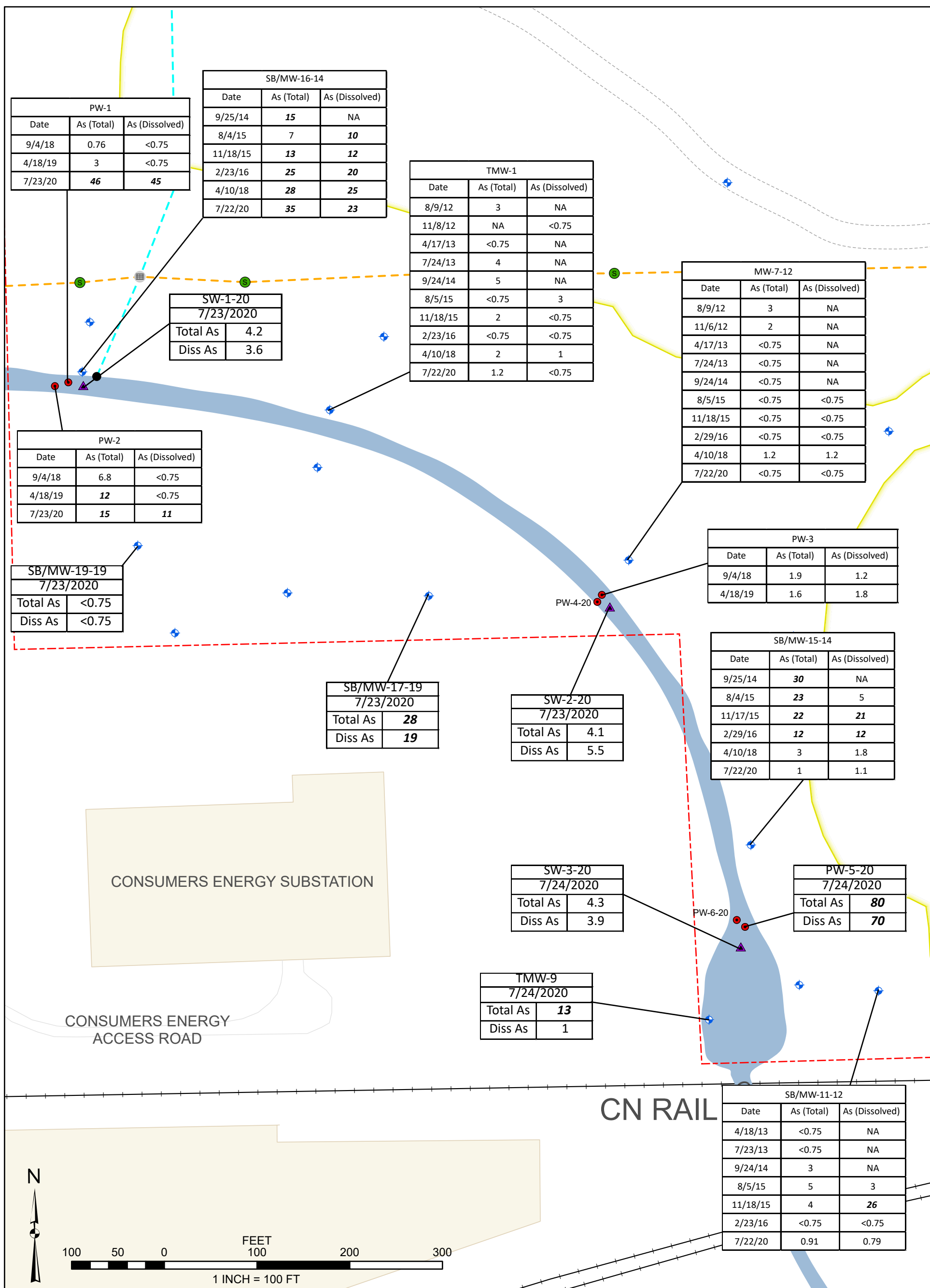
Table 2 - Groundwater, Porewater, and Surface Water Analytical Results



Appendix 3 – Laboratory Analytical Results
Appendix 4 – Low Flow Field Data Sheets

APPENDIX 1

FIGURES



LEGEND

-  Porewater Samples - July 2020
-  Surface Water Samples - July 2020
-  Monitoring Wells

Utilities

- Drain Outfalls
- Sanitary Sewer Manholes
- Granger Drain Catch Basins

Property Details

- Property Boundary
--- Area of Fill (2018 USGS LiDAR)
--- Sanitary Sewer
--- Ketzler Drain
--- Granger Drain

Notes:
Concentrations were compared to EGLE Cleanup Criteria Requirements for Response Activity (CCRRA), Effective December 30, 2013 (formerly Part 201 Residential Generic Cleanup Criteria and Screening Levels; Part 213 Tier 1 Risk-Based Screening Levels (RBSLs))
Bold -Concentrations exceeding the Residential/Nonresidential Drinking Water CCRRA.
Italic -Concentrations exceeding the Groundwater/Surface Water Interface (GSI) CCRRA.
Units are measured in ug/L

RACER TRUST DAVISON ROAD IND. LAND

DAVISON AND DONEGAL, BURTON, MI

GROUNDWATER ANALYTICAL MAP

JOB NO.: 1119.004

BY: TNV DATE: 8/20/2020

SHEET: FIGURE 3



APPENDIX 2

TABLES

Northing and Easting Coordinates

TABLE 1
GW Data from July 2020

DAVISON ROAD LANDFILL
DAVISON AND DONEGAL ROAD, BURTON, MI.

