Stream Survey Data Report

NYSDEC SMAS

Report Date: 2021-11-19

# General

Harmful algal blooms (HABs) are increasingly a global concern because they pose a threat to human and aquatic ecosystem health and cause economic damages. Most HABs management strategies are focused on reduction of nitrogen and phosphorus loading to the lakes. However, lakes, bays, and coves can harbor different phytoplankton communities, including communities that shift between harmful and benign species, under similar nutrient loads or concentrations. Cyanobacterial HABs (CyanoHABs) represent a substantial threat to drinking-water supplies and safe recreational uses of freshwater resources in New York, including the Finger Lakes region. Toxins produced by some species of cyanobacteria (called cyanotoxins) can cause acute and chronic illnesses in humans. Aquatic ecosystem health also is affected by cyanotoxins, as well as low dissolved oxygen concentrations and changes in aquatic food webs caused by an over-abundance of cyanobacteria. Environmental factors that have been attributed to CyanoHAB occurrence include cyanobacterial community composition, nutrient concentrations, light conditions, water temperature, hydrologic conditions, and meteorological conditions. Yet despite a general understanding of factors contributing to CyanoHABs, many unanswered questions remain about occurrence, environmental triggers for toxicity, and the ability to predict the timing, duration, and toxicity of CyanoHABs. For these reasons, the U.S. Geological Survey, in cooperation with New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH), has developed a comprehensive monitoring strategy in three lakes that have recently been affected by CyanoHABs: Owasco Lake, Seneca Lake, and Skaneateles Lake.

The Steam Monitoring and Assessment Section (SMAS) conducted targeted stream monitoring that included:

1. Benthic Macroinvertebrate Community Analysis
2. Water Quality Measurements
3. Stream Reach Physical Habitat Characteristics
4. Observer Ranking of Recreational Ability

This data report includes two sections: I) an overview of the sampling events described above, with results aggregated by WI/PWL segment, and II) a site-specific data summary to present all major findings for each site. Additional sections (III, IV) include literature cited and appendices covering all references and additional source material.

The FL advanced Monitoring Report site descriptions (Table ) and locations (Figure ), and sampling dates (Table ) are included below.

Table . Sampling locations.

| **Location ID** | **Group** | **River mile** | **WI/PWL ID** | **Waterbody   Classification** | **Description** | **Latitude** | **Longitude** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 07-CATH-0.6 | a | 0.6 | 0705-0011 | C(TS) | South genesee st bridge. | 42 | -77 |
| 07-KASH-0.3 | a | 0.3 | 0705-0017 | C | At west lake rd. | 43 | -77 |
| 07-KEUK-0.1 | a | 0.1 | 0705-0020 | C(T) | 0.5 m u.s. Of mouth. | 43 | -77 |
| 07-REED-0.1 | a | 0.1 | 0705-0074 | C(T) | 300' west of intersection with 125. | 43 | -77 |
| 07-GLNK-0.2 | a | 0.2 | 0705-0082 | C(TS) | Junction of mcgee and shannon street. | 42 | -77 |
| 07-BGST-0.1 | a | 0.1 | 0705-0087 | C(TS) | At south glenora rd. | 42 | -77 |
| 07-THOL-1.8 | a | 1.8 | 0705-0073 | C | 10 m above satterly hill rd. Bridge. | 42 | -77 |
| 07-OWLI-3.0 | b | 3.0 | 0706-0002 | C(T) | 20 m below sr 38. | 43 | -76 |
| 07-DUCH-0.3 | b | 0.3 | 0706-0003 | C(TS) | East lake rd. | 43 | -77 |
| 07-DUCH-8.3 | b | 8.3 | 0706-0003 | C(TS) | 10 m above old state rd. Bridge. | 43 | -76 |
| 07-OWAL\_T46-0.1 | b | 0.1 | 0706-0010 | C | Off fire lane near sr 38. | 43 | -77 |
| 07-OWAL\_T9-0.1 | b | 0.1 | 0706-0010 | C | Off widewaters rd. | 43 | -76 |
| 07-OWAL\_T9-0.1 | b |  | 0706-0010 | C |  | NA | NA |
| 07-SCKR-0.1 | b | 0.1 | 0706-0010 | C | 100 m upstream of sr 38a. | 43 | -77 |
| 07-VENE-1.5 | b | 1.5 | 0706-0010 | C | Downstream of silver street rd. Bridge. | 43 | -77 |
| 07-GROU-1.5 | c | 1.5 | 0706-0001 | AA(T) | Co rte 101 at sweeney hill rd. Bridge. | 43 | -76 |
| 07-SKAT\_T2-0.1 | c | 0.1 | 0707-0005 | AA | East lake rd. At public fishing access. | 43 | -76 |
| 07-SKAT\_T5-0.1 | c | 0.1 | 0707-0005 | AA | East lake rd. Bridge. | 43 | -76 |
| 07-SKAT\_T89-0.2 | c | 0.2 | 0707-0005 | AA | West lake rd. Bridge. | 43 | -76 |
| 07-BSWP-0.1 | c | 0.1 | 0707-0005 | AA(T) | Appletree fire lane. | 43 | -76 |
| 07-BSWP-6.3 | c |  | 0707-0005 | AA |  | NA | NA |
| 07-MASH-0.1 | c |  | 0705-0027 | C |  | NA | NA |
| 07-OWAL\_T16-0.4 | b |  | 0706-0010 | C |  | NA | NA |
| 07-OWAL\_T2-0.1 | b |  | 0706-0010 | C |  | NA | NA |
| 07-OWAL\_T5-0.2 | b |  | 0706-0010 | C |  | NA | NA |
| 07-OWLI-0.1 | b |  | 0706-0002 | C(T) |  | NA | NA |
| 07-RAND-0.1 | b |  | 0707-0005 | AA |  | NA | NA |
| 07-SKAT\_T14-0.2 | c | 0.2 | 0707-0005 | AA | At route 41 bridge. | 43 | -76 |
| 07-SKAT\_T21-0.1 | c |  | 0707-0005 | AA |  | NA | NA |
| 07-SKAT\_T93a-0.5 | c | 0.5 | 0707-0005 | AA | Just upstream of culvert on west lake rd. | 43 | -76 |
| 07-VENE-0.4 | b | 0.4 | 0706-0010 | C | Veness brook at oltz residence | 43 | -77 |
| O7-DUCH-0.3 | b |  | 0706-0003 | C(TS) |  | NA | NA |
| O7-SCKR-0.1 | b |  | 0706-0010 | C |  | NA | NA |

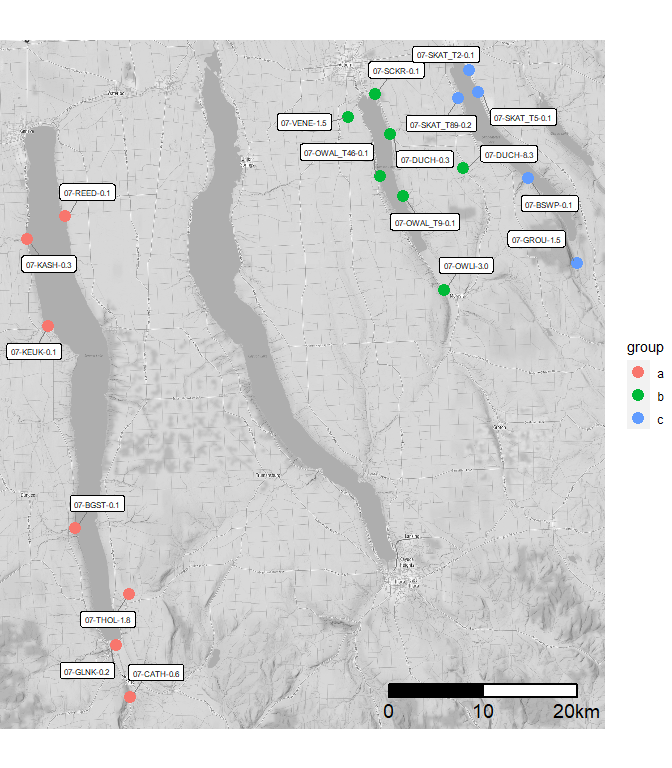


Figure . Map of sampling locations. Site names reference the Location ID and River Mile.

Table . Sampling dates and overall parameters for the study period included in this report.