Well	Northing	Easting	Ground Elevation at Well (ft.)	Well Depth to Bottom (ft.)	Well Top of Casing Elevation (ft.)	Depth to Water (ft.)	Static Water Level Elevation (ft.)	Surface Water Height (ft.)	Surface Water Elevation (ft.)
SB/MW-1-12	559022.90	13320366.80	759.28	12.84	762.66	9.80	752.86	N/A	N/A
SB/MW-2-12	558864.50	13320936.00	756.29	11.67	759.75	6.75	753.00	N/A	N/A
SB/MW-3-12	557868.00	13320330.50	750.37	10.21	753.62	7.18	746.44	N/A	N/A
SB/MW-4-12	557852.70	13320647.70	750.87	11.26	753.89	6.99	746.90	N/A	N/A
SB/MW-5-12	558018.80	13321018.10	760.91	16.43	764.37	11.53	752.84	N/A	N/A
SB/MW-6-12	557810.70	13321572.90	757.97	20.20	761.11	16.97	744.14	N/A	N/A
SB/MW-7-12	557611.50	13320911.80	752.35	13.95	755.48	7.87	747.61	N/A	N/A
SB/MW-8-12	557750.30	13321192.30	754.99	13.95	758.47	12.62	745.85	N/A	N/A
SB/MW-9-12	557520.30	13321024.60	752.23	15.35	755.52	8.11	747.41	N/A	N/A
SB/MW-10-12	557529.30	13321089.50	751.93	10.38	755.33	7.56	747.77	N/A	N/A
SB/MW-11-12	557146.60	13321181.20	754.66	13.96	758.02	10.68	747.34	N/A	N/A
SB/MW-12-12	557108.30	13321429.50	761.07	19.37	764.44	13.26	751.18	N/A	N/A
SB/MW-13-12	557139.10	13321690.20	761.89	13.83	765.27	10.35	754.92	N/A	N/A
SB/MW-14-12	557212.20	13321880.40	761.84	13.16	765.11	10.40	754.71	N/A	N/A
SB/MW-15-14	557304.07	13321043.54	751.17	21.74	754.47	6.27	748.20	N/A	N/A
SB/MW-16-14	557814.31	13320322.36	751.82	13.17	755.02	8.39	746.63	N/A	N/A
SB/MW-17-19	557573.08	13320696.04	754.02	15.59	758.35	7.94	750.41	N/A	N/A
SB/MW-18-19	557575.96	13320543.61	757.04	14.58	761.85	8.87	752.98	N/A	N/A
SB/MW-19-19	557627.08	13320382.29	755.17	13.7	758.58	8.26	750.32	N/A	N/A
TMW-9	557115.51	13320998.33	749.59	4.95	751.72	3.88	747.84	N/A	N/A
SB/MW-1	558431.90	13320591.00	760.37	15.54	762.58	8.57	754.01	N/A	N/A
SB/MW-2	557211.10	13321359.80	763.82	17.87	766.11	13.63	752.48	N/A	N/A
SB/MW-04	558576.60	13321606.70	761.14	15.28	763.55	12.35	751.20	N/A	N/A
TW-1	557773.60	13320589.40	753.09	15.23	756.01	9.25	746.76	N/A	N/A
TW-6	557152.90	13321095.70	754.17	12.9	756.43	N/A	N/A	N/A	N/A
TW-7	557533.00	13320422.33	758.16	15.03	760.28	8.72	751.56	N/A	N/A
TW-8	557711.54	13320575.93	753.722	17.5	757.92	10.57	747.35	N/A	N/A
PW-1-20	557803.19	13320307.20	746.17	4	748.045	1.46	746.59	N/A	N/A
PW-2-20	557799.18	13320292.73	745.76	4	747.1298	1.07	746.06	0.21	745.97
PW-3-20	557573.95	13320882.70	746.83	4	748.5383	3.55	744.99	N/A	N/A
PW-4-20	557566.36	13320877.79	745.64	4	N/A	N/A	N/A	0.51	746.15
PW-5-20	557215.73	13321037.14	746.88	4	748.0571	1.71	746.35	N/A	N/A
PW-6-20	557223.17	13321028.22	746.12	4	N/A	N/A	N/A	0.54	746.66

NOTES:

NAD83 State Plane Coordinate System, Intl Feet (Zone 2114, Michigan South)
Elevation Reference: NAVD88 Mean Sea Level (MSL)

TABLE 2 - July 2020 and Historical Arsenic Analytical Results Summary
RACER-Davison Road Industrial Land
July 22-24, 2020
ERG Project No.: 1119.004



Constituent*	Chemical Abstract Service Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Sample Location	PW-1-18	PW-1-19	PW-1-20	PW-2-18	PW-2-19	PW-2-20	PW-3-19	PW-3-20	PW-5-20	SW-1-20	SW-2-20
					Sample Identification											
					Collection Date	9/4/2018	4/18/2019	7/23/2020	9/4/2018	4/18/2019	7/23/2020	4/18/2019	7/23/2020	7/24/2020	7/23/2020	7/23/2020
Metals (Total)																
Arsenic	7440-38-2	10 (A)	10 (A)	10		0.76	3	46	6.8	12	15	1.9	1.6	80	4.2	4.1
Metals (Dissolved)																
Arsenic						<0.75	<0.75	45	<0.75	<0.75	11	1.2	1.8	70	3.6	5.5
Water Quality Parameters																
ORP (mV)						132	90.2	-78.1	176.7	93.6	-98.2	34.4	-96.4	-68.3	101.4	125.6

Notes:

Concentrations were compared to EGLE Cleanup Criteria Requirements for Response Activity (CCRRA), Effective December 30, 2013 (formerly Part 201 Residential Generic Cleanup Criteria and Screening Levels; Part 213 Tier 1 Risk-Based Screening Levels (RBSLs))

Bold -Concentrations exceeding the Residential/Nonresidential Drinking Water CCRRA.

Italic -Concentrations exceeding the Groundwater/Surface Water Interface (GSI) CCRRA.

Units are measured in ug/L

NA = Not Analyzed

NS = Not Sampled

* = Water quality parameters unreliable due to sensor malfunction

Refer to R 299.49 for Footnotes for Generic Cleanup Criteria.