| **Site** | **Date** | **Chemistry** | **Macroinvertebrates** |
| --- | --- | --- | --- |
| 07-BGST-0.1 | 2019-06-20 | X |  |
| 07-BGST-0.1 | 2019-07-18 | X | X |
| 07-BGST-0.1 | 2019-08-15 | X |  |
| 07-BGST-0.1 | 2020-03-29 | X |  |
| 07-BGST-0.1 | 2020-04-06 | X |  |
| 07-BGST-0.1 | 2020-05-11 | X |  |
| 07-BGST-0.1 | 2020-07-12 | X |  |
| 07-BGST-0.1 | 2020-08-05 | X |  |
| 07-BGST-0.1 | 2020-10-05 | X |  |
| 07-BSWP-0.1 | 2018-05-30 | X |  |
| 07-BSWP-0.1 | 2018-06-14 | X |  |
| 07-BSWP-0.1 | 2018-06-29 | X |  |
| 07-BSWP-0.1 | 2018-07-11 | X |  |
| 07-BSWP-0.1 | 2018-07-25 | X |  |
| 07-BSWP-0.1 | 2018-08-08 | X |  |
| 07-BSWP-0.1 | 2018-08-14 | X |  |
| 07-BSWP-0.1 | 2018-08-22 | X |  |
| 07-BSWP-0.1 | 2018-09-06 | X |  |
| 07-BSWP-0.1 | 2018-09-10 | X |  |
| 07-BSWP-0.1 | 2018-09-18 | X |  |
| 07-BSWP-0.1 | 2018-09-25 | X |  |
| 07-BSWP-0.1 | 2018-10-03 | X |  |
| 07-BSWP-0.1 | 2018-10-17 | X |  |
| 07-BSWP-0.1 | 2018-10-29 | X |  |
| 07-BSWP-0.1 | 2018-11-27 | X |  |
| 07-BSWP-0.1 | 2018-12-11 | X |  |
| 07-BSWP-0.1 | 2019-05-01 | X |  |
| 07-BSWP-0.1 | 2019-05-10 | X |  |
| 07-BSWP-0.1 | 2019-05-13 | X |  |
| 07-BSWP-0.1 | 2019-05-28 | X |  |
| 07-BSWP-0.1 | 2019-06-11 | X |  |
| 07-BSWP-0.1 | 2019-06-18 | X |  |
| 07-BSWP-0.1 | 2019-06-20 | X |  |
| 07-BSWP-0.1 | 2019-06-26 | X |  |
| 07-BSWP-0.1 | 2019-07-10 | X |  |
| 07-BSWP-0.1 | 2019-07-17 | X | X |
| 07-BSWP-0.1 | 2019-07-23 | X |  |
| 07-BSWP-0.1 | 2019-08-06 | X |  |
| 07-BSWP-0.1 | 2019-08-14 | X |  |
| 07-BSWP-0.1 | 2019-08-21 | X |  |
| 07-BSWP-0.1 | 2019-09-05 | X |  |
| 07-BSWP-0.1 | 2019-09-18 | X |  |
| 07-BSWP-0.1 | 2019-10-03 | X |  |
| 07-BSWP-0.1 | 2019-10-07 | X |  |
| 07-BSWP-0.1 | 2019-10-17 | X |  |
| 07-BSWP-0.1 | 2019-10-30 | X |  |
| 07-BSWP-0.1 | 2019-11-14 | X |  |
| 07-BSWP-0.1 | 2019-11-25 | X |  |
| 07-BSWP-6.3 | 2019-05-10 | X |  |
| 07-BSWP-6.3 | 2019-06-20 | X |  |
| 07-BSWP-6.3 | 2019-07-23 | X |  |
| 07-BSWP-6.3 | 2019-08-21 | X |  |
| 07-BSWP-6.3 | 2019-09-18 | X |  |
| 07-BSWP-6.3 | 2019-10-03 | X |  |
| 07-BSWP-6.3 | 2019-10-07 | X |  |
| 07-BSWP-6.3 | 2019-10-17 | X |  |
| 07-BSWP-6.3 | 2019-11-14 | X |  |
| 07-CATH-0.6 | 2019-06-20 | X |  |
| 07-CATH-0.6 | 2019-07-18 | X | X |
| 07-CATH-0.6 | 2019-08-15 | X |  |
| 07-CATH-0.6 | 2020-03-26 | X |  |
| 07-CATH-0.6 | 2020-03-29 | X |  |
| 07-CATH-0.6 | 2020-04-06 | X |  |
| 07-CATH-0.6 | 2020-04-20 | X |  |
| 07-CATH-0.6 | 2020-05-11 | X |  |
| 07-CATH-0.6 | 2020-08-05 | X |  |
| 07-CATH-0.6 | 2020-10-05 | X |  |
| 07-CATH-0.6 | 2020-10-30 | X |  |
| 07-DUCH-0.3 | 2018-03-12 | X |  |
| 07-DUCH-0.3 | 2018-03-20 | X |  |
| 07-DUCH-0.3 | 2018-04-03 | X |  |
| 07-DUCH-0.3 | 2018-04-18 | X |  |
| 07-DUCH-0.3 | 2018-04-26 | X |  |
| 07-DUCH-0.3 | 2018-05-01 | X |  |
| 07-DUCH-0.3 | 2018-05-15 | X |  |
| 07-DUCH-0.3 | 2018-05-23 | X |  |
| 07-DUCH-0.3 | 2018-05-29 | X |  |
| 07-DUCH-0.3 | 2018-06-19 | X |  |
| 07-DUCH-0.3 | 2019-06-19 | X |  |
| 07-DUCH-0.3 | 2019-07-16 | X | X |
| 07-GLNK-0.2 | 2019-06-20 | X |  |
| 07-GLNK-0.2 | 2019-07-18 | X | X |
| 07-GLNK-0.2 | 2019-08-15 | X |  |
| 07-GROU-1.5 | 2018-05-30 | X |  |
| 07-GROU-1.5 | 2018-06-14 | X |  |
| 07-GROU-1.5 | 2018-06-29 | X |  |
| 07-GROU-1.5 | 2018-07-11 | X |  |
| 07-GROU-1.5 | 2018-07-25 | X |  |
| 07-GROU-1.5 | 2018-07-31 | X | X |
| 07-GROU-1.5 | 2018-08-08 | X |  |
| 07-GROU-1.5 | 2018-08-14 | X |  |
| 07-GROU-1.5 | 2018-08-22 | X |  |
| 07-GROU-1.5 | 2018-09-06 | X |  |
| 07-GROU-1.5 | 2018-09-10 | X |  |
| 07-GROU-1.5 | 2018-09-18 | X |  |
| 07-GROU-1.5 | 2018-09-25 | X |  |
| 07-GROU-1.5 | 2018-10-03 | X |  |
| 07-GROU-1.5 | 2018-10-17 | X |  |
| 07-GROU-1.5 | 2018-10-29 | X |  |
| 07-GROU-1.5 | 2018-11-15 | X |  |
| 07-GROU-1.5 | 2018-11-27 | X |  |
| 07-GROU-1.5 | 2018-12-11 | X |  |
| 07-GROU-1.5 | 2019-05-01 | X |  |
| 07-GROU-1.5 | 2019-05-10 | X |  |
| 07-GROU-1.5 | 2019-05-13 | X |  |
| 07-GROU-1.5 | 2019-05-28 | X |  |
| 07-GROU-1.5 | 2019-06-11 | X |  |
| 07-GROU-1.5 | 2019-06-18 | X |  |
| 07-GROU-1.5 | 2019-06-20 | X |  |
| 07-GROU-1.5 | 2019-06-26 | X |  |
| 07-GROU-1.5 | 2019-07-10 | X |  |
| 07-GROU-1.5 | 2019-07-17 | X | X |
| 07-GROU-1.5 | 2019-07-23 | X |  |
| 07-GROU-1.5 | 2019-08-06 | X |  |
| 07-GROU-1.5 | 2019-08-21 | X |  |
| 07-GROU-1.5 | 2019-09-05 | X |  |
| 07-GROU-1.5 | 2019-09-18 | X |  |
| 07-GROU-1.5 | 2019-10-03 | X |  |
| 07-GROU-1.5 | 2019-10-07 | X |  |
| 07-GROU-1.5 | 2019-10-17 | X |  |
| 07-GROU-1.5 | 2019-10-30 | X |  |
| 07-GROU-1.5 | 2019-11-14 | X |  |
| 07-GROU-1.5 | 2019-11-25 | X |  |
| 07-KASH-0.3 | 2019-06-20 | X |  |
| 07-KASH-0.3 | 2019-07-18 | X | X |
| 07-KASH-0.3 | 2020-03-29 | X |  |
| 07-KASH-0.3 | 2020-04-06 | X |  |
| 07-KASH-0.3 | 2020-05-11 | X |  |
| 07-KASH-0.3 | 2020-05-20 | X |  |
| 07-KASH-0.3 | 2020-06-08 | X |  |
| 07-KASH-0.3 | 2020-07-12 | X |  |
| 07-KEUK-0.1 | 2019-06-19 | X |  |
| 07-KEUK-0.1 | 2019-07-18 | X | X |
| 07-KEUK-0.1 | 2019-08-15 | X |  |
| 07-MASH-0.1 | 2020-03-29 | X |  |
| 07-MASH-0.1 | 2020-04-06 | X |  |
| 07-MASH-0.1 | 2020-05-11 | X |  |
| 07-MASH-0.1 | 2020-08-05 | X |  |
| 07-MASH-0.1 | 2020-10-05 | X |  |
| 07-MASH-0.1 | 2020-10-30 | X |  |
| 07-OWAL\_T16-0.4 | 2017-11-15 | X |  |
| 07-OWAL\_T16-0.4 | 2017-12-01 | X |  |
| 07-OWAL\_T2-0.1 | 2017-04-05 | X |  |
| 07-OWAL\_T2-0.1 | 2017-06-06 | X |  |
| 07-OWAL\_T2-0.1 | 2017-07-05 | X |  |
| 07-OWAL\_T2-0.1 | 2017-07-28 | X |  |
| 07-OWAL\_T2-0.1 | 2017-10-30 | X |  |
| 07-OWAL\_T2-0.1 | 2018-05-23 | X |  |
| 07-OWAL\_T2-0.1 | 2018-07-31 | X |  |
| 07-OWAL\_T2-0.1 | 2018-08-14 | X |  |
| 07-OWAL\_T2-0.1 | 2018-08-17 | X |  |
| 07-OWAL\_T2-0.1 | 2018-08-28 | X |  |
| 07-OWAL\_T2-0.1 | 2018-09-11 | X |  |
| 07-OWAL\_T2-0.1 | 2018-10-09 | X |  |
| 07-OWAL\_T2-0.1 | 2018-10-23 | X |  |
| 07-OWAL\_T46-0.1 | 2017-04-05 | X |  |
| 07-OWAL\_T46-0.1 | 2017-06-06 | X |  |
| 07-OWAL\_T46-0.1 | 2017-07-05 | X |  |
| 07-OWAL\_T46-0.1 | 2017-07-28 | X |  |
| 07-OWAL\_T46-0.1 | 2018-07-05 | X |  |
| 07-OWAL\_T46-0.1 | 2018-07-17 | X |  |
| 07-OWAL\_T46-0.1 | 2018-07-31 | X |  |
| 07-OWAL\_T46-0.1 | 2018-08-14 | X |  |
| 07-OWAL\_T46-0.1 | 2018-08-28 | X |  |
| 07-OWAL\_T46-0.1 | 2018-09-11 | X |  |
| 07-OWAL\_T46-0.1 | 2018-10-09 | X |  |
| 07-OWAL\_T46-0.1 | 2018-10-23 | X |  |
| 07-OWAL\_T46-0.1 | 2019-06-19 | X |  |
| 07-OWAL\_T46-0.1 | 2019-07-16 | X | X |
| 07-OWAL\_T5-0.2 | 2017-04-05 | X |  |
| 07-OWAL\_T5-0.2 | 2017-06-06 | X |  |
| 07-OWAL\_T5-0.2 | 2017-07-05 | X |  |
| 07-OWAL\_T5-0.2 | 2017-07-28 | X |  |
| 07-OWAL\_T5-0.2 | 2017-11-15 | X |  |
| 07-OWAL\_T5-0.2 | 2017-12-01 | X |  |
| 07-OWAL\_T9-0.1 | 2017-11-15 | X |  |
| 07-OWAL\_T9-0.1 | 2017-12-01 | X |  |
| 07-OWAL\_T9-0.1 | 2019-07-16 | X | X |
| 07-OWLI-0.1 | 2017-04-05 | X |  |
| 07-OWLI-0.1 | 2017-05-02 | X |  |
| 07-OWLI-0.1 | 2017-06-06 | X |  |
| 07-OWLI-0.1 | 2017-07-05 | X |  |
| 07-OWLI-0.1 | 2017-07-28 | X |  |
| 07-OWLI-0.1 | 2017-11-15 | X |  |
| 07-OWLI-0.1 | 2017-12-01 | X |  |
| 07-OWLI-0.1 | 2018-07-05 | X |  |
| 07-OWLI-0.1 | 2018-07-17 | X |  |
| 07-OWLI-0.1 | 2018-07-25 | X |  |
| 07-OWLI-0.1 | 2018-07-31 | X |  |
| 07-OWLI-0.1 | 2018-08-14 | X |  |
| 07-OWLI-0.1 | 2018-08-28 | X |  |
| 07-OWLI-0.1 | 2018-09-10 | X |  |
| 07-OWLI-0.1 | 2018-09-11 | X |  |
| 07-OWLI-0.1 | 2018-10-09 | X |  |
| 07-OWLI-0.1 | 2018-10-23 | X |  |
| 07-OWLI-0.1 | 2018-10-29 | X |  |
| 07-OWLI-0.1 | 2018-11-02 | X |  |
| 07-OWLI-3.0 | 2018-03-12 | X |  |
| 07-OWLI-3.0 | 2018-03-20 | X |  |
| 07-OWLI-3.0 | 2018-04-03 | X |  |
| 07-OWLI-3.0 | 2018-04-18 | X |  |
| 07-OWLI-3.0 | 2018-04-26 | X |  |
| 07-OWLI-3.0 | 2018-05-01 | X |  |
| 07-OWLI-3.0 | 2018-05-15 | X |  |
| 07-OWLI-3.0 | 2018-05-23 | X |  |
| 07-OWLI-3.0 | 2018-05-29 | X |  |
| 07-OWLI-3.0 | 2018-06-19 | X |  |
| 07-OWLI-3.0 | 2019-06-18 | X |  |
| 07-OWLI-3.0 | 2019-07-16 | X | X |
| 07-RAND-0.1 | 2019-05-10 | X |  |
| 07-RAND-0.1 | 2019-06-20 | X |  |
| 07-RAND-0.1 | 2019-07-23 | X |  |
| 07-RAND-0.1 | 2019-08-21 | X |  |
| 07-RAND-0.1 | 2019-10-03 | X |  |
| 07-RAND-0.1 | 2019-10-07 | X |  |
| 07-RAND-0.1 | 2019-10-17 | X |  |
| 07-RAND-0.1 | 2019-11-14 | X |  |
| 07-REED-0.1 | 2019-06-19 | X |  |
| 07-REED-0.1 | 2019-07-17 | X | X |
| 07-REED-0.1 | 2019-08-14 | X |  |
| 07-REED-0.1 | 2020-04-06 | X |  |
| 07-REED-0.1 | 2020-05-11 | X |  |
| 07-REED-0.1 | 2020-07-12 | X |  |
| 07-REED-0.1 | 2020-07-29 | X |  |
| 07-REED-0.1 | 2020-08-05 | X |  |
| 07-REED-0.1 | 2020-10-05 | X |  |
| 07-REED-0.1 | 2020-10-30 | X |  |
| 07-SCKR-0.1 | 2018-03-12 | X |  |
| 07-SCKR-0.1 | 2018-03-20 | X |  |
| 07-SCKR-0.1 | 2018-04-03 | X |  |
| 07-SCKR-0.1 | 2018-04-18 | X |  |
| 07-SCKR-0.1 | 2018-04-26 | X |  |
| 07-SCKR-0.1 | 2018-05-01 | X |  |
| 07-SCKR-0.1 | 2018-05-15 | X |  |
| 07-SCKR-0.1 | 2018-05-23 | X |  |
| 07-SCKR-0.1 | 2018-05-29 | X |  |
| 07-SCKR-0.1 | 2018-06-19 | X |  |
| 07-SCKR-0.1 | 2019-06-19 | X |  |
| 07-SCKR-0.1 | 2019-07-16 |  | X |
| 07-SKAT\_T14-0.2 | 2019-05-10 | X |  |
| 07-SKAT\_T14-0.2 | 2019-06-20 | X |  |
| 07-SKAT\_T14-0.2 | 2019-07-23 | X |  |
| 07-SKAT\_T14-0.2 | 2019-08-21 | X |  |
| 07-SKAT\_T14-0.2 | 2019-09-18 | X |  |
| 07-SKAT\_T14-0.2 | 2019-10-03 | X |  |
| 07-SKAT\_T14-0.2 | 2019-10-07 | X |  |
| 07-SKAT\_T14-0.2 | 2019-10-17 | X |  |
| 07-SKAT\_T14-0.2 | 2019-11-14 | X |  |
| 07-SKAT\_T2-0.1 | 2018-04-05 | X |  |
| 07-SKAT\_T2-0.1 | 2018-04-19 | X |  |
| 07-SKAT\_T2-0.1 | 2018-05-02 | X |  |
| 07-SKAT\_T2-0.1 | 2018-05-17 | X |  |
| 07-SKAT\_T2-0.1 | 2018-05-30 | X |  |
| 07-SKAT\_T2-0.1 | 2018-06-14 | X |  |
| 07-SKAT\_T2-0.1 | 2018-06-29 | X |  |
| 07-SKAT\_T2-0.1 | 2018-07-11 | X |  |
| 07-SKAT\_T2-0.1 | 2018-07-25 | X |  |
| 07-SKAT\_T2-0.1 | 2018-07-31 | X |  |
| 07-SKAT\_T2-0.1 | 2018-08-08 | X |  |
| 07-SKAT\_T2-0.1 | 2018-08-14 | X |  |
| 07-SKAT\_T2-0.1 | 2018-08-22 | X |  |
| 07-SKAT\_T2-0.1 | 2018-09-06 | X |  |
| 07-SKAT\_T2-0.1 | 2018-09-10 | X |  |
| 07-SKAT\_T2-0.1 | 2018-09-18 | X |  |
| 07-SKAT\_T2-0.1 | 2018-09-25 | X |  |
| 07-SKAT\_T2-0.1 | 2018-10-03 | X |  |
| 07-SKAT\_T2-0.1 | 2018-10-17 | X |  |
| 07-SKAT\_T2-0.1 | 2018-10-29 | X |  |
| 07-SKAT\_T2-0.1 | 2018-11-15 | X |  |
| 07-SKAT\_T2-0.1 | 2018-11-27 | X |  |
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| 07-SKAT\_T2-0.1 | 2019-04-15 | X |  |
| 07-SKAT\_T2-0.1 | 2019-05-01 | X |  |
| 07-SKAT\_T2-0.1 | 2019-05-10 | X |  |
| 07-SKAT\_T2-0.1 | 2019-05-13 | X |  |
| 07-SKAT\_T2-0.1 | 2019-05-28 | X |  |
| 07-SKAT\_T2-0.1 | 2019-06-11 | X |  |
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| 07-SKAT\_T2-0.1 | 2019-06-26 | X |  |
| 07-SKAT\_T2-0.1 | 2019-07-10 | X |  |
| 07-SKAT\_T2-0.1 | 2019-07-17 | X | X |
| 07-SKAT\_T2-0.1 | 2019-07-23 | X |  |
| 07-SKAT\_T2-0.1 | 2019-08-06 | X |  |
| 07-SKAT\_T2-0.1 | 2019-08-14 | X |  |
| 07-SKAT\_T2-0.1 | 2019-08-21 | X |  |
| 07-SKAT\_T2-0.1 | 2019-09-05 | X |  |
| 07-SKAT\_T2-0.1 | 2019-09-18 | X |  |
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| 07-SKAT\_T2-0.1 | 2019-10-17 | X |  |
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| 07-SKAT\_T2-0.1 | 2019-11-25 | X |  |
| 07-SKAT\_T2-0.1 | 2020-01-13 | X |  |
| 07-SKAT\_T2-0.1 | 2020-02-26 | X |  |
| 07-SKAT\_T2-0.1 | 2020-03-03 | X |  |
| 07-SKAT\_T2-0.1 | 2020-03-20 | X |  |
| 07-SKAT\_T2-0.1 | 2020-05-18 | X |  |
| 07-SKAT\_T2-0.1 | 2020-12-16 | X |  |
| 07-SKAT\_T21-0.1 | 2019-05-10 | X |  |
| 07-SKAT\_T21-0.1 | 2019-06-20 | X |  |
| 07-SKAT\_T21-0.1 | 2019-07-23 | X |  |
| 07-SKAT\_T21-0.1 | 2019-08-21 | X |  |
| 07-SKAT\_T21-0.1 | 2019-09-18 | X |  |
| 07-SKAT\_T21-0.1 | 2019-10-03 | X |  |
| 07-SKAT\_T21-0.1 | 2019-10-07 | X |  |
| 07-SKAT\_T21-0.1 | 2019-10-17 | X |  |
| 07-SKAT\_T21-0.1 | 2019-11-14 | X |  |
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| 07-SKAT\_T5-0.1 | 2019-06-18 | X |  |
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| 07-SKAT\_T5-0.1 | 2019-09-18 | X |  |
| 07-SKAT\_T5-0.1 | 2019-10-03 | X |  |
| 07-SKAT\_T5-0.1 | 2019-10-07 | X |  |
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| 07-SKAT\_T5-0.1 | 2020-03-20 | X |  |
| 07-SKAT\_T5-0.1 | 2020-05-18 | X |  |
| 07-SKAT\_T5-0.1 | 2020-12-16 | X |  |
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| 07-SKAT\_T89-0.2 | 2018-08-22 | X |  |
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| 07-SKAT\_T89-0.2 | 2018-09-10 | X |  |
| 07-SKAT\_T89-0.2 | 2018-09-18 | X |  |
| 07-SKAT\_T89-0.2 | 2018-09-25 | X |  |
| 07-SKAT\_T89-0.2 | 2018-10-03 | X |  |
| 07-SKAT\_T89-0.2 | 2018-10-17 | X |  |
| 07-SKAT\_T89-0.2 | 2018-10-29 | X |  |
| 07-SKAT\_T89-0.2 | 2018-11-15 | X |  |
| 07-SKAT\_T89-0.2 | 2018-11-27 | X |  |
| 07-SKAT\_T89-0.2 | 2018-12-11 | X |  |
| 07-SKAT\_T89-0.2 | 2019-05-01 | X |  |
| 07-SKAT\_T89-0.2 | 2019-05-10 | X |  |
| 07-SKAT\_T89-0.2 | 2019-05-13 | X |  |
| 07-SKAT\_T89-0.2 | 2019-05-28 | X |  |
| 07-SKAT\_T89-0.2 | 2019-06-11 | X |  |
| 07-SKAT\_T89-0.2 | 2019-06-18 | X |  |
| 07-SKAT\_T89-0.2 | 2019-06-20 | X |  |
| 07-SKAT\_T89-0.2 | 2019-06-26 | X |  |
| 07-SKAT\_T89-0.2 | 2019-07-10 | X |  |
| 07-SKAT\_T89-0.2 | 2019-07-17 | X | X |
| 07-SKAT\_T89-0.2 | 2019-07-23 | X |  |
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| 07-SKAT\_T89-0.2 | 2019-08-14 | X |  |
| 07-SKAT\_T89-0.2 | 2019-08-21 | X |  |
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| 07-SKAT\_T89-0.2 | 2019-09-18 | X |  |
| 07-SKAT\_T89-0.2 | 2019-10-03 | X |  |
| 07-SKAT\_T89-0.2 | 2019-10-07 | X |  |
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| 07-SKAT\_T89-0.2 | 2019-10-30 | X |  |
| 07-SKAT\_T89-0.2 | 2019-11-14 | X |  |
| 07-SKAT\_T89-0.2 | 2019-11-25 | X |  |
| 07-SKAT\_T89-0.2 | 2020-01-13 | X |  |
| 07-SKAT\_T89-0.2 | 2020-02-26 | X |  |
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| 07-SKAT\_T93a-0.5 | 2019-09-18 | X |  |
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| 07-SKAT\_T93a-0.5 | 2020-02-26 | X |  |
| 07-SKAT\_T93a-0.5 | 2020-03-03 | X |  |
| 07-SKAT\_T93a-0.5 | 2020-03-20 | X |  |
| 07-SKAT\_T93a-0.5 | 2020-05-18 | X |  |
| 07-SKAT\_T93a-0.5 | 2020-12-16 | X |  |
| 07-THOL-1.8 | 2019-06-20 | X |  |
| 07-THOL-1.8 | 2019-07-18 | X | X |
| 07-THOL-1.8 | 2019-08-15 | X |  |
| 07-VENE-0.4 | 2017-04-05 | X |  |
| 07-VENE-0.4 | 2017-05-02 | X |  |
| 07-VENE-0.4 | 2017-06-06 | X |  |
| 07-VENE-0.4 | 2017-07-05 | X |  |
| 07-VENE-0.4 | 2017-07-28 | X |  |
| 07-VENE-0.4 | 2017-10-30 | X |  |
| 07-VENE-0.4 | 2017-11-15 | X |  |
| 07-VENE-0.4 | 2017-12-01 | X |  |
| 07-VENE-0.4 | 2018-03-12 | X |  |
| 07-VENE-0.4 | 2018-03-20 | X |  |
| 07-VENE-0.4 | 2018-04-03 | X |  |
| 07-VENE-0.4 | 2018-04-18 | X |  |
| 07-VENE-0.4 | 2018-04-26 | X |  |
| 07-VENE-0.4 | 2018-05-01 | X |  |
| 07-VENE-0.4 | 2018-05-15 | X |  |
| 07-VENE-0.4 | 2018-05-23 | X |  |
| 07-VENE-0.4 | 2018-06-19 | X |  |
| 07-VENE-0.4 | 2018-07-05 | X |  |
| 07-VENE-0.4 | 2018-07-25 | X |  |
| 07-VENE-0.4 | 2018-07-31 | X |  |
| 07-VENE-0.4 | 2018-08-14 | X |  |
| 07-VENE-0.4 | 2018-08-28 | X |  |
| 07-VENE-0.4 | 2018-09-10 | X |  |
| 07-VENE-0.4 | 2018-09-11 | X |  |
| 07-VENE-0.4 | 2018-10-09 | X |  |
| 07-VENE-0.4 | 2018-10-23 | X |  |
| 07-VENE-0.4 | 2018-10-29 | X |  |
| 07-VENE-0.4 | 2018-11-02 | X |  |
| 07-VENE-1.5 | 2019-06-19 | X |  |
| 07-VENE-1.5 | 2019-07-16 | X | X |
| O7-DUCH-0.3 | 2017-04-05 | X |  |
| O7-DUCH-0.3 | 2017-05-02 | X |  |
| O7-DUCH-0.3 | 2017-06-06 | X |  |
| O7-DUCH-0.3 | 2017-07-05 | X |  |
| O7-DUCH-0.3 | 2017-07-28 | X |  |
| O7-DUCH-0.3 | 2017-10-30 | X |  |
| O7-DUCH-0.3 | 2017-11-15 | X |  |
| O7-DUCH-0.3 | 2017-12-01 | X |  |
| O7-DUCH-0.3 | 2018-07-05 | X |  |
| O7-DUCH-0.3 | 2018-07-17 | X |  |
| O7-DUCH-0.3 | 2018-07-25 | X |  |
| O7-DUCH-0.3 | 2018-07-31 | X |  |
| O7-DUCH-0.3 | 2018-08-14 | X |  |
| O7-DUCH-0.3 | 2018-08-28 | X |  |
| O7-DUCH-0.3 | 2018-09-10 | X |  |
| O7-DUCH-0.3 | 2018-09-11 | X |  |
| O7-DUCH-0.3 | 2018-10-09 | X |  |
| O7-DUCH-0.3 | 2018-10-23 | X |  |
| O7-DUCH-0.3 | 2018-10-29 | X |  |
| O7-DUCH-0.3 | 2018-11-02 | X |  |
| O7-SCKR-0.1 | 2017-04-05 | X |  |
| O7-SCKR-0.1 | 2017-05-02 | X |  |
| O7-SCKR-0.1 | 2017-06-06 | X |  |
| O7-SCKR-0.1 | 2017-07-05 | X |  |
| O7-SCKR-0.1 | 2017-07-28 | X |  |
| O7-SCKR-0.1 | 2017-10-30 | X |  |
| O7-SCKR-0.1 | 2017-11-15 | X |  |
| O7-SCKR-0.1 | 2017-12-01 | X |  |
| O7-SCKR-0.1 | 2018-07-25 | X |  |
| O7-SCKR-0.1 | 2018-07-31 | X |  |
| O7-SCKR-0.1 | 2018-08-14 | X |  |
| O7-SCKR-0.1 | 2018-08-28 | X |  |
| O7-SCKR-0.1 | 2018-09-10 | X |  |
| O7-SCKR-0.1 | 2018-09-11 | X |  |
| O7-SCKR-0.1 | 2018-10-09 | X |  |
| O7-SCKR-0.1 | 2018-10-23 | X |  |
| O7-SCKR-0.1 | 2018-10-29 | X |  |
| O7-SCKR-0.1 | 2018-11-02 | X |  |

# Section I: Overview

## Benthic Macroinvertebrate Community

Biological assessments based on the macroinvertebrate community provide the ability to detect water quality problems that are intermittent, not detected, and/or underestimated by water chemistry sampling alone. These biological assessments of water quality are generated using calculated Biological Assessment Profile (BAP) scores (SOP #208-21). BAP scores are calculated by taking the average of five normalized 10-scale community metrics and assigning that score to a four-tiered system of impact category of non (7.5-10), slight (5.0-7.5), moderate (2.5-5.0), or severe (0-2.5) impacts see (Figure ; SOP #208-21). A final BAP score below 5 is associated with significant loss of biodiversity, functional organization, and ability to support a balanced community compared to natural conditions (Karr, 1991; Davis, 1995). A BAP score above 5 indicates that aquatic life in the sampled stream reflects that of natural conditions or only slightly altered from natural (Figure ). Expected variability in the results of benthic macroinvertebrate community samples is presented in Smith and Bode (2004).

![](data:application/octet-stream;base64,)

Figure . Biological Assessment Profile (BAP) score impact categories based on the macroinvertebrate community.

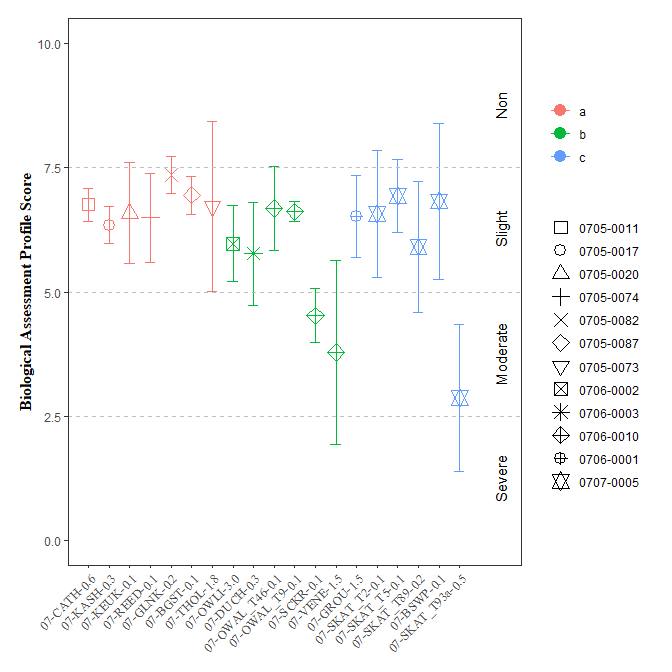


Figure . Biological Assessment Profile (BAP) Scores and 95% confidence intervals for benthic macroinvertebrate community assessment data. Symbology corresponds with WI/PWL segmentation as indicated in the plot legend.

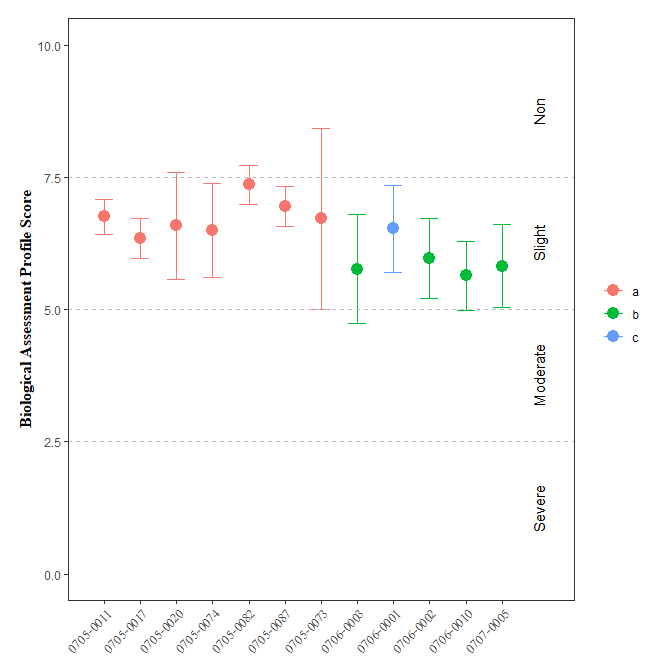


Figure . Biological Assessment Profile (BAP) Scores and 95% confidence intervals for benthic macroinvertebrate community assessment data. Symbology corresponds with segmentation as indicated in the plot legend.

No segments fell below a mean BAP score of 5 for the study period. (Figure ). Also ninety-five percent confidence intervals suggest inconclusive results for segments,0706-0003, Also ninety-five percent confidence intervals suggest inconclusive results for segments,0706-0010.

## Water Quality

### Water Chemistry Collection

DEC establishes water quality standards (WQS) and guidance values for many specific substances. Waters are classified for their best uses and WQS are set to protect those uses (6 NYCRR Part 703). Staff sampled a subset of these WQS as part of this study. Of the analytes sampled, this segment (WI/PWL ID 0705-0087, 0707-0005, 0705-0011, 0706-0003, 0705-0082, 0706-0001, 0705-0017, 0705-0020, 0705-0027, 0706-0010, 0706-0002, 0705-0074, 0705-0073) has applicable WQS for ammonia, dissolved oxygen, nitrite, pH, arsenic, cadmium, chloride, copper, iron, lead, magnesium, nickel, nitrate, nitrate\_nitrite, silver(6 NYCRR Part 703). The data presented below does not meet the minimum data requirements for a confirmed best use assessment[[1]](#footnote-25) (CALM, 2021). However, individual WQS excursions were evaluated for the applicable WQS and WQS attainment will be determined following Consolidated Assessment and Listing Methodology (CALM, 2021). For the best use assessment, please see [DEC Info Locator](https://gisservices.dec.ny.gov/gis/dil/) and factsheets[[2]](#footnote-27) for individual WI/PWL ID segments (WI/PWL ID 0705-0087, 0707-0005, 0705-0011, 0706-0003, 0705-0082, 0706-0001, 0705-0017, 0705-0020, 0705-0027, 0706-0010, 0706-0002, 0705-0074, 0705-0073).

Ambient water chemistry sampling included in-situ and lab measured water quality analytes (Table ). A total of 35 lab-measured and 8 in-situ water quality parameters were collected. Samples were collected by SMAS using the direct grab method (SOP #210-21, section 11.6). Water samples were sent for processing using a contract lab with NYS Environmental Laboratory Approval Program (ELAP) certification.

Following sample collection, all data processing followed quality assurance/quality control (QA/QC) protocols (SOP #102-20, and #110-21). Only data meeting the highest data quality standard were reported and used in this report. For water chemistry, an evaluation of the precision, accuracy, and completeness of processed water chemistry samples after lab analyses was performed following the methods detailed in SOP #102. Appendix I includes a compilation of all rejected data flagged by the process. Analytes that fell below the minimum detection limit (MDL) were replaced with 1/2 the MDL (Helsel, 1990). Where applicable, raw chemistry results were analyzed for excursions from state WQS and summarized using R programing software (R Core Team, 2017). All accepted raw chemistry results (in-situ and lab reported) with all applicable standards and excursion determinations accompany this report as Attachment I (excel file).

A total of 35 lab-measured, and 4 in-situ water quality analytes were analyzed in this study. Out of the 4442 lab-measured records and 350 in-situ water quality records, there were 8 excursions from established water quality standards (6 NYCRR Part 703). There were excursions in: ph: ., There were excursions in: dissolved\_oxygen: ., There were excursions in: iron: .

Plots illustrating the range of analyte concentration values within each WI/PWL segments from both mainstem and tributaries, are included below. Analytes selected for presentation were subset to those of specific interest to the study and include nitrate, nitrate + nitrite (as N), nitrite (as N), total nitrogen, ammonia, total kjeldahl nitrogen (TKN), total phosphorus, and turbidity, and in-situ parameters: dissolved oxygen, temperature, pH, and specific conductance. Excursions are indicated by an asterisk. Site specific excursions are quantified in Section II.

Table . Water chemistry analytes sampled as part of the Stream Assessment Survey. Table lists sampled analytes and analytical specifications.

| **Analytes** | **Analytical  Lab** | **Method** | **Precision** | **Accuracy** | **Calibration:   Initial** | **Calibration:   Ongoing** | **Calibration:   Blanks** | **Detection   Limit** | **Reporting   Limit** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity | ALS | SM 2320B | ^ | ± 20% | Daily | Every 10 | Every 10 | 1.0 mg/L | 2.0 mg/L |
| Aluminum (total) | ALS | EPA 200.8 | ^ | ± 20% | Daily | Every 10 | Every 10 | 4.0 µ/L | 50 µ/L |
| Arsenic (total) | ALS | EPA 200.8 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.3 µ/L | 1 µ/L |
| Cadmium (total) | ALS | EPA 200.8 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.03 µ/L | 1 µ/L |
| Calcium | ALS | EPA 200.7 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.1 mg/L | 1.0 mg/L |
| Dissolved Organic Carbon | ALS | 5310C | ^ | ± 20% | As needed | Ever 10 | Every 10 | 0.4 mg/L | 10 mg/L |
| Chloride | ALS | EPA 300.0 | ^ | ± 20% | As needed | Every 10 | Every 10 | 0.02 mg/L | 0.2 mg/L |
| Copper (total) | ALS | EPA 200.8 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.04 µ/L | 1 µ/L |
| Hardness | ALS | SM 2340C | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.3 mg/L | 2.0 mg/L |
| Iron (total) | ALS | EPA 200.7 | ^ | ± 20% | Daily | Every 10 | Every 10 | 6 µ/L | 100 µ/L |
| Lead (total) | ALS | EPA 200.8 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.08 µ/L | 1 µ/L |
| Magnesium | ALS | EPA 200.7 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.04 mg/L | 1.0 mg/L |
| Nickel (total) | ALS | EPA 200.8 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.04 µ/L | 1 µ/L |
| Ammonia | ALS | D6919-09 | ^ | ± 20% | As needed | Every 10 | Every 10 | 0.008 mg/L | 0.01 mg/L |
| Total Kjeldahl Nitrogen | ALS | EPA 351.2 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.08 mg/L | 0.1 mg/L |
| Nitrate-nitrite | ALS | EPA 351.2 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.0015 mg/L | 0.002 mg/L |
| Nitrogen, Nitrate | ALS | EPA 353.2 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.02 mg/L | 0.05 mg/L |
| Nitrogen, Nitrite | ALS | EPA 351.2 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.08 mg/L | 0.1 mg/L |
| Nitrogen, Total | ALS | Calculated | ^ |  |  |  |  |  |  |
| Ortho-phosphate | ALS | EPA 365.1 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.001 mg/L | 0.005 mg/L |
| Total Phosphorus | ALS | EPA 365.1 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.002 mg/L | 0.003 mg/L |
| Silver (total) | ALS | EPA 200.8 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.07 µ/L | 1 µ/L |
| Turbidity | ALS | EPA 180.1 | ^ | ± 10% | Daily | Every 10 | Every 10 | 0.06 NTU | 0.1 NTU |
| Zinc (total) | ALS | EPA 200.8 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.7 µ/L | 10 µ/L |
| Dissolved Oxygen | in-situ | 4500-O G | ± 1% | ± 2% | Daily | ~ | ~ | 0% | ~ |
| pH | in-situ | 4500-H+B | ± .05 SU | ± .2 SU | Weekly | ~ | ~ | 0 SU | ~ |
| Salinity | in-situ | Calculated | 0.001 ppt | ± 1% | N/A | ~ | ~ | 0% | ~ |
| Specific Conductance | in-situ | 2510 B | ± 1µs/cm | ± 1% | Weekly | ~ | ~ | 0% | ~ |
| Temperature | in-situ | 2550 B | ± 1oC | ± 1.5oC | Factory Set | ~ | ~ | 0oC | ~ |
| ^ Precision objectives are defined by results of duplicate samples as described in SOP #102-20, and #110-21. | | | | | | | | | |
| ~ Not Applicable | | | | | | | | | |