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RACER-Davison Road Industrial Land
July 22-24, 2020
ERG Project No.: 1119.004

Constituent* <i>*(Refer to detailed laboratory report for method reference data)</i>	Chemical Abstract Service Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Sample Location	SW-3-20	SB/MW-7-12										SB/MW-11-12	
					Sample Identification													
					Collection Date	7/24/2020	8/9/2012	11/6/2012	4/17/2013	7/24/2013	9/24/2014	8/5/2015	11/18/2015	2/29/2016	4/10/2018	7/22/2020	4/18/2013	7/23/2013
Metals (Total)																		
Arsenic	7440-38-2	10 (A)	10 (A)	10		4.3	3	2	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	1.2	<0.75	<0.75	<0.75
Metals (Dissolved)																		
Arsenic						3.9	NA	NA	NA	NA	NA	<0.75	<0.75	<0.75	1.2	<0.75	NA	NA
Water Quality Parameters																		
ORP (mV)						168	93.4	4.6	27.2	12.7	N/A	409.5	-15.1	291.5	93.2	180.1	-10.3	1.1

Notes:

Concentrations were compared to EGLE Cleanup Criteria Requirements for Response Activity (CCRRA), Effective December 30, 2013 (formerly Part 201 Residential Generic Cleanup Criteria and Screening Levels; Part 213 Tier 1 Risk-Based Screening Levels (RBSLs))

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RACER-Davison Road Industrial Land
July 22-24, 2020
ERG Project No.: 1119.004



Constituent*	Chemical Abstract Service Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Sample Location	SB/MW-11-12					SB/MW-15-14					
					Sample Identification											
					Collection Date	9/24/2014	8/5/2015	11/18/2015	2/23/2016	7/22/2020	9/25/2014	8/4/2015	11/17/2015	2/29/2016	4/10/2018	7/22/2020
Metals (Total)																
Arsenic	7440-38-2	10 (A)	10 (A)	10		3	5	4	<0.75	0.91	30	23	22	12	3	1
Metals (Dissolved)																
Arsenic						NA	3	26	<0.75	0.79	NA	5	21	12	1.8	1.1
Water Quality Parameters																
ORP (mV)						N/A	65.8	21.7	287.8	99.4	69	N/A	-99.8	88.1	65.3	162.5

Notes:

Concentrations were compared to EGLE Cleanup Criteria Requirements for Response Activity (CCRRA), Effective December 30, 2013 (formerly Part 201 Residential Generic Cleanup Criteria and Screening Levels; Part 213 Tier 1 Risk-Based Screening Levels (RBSLs))

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RACER-Davison Road Industrial Land
July 22-24, 2020
ERG Project No.: 1119.004



Constituent*	Chemical Abstract Service Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Sample Location	SB/MW-16-14						SB/MW-17-19	SB/MW-19-19	TMW-1	
					Sample Identification										
					Collection Date	9/25/2014	8/4/2015	11/18/2015	2/23/2016	4/10/2018	7/22/2020	7/23/2020	7/23/2020	8/9/2012	11/8/2012
Metals (Total)															
Arsenic	7440-38-2	10 (A)	10 (A)	10		15	7	13	25	28	35	28	<0.75	3	NA
Metals (Dissolved)															
Arsenic						NA	10	12	20	25	23	19	<0.75	NA	<0.75
Water Quality Parameters															
ORP (mV)						75	N/A	-33.1	-96	-110.1	-26.7	-25.1	187.4	N/A	N/A

Notes:

Concentrations were compared to EGLE Cleanup Criteria Requirements for Response Activity (CCRRA), Effective December 30, 2013 (formerly Part 201 Residential Generic Cleanup Criteria and Screening Levels; Part 213 Tier 1 Risk-Based Screening Levels (RBSLs))

Bold -Concentrations exceeding the Residential/Nonresidential Drinking Water CCRRA.

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Refer to R 299.49 for Footnotes for Generic Cleanup Criteria.

TABLE 2 - July 2020 and Historical Arsenic Analytical Results Summary
RACER-Davison Road Industrial Land
July 22-24, 2020
ERG Project No.: 1119.004



Constituent*	Chemical Abstract Service Number	Residential Drinking Water Criteria	Nonresidential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Sample Location	TMW-1								TMW-9
					Sample Identification									
					Collection Date	4/17/2013	7/24/2013	9/24/2014	8/5/2015	11/18/2015	2/23/2016	4/10/2018	7/22/2020	7/24/2020
Metals (Total)														
Arsenic	7440-38-2	10 (A)	10 (A)	10		<0.75	4	5	<0.75	2	<0.75	1.9	1.2	13
Metals (Dissolved)														
Arsenic						NA	NA	NA	3	<0.75	<0.75	1.1	<0.75	1
Water Quality Parameters														
ORP (mV)						N/A	N/A	N/A	N/A	-17.9	65.3	88.7	43.5	193.3*

Notes:

Concentrations were compared to EGLE Cleanup Criteria Requirements for Response Activity (CCRRA), Effective December 30, 2013 (formerly Part 201 Residential Generic Cleanup Criteria and Screening Levels; Part 213 Tier 1 Risk-Based Screening Levels (RBSLs))

Bold -Concentrations exceeding the Residential/Nonresidential Drinking Water CCRRA.

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APPENDIX 4

LOW FLOW DATA SHEETS

Low-Flow Test Report:

Test Date / Time: 7/22/2020 10:33:31 AM
Project: RACER SB/MW-16-14
Operator Name: TNV

Location Name: RACER SB/MW-16-14 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 8.17 ft Total Depth: 13.17 ft Initial Depth to Water: 8.4 ft	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 10.79 ft Estimated Total Volume Pumped: 1493.533 ml Flow Cell Volume: 130 ml Final Flow Rate: 86 ml/min Final Draw Down: 0.06 ft	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:
Flow cell issue at final interval, all parameters stable prior to sample collection

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/22/2020 10:33 AM	00:00	6.91 pH	20.89 °C	1,289.2 µS/cm	0.90 mg/L	61.67 NTU	2.8 mV	8.46 ft	86.00 ml/min
7/22/2020 10:36 AM	03:00	6.92 pH	18.33 °C	1,339.7 µS/cm	0.42 mg/L	31.23 NTU	-9.4 mV	8.46 ft	86.00 ml/min
7/22/2020 10:39 AM	06:00	6.92 pH	18.35 °C	1,350.0 µS/cm	0.30 mg/L	23.55 NTU	-16.1 mV	8.46 ft	86.00 ml/min
7/22/2020 10:42 AM	09:00	6.93 pH	18.36 °C	1,352.9 µS/cm	0.27 mg/L	33.76 NTU	-20.0 mV	8.46 ft	86.00 ml/min
7/22/2020 10:45 AM	12:00	6.93 pH	18.33 °C	1,355.3 µS/cm	0.22 mg/L	15.43 NTU	-23.7 mV	8.46 ft	86.00 ml/min
7/22/2020 10:48 AM	15:00	6.92 pH	18.28 °C	1,355.3 µS/cm	0.19 mg/L	21.18 NTU	-25.5 mV	8.46 ft	86.00 ml/min
7/22/2020 10:50 AM	17:22	6.92 pH	27.79 °C		0.09 mg/L	12.12 NTU	-26.7 mV	8.46 ft	86.00 ml/min

Samples

Sample ID:	Description:
SB/MW-16-14	Total/Diss Arsenic

Low-Flow Test Report:

Test Date / Time: 7/22/2020 11:28:24 AM
Project: RACER TMW-1
Operator Name: TNV

Location Name: RACER TMW-1 Well Diameter: 1 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 10.23 ft Total Depth: 15.23 ft Initial Depth to Water: 9.28 ft	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 12.25 ft Estimated Total Volume Pumped: 504 ml Flow Cell Volume: 130 ml Final Flow Rate: 42 ml/min Final Draw Down: 0.51 ft	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/22/2020 11:28 AM	00:00	6.89 pH	23.31 °C	1,266.6 µS/cm	1.52 mg/L	0.34 NTU	45.1 mV	9.64 ft	42.00 ml/min
7/22/2020 11:31 AM	03:00	6.89 pH	22.67 °C	1,272.6 µS/cm	1.00 mg/L	0.00 NTU	40.4 mV	9.69 ft	42.00 ml/min
7/22/2020 11:34 AM	06:00	6.88 pH	22.40 °C	1,273.9 µS/cm	0.77 mg/L	0.00 NTU	40.9 mV	9.74 ft	42.00 ml/min
7/22/2020 11:37 AM	09:00	6.87 pH	22.17 °C	1,274.8 µS/cm	0.69 mg/L	0.00 NTU	41.1 mV	9.79 ft	42.00 ml/min
7/22/2020 11:40 AM	12:00	6.87 pH	21.99 °C	1,272.1 µS/cm	0.59 mg/L	0.00 NTU	43.5 mV	9.79 ft	42.00 ml/min

Samples

Sample ID:	Description:
TMW-1	As, dissolved As 12:55

Low-Flow Test Report:

Test Date / Time: 7/22/2020 12:38:05 PM
Project: RACER SB/MW-7-12
Operator Name: TNV

Location Name: RACER SB/MW-7-12 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 8.95 ft Total Depth: 13.95 ft Initial Depth to Water: 7.93 ft	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 10.94 ft Estimated Total Volume Pumped: 720 ml Flow Cell Volume: 130 ml Final Flow Rate: 40 ml/min Final Draw Down: 0.08 ft	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/22/2020 12:38 PM	00:00	7.01 pH	26.98 °C	1,417.0 µS/cm	1.59 mg/L	0.00 NTU	184.2 mV	8.01 ft	40.00 ml/min
7/22/2020 12:41 PM	03:00	7.01 pH	25.36 °C	1,427.9 µS/cm	1.00 mg/L	0.00 NTU	183.6 mV	8.01 ft	40.00 ml/min
7/22/2020 12:44 PM	06:00	7.01 pH	24.52 °C	1,423.5 µS/cm	0.65 mg/L	0.00 NTU	182.8 mV	8.01 ft	40.00 ml/min
7/22/2020 12:47 PM	09:00	7.01 pH	24.10 °C	1,424.6 µS/cm	0.57 mg/L	0.00 NTU	182.1 mV	8.01 ft	40.00 ml/min
7/22/2020 12:50 PM	12:00	7.02 pH	23.71 °C	1,424.9 µS/cm	0.50 mg/L	0.00 NTU	181.9 mV	8.01 ft	40.00 ml/min
7/22/2020 12:53 PM	15:00	7.02 pH	23.53 °C	1,425.1 µS/cm	0.49 mg/L	0.00 NTU	181.3 mV	8.01 ft	40.00 ml/min
7/22/2020 12:56 PM	18:00	7.02 pH	23.39 °C	1,425.6 µS/cm	0.52 mg/L	0.00 NTU	180.1 mV	8.01 ft	40.00 ml/min

Samples

Sample ID:	Description:
MW-7-12	As, dissolved As 14:10

Low-Flow Test Report:

Test Date / Time: 7/22/2020 1:57:29 PM
Project: RACER SB/MW-11-12
Operator Name: TNV