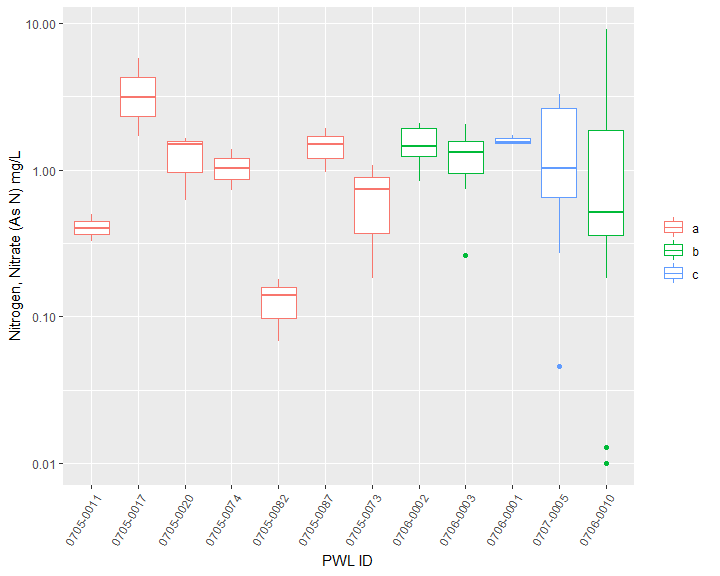


Figure . Nitrogen, Nitrate (As N), Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

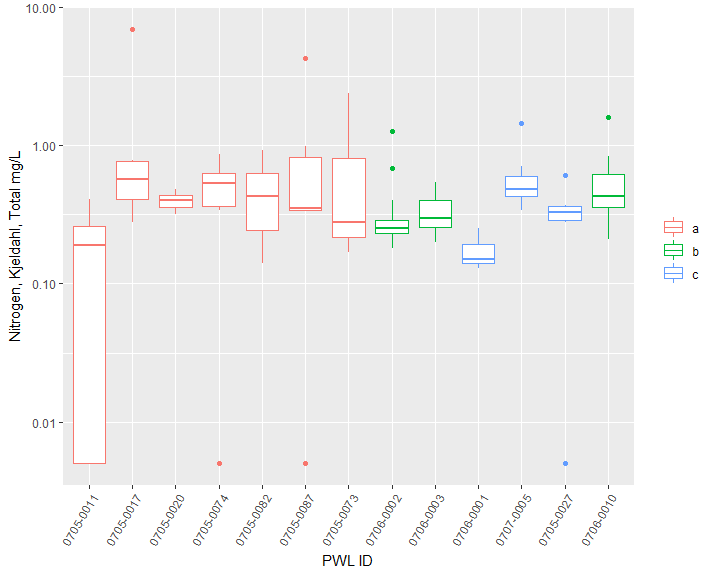


Figure . Nitrogen, Kjeldahl, Total, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

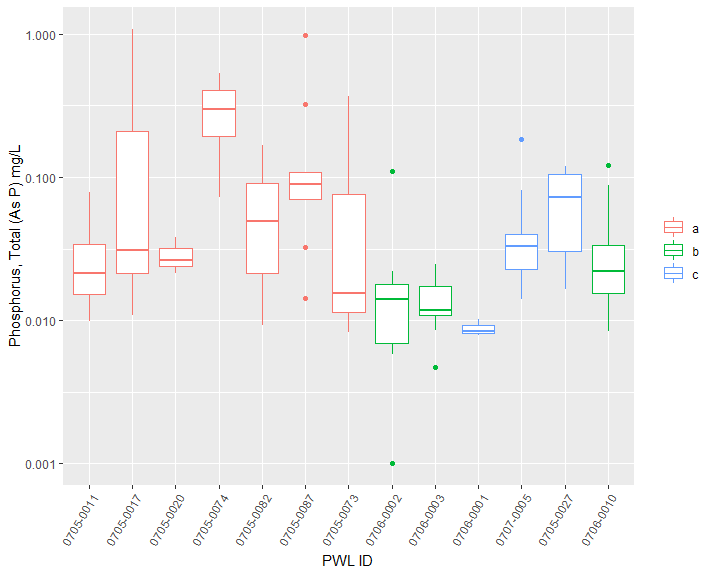


Figure . Phosphorus, Total (As P), Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

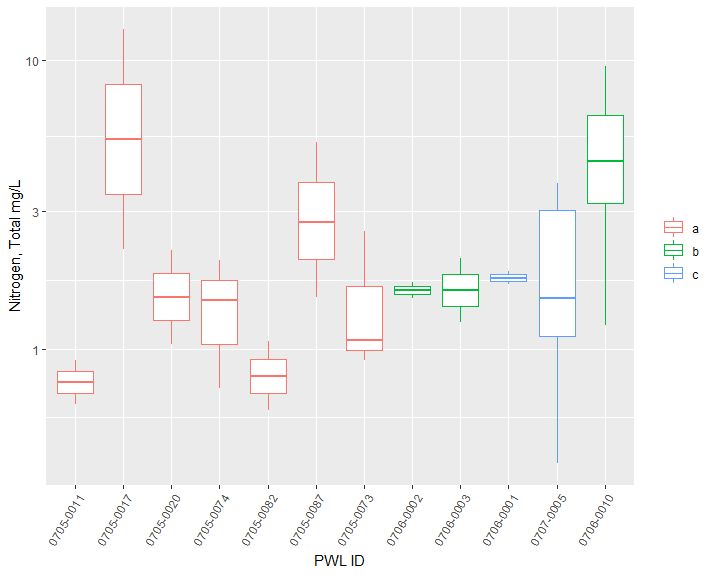


Figure . Nitrogen, Total, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

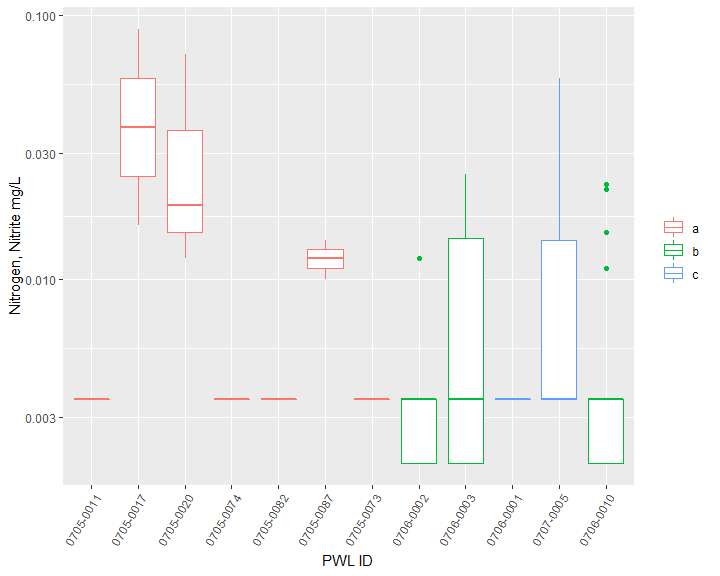


Figure . Nitrogen, Nitrite, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

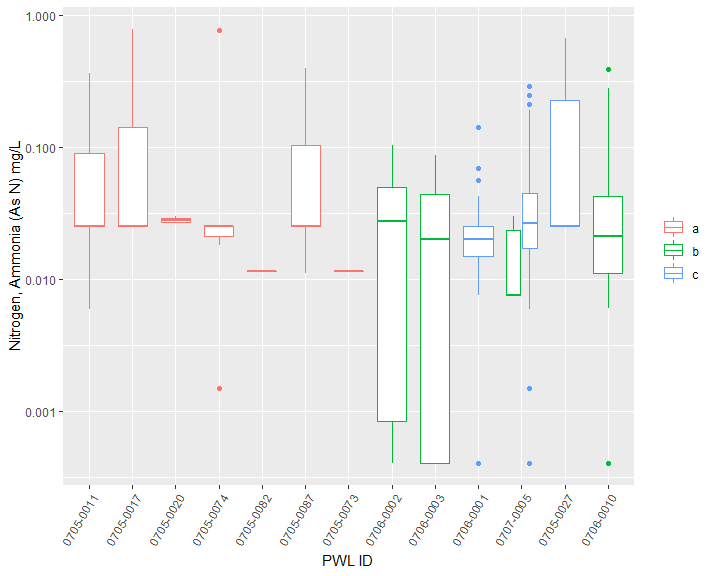


Figure . Nitrogen, Ammonia (As N), Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

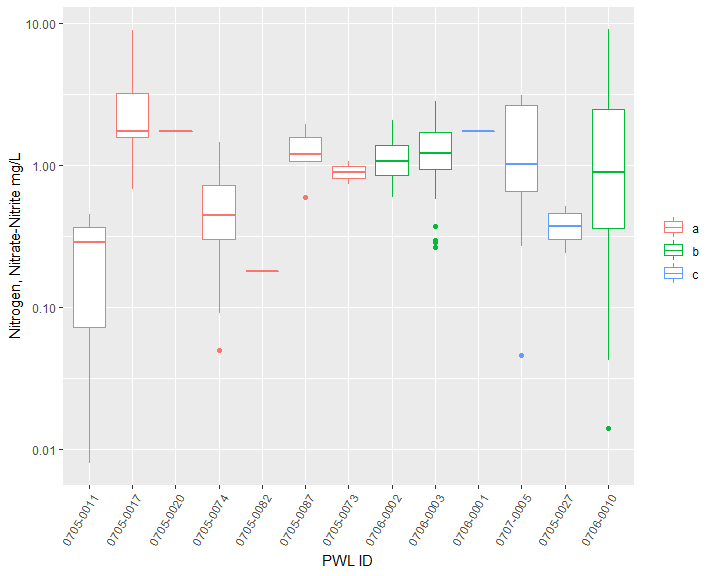


Figure . Nitrogen, Nitrate-Nitrite, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

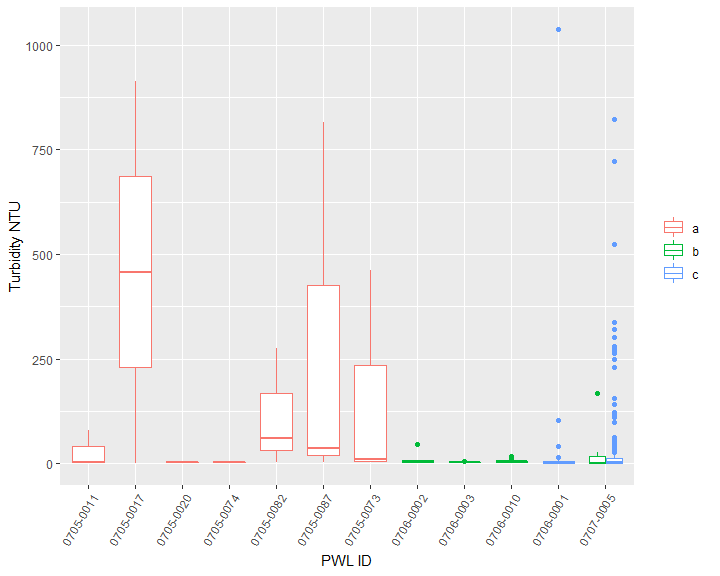


Figure . Turbidity, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

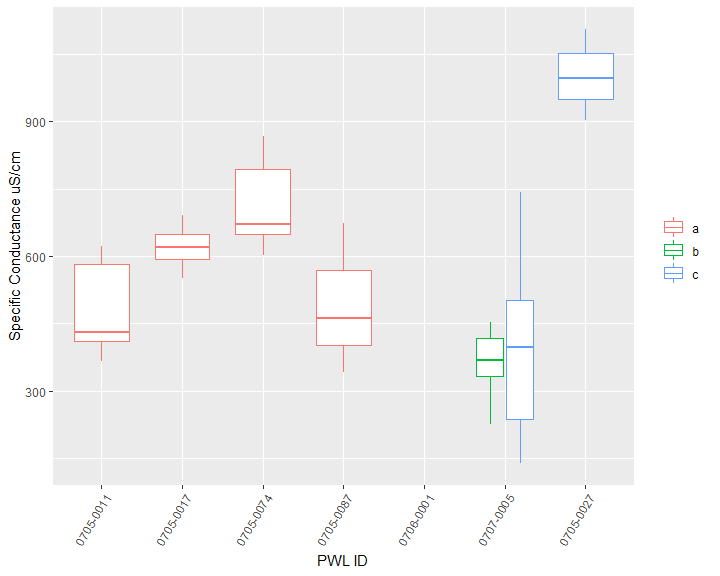


Figure . Specific Conductance, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

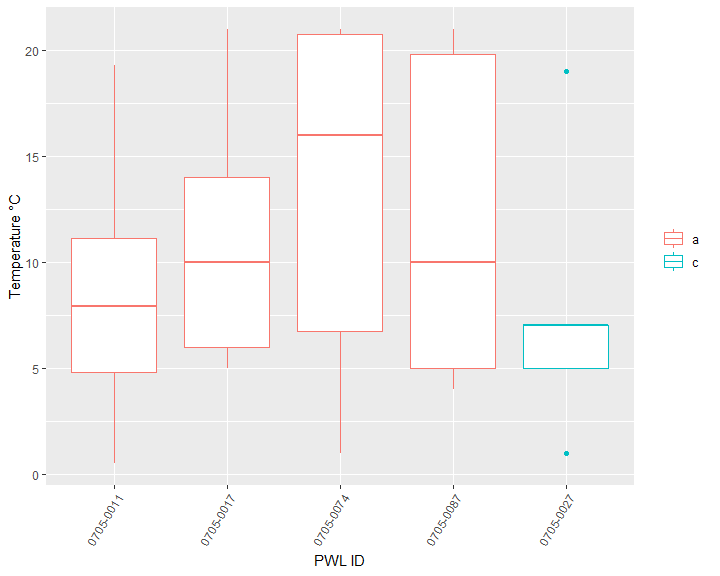


Figure . Temperature, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

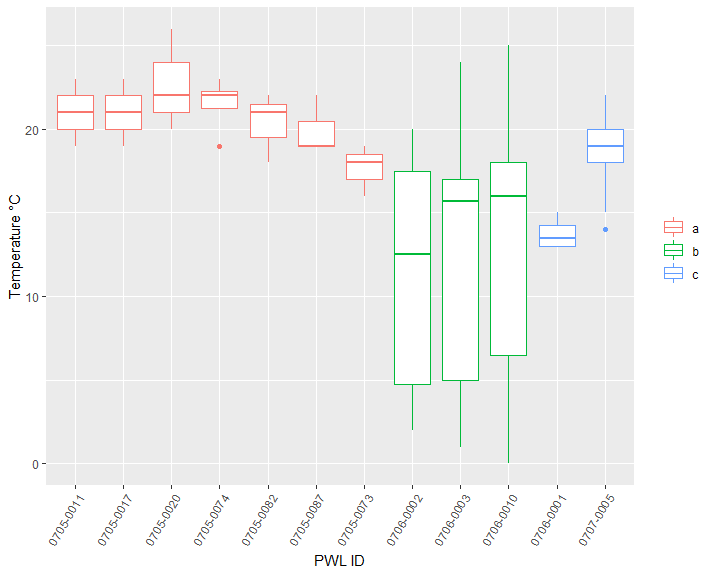


Figure . Temperature, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

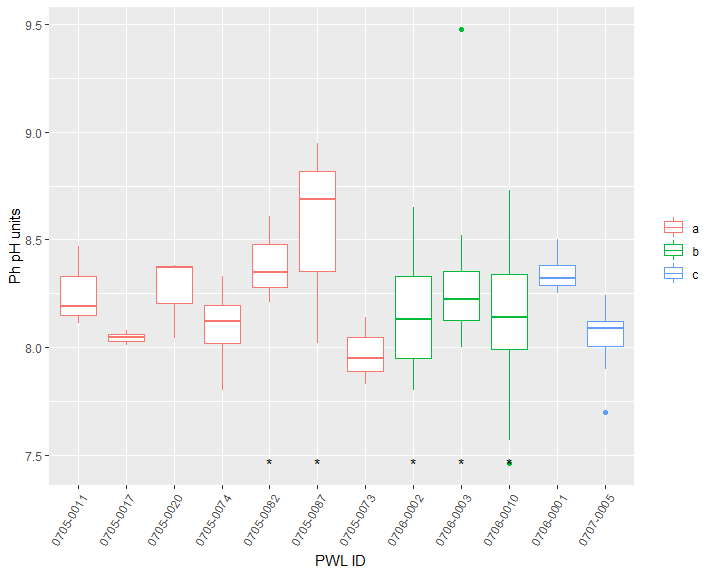


Figure . Ph, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

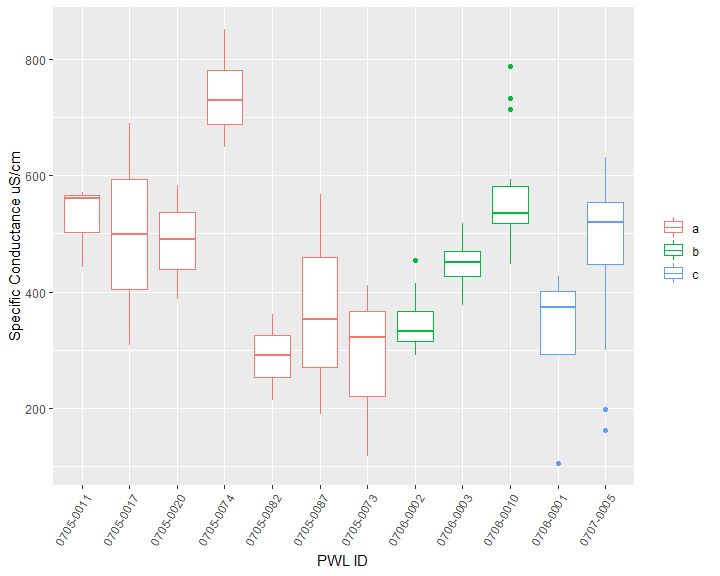


Figure . Specific Conductance, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