Location Name: RACER SB/MW-11-12 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 8.96 ft Total Depth: 13.96 ft Initial Depth to Water: 10.73 ft	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 12.35 ft Estimated Total Volume Pumped: 1440 ml Flow Cell Volume: 130 ml Final Flow Rate: 48 ml/min Final Draw Down: 0.08 ft	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/22/2020 1:57 PM	00:00	6.72 pH	23.27 °C	2,015.6 µS/cm	1.07 mg/L	0.00 NTU	189.7 mV	10.81 ft	48.00 ml/min
7/22/2020 2:00 PM	03:00	6.72 pH	21.32 °C	1,980.9 µS/cm	0.66 mg/L	0.00 NTU	179.5 mV	10.81 ft	48.00 ml/min
7/22/2020 2:03 PM	06:00	6.72 pH	20.35 °C	1,927.1 µS/cm	0.49 mg/L	0.00 NTU	172.1 mV	10.81 ft	48.00 ml/min
7/22/2020 2:06 PM	09:00	6.74 pH	20.15 °C	1,865.0 µS/cm	0.36 mg/L	1.91 NTU	163.1 mV	10.81 ft	48.00 ml/min
7/22/2020 2:09 PM	12:00	6.78 pH	19.78 °C	1,689.8 µS/cm	0.31 mg/L	12.48 NTU	146.7 mV	10.81 ft	48.00 ml/min
7/22/2020 2:12 PM	15:00	6.80 pH	19.86 °C	1,603.0 µS/cm	0.29 mg/L	22.97 NTU	132.6 mV	10.81 ft	48.00 ml/min
7/22/2020 2:15 PM	18:00	6.82 pH	19.73 °C	1,554.9 µS/cm	0.27 mg/L	40.15 NTU	123.2 mV	10.81 ft	48.00 ml/min
7/22/2020 2:18 PM	21:00	6.83 pH	18.97 °C	1,531.0 µS/cm	0.25 mg/L	62.48 NTU	115.4 mV	10.81 ft	48.00 ml/min
7/22/2020 2:21 PM	24:00	6.83 pH	18.87 °C	1,536.8 µS/cm	0.24 mg/L	86.60 NTU	108.9 mV	10.81 ft	48.00 ml/min
7/22/2020 2:24 PM	27:00	6.82 pH	18.83 °C	1,617.3 µS/cm	0.22 mg/L	102.73 NTU	103.9 mV	10.81 ft	48.00 ml/min
7/22/2020 2:27 PM	30:00	6.82 pH	18.87 °C	1,613.1 µS/cm	0.20 mg/L	117.38 NTU	99.4 mV	10.81 ft	48.00 ml/min

Samples

Sample ID:	Description:
SB/MW-11-12	Total/Diss Arsenic

Low-Flow Test Report:

Test Date / Time: 7/22/2020 3:05:35 PM
Project: RACER SB/MW-15-14
Operator Name: TNV

Location Name: RACER SBMW-15-14 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 16.74 ft Total Depth: 21.74 ft Initial Depth to Water: 6.31 ft	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 19.24 ft Estimated Total Volume Pumped: 624 ml Flow Cell Volume: 130 ml Final Flow Rate: 52 ml/min Final Draw Down: 0.35 ft	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:
Well exceeded drawdown at minimum flow rate

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/22/2020 3:05 PM	00:00	7.13 pH	22.10 °C	2,059.2 µS/cm	1.58 mg/L	0.00 NTU	180.0 mV	6.60 ft	52.00 ml/min
7/22/2020 3:08 PM	03:00	7.22 pH	21.18 °C	2,079.6 µS/cm	1.32 mg/L	0.00 NTU	173.4 mV	6.60 ft	52.00 ml/min
7/22/2020 3:11 PM	06:00	7.27 pH	21.29 °C	2,084.3 µS/cm	1.04 mg/L	0.00 NTU	168.0 mV	6.66 ft	52.00 ml/min
7/22/2020 3:14 PM	09:00	7.31 pH	20.98 °C	2,076.2 µS/cm	0.86 mg/L	0.00 NTU	164.8 mV	6.66 ft	52.00 ml/min
7/22/2020 3:17 PM	12:00	7.33 pH	20.87 °C	2,082.7 µS/cm	0.76 mg/L	0.00 NTU	162.5 mV	6.66 ft	52.00 ml/min

Samples

Sample ID:	Description:
SB/MW-15-14	Total/Diss Arsenic

Low-Flow Test Report:

Test Date / Time: 7/23/2020 8:12:32 AM
Project: RACER PW-2-20
Operator Name: TNV

Location Name: RACER PW-2-20 Well Diameter: 0.25 in Casing Type: Stainless Steel Screen Length: 2 in Top of Screen: 46 in Total Depth: 48 in Initial Depth to Water: 12.875 in	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 46 in Estimated Total Volume Pumped: 2550 ml Flow Cell Volume: 130 ml Final Flow Rate: 85 ml/min Final Draw Down: 0 in	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/23/2020 8:12 AM	00:00	7.27 pH	21.18 °C	671.95 µS/cm	1.61 mg/L	185.77 NTU	-49.1 mV	1.07 ft	85.00 ml/min
7/23/2020 8:15 AM	03:00	7.26 pH	20.85 °C	668.84 µS/cm	0.45 mg/L	200.73 NTU	-79.2 mV	1.07 ft	85.00 ml/min
7/23/2020 8:18 AM	06:00	7.27 pH	20.26 °C	659.91 µS/cm	0.21 mg/L	173.95 NTU	-89.4 mV	1.07 ft	85.00 ml/min
7/23/2020 8:21 AM	09:00	7.27 pH	20.13 °C	655.27 µS/cm	0.18 mg/L	134.60 NTU	-91.1 mV	1.07 ft	85.00 ml/min
7/23/2020 8:24 AM	12:00	7.27 pH	20.00 °C	655.60 µS/cm	0.18 mg/L	80.33 NTU	-94.8 mV	1.07 ft	85.00 ml/min
7/23/2020 8:27 AM	15:00	7.28 pH	20.17 °C	656.15 µS/cm	0.18 mg/L	50.52 NTU	-95.6 mV	1.07 ft	85.00 ml/min
7/23/2020 8:30 AM	18:00	7.26 pH	20.23 °C	657.00 µS/cm	0.17 mg/L	190.27 NTU	-96.9 mV	1.07 ft	85.00 ml/min
7/23/2020 8:33 AM	21:00	7.27 pH	20.36 °C	656.34 µS/cm	0.16 mg/L	90.50 NTU	-97.7 mV	1.07 ft	85.00 ml/min
7/23/2020 8:36 AM	24:00	7.26 pH	20.48 °C	656.77 µS/cm	0.16 mg/L	108.48 NTU	-98.2 mV	1.07 ft	85.00 ml/min
7/23/2020 8:39 AM	27:00	7.26 pH	20.49 °C	655.18 µS/cm	0.13 mg/L	78.07 NTU	-98.4 mV	1.07 ft	85.00 ml/min
7/23/2020 8:42 AM	30:00	7.26 pH	20.37 °C	652.99 µS/cm	0.11 mg/L	78.35 NTU	-98.2 mV	1.07 ft	85.00 ml/min

Samples

Sample ID:	Description:
PW-2-20	Total As, dissolved As 10:00

Low-Flow Test Report:

Test Date / Time: 7/23/2020 9:17:38 AM
Project: RACER PW-1-20
Operator Name: TNV

Location Name: RACER PW-1-20 Well Diameter: 2 in Casing Type: Stainless Steel Screen Length: 2 in Top of Screen: 46 in Total Depth: 48 in Initial Depth to Water: 22.5 in	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 46 in Estimated Total Volume Pumped: 2460 ml Flow Cell Volume: 130 ml Final Flow Rate: 82 ml/min Final Draw Down: 0 in	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/23/2020 9:17 AM	00:00	6.97 pH	21.70 °C	1,000.7 µS/cm	0.92 mg/L	95.28 NTU	-43.5 mV	1.88 ft	82.00 ml/min
7/23/2020 9:20 AM	03:00	6.97 pH	21.62 °C	996.30 µS/cm	0.51 mg/L	139.47 NTU	-53.9 mV	1.88 ft	82.00 ml/min
7/23/2020 9:23 AM	06:00	6.98 pH	21.74 °C	992.48 µS/cm	0.31 mg/L	30.48 NTU	-58.8 mV	1.88 ft	82.00 ml/min
7/23/2020 9:26 AM	09:00	6.98 pH	21.97 °C	988.28 µS/cm	0.27 mg/L	14.59 NTU	-55.7 mV	1.88 ft	82.00 ml/min
7/23/2020 9:29 AM	12:00	6.97 pH	21.95 °C	979.92 µS/cm	0.24 mg/L	15.15 NTU	-58.8 mV	1.88 ft	82.00 ml/min
7/23/2020 9:32 AM	15:00	6.98 pH	21.99 °C	977.85 µS/cm	0.18 mg/L	65.03 NTU	-68.3 mV	1.88 ft	82.00 ml/min
7/23/2020 9:35 AM	18:00	6.96 pH	21.88 °C	977.90 µS/cm	0.15 mg/L	45.33 NTU	-70.8 mV	1.88 ft	82.00 ml/min
7/23/2020 9:38 AM	21:00	6.97 pH	21.87 °C	973.19 µS/cm	0.14 mg/L	28.45 NTU	-67.8 mV	1.88 ft	82.00 ml/min
7/23/2020 9:41 AM	24:00	6.98 pH	21.87 °C	972.59 µS/cm	0.14 mg/L	33.66 NTU	-76.0 mV	1.88 ft	82.00 ml/min
7/23/2020 9:44 AM	27:00	6.99 pH	21.92 °C	967.03 µS/cm	0.11 mg/L	43.03 NTU	-75.6 mV	1.88 ft	82.00 ml/min
7/23/2020 9:47 AM	30:00	6.96 pH	22.23 °C	969.00 µS/cm	0.10 mg/L	64.68 NTU	-78.1 mV	1.88 ft	82.00 ml/min

Samples

Sample ID:	Description:
PW-1-20	Total As, dissolved As 11:05

Low-Flow Test Report:

Test Date / Time: 7/23/2020 9:58:20 AM
Project: RACER SW-1-20
Operator Name: TNV

Location Name: RACER SW-1-20 Initial Depth to Water: 0 in	Pump Type: N/A Tubing Type: N/A Pump Intake From TOC: 46 in Estimated Total Volume Pumped: 984 ml Flow Cell Volume: 130 ml Final Flow Rate: 82 ml/min Final Draw Down: 0 in	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/23/2020 9:58 AM	00:00	7.79 pH	23.21 °C	1,952.3 µS/cm	7.57 mg/L	6.53 NTU	85.5 mV	0.00 ft	82.00 ml/min
7/23/2020 10:01 AM	03:00	7.79 pH	23.27 °C	1,937.3 µS/cm	6.20 mg/L	6.36 NTU	84.5 mV	0.00 ft	82.00 ml/min
7/23/2020 10:04 AM	06:00	7.83 pH	23.31 °C	1,888.3 µS/cm	6.19 mg/L	6.20 NTU	91.0 mV	0.00 ft	82.00 ml/min
7/23/2020 10:07 AM	09:00	7.85 pH	23.27 °C	1,965.3 µS/cm	6.25 mg/L	6.55 NTU	98.3 mV	0.00 ft	82.00 ml/min
7/23/2020 10:10 AM	12:00	7.87 pH	23.32 °C	1,765.3 µS/cm	6.35 mg/L	6.21 NTU	101.4 mV	0.00 ft	82.00 ml/min

Samples

Sample ID:	Description:
SW-1-20	Total/Dissolved As

Low-Flow Test Report:

Test Date / Time: 7/23/2020 10:18:54 AM
Project: RACER SW-2-20
Operator Name: TNV

Location Name: RACER SW-20-20	Pump Type: N/A Tubing Type: N/A Pump Intake From TOC: 46 in Estimated Total Volume Pumped: 246 ml Flow Cell Volume: 130 ml Final Flow Rate: 82 ml/min	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/23/2020 10:18 AM	00:00	7.86 pH	23.03 °C	2,335.4 µS/cm	7.62 mg/L	30.13 NTU	127.2 mV		82.00 ml/min
7/23/2020 10:19 AM	01:00	7.83 pH	22.64 °C	2,357.4 µS/cm	6.44 mg/L	7.09 NTU	127.9 mV		82.00 ml/min
7/23/2020 10:20 AM	02:00	7.84 pH	22.63 °C	2,359.5 µS/cm	6.25 mg/L	6.90 NTU	126.6 mV		82.00 ml/min
7/23/2020 10:21 AM	03:00	7.83 pH	22.65 °C	2,360.2 µS/cm	6.23 mg/L	6.22 NTU	125.6 mV		82.00 ml/min

Samples

Sample ID:	Description:
SW-2-20	Total/Dissolved Arsenic

Low-Flow Test Report:

Test Date / Time: 7/23/2020 11:08:15 AM
Project: RACER SB/MW-17-19
Operator Name: TNV