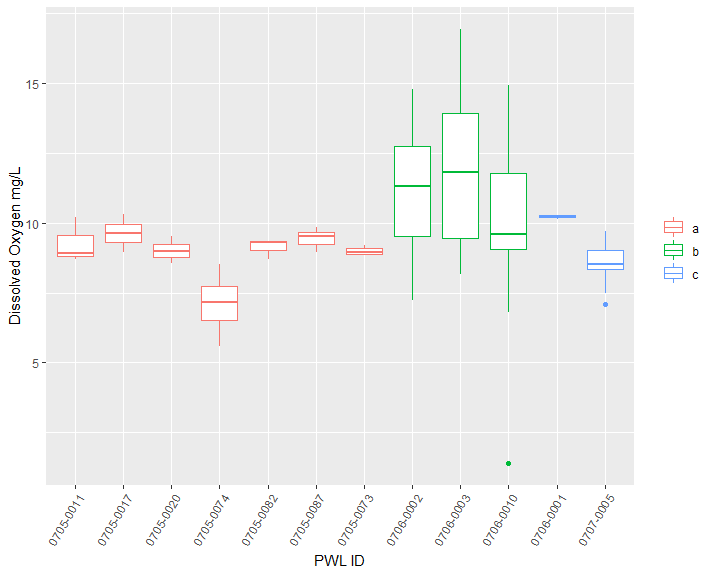


Figure . Dissolved Oxygen, Horizontal lines represent the 95th, 75th, and 25th percentiles of statewide data for each endpoint. Boxes represent the interquartile range (25th to 75th percentiles) of the data for each site, whiskers represent the IQR +/- 1.5 times the IQR and dots indicate potential outlier values, or those outside of the IQR +/- 1.5 times the IQR. Stars at the bottom of the graph indicate an excursion of a WQS (if applicable). Axis are presented in log scale for comparison by site.

## Stream Reach Physical Characteristics

Assessments of the physical habitat was also collected to calculate the Habitat Model Affinity (HMA) (Table 3). HMA is an overall estimate of habitat quality which describes potential habitat stress on biologic community. The HMA is based on rankings of individual habitat characteristics on a scale from 0 (poor) to 20 (optimal) which are then compared to a statewide reference condition (SOP #208-19). HMA scores are used to make final physical habitat assessments; Natural (80-100), Altered (70 – 80), Moderate (60 – 70), and Severe (< 60). Results are described in terms of percent similarity to the reference condition.

Habitat model affinity (HMA) scores and resulting final physical habitat assessments are presented below (Table). Physical habitat final assessments demonstrate that habitat may have been a factor influencing benthic communities at sampling locations where HMA scores indicate severely altered conditions. severe (n=1).

Table . Ranked habitat characteristics and calculated HMA. Epifaunal substrate (Epi. Cover); Embeddedness/Pool Substrate Characterization (Embed. Pool.); Velocity Depth Regime/Pool Variability (Vel/Dep Reg.); Sediment Deposition (Sed. Dep.); Channel Flow Status (Flow Status); Channel Alteration (Chan. Alt.); Riffle Frequency/Stream Sinuosity (Rif. Freq.); Left and Right Bank Stability (L.B. and R.B. Stability); Left and Right Bank Vegetation (L.B. and R.B. Veg); Width of Left and Right Bank Vegetative Zone (L.B. and R.B. Veg Zone); Habitat Model Affinity Score (HMA Score); HMA Assessment (HMA Assess.)

| **PWL** | **Site** | **Gradient** | **Epi.  Cover** | **Embed.   Pool.** | **Vel/Dep.   Reg.** | **Sed.   Dep.** | **Flow   Status** | **Chan.   Alt** | **Rif.   Freq** | **L.B.   Stability** | **R.B.   Stability** | **L.B.   Veg** | **R.B.  Veg** | **L.B.   Veg Zone** | **R.B.   Veg Zone** | **HMA   Score** | **HMA   Assess.** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0705-0087 | 07-BGST-0.1 | High | 8 | 17 | 19 | 20 | 18 | 18.0 | 18 | 9 | 9.0 | 9.0 | 4 | 10 | 1.0 | 87 | Natural |
| 0707-0005 | 07-BSWP-0.1 | High | 18 | 17 | 16 | 12 | 16 | 17.0 | 19 | 7 | 8.0 | 9.0 | 3 | 9 | 2.0 | 84 | Natural |
| 0705-0011 | 07-CATH-0.6 | High | 14 | 17 | 17 | 18 | 10 | 13.0 | 10 | 3 | 3.0 | 7.0 | 7 | 3 | 3.0 | 69 | Moderate |
| 0706-0003 | 07-DUCH-0.3 | High | 17 | 18 | 18 | 18 | 18 | 18.0 | 19 | 9 | 9.0 | 9.0 | 9 | 8 | 9.0 | 98 | Natural |
| 0705-0082 | 07-GLNK-0.2 | High | 12 | 18 | 19 | 20 | 13 | 8.0 | 18 | 8 | 4.0 | 2.0 | 2 | 1 | 1.0 | 68 | Moderate |
| 0706-0001 | 07-GROU-1.5 | High | 16 | 16 | 15 | 18 | 16 | 13.0 | 18 | 9 | 9.5 | 9.5 | 5 | 8 | 3.5 | 86 | Natural |
| 0705-0017 | 07-KASH-0.3 | High | 11 | 16 | 18 | 13 | 7 | 13.0 | 15 | 8 | 4.0 | 8.0 | 1 | 8 | 0.0 | 67 | Moderate |
| 0705-0020 | 07-KEUK-0.1 | High | 14 | 15 | 19 | 14 | 16 | 14.0 | 19 | 9 | 9.0 | 9.0 | 9 | 9 | 9.0 | 91 | Natural |
| 0706-0010 | 07-OWAL\_T46-0.1 | High | 17 | 18 | 13 | 18 | 18 | 19.0 | 19 | 9 | 8.0 | 9.0 | 8 | 3 | 2.0 | 88 | Natural |
| 07-OWAL\_T9-0.1 | High | 14 | 15 | 9 | 10 | 14 | 17.0 | 16 | 8 | 7.0 | 7.0 | 8 | 4 | 4.0 | 74 | Altered |
| 07-OWAL\_T9-0.1 | High | 14 | 15 | 9 | 10 | 14 | 17.0 | 16 | 8 | 7.0 | 7.0 | 8 | 4 | 4.0 | 74 | Altered |
| 0706-0002 | 07-OWLI-3.0 | High | 14 | 17 | 15 | 13 | 19 | 17.0 | 18 | 6 | 6.0 | 8.0 | 9 | 5 | 4.0 | 83 | Natural |
| 0705-0074 | 07-REED-0.1 | High | 16 | 17 | 12 | 7 | 10 | 20.0 | 16 | 10 | 6.0 | 9.0 | 9 | 5 | 5.0 | 77 | Altered |
| 07-REED-0.1 | Low | 13 | 17 | 13 | 17 | 13 | 13.0 | 14 | 8 | 7.0 | 1.0 | 4 | 0 | 4.0 | 76 | Altered |
| 0706-0010 | 07-SCKR-0.1 | High | 15 | 16 | 6 | 16 | 7 | NA | 13 | 9 | 10.0 | 7.0 | 7 | 7 | 8.0 | 76 | Altered |
| 0707-0005 | 07-SKAT\_T2-0.1 | High | 13 | 9 | 14 | 16 | 15 | 9.5 | 16 | -4996 | 7.0 | 8.5 | -4996 | 6 | 6.0 | -5454 | Severe |
| 07-SKAT\_T5-0.1 | High | 19 | NA | 18 | 17 | 10 | 16.0 | 18 | 8 | 6.0 | 9.0 | 9 | 9 | 9.0 | 90 | Natural |
| 07-SKAT\_T89-0.2 | High | 12 | 16 | 13 | 14 | 13 | 12.0 | 16 | 7 | 6.0 | 8.0 | 7 | 9 | 8.0 | 79 | Altered |
| 07-SKAT\_T93a-0.5 | High | 14 | 14 | 13 | 16 | 17 | 13.0 | 11 | 6 | 5.0 | 8.0 | 7 | 7 | 7.0 | 76 | Altered |
| 0705-0073 | 07-THOL-1.8 | High | 17 | 16 | 19 | 17 | 14 | 18.0 | 19 | 8 | 8.0 | 10.0 | 10 | 10 | 10.0 | 95 | Natural |
| 0706-0010 | 07-VENE-1.5 | High | 10 | 11 | 6 | 12 | 18 | 18.0 | 4 | 9 | 9.0 | 9.0 | 9 | 9 | 3.0 | 70 | Altered |

## User Perception

Perceptions of recreational ability were ranked at all sampling locations as per standard site visit protocols (SOP #208-19). The observer ranking of recreational ability is a method of evaluating impacts to recreational use of a stream segment. Impacts to recreational use have been correlated with biological impairment from nutrient enrichment and rankings below slightly impacted (rank of 3) are indicative of significant impacts to recreational ability (Smith et al., 2014). The ranking assesses primary (1°) and secondary (2°) contact recreation, as well as a user’s desire to fish.

The first two questions of the recreational use evaluation describe the observers perceived ability to participate in 1° and 2° contact recreation. Results of this ranking are the primary gauge of whether the FL advanced Monitoring Report sites are achieving the designated recreational uses. Figure illustrates the average observer ranking for desire to participate in 1° and 2° contact recreation at each sampling location. User rankings of recreational desirability ranged from 0 (best) to 5 (worst) where,as described above, a measurable impact was related to a ranking of 3 (Smith et al., 2014). Values of 6 were the result of 1° or 2° degree contact not being applicable due to site condition and were removed from mean aggregations. Results of this survey suggest observers (NYSDEC field staff) considered the desire to participate in 1° and 2° contact recreation to be slightly impacted (ranked > 3) at 8 WI/PWL segments 0705-0087, 0707-0005, 0705-0011, 0705-0082, 0706-0001, 0705-0017, 0705-0020, 0705-0073(Figure ).

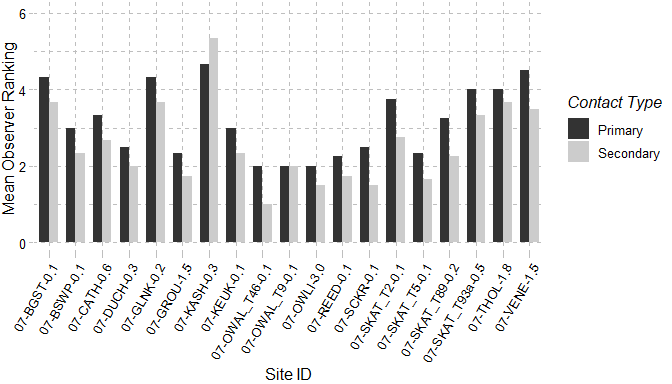


Figure . Mean observer ranking of recreational ability for each sampling location. Columns represent observer rankings for the desire to participate in 1° and 2° contact recreation. Ranking of recreation ability was performed for all locations during each site visit.

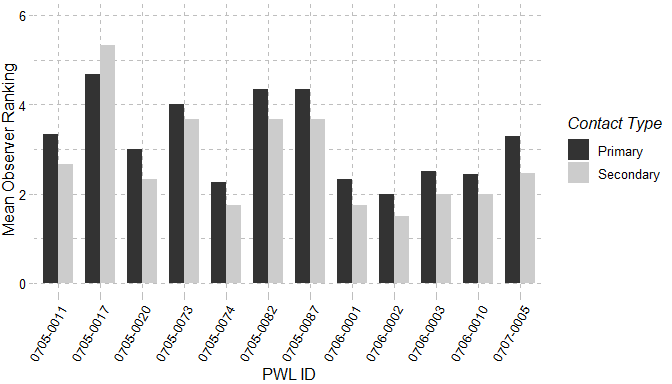


Figure . Mean observer ranking of recreational ability for sampling locations, grouped by WI/PWL. Columns represent observer rankings for the desire to participate in 1° and 2° contact recreation. Ranking of recreation ability was performed for all locations during each site visit.

Additional recreational usability questions rank in-stream and stream-side factors on a scale of 0-10 (0 – Best/Natural; 10 Worst/Severe). Those factors are: 1) Water Clarity, 2) Trash, 3) Periphyton, 4) Odor, and 5) Discharge Pipes. These visual and olfactory observations help isolate negative factors influencing the user’s perception of recreational use. Table shows the mean recorded value for these factors at each sampling location and Table lists the users selection of the most dominant impediment that reduces the observer’s desire to participate in 1° and 2° contact recreation, which can include the factors above, as well as ease of access and proximity to development.

Table . Mean observer ranked value for factors influencing desire to participate in 1° and 2° contact recreation. Factors were ranked on a 10 scale (0 – Best/Natural; 10 Worst/Severe) according to perceived impact on a location. Ranking of recreation ability was performed for all locations during each site visit

| **PWL** | **Site** | **Water Clarity** | **Susp. Phyto.** | **Periphyton** | **Macro.** | **Odor** | **Trash** | **Discharge Pipes** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0705-0087 | 07-BGST-0.1 | 6 | 0 | 1 | 1 | 2 | 0 | 0 |
| 0707-0005 | 07-BSWP-0.1 | 2 | 0 | 2 | 0 | 0 | 1 | 0 |
| 0705-0011 | 07-CATH-0.6 | 3 | 0 | NA | NA | 0 | 0 | 0 |
| 0706-0003 | 07-DUCH-0.3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 |
| 0705-0082 | 07-GLNK-0.2 | 6 | 0 | 2 | 0 | 0 | 2 | 0 |
| 0706-0001 | 07-GROU-1.5 | 2 | 0 | 4 | 0 | 0 | 0 | 0 |
| 0705-0017 | 07-KASH-0.3 | NA | NA | NA | NA | NA | NA | NA |
| 0705-0020 | 07-KEUK-0.1 | 1 | 0 | 3 | 0 | 3 | 0 | 0 |
| 0706-0010 | 07-OWAL\_T46-0.1 | 0 | 0 | 2 | 0 | 2 | 0 | 0 |
| 0706-0010 | 07-OWAL\_T9-0.1 | 3 | 0 | 2 | 0 | 0 | 1 | 0 |
| 0706-0010 | 07-OWAL\_T9-0.1 | 3 | 0 | 2 | 0 | 0 | 1 | 0 |
| 0706-0002 | 07-OWLI-3.0 | 4 | 1 | 2 | 1 | 0 | 0 | 0 |
| 0705-0074 | 07-REED-0.1 | 2 | 1 | NA | 1 | 0 | 0 | 0 |
| 0706-0010 | 07-SCKR-0.1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 |
| 0707-0005 | 07-SKAT\_T2-0.1 | 3 | 2 | NA | 1 | 1 | 0 | 0 |
| 0707-0005 | 07-SKAT\_T5-0.1 | 0 | 0 | 2 | 0 | 0 | NA | 0 |
| 0707-0005 | 07-SKAT\_T89-0.2 | 2 | 0 | 4 | 0 | 0 | 0 | 0 |
| 0707-0005 | 07-SKAT\_T93a-0.5 | 4 | 1 | 3 | 1 | 0 | 0 | 1 |
| 0705-0073 | 07-THOL-1.8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0706-0010 | 07-VENE-1.5 | NA | NA | 6 | 0 | 1 | 0 | 0 |

Table . Most frequently ranked factor influencing observer desire to participate in 1° and 2° contact recreation. Factors influencing desire to recreate were ranked and a primary factor influencing the desire to participate in 1° and 2° contact recreation was chosen during each site visit. Column values represent the factor selected most frequently at each site.

| **PWL** | **Sites** | **Primary** | **Secondary** |
| --- | --- | --- | --- |
| 0705-0087 | 07-BGST-0.1 | Odor | Other, Periphyton, Water Clarity |
| 07-BGST-0.1 | Water Clarity | Other, Periphyton, Water Clarity |
| 0707-0005 | 07-BSWP-0.1 | Periphyton | Periphyton |
| 07-BSWP-0.1 | Water Clarity | Periphyton |
| 0705-0011 | 07-CATH-0.6 | Periphyton | Periphyton, Water Clarity |
| 07-CATH-0.6 | Water Clarity | Periphyton, Water Clarity |
| 0706-0003 | 07-DUCH-0.3 | Water Clarity | Periphyton, Water Clarity |
| 0705-0082 | 07-GLNK-0.2 | Periphyton | Trash |
| 07-GLNK-0.2 | Water Clarity | Trash |
| 0706-0001 | 07-GROU-1.5 | Periphyton | Periphyton |
| 07-GROU-1.5 | Water Clarity | Periphyton |
| 0705-0017 | 07-KASH-0.3 | Periphyton | Other |
| 07-KASH-0.3 | Water Clarity | Other |
| 0705-0020 | 07-KEUK-0.1 | Odor | None, Odor, Periphyton |
| 07-KEUK-0.1 | Periphyton | None, Odor, Periphyton |
| 07-KEUK-0.1 | Water Clarity | None, Odor, Periphyton |
| 0706-0010 | 07-OWAL\_T46-0.1 | None | None, Odor |
| 07-OWAL\_T46-0.1 | Odor | None, Odor |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water Clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water Clarity | Trash, Water Clarity |
| 0706-0002 | 07-OWLI-3.0 | Water Clarity | Water Clarity |
| 0705-0074 | 07-REED-0.1 | Periphyton | Periphyton |
| 07-REED-0.1 | Water Clarity | Periphyton |
| 0706-0010 | 07-SCKR-0.1 | Other | None, Water Clarity |
| 07-SCKR-0.1 | Water Clarity | None, Water Clarity |
| 0707-0005 | 07-SKAT\_T2-0.1 | Odor | None, Water Clarity |
| 07-SKAT\_T2-0.1 | Periphyton | None, Water Clarity |
| 07-SKAT\_T2-0.1 | Water Clarity | None, Water Clarity |
| 07-SKAT\_T5-0.1 | Periphyton | Periphyton |
| 07-SKAT\_T5-0.1 | Proximity to Development Roads | Periphyton |
| 07-SKAT\_T5-0.1 | Water Clarity | Periphyton |
| 07-SKAT\_T89-0.2 | Periphyton | Discharge/Pipes, Periphyton |
| 07-SKAT\_T89-0.2 | Water Clarity | Discharge/Pipes, Periphyton |
| 07-SKAT\_T93a-0.5 | Periphyton | Periphyton |
| 07-SKAT\_T93a-0.5 | Water Clarity | Periphyton |
| 0705-0073 | 07-THOL-1.8 | Other | Other, Water Clarity |
| 07-THOL-1.8 | Water Clarity | Other, Water Clarity |
| 0706-0010 | 07-VENE-1.5 | Other | Periphyton, Water Clarity |
| 07-VENE-1.5 | Periphyton | Periphyton, Water Clarity |

# Section II: Site Specific Data

Section II provides a tabular summary of all accepted results from each sampling location. Descriptive tables for each site include applicable established WQS (6 NYCRR Part 703), a summary of general chemistry and in-situ results, WQS excursion information, and BAP scores. Water chemistry results are summarized by analyte concentration after meeting QA/QC standards. WQS excursion information identifies excursions of the applicable WQS. BAP score information includes mean BAP score, standard deviation, standard error, and number of replicates.

### 07-CATH-0.6 | Waterbody Class: C(TS) | WI/PWL ID: 0705-0011

Table : Applicable Standards: 07-CATH-0.6

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(TS) | Dissolved Oxygen | dissolved | mg/L | Shall not be less than 7.0 mg/L from other than natural conditions. |
| C(TS) | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(TS) | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-CATH-0.6

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 183 | 190 | 192 | 167 |
| Aluminum | µg/L | total | 3 | 637.3 | 55.8 | 1820 | 36.1 |
| Ammonia | µg/L | total | 7 | 113.271 | 25 | 364 | 5.9 |
| Arsenic | µg/L | total | 3 | 1.17 | 0.97 | 1.6 | 0.94 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 64166.667 | 64300 | 67500 | 60700 |
| Carbon, Total Organic | mg/L | total | 3 | 3.8 | 3.9 | 4.5 | 3 |
| Chloride | mg/L | total | 2 | 42.3 | 42.3 | 47.3 | 37.3 |
| Chlorophyll A | µg/L | total | 3 | 0.874 | 0.81 | 1.07 | 0.741 |
| Copper | µg/L | total | 3 | 2.06 | 1.2 | 4.2 | 0.78 |
| Dissolved Oxygen | mg/L | dissolved | 6 | 9.27 | 8.92 | 10.19 | 8.7 |
| Hardness | mg/L | total | 3 | 228.667 | 233 | 238 | 215 |
| Iron | µg/L | total | 3 | 1212.667 | 165 | 3360 | 113 |
| Lead | µg/L | total | 3 | 0.945 | 0.85 | 1.7 | 0.285 |
| Magnesium | µg/L | total | 3 | 16600 | 16800 | 17600 | 15400 |
| Nickel | µg/L | total | 3 | 2.067 | 1 | 4.2 | 1 |
| Nitrate | mg/L | total | 3 | 0.412 | 0.412 | 0.498 | 0.326 |
| Nitrite | mg/L | total | 3 | 0.004 | 0.004 | 0.004 | 0.004 |
| Nitrite (As N) | mg/L | total | 8 | 0.24 | 0.288 | 0.45 | 0.008 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 9 | 0.161 | 0.19 | 0.41 | 0.005 |
| Nitrogen, Total | mg/L | total | 3 | 0.775 | 0.775 | 0.91 | 0.64 |
| Phosphorus | mg/L | total | 9 | 0.03 | 0.021 | 0.078 | 0.01 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 8 | 0.014 | 0.012 | 0.024 | 0.002 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 9 | 20.951 | 4.1 | 105 | 0.5 |
| Turbidity | NTU | total | 3 | 28.983 | 3.22 | 80.6 | 3.13 |
| Zinc | µg/L | total | 3 | 4.033 | 1.25 | 9.6 | 1.25 |

Table : In-Situ Measurements: 07-CATH-0.6

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-CATH-0.6 | Chlorophyll A (Probe) | µg/L |  | 3 | 1.663 | 1.49 | 2.31 | 1.19 |
| 07-CATH-0.6 | Chlorophyll A (Probe) | RFU |  | 3 | 0.457 | 0.46 | 0.62 | 0.29 |
| 07-CATH-0.6 | Dissolved Oxygen Saturation | % |  | 3 | 104.267 | 98.3 | 118.6 | 95.9 |
| 07-CATH-0.6 | pH | pH units | total | 3 | 8.257 | 8.19 | 8.47 | 8.11 |
| 07-CATH-0.6 | Phycocyanin (Probe) | µg/L |  | 3 | 0.047 | 0.04 | 0.07 | 0.03 |
| 07-CATH-0.6 | Phycocyanin (Probe) | RFU |  | 3 | 0.083 | 0.1 | 0.11 | 0.04 |
| 07-CATH-0.6 | Salinity | ppt |  | 3 | 0.253 | 0.27 | 0.28 | 0.21 |
| 07-CATH-0.6 | Specific Conductance | uS/cm |  | 3 | 525 | 561 | 571 | 443 |
| 07-CATH-0.6 | Specific Conductance | uS/cm | NA | 5 | 482.8 | 432 | 623 | 366 |
| 07-CATH-0.6 | Temperature | °C |  | 3 | 21 | 21 | 23 | 19 |
| 07-CATH-0.6 | Temperature | °C | NA | 6 | 8.6 | 7.9 | 19.3 | 0.5 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-CATH-0.6

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-18 | 6.8 | 0.21 | 0.1 | 4 |

### 07-KASH-0.3 | Waterbody Class: C | WI/PWL ID: 0705-0017

Table : Applicable Standards: 07-KASH-0.3

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L. |
| C | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-KASH-0.3

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 2 | 156 | 156 | 230 | 82 |
| Aluminum | µg/L | total | 1 | 24900 | 24900 | 24900 | 24900 |
| Ammonia | µg/L | total | 6 | 190.667 | 25 | 789 | 25 |
| Arsenic | µg/L | total | 2 | 2.43 | 2.43 | 4.4 | 0.46 |
| Cadmium | µg/L | total | 2 | 1.045 | 1.045 | 1.9 | 0.19 |
| Calcium | µg/L | total | 2 | 82650 | 82650 | 92400 | 72900 |
| Carbon, Total Organic | mg/L | total | 2 | 7.2 | 7.2 | 11.2 | 3.2 |
| Chloride | mg/L | total | 2 | 31.4 | 31.4 | 44.1 | 18.7 |
| Chlorophyll A | µg/L | total | 2 | 9.22 | 9.22 | 12.7 | 5.74 |
| Copper | µg/L | total | 2 | 19.5 | 19.5 | 37.2 | 1.8 |
| Dissolved Oxygen | mg/L | dissolved | 4 | 9.63 | 9.63 | 10.3 | 8.96 |
| Hardness | mg/L | total | 2 | 299.5 | 299.5 | 326 | 273 |
| Iron | µg/L | total | 2 | 18365.2 | 18365.2 | 36700 | 30.4 |
| Lead | µg/L | total | 2 | 18.815 | 18.815 | 37 | 0.63 |
| Magnesium | µg/L | total | 2 | 22650 | 22650 | 23100 | 22200 |
| Nickel | µg/L | total | 2 | 21.05 | 21.05 | 40.8 | 1.3 |
| Nitrate | mg/L | total | 2 | 3.745 | 3.745 | 5.79 | 1.7 |
| Nitrite | mg/L | total | 2 | 0.052 | 0.052 | 0.089 | 0.016 |
| Nitrite (As N) | mg/L | total | 7 | 2.977 | 1.72 | 8.84 | 0.68 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 8 | 1.338 | 0.57 | 6.99 | 0.28 |
| Nitrogen, Total | mg/L | total | 2 | 7.56 | 7.56 | 12.9 | 2.22 |
| Phosphorus | mg/L | total | 8 | 0.212 | 0.032 | 1.09 | 0.011 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 7 | 0.058 | 0.033 | 0.16 | 0.006 |
| Silver | µg/L | total | 2 | 0.412 | 0.412 | 0.75 | 0.075 |
| Total Suspended Solids | mg/L | total | 8 | 140.592 | 2.02 | 1010 | 0.5 |
| Turbidity | NTU | total | 2 | 457.63 | 457.63 | 914 | 1.26 |
| Zinc | µg/L | total | 2 | 79.125 | 79.125 | 157 | 1.25 |

Table : In-Situ Measurements: 07-KASH-0.3

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-KASH-0.3 | Chlorophyll A (Probe) | µg/L |  | 2 | 12.325 | 12.325 | 23.35 | 1.3 |
| 07-KASH-0.3 | Chlorophyll A (Probe) | RFU |  | 2 | 3.095 | 3.095 | 5.82 | 0.37 |
| 07-KASH-0.3 | Dissolved Oxygen Saturation | % |  | 2 | 108.55 | 108.55 | 120.6 | 96.5 |
| 07-KASH-0.3 | pH | pH units | total | 2 | 8.045 | 8.045 | 8.08 | 8.01 |
| 07-KASH-0.3 | Phycocyanin (Probe) | µg/L |  | 2 | 1.425 | 1.425 | 2.6 | 0.25 |
| 07-KASH-0.3 | Phycocyanin (Probe) | RFU |  | 2 | 1.485 | 1.485 | 2.7 | 0.27 |
| 07-KASH-0.3 | Salinity | ppt |  | 2 | 0.23 | 0.23 | 0.31 | 0.15 |
| 07-KASH-0.3 | Specific Conductance | uS/cm |  | 2 | 499 | 499 | 689 | 309 |
| 07-KASH-0.3 | Specific Conductance | uS/cm | NA | 4 | 621 | 621 | 692 | 550 |
| 07-KASH-0.3 | Temperature | °C |  | 2 | 21 | 21 | 23 | 19 |
| 07-KASH-0.3 | Temperature | °C | NA | 5 | 11.2 | 10 | 21 | 5 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-KASH-0.3

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-18 | 6.3 | 0.24 | 0.12 | 4 |

### 07-KEUK-0.1 | Waterbody Class: C(T) | WI/PWL ID: 0705-0020

Table : Applicable Standards: 07-KEUK-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(T) | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 6.0 mg/L, and at no time shall the concentration be less than 5.0 mg/L |
| C(T) | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(T) | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C(T) | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-KEUK-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 132.333 | 128 | 151 | 118 |
| Aluminum | µg/L | total | 3 | 54.033 | 59.7 | 68.3 | 34.1 |
| Ammonia | µg/L | total | 2 | 28.15 | 28.15 | 30 | 26.3 |
| Arsenic | µg/L | total | 3 | 0.71 | 0.75 | 0.76 | 0.62 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 48300 | 44900 | 57600 | 42400 |
| Carbon, Total Organic | mg/L | total | 3 | 3.467 | 3.4 | 3.7 | 3.3 |
| Chloride | mg/L | total | 2 | 47 | 47 | 56.8 | 37.2 |
| Chlorophyll A | µg/L | total | 3 | 1.214 | 1.25 | 1.47 | 0.922 |
| Copper | µg/L | total | 3 | 2.933 | 2.7 | 3.9 | 2.2 |
| Dissolved Oxygen | mg/L | dissolved | 6 | 9.02 | 8.99 | 9.52 | 8.55 |
| Hardness | mg/L | total | 3 | 178 | 167 | 209 | 158 |
| Iron | µg/L | total | 3 | 103.533 | 92.9 | 154 | 63.7 |
| Lead | µg/L | total | 3 | 0.623 | 0.285 | 1.3 | 0.285 |
| Magnesium | µg/L | total | 3 | 13933.333 | 13400 | 15800 | 12600 |
| Nickel | µg/L | total | 3 | 1.167 | 1.1 | 1.4 | 1 |
| Nitrate | mg/L | total | 3 | 1.254 | 1.49 | 1.65 | 0.622 |
| Nitrite | mg/L | total | 3 | 0.034 | 0.019 | 0.071 | 0.012 |
| Nitrite (As N) | mg/L | total | 1 | 1.72 | 1.72 | 1.72 | 1.72 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 3 | 0.4 | 0.4 | 0.48 | 0.32 |
| Nitrogen, Total | mg/L | total | 3 | 1.583 | 1.51 | 2.2 | 1.04 |
| Phosphorus | mg/L | total | 3 | 0.029 | 0.026 | 0.038 | 0.021 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 2 | 0.017 | 0.017 | 0.023 | 0.011 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 3 | 4.4 | 4.4 | 4.7 | 4.1 |
| Turbidity | NTU | total | 3 | 2.797 | 2.95 | 3.35 | 2.09 |
| Zinc | µg/L | total | 3 | 2.95 | 3.4 | 4.2 | 1.25 |