Location Name: SB/MW-17-19 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 10.59 ft Total Depth: 15.59 ft Initial Depth to Water: 8.08 ft	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 11.54 ft Estimated Total Volume Pumped: 900 ml Flow Cell Volume: 130 ml Final Flow Rate: 50 ml/min Final Draw Down: 0.96 ft	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/23/2020 11:08 AM	00:00	7.30 pH	24.43 °C	638.68 µS/cm	1.02 mg/L	26.53 NTU	-30.4 mV	8.49 ft	50.00 ml/min
7/23/2020 11:11 AM	03:00	7.28 pH	22.18 °C	635.23 µS/cm	0.49 mg/L	24.59 NTU	-7.8 mV	8.68 ft	50.00 ml/min
7/23/2020 11:14 AM	06:00	7.30 pH	21.26 °C	633.47 µS/cm	0.37 mg/L	14.00 NTU	-6.9 mV	8.75 ft	50.00 ml/min
7/23/2020 11:17 AM	09:00	7.31 pH	20.58 °C	620.07 µS/cm	0.33 mg/L	17.82 NTU	-9.3 mV	8.86 ft	50.00 ml/min
7/23/2020 11:20 AM	12:00	7.31 pH	19.59 °C	621.24 µS/cm	0.40 mg/L	14.51 NTU	-15.5 mV	8.98 ft	50.00 ml/min
7/23/2020 11:23 AM	15:00	7.31 pH	19.51 °C	624.27 µS/cm	0.41 mg/L	9.57 NTU	-20.9 mV	9.04 ft	50.00 ml/min
7/23/2020 11:26 AM	18:00	7.31 pH	19.49 °C	624.53 µS/cm	0.43 mg/L	13.78 NTU	-25.1 mV	9.04 ft	50.00 ml/min

Samples

Sample ID:	Description:
MW-17-19	Total As, dissolved As 12:40

Low-Flow Test Report:

Test Date / Time: 7/23/2020 12:13:15 PM
Project: RACER SB/MW-19-19
Operator Name: TNV

Location Name: SB/MW-19-19 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 8.7 ft Total Depth: 13.7 ft Initial Depth to Water: 8.32 ft	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 11.01 ft Estimated Total Volume Pumped: 1260 ml Flow Cell Volume: 130 ml Final Flow Rate: 70 ml/min Final Draw Down: 0.11 ft	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/23/2020 12:13 PM	00:00	7.60 pH	20.88 °C	397.91 µS/cm	5.12 mg/L	6.00 NTU	151.8 mV	8.43 ft	70.00 ml/min
7/23/2020 12:16 PM	03:00	7.53 pH	17.97 °C	401.20 µS/cm	5.16 mg/L	5.21 NTU	159.7 mV	8.43 ft	70.00 ml/min
7/23/2020 12:19 PM	06:00	7.42 pH	17.47 °C	404.93 µS/cm	5.07 mg/L	6.22 NTU	168.6 mV	8.43 ft	70.00 ml/min
7/23/2020 12:22 PM	09:00	7.32 pH	17.45 °C	408.83 µS/cm	4.86 mg/L	8.29 NTU	175.8 mV	8.43 ft	70.00 ml/min
7/23/2020 12:25 PM	12:00	7.25 pH	17.14 °C	414.35 µS/cm	4.84 mg/L	9.41 NTU	181.5 mV	8.43 ft	70.00 ml/min
7/23/2020 12:28 PM	15:00	7.20 pH	16.90 °C	417.82 µS/cm	4.77 mg/L	14.00 NTU	185.8 mV	8.43 ft	70.00 ml/min
7/23/2020 12:31 PM	18:00	7.17 pH	17.19 °C	423.60 µS/cm	4.71 mg/L	17.54 NTU	187.4 mV	8.43 ft	70.00 ml/min

Samples

Sample ID:	Description:
SB/MW-19-19	Total/Diss Arsenic

Low-Flow Test Report:

Test Date / Time: 7/23/2020 1:41:06 PM
Project: RACER PW-3-20
Operator Name: TNV

Location Name: RACER PW-3-20 Well Diameter: 2 in Casing Type: Stainless Steel Screen Length: 2 in Top of Screen: 46 in Total Depth: 48 in	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 46 in Estimated Total Volume Pumped: 1764 ml Flow Cell Volume: 130 ml Final Flow Rate: 84 ml/min	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/23/2020 1:41 PM	00:00	6.74 pH	24.75 °C	1,321.8 µS/cm	0.94 mg/L	36.55 NTU	-72.3 mV		84.00 ml/min
7/23/2020 1:44 PM	03:00	6.74 pH	23.06 °C	1,339.3 µS/cm	0.36 mg/L	26.10 NTU	-79.1 mV		84.00 ml/min
7/23/2020 1:47 PM	06:00	6.75 pH	22.71 °C	1,337.4 µS/cm	0.26 mg/L	29.75 NTU	-82.7 mV		84.00 ml/min
7/23/2020 1:50 PM	09:00	6.77 pH	22.31 °C	1,340.3 µS/cm	0.21 mg/L	25.54 NTU	-84.5 mV		84.00 ml/min
7/23/2020 1:53 PM	12:00	6.76 pH	21.92 °C	1,340.8 µS/cm	0.19 mg/L	17.39 NTU	-86.6 mV		84.00 ml/min
7/23/2020 1:56 PM	15:00	6.76 pH	21.88 °C	1,337.3 µS/cm	0.17 mg/L	15.51 NTU	-87.4 mV		84.00 ml/min
7/23/2020 1:59 PM	18:00	6.76 pH	22.13 °C	1,338.7 µS/cm	0.15 mg/L	12.48 NTU	-96.7 mV		84.00 ml/min
7/23/2020 2:02 PM	21:00	6.76 pH	22.31 °C	1,339.8 µS/cm	0.13 mg/L	11.57 NTU	-96.4 mV		84.00 ml/min

Samples

Sample ID:	Description:
PW-3-20	Total/Dissolved Arsenic

Low-Flow Test Report:

Test Date / Time: 7/24/2020 8:38:06 AM
Project: RACER TMW-9
Operator Name: TNV

Location Name: RACER TMW-9 Well Diameter: 2 in Casing Type: PVC Screen Length: 5 ft Top of Screen: 0 ft Total Depth: 4.95 ft Initial Depth to Water: 4.01 ft	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 4.5 ft Estimated Total Volume Pumped: 600 ml Flow Cell Volume: 130 ml Final Flow Rate: 50 ml/min Final Draw Down: 0.52 ft	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:
Issue with specific conductivity sensors, all other parameters stable

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/24/2020 8:38 AM	00:00	6.44 pH	23.56 °C	0.44 µS/cm	8.36 mg/L	0.00 NTU	198.2 mV	4.53 ft	50.00 ml/min
7/24/2020 8:41 AM	03:00	6.43 pH	22.38 °C	0.38 µS/cm	8.39 mg/L	0.00 NTU	197.6 mV	4.53 ft	50.00 ml/min
7/24/2020 8:44 AM	06:00	6.46 pH	22.00 °C	0.28 µS/cm	8.44 mg/L	0.01 NTU	196.1 mV	4.53 ft	50.00 ml/min
7/24/2020 8:47 AM	09:00	6.51 pH	22.45 °C	0.15 µS/cm	8.35 mg/L	0.00 NTU	192.1 mV	4.53 ft	50.00 ml/min
7/24/2020 8:50 AM	12:00	6.46 pH	22.41 °C	0.06 µS/cm	8.35 mg/L	0.01 NTU	193.3 mV	4.53 ft	50.00 ml/min

Samples

Sample ID:	Description:
TMW-9	Total/Diss Arsenic

Low-Flow Test Report:

Test Date / Time: 7/24/2020 9:09:27 AM
Project: RACER SW-3-20
Operator Name: TNV

Location Name: RACER SW-3-20	Pump Type: N/A Tubing Type: N/A Estimated Total Volume Pumped: 0 ml Flow Cell Volume: 130 ml Final Flow Rate: 0 ml/min	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/24/2020 9:09 AM	00:00	7.71 pH	20.28 °C	2,081.6 µS/cm	7.49 mg/L	4.04 NTU	193.8 mV		0.00 ml/min
7/24/2020 9:10 AM	01:00	7.79 pH	19.51 °C	2,110.8 µS/cm	5.91 mg/L	11.31 NTU	190.4 mV		0.00 ml/min
7/24/2020 9:11 AM	02:00	7.80 pH	19.43 °C	2,112.9 µS/cm	5.77 mg/L	10.99 NTU	173.4 mV		0.00 ml/min
7/24/2020 9:12 AM	03:00	7.80 pH	19.45 °C	2,113.0 µS/cm	5.76 mg/L	10.19 NTU	170.6 mV		0.00 ml/min
7/24/2020 9:13 AM	04:00	7.81 pH	19.51 °C	2,110.8 µS/cm	5.76 mg/L	10.55 NTU	168.0 mV		0.00 ml/min

Samples

Sample ID:	Description:
SW-3-20	Total / Dissolved Arsenic

Low-Flow Test Report:

Test Date / Time: 7/24/2020 9:51:19 AM
Project: RACER PW-5-20
Operator Name: TNV

Location Name: PW-5-20 Well Diameter: 0.25 in Casing Type: Stainless Steel Screen Length: 2 in Top of Screen: 46 in Total Depth: 48 in Initial Depth to Water: 20.5 in	Pump Type: Peristaltic Tubing Type: Polypropylene Pump Intake From TOC: 46 in Estimated Total Volume Pumped: 1950 ml Flow Cell Volume: 130 ml Final Flow Rate: 65 ml/min Final Draw Down: 0 in	Instrument Used: Aqua TROLL 600 Serial Number: 514587
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Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5	+/- 3 %	+/- 0.3	+/- 10	+/- 10	+/- 0.3	
7/24/2020 9:51 AM	00:00	6.92 pH	25.28 °C	1,507.0 µS/cm	0.70 mg/L	203.11 NTU	-112.3 mV	1.71 ft	65.00 ml/min
7/24/2020 9:54 AM	03:00	6.93 pH	23.93 °C	1,524.6 µS/cm	0.30 mg/L	76.53 NTU	-119.9 mV	1.71 ft	65.00 ml/min
7/24/2020 9:57 AM	06:00	6.94 pH	23.49 °C	1,508.9 µS/cm	0.22 mg/L	115.94 NTU	-110.0 mV	1.71 ft	65.00 ml/min
7/24/2020 10:00 AM	09:00	6.94 pH	23.41 °C	1,505.8 µS/cm	0.20 mg/L	180.45 NTU	-97.3 mV	1.71 ft	65.00 ml/min
7/24/2020 10:03 AM	12:00	6.94 pH	23.51 °C	1,509.3 µS/cm	0.16 mg/L	205.73 NTU	-88.4 mV	1.71 ft	65.00 ml/min
7/24/2020 10:06 AM	15:00	6.93 pH	23.95 °C	1,509.6 µS/cm	0.18 mg/L	170.82 NTU	-87.8 mV	1.71 ft	65.00 ml/min
7/24/2020 10:09 AM	18:00	6.93 pH	23.87 °C	1,507.3 µS/cm	0.12 mg/L	147.97 NTU	-78.9 mV	1.71 ft	65.00 ml/min
7/24/2020 10:12 AM	21:00	6.93 pH	23.53 °C	1,509.5 µS/cm	0.12 mg/L	143.96 NTU	-81.1 mV	1.71 ft	65.00 ml/min
7/24/2020 10:15 AM	24:00	6.93 pH	24.02 °C	1,510.1 µS/cm	0.23 mg/L	94.79 NTU	-88.7 mV	1.71 ft	65.00 ml/min
7/24/2020 10:18 AM	27:00	6.93 pH	24.32 °C	1,508.5 µS/cm	0.08 mg/L	57.47 NTU	-85.9 mV	1.71 ft	65.00 ml/min
7/24/2020 10:21 AM	30:00	6.94 pH	23.82 °C	1,503.7 µS/cm	0.09 mg/L	91.80 NTU	-68.3 mV	1.71 ft	65.00 ml/min

Samples

Sample ID:	Description:
PW-5-20	Total/Diss Arsenic