Table : In-Situ Measurements: 07-KEUK-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-KEUK-0.1 | Chlorophyll A (Probe) | µg/L |  | 3 | 1.5 | 0.67 | 3.42 | 0.41 |
| 07-KEUK-0.1 | Chlorophyll A (Probe) | RFU |  | 3 | 0.38 | 0.15 | 0.85 | 0.14 |
| 07-KEUK-0.1 | Dissolved Oxygen Saturation | % |  | 3 | 104.933 | 99.3 | 116.6 | 98.9 |
| 07-KEUK-0.1 | pH | pH units | total | 3 | 8.263 | 8.37 | 8.38 | 8.04 |
| 07-KEUK-0.1 | Phycocyanin (Probe) | µg/L |  | 3 | 0.06 | 0 | 0.18 | 0 |
| 07-KEUK-0.1 | Phycocyanin (Probe) | RFU |  | 3 | 0.083 | 0 | 0.25 | 0 |
| 07-KEUK-0.1 | Salinity | ppt |  | 3 | 0.237 | 0.24 | 0.28 | 0.19 |
| 07-KEUK-0.1 | Specific Conductance | uS/cm |  | 3 | 487.333 | 490 | 584 | 388 |
| 07-KEUK-0.1 | Temperature | °C |  | 3 | 22.667 | 22 | 26 | 20 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-KEUK-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-18 | 6.6 | 0.64 | 0.32 | 4 |

### 07-REED-0.1 | Waterbody Class: C(T) | WI/PWL ID: 0705-0074

Table : Applicable Standards: 07-REED-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(T) | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 6.0 mg/L, and at no time shall the concentration be less than 5.0 mg/L |
| C(T) | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(T) | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C(T) | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-REED-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 257 | 254 | 264 | 253 |
| Aluminum | µg/L | total | 2 | 50.6 | 50.6 | 58.6 | 42.6 |
| Ammonia | µg/L | total | 7 | 126.786 | 25 | 768 | 1.5 |
| Arsenic | µg/L | total | 3 | 1.14 | 1.1 | 1.5 | 0.82 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 97900 | 96200 | 102000 | 95500 |
| Carbon, Total Organic | mg/L | total | 3 | 4.333 | 4.1 | 4.8 | 4.1 |
| Chloride | mg/L | total | 3 | 73.367 | 59.5 | 108 | 52.6 |
| Chlorophyll A | µg/L | total | 3 | 1.214 | 1.12 | 1.63 | 0.892 |
| Copper | µg/L | total | 3 | 2.167 | 2.2 | 2.3 | 2 |
| Dissolved Oxygen | mg/L | dissolved | 8 | 7.105 | 7.15 | 8.52 | 5.6 |
| Hardness | mg/L | total | 3 | 312.333 | 307 | 326 | 304 |
| Iron | µg/L | total | 3 | 129.867 | 142 | 166 | 81.6 |
| Lead | µg/L | total | 3 | 0.447 | 0.285 | 0.77 | 0.285 |
| Magnesium | µg/L | total | 3 | 16433.333 | 16300 | 17000 | 16000 |
| Nickel | µg/L | total | 3 | 1.867 | 1.9 | 1.9 | 1.8 |
| Nitrate | mg/L | total | 3 | 1.049 | 1.03 | 1.39 | 0.726 |
| Nitrite | mg/L | total | 3 | 0.004 | 0.004 | 0.004 | 0.004 |
| Nitrite (As N) | mg/L | total | 9 | 0.541 | 0.44 | 1.44 | 0.05 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 10 | 0.469 | 0.535 | 0.86 | 0.005 |
| Nitrogen, Total | mg/L | total | 3 | 1.41 | 1.47 | 2.03 | 0.73 |
| Phosphorus | mg/L | total | 10 | 0.292 | 0.298 | 0.536 | 0.073 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 10 | 0.292 | 0.294 | 0.539 | 0.064 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 10 | 2.47 | 1.85 | 6 | 0.5 |
| Turbidity | NTU | total | 3 | 2.76 | 2.56 | 3.23 | 2.49 |
| Zinc | µg/L | total | 3 | 1.767 | 1.25 | 2.8 | 1.25 |

Table : In-Situ Measurements: 07-REED-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-REED-0.1 | Chlorophyll A (Probe) | µg/L |  | 3 | 1.553 | 1.7 | 2.11 | 0.85 |
| 07-REED-0.1 | Chlorophyll A (Probe) | RFU |  | 3 | 0.503 | 0.45 | 0.66 | 0.4 |
| 07-REED-0.1 | Dissolved Oxygen Saturation | % |  | 4 | 80.575 | 81.3 | 92.7 | 67 |
| 07-REED-0.1 | pH | pH units | total | 4 | 8.092 | 8.12 | 8.33 | 7.8 |
| 07-REED-0.1 | Phycocyanin (Probe) | µg/L |  | 3 | 0.047 | 0.06 | 0.06 | 0.02 |
| 07-REED-0.1 | Phycocyanin (Probe) | RFU |  | 3 | 0.073 | 0.06 | 0.11 | 0.05 |
| 07-REED-0.1 | Salinity | ppt |  | 4 | 0.362 | 0.355 | 0.42 | 0.32 |
| 07-REED-0.1 | Specific Conductance | uS/cm |  | 4 | 739.5 | 728.5 | 852 | 649 |
| 07-REED-0.1 | Specific Conductance | uS/cm | NA | 5 | 716.6 | 672 | 866 | 602 |
| 07-REED-0.1 | Temperature | °C |  | 4 | 21.5 | 22 | 23 | 19 |
| 07-REED-0.1 | Temperature | °C | NA | 6 | 13.333 | 16 | 21 | 1 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-REED-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-17 | 6.5 | 0.56 | 0.28 | 4 |

### 07-GLNK-0.2 | Waterbody Class: C(TS) | WI/PWL ID: 0705-0082

Table : Applicable Standards: 07-GLNK-0.2

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(TS) | Dissolved Oxygen | dissolved | mg/L | Shall not be less than 7.0 mg/L from other than natural conditions. |
| C(TS) | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(TS) | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-GLNK-0.2

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 112.8 | 109 | 141 | 88.4 |
| Aluminum | µg/L | total | 3 | 2214.067 | 2610 | 3980 | 52.2 |
| Ammonia | µg/L | total | 1 | 11.5 | 11.5 | 11.5 | 11.5 |
| Arsenic | µg/L | total | 3 | 2 | 2 | 2.7 | 1.3 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 38733.333 | 38900 | 46000 | 31300 |
| Carbon, Total Organic | mg/L | total | 3 | 4.233 | 4.2 | 5.9 | 2.6 |
| Chloride | mg/L | total | 2 | 12.85 | 12.85 | 13.5 | 12.2 |
| Chlorophyll A | µg/L | total | 3 | 2.74 | 3.44 | 3.45 | 1.33 |
| Copper | µg/L | total | 3 | 4.193 | 3.3 | 8.3 | 0.98 |
| Dissolved Oxygen | mg/L | dissolved | 5 | 9.078 | 9.31 | 9.35 | 8.71 |
| Hardness | mg/L | total | 3 | 133.333 | 129 | 158 | 113 |
| Iron | µg/L | total | 3 | 3409 | 2090 | 8000 | 137 |
| Lead | µg/L | total | 3 | 2.428 | 2 | 5 | 0.285 |
| Magnesium | µg/L | total | 3 | 8913.333 | 8370 | 10500 | 7870 |
| Nickel | µg/L | total | 3 | 5.387 | 5.4 | 9.9 | 0.86 |
| Nitrate | mg/L | total | 3 | 0.129 | 0.139 | 0.18 | 0.068 |
| Nitrite | mg/L | total | 3 | 0.004 | 0.004 | 0.004 | 0.004 |
| Nitrite (As N) | mg/L | total | 1 | 0.18 | 0.18 | 0.18 | 0.18 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 3 | 0.497 | 0.43 | 0.92 | 0.14 |
| Nitrogen, Total | mg/L | total | 3 | 0.835 | 0.835 | 1.06 | 0.61 |
| Phosphorus | mg/L | total | 3 | 0.075 | 0.05 | 0.167 | 0.009 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 2 | 0.006 | 0.006 | 0.009 | 0.002 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 3 | 94.667 | 42.2 | 238 | 3.8 |
| Turbidity | NTU | total | 3 | 112.783 | 61 | 275 | 2.35 |
| Zinc | µg/L | total | 3 | 14.883 | 15 | 28.4 | 1.25 |

Table : In-Situ Measurements: 07-GLNK-0.2

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-GLNK-0.2 | Chlorophyll A (Probe) | µg/L |  | 3 | 2.77 | 2.33 | 3.65 | 2.33 |
| 07-GLNK-0.2 | Chlorophyll A (Probe) | RFU |  | 3 | 0.733 | 0.74 | 0.92 | 0.54 |
| 07-GLNK-0.2 | Dissolved Oxygen Saturation | % |  | 3 | 100.433 | 99 | 104.1 | 98.2 |
| 07-GLNK-0.2 | pH | pH units | total | 4 | 8.445 | 8.48 | 8.61 | 8.21 |
| 07-GLNK-0.2 | Phycocyanin (Probe) | µg/L |  | 3 | 0.167 | 0.2 | 0.28 | 0.02 |
| 07-GLNK-0.2 | Phycocyanin (Probe) | RFU |  | 3 | 0.197 | 0.24 | 0.26 | 0.09 |
| 07-GLNK-0.2 | Salinity | ppt |  | 3 | 0.137 | 0.14 | 0.17 | 0.1 |
| 07-GLNK-0.2 | Specific Conductance | uS/cm |  | 3 | 288.667 | 291 | 361 | 214 |
| 07-GLNK-0.2 | Temperature | °C |  | 3 | 20.333 | 21 | 22 | 18 |

Table : Water Quality Standard Excursions: 07-GLNK-0.2

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2019-08-15 | Ph | 8.6 | total | ph units | fishing; secondary contact recreation; primary contact recreation | 8.5 | Excursion |

Table : Biological Assessment Score (BAP) Summary: 07-GLNK-0.2

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-18 | 7.4 | 0.24 | 0.12 | 4 |

### 07-BGST-0.1 | Waterbody Class: C(TS) | WI/PWL ID: 0705-0087

Table : Applicable Standards: 07-BGST-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(TS) | Dissolved Oxygen | dissolved | mg/L | Shall not be less than 7.0 mg/L from other than natural conditions. |
| C(TS) | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(TS) | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-BGST-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 117.267 | 108 | 177 | 66.8 |
| Aluminum | µg/L | total | 2 | 15466.95 | 15466.95 | 30900 | 33.9 |
| Ammonia | µg/L | total | 7 | 98.386 | 25 | 394 | 11 |
| Arsenic | µg/L | total | 3 | 2.713 | 1.3 | 6 | 0.84 |
| Cadmium | µg/L | total | 3 | 0.443 | 0.19 | 0.95 | 0.19 |
| Calcium | µg/L | total | 3 | 47100 | 43100 | 62600 | 35600 |
| Carbon, Total Organic | mg/L | total | 3 | 7.233 | 7.8 | 10.8 | 3.1 |
| Chloride | mg/L | total | 2 | 18.7 | 18.7 | 26.3 | 11.1 |
| Chlorophyll A | µg/L | total | 3 | 5.447 | 3.94 | 8.87 | 3.53 |
| Copper | µg/L | total | 3 | 18.867 | 3.6 | 51.2 | 1.8 |
| Dissolved Oxygen | mg/L | dissolved | 6 | 9.43 | 9.51 | 9.84 | 8.94 |
| Hardness | mg/L | total | 3 | 177.333 | 186 | 220 | 126 |
| Iron | µg/L | total | 3 | 19949.767 | 1290 | 58500 | 59.3 |
| Lead | µg/L | total | 3 | 15.095 | 1.4 | 43.6 | 0.285 |
| Magnesium | µg/L | total | 3 | 14546.667 | 15400 | 19200 | 9040 |
| Nickel | µg/L | total | 3 | 21.167 | 2.3 | 60.1 | 1.1 |
| Nitrate | mg/L | total | 3 | 1.461 | 1.5 | 1.92 | 0.962 |
| Nitrite | mg/L | total | 3 | 0.012 | 0.012 | 0.014 | 0.01 |
| Nitrite (As N) | mg/L | total | 7 | 1.29 | 1.2 | 1.94 | 0.59 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 9 | 0.83 | 0.35 | 4.25 | 0.005 |
| Nitrogen, Total | mg/L | total | 3 | 3.16 | 2.75 | 5.22 | 1.51 |
| Phosphorus | mg/L | total | 9 | 0.201 | 0.09 | 0.99 | 0.014 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 8 | 0.065 | 0.062 | 0.158 | 0.01 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 9 | 205.75 | 3.1 | 1680 | 0.5 |
| Turbidity | NTU | total | 3 | 285.09 | 37.1 | 816 | 2.17 |
| Zinc | µg/L | total | 3 | 61.817 | 5.2 | 179 | 1.25 |

Table : In-Situ Measurements: 07-BGST-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-BGST-0.1 | Chlorophyll A (Probe) | µg/L |  | 3 | 7.393 | 5.5 | 14.28 | 2.4 |
| 07-BGST-0.1 | Chlorophyll A (Probe) | RFU |  | 3 | 1.7 | 1.5 | 2.95 | 0.65 |
| 07-BGST-0.1 | Dissolved Oxygen Saturation | % |  | 3 | 103.3 | 101.7 | 106.5 | 101.7 |
| 07-BGST-0.1 | pH | pH units | total | 4 | 8.587 | 8.69 | 8.95 | 8.02 |
| 07-BGST-0.1 | Phycocyanin (Probe) | µg/L |  | 3 | 0.81 | 0.2 | 2.04 | 0.19 |
| 07-BGST-0.1 | Phycocyanin (Probe) | RFU |  | 3 | 0.83 | 0.23 | 2.06 | 0.2 |
| 07-BGST-0.1 | Salinity | ppt |  | 3 | 0.18 | 0.17 | 0.28 | 0.09 |
| 07-BGST-0.1 | Specific Conductance | uS/cm |  | 3 | 369.667 | 353 | 567 | 189 |
| 07-BGST-0.1 | Specific Conductance | uS/cm | NA | 3 | 492.667 | 463 | 673 | 342 |
| 07-BGST-0.1 | Temperature | °C |  | 3 | 20 | 19 | 22 | 19 |
| 07-BGST-0.1 | Temperature | °C | NA | 5 | 11.96 | 10 | 21 | 4 |

Table : Water Quality Standard Excursions: 07-BGST-0.1

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2019-08-15 | Ph | 8.7 | total | ph units | fishing; secondary contact recreation; primary contact recreation | 8.5 | Excursion |
| 2019-07-18 | Ph | 9.0 | total | ph units | fishing; secondary contact recreation; primary contact recreation | 8.5 | Excursion |

Table : Biological Assessment Score (BAP) Summary: 07-BGST-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-18 | 7 | 0.24 | 0.12 | 4 |

### 07-THOL-1.8 | Waterbody Class: C | WI/PWL ID: 0705-0073

Table : Applicable Standards: 07-THOL-1.8

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L. |
| C | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-THOL-1.8

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 110.2 | 119 | 162 | 49.6 |
| Aluminum | µg/L | total | 3 | 4742 | 135 | 14000 | 91 |
| Ammonia | µg/L | total | 1 | 11.5 | 11.5 | 11.5 | 11.5 |
| Arsenic | µg/L | total | 3 | 1.77 | 0.44 | 4.5 | 0.37 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 44366.667 | 47200 | 61500 | 24400 |
| Carbon, Total Organic | mg/L | total | 3 | 3.6 | 1.8 | 7.8 | 1.2 |
| Chloride | mg/L | total | 2 | 7.9 | 7.9 | 11.4 | 4.4 |
| Chlorophyll A | µg/L | total | 3 | 3.354 | 1.5 | 7.81 | 0.753 |
| Copper | µg/L | total | 3 | 7.987 | 1.2 | 21.8 | 0.96 |
| Dissolved Oxygen | mg/L | dissolved | 6 | 9 | 8.96 | 9.21 | 8.83 |
| Hardness | mg/L | total | 3 | 151 | 152 | 200 | 101 |
| Iron | µg/L | total | 3 | 9588 | 276 | 28300 | 188 |
| Lead | µg/L | total | 3 | 6.068 | 0.92 | 17 | 0.285 |
| Magnesium | µg/L | total | 3 | 9763.333 | 9750 | 11300 | 8240 |
| Nickel | µg/L | total | 3 | 10.25 | 1 | 29 | 0.75 |
| Nitrate | mg/L | total | 3 | 0.663 | 0.737 | 1.07 | 0.183 |
| Nitrite | mg/L | total | 3 | 0.004 | 0.004 | 0.004 | 0.004 |
| Nitrite (As N) | mg/L | total | 2 | 0.903 | 0.903 | 1.07 | 0.737 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 3 | 0.94 | 0.28 | 2.37 | 0.17 |
| Nitrogen, Total | mg/L | total | 3 | 1.51 | 1.07 | 2.55 | 0.91 |
| Phosphorus | mg/L | total | 3 | 0.13 | 0.016 | 0.366 | 0.008 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 2 | 0.011 | 0.011 | 0.019 | 0.002 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 3 | 264 | 12.9 | 774 | 5.1 |
| Turbidity | NTU | total | 3 | 157.917 | 9.26 | 462 | 2.49 |
| Zinc | µg/L | total | 3 | 27.533 | 1.25 | 80.1 | 1.25 |

Table : In-Situ Measurements: 07-THOL-1.8

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-THOL-1.8 | Chlorophyll A (Probe) | µg/L |  | 3 | 2.803 | 0.61 | 7.75 | 0.05 |
| 07-THOL-1.8 | Chlorophyll A (Probe) | RFU |  | 3 | 0.723 | 0.15 | 1.97 | 0.05 |
| 07-THOL-1.8 | Dissolved Oxygen Saturation | % |  | 3 | 95.033 | 94.1 | 97.2 | 93.8 |
| 07-THOL-1.8 | pH | pH units | total | 3 | 7.973 | 7.95 | 8.14 | 7.83 |
| 07-THOL-1.8 | Phycocyanin (Probe) | µg/L |  | 3 | 0.367 | 0.02 | 1.08 | 0 |
| 07-THOL-1.8 | Phycocyanin (Probe) | RFU |  | 3 | 0.393 | 0.01 | 1.17 | 0 |
| 07-THOL-1.8 | Salinity | ppt |  | 3 | 0.137 | 0.15 | 0.2 | 0.06 |
| 07-THOL-1.8 | Specific Conductance | uS/cm |  | 3 | 284 | 322 | 412 | 118 |
| 07-THOL-1.8 | Temperature | °C |  | 3 | 17.667 | 18 | 19 | 16 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-THOL-1.8

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-18 | 6.7 | 1.1 | 0.54 | 4 |

### 07-OWLI-3.0 | Waterbody Class: C(T) | WI/PWL ID: 0706-0002

Table : Applicable Standards: 07-OWLI-3.0

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(T) | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 6.0 mg/L, and at no time shall the concentration be less than 5.0 mg/L |
| C(T) | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(T) | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C(T) | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-OWLI-3.0

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 2 | 147 | 147 | 158 | 136 |
| Aluminum | µg/L | total | 2 | 92.1 | 92.1 | 110 | 74.2 |
| Ammonia | µg/L | total | 6 | 5.917 | 0.4 | 33.5 | 0.4 |
| Arsenic | µg/L | total | 2 | 0.44 | 0.44 | 0.44 | 0.44 |
| Cadmium | µg/L | total | 2 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 2 | 55850 | 55850 | 61100 | 50600 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 10 | 2.71 | 2.2 | 5.7 | 1.6 |
| Carbon, Total Organic | mg/L | total | 2 | 2.45 | 2.45 | 2.9 | 2 |
| Chloride | mg/L | total | 1 | 33.8 | 33.8 | 33.8 | 33.8 |
| Chlorophyll A | µg/L | total | 2 | 1.014 | 1.014 | 1.16 | 0.869 |
| Copper | µg/L | total | 2 | 1.025 | 1.025 | 1.1 | 0.95 |
| Dissolved Oxygen | mg/L | dissolved | 19 | 11.531 | 12.15 | 14.78 | 7.25 |
| Hardness | mg/L | total | 2 | 179 | 179 | 195 | 163 |
| Iron | µg/L | total | 2 | 186.5 | 186.5 | 242 | 131 |
| Lead | µg/L | total | 2 | 0.622 | 0.622 | 0.96 | 0.285 |
| Magnesium | µg/L | total | 2 | 9570 | 9570 | 10300 | 8840 |
| Nickel | µg/L | total | 2 | 1.015 | 1.015 | 1.1 | 0.93 |
| Nitrate | mg/L | total | 13 | 1.472 | 1.44 | 2.07 | 0.832 |
| Nitrite | mg/L | total | 11 | 0.004 | 0.004 | 0.012 | 0.002 |
| Nitrite (As N) | mg/L | total | 10 | 1.5 | 1.505 | 2.07 | 0.832 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 12 | 0.371 | 0.25 | 1.26 | 0.18 |
| Nitrogen, Total | mg/L | total | 2 | 1.6 | 1.6 | 1.7 | 1.5 |
| Phosphorus | mg/L | total | 13 | 0.02 | 0.014 | 0.111 | 0.001 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 12 | 0.003 | 0.001 | 0.009 | 0.001 |
| Silver | µg/L | total | 2 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 13 | 23.9 | 8.5 | 178 | 3 |
| Total Volatile Solids | mg/L | total | 11 | 47.727 | 41 | 75 | 33 |
| Turbidity | NTU | total | 13 | 7.672 | 3.32 | 47 | 1.71 |
| Zinc | µg/L | total | 2 | 1.25 | 1.25 | 1.25 | 1.25 |

Table : In-Situ Measurements: 07-OWLI-3.0

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-OWLI-3.0 | Chlorophyll A (Probe) | µg/L |  | 2 | 1.175 | 1.175 | 1.6 | 0.75 |
| 07-OWLI-3.0 | Chlorophyll A (Probe) | RFU |  | 2 | 0.19 | 0.19 | 0.22 | 0.16 |
| 07-OWLI-3.0 | Dissolved Oxygen Saturation | % |  | 10 | 100.857 | 102.85 | 106 | 80.7 |
| 07-OWLI-3.0 | pH | pH units | total | 8 | 8.224 | 8.16 | 8.65 | 7.8 |
| 07-OWLI-3.0 | Phycocyanin (Probe) | µg/L |  | 2 | 0.11 | 0.11 | 0.14 | 0.08 |
| 07-OWLI-3.0 | Phycocyanin (Probe) | RFU |  | 2 | 0.2 | 0.2 | 0.25 | 0.15 |
| 07-OWLI-3.0 | Salinity | ppt |  | 2 | 0.195 | 0.195 | 0.22 | 0.17 |
| 07-OWLI-3.0 | Specific Conductance | uS/cm |  | 10 | 348.8 | 333 | 454 | 291 |
| 07-OWLI-3.0 | Temperature | °C |  | 12 | 11.417 | 12.5 | 20 | 2 |

Table : Water Quality Standard Excursions: 07-OWLI-3.0

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2018-03-12 | Ph | 8.7 | total | ph units | fishing | 8.5 | Excursion |

Table : Biological Assessment Score (BAP) Summary: 07-OWLI-3.0

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-16 | 6 | 0.48 | 0.24 | 4 |

### 07-DUCH-0.3 | Waterbody Class: C(TS) | WI/PWL ID: 0706-0003

Table : Applicable Standards: 07-DUCH-0.3

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(TS) | Dissolved Oxygen | dissolved | mg/L | Shall not be less than 7.0 mg/L from other than natural conditions. |
| C(TS) | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(TS) | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-DUCH-0.3

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 2 | 189.5 | 189.5 | 193 | 186 |
| Aluminum | µg/L | total | 2 | 82.2 | 82.2 | 110 | 54.4 |
| Ammonia | µg/L | total | 9 | 15.467 | 0.4 | 47.6 | 0.4 |
| Arsenic | µg/L | total | 2 | 0.475 | 0.475 | 0.55 | 0.4 |
| Cadmium | µg/L | total | 2 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 2 | 68200 | 68200 | 70200 | 66200 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 11 | 2.809 | 2.7 | 4.1 | 2 |
| Carbon, Total Organic | mg/L | total | 2 | 2.85 | 2.85 | 3.5 | 2.2 |
| Chloride | mg/L | total | 2 | 27.75 | 27.75 | 27.9 | 27.6 |
| Chlorophyll A | µg/L | total | 2 | 1.38 | 1.38 | 1.71 | 1.05 |
| Copper | µg/L | total | 2 | 1.2 | 1.2 | 1.2 | 1.2 |
| Dissolved Oxygen | mg/L | dissolved | 9 | 12.302 | 12.5 | 16.95 | 8.17 |
| Hardness | mg/L | total | 2 | 224.5 | 224.5 | 229 | 220 |
| Iron | µg/L | total | 2 | 179.8 | 179.8 | 261 | 98.6 |
| Lead | µg/L | total | 2 | 0.583 | 0.583 | 0.88 | 0.285 |
| Magnesium | µg/L | total | 2 | 13250 | 13250 | 13300 | 13200 |
| Nickel | µg/L | total | 2 | 1.2 | 1.2 | 1.3 | 1.1 |
| Nitrate | mg/L | total | 13 | 1.23 | 1.32 | 2.03 | 0.263 |
| Nitrite | mg/L | total | 12 | 0.008 | 0.004 | 0.025 | 0.002 |
| Nitrite (As N) | mg/L | total | 10 | 1.145 | 0.979 | 2.03 | 0.263 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 11 | 0.341 | 0.3 | 0.54 | 0.2 |
| Nitrogen, Total | mg/L | total | 2 | 1.655 | 1.655 | 2.07 | 1.24 |
| Phosphorus | mg/L | total | 13 | 0.013 | 0.012 | 0.024 | 0.005 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 13 | 0.005 | 0.001 | 0.04 | 0.001 |
| Silver | µg/L | total | 2 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 12 | 5.018 | 4.1 | 12.2 | 1.4 |
| Total Volatile Solids | mg/L | total | 11 | 55.545 | 51 | 80 | 41 |
| Turbidity | NTU | total | 13 | 2.85 | 2.32 | 5.54 | 1.01 |
| Zinc | µg/L | total | 2 | 1.25 | 1.25 | 1.25 | 1.25 |

Table : In-Situ Measurements: 07-DUCH-0.3

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-DUCH-0.3 | Chlorophyll A (Probe) | µg/L |  | 2 | 0.93 | 0.93 | 1.2 | 0.66 |
| 07-DUCH-0.3 | Chlorophyll A (Probe) | RFU |  | 2 | 0.25 | 0.25 | 0.28 | 0.22 |
| 07-DUCH-0.3 | Dissolved Oxygen Saturation | % |  | 10 | 107.94 | 109 | 122 | 91 |
| 07-DUCH-0.3 | pH | pH units | total | 8 | 8.523 | 8.225 | 9.48 | 8 |
| 07-DUCH-0.3 | Phycocyanin (Probe) | µg/L |  | 2 | 0.05 | 0.05 | 0.1 | 0 |
| 07-DUCH-0.3 | Phycocyanin (Probe) | RFU |  | 2 | 0.1 | 0.1 | 0.16 | 0.04 |
| 07-DUCH-0.3 | Salinity | ppt |  | 2 | 0.225 | 0.225 | 0.23 | 0.22 |
| 07-DUCH-0.3 | Specific Conductance | uS/cm |  | 10 | 449.2 | 455.5 | 518 | 377 |
| 07-DUCH-0.3 | Temperature | °C |  | 12 | 12 | 12.5 | 24 | 1 |

Table : Water Quality Standard Excursions: 07-DUCH-0.3

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2018-03-12 | Ph | 9.5 | total | ph units | fishing | 8.5 | Excursion |

Table : Biological Assessment Score (BAP) Summary: 07-DUCH-0.3

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-16 | 5.8 | 0.65 | 0.33 | 4 |

### 07-DUCH-8.3 | Waterbody Class: C(TS) | WI/PWL ID: 0706-0003

Table : Applicable Standards: 07-DUCH-8.3

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(TS) | Dissolved Oxygen | dissolved | mg/L | Shall not be less than 7.0 mg/L from other than natural conditions. |
| C(TS) | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |

Table : Chemistry Measurements: 07-DUCH-8.3

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Dissolved Oxygen | mg/L | dissolved | 1 | 9.7 | 9.7 | 9.7 | 9.7 |

Table : In-Situ Measurements: 07-DUCH-8.3

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-DUCH-8.3 | Dissolved Oxygen Saturation | % |  | 1 | 97.8 | 97.8 | 97.8 | 97.8 |
| 07-DUCH-8.3 | pH | pH units | total | 1 | 8.3 | 8.3 | 8.3 | 8.3 |
| 07-DUCH-8.3 | Salinity | ppt |  | 1 | 0.2 | 0.2 | 0.2 | 0.2 |
| 07-DUCH-8.3 | Specific Conductance | uS/cm |  | 1 | 424.2 | 424.2 | 424.2 | 424.2 |
| 07-DUCH-8.3 | Temperature | °C |  | 1 | 15.7 | 15.7 | 15.7 | 15.7 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-OWAL\_T46-0.1 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table : Applicable Standards: 07-OWAL\_T46-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L. |
| C | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-OWAL\_T46-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 2 | 210.5 | 210.5 | 226 | 195 |
| Aluminum | µg/L | total | 2 | 53.8 | 53.8 | 67.7 | 39.9 |
| Ammonia | µg/L | total | 7 | 12.571 | 12 | 21 | 7.5 |
| Arsenic | µg/L | total | 2 | 0.16 | 0.16 | 0.16 | 0.16 |
| Cadmium | µg/L | total | 2 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 2 | 70850 | 70850 | 76300 | 65400 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 8 | 2.233 | 1.9 | 2.9 | 1.9 |
| Carbon, Total Organic | mg/L | total | 2 | 1.7 | 1.7 | 1.8 | 1.6 |
| Chloride | mg/L | total | 2 | 24.1 | 24.1 | 33.5 | 14.7 |
| Chlorophyll A | µg/L | total | 2 | 0.284 | 0.284 | 0.376 | 0.192 |
| Copper | µg/L | total | 2 | 0.82 | 0.82 | 0.88 | 0.76 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 9.173 | 9.51 | 9.51 | 8.5 |
| Hardness | mg/L | total | 2 | 283 | 283 | 301 | 265 |
| Iron | µg/L | total | 2 | 86.45 | 86.45 | 111 | 61.9 |
| Lead | µg/L | total | 2 | 0.593 | 0.593 | 0.9 | 0.285 |
| Magnesium | µg/L | total | 2 | 25750 | 25750 | 26700 | 24800 |
| Nickel | µg/L | total | 2 | 0.955 | 0.955 | 1 | 0.91 |
| Nitrate | mg/L | total | 2 | 8.775 | 8.775 | 9.12 | 8.43 |
| Nitrite | mg/L | total | 2 | 0.004 | 0.004 | 0.004 | 0.004 |
| Nitrite (As N) | mg/L | total | 10 | 5.157 | 4.945 | 9.12 | 3.48 |
| Nitrogen Total | mg/L | total | 11 | 4.574 | 4.35 | 6.07 | 3.7 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 2 | 0.395 | 0.395 | 0.47 | 0.32 |
| Nitrogen, Total | mg/L | total | 2 | 9.17 | 9.17 | 9.59 | 8.75 |
| Phosphorus | mg/L | total | 10 | 0.02 | 0.021 | 0.043 | 0.011 |
| Phosphorus, Dissolved | mg/L | dissolved | 8 | 0.012 | 0.011 | 0.024 | 0.004 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 12 | 0.01 | 0.009 | 0.017 | 0 |
| Silver | µg/L | total | 2 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 11 | 7.05 | 5.1 | 24.4 | 0.5 |
| Turbidity | NTU | total | 2 | 4.25 | 4.25 | 4.61 | 3.89 |
| Zinc | µg/L | total | 2 | 1.25 | 1.25 | 1.25 | 1.25 |

Table : In-Situ Measurements: 07-OWAL\_T46-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-OWAL\_T46-0.1 | Chlorophyll A (Probe) | µg/L |  | 2 | 0.14 | 0.14 | 0.18 | 0.1 |
| 07-OWAL\_T46-0.1 | Chlorophyll A (Probe) | RFU |  | 2 | 0.04 | 0.04 | 0.05 | 0.03 |
| 07-OWAL\_T46-0.1 | Dissolved Oxygen Saturation | % |  | 2 | 93.75 | 93.75 | 95.2 | 92.3 |
| 07-OWAL\_T46-0.1 | pH | pH units | total | 2 | 8.12 | 8.12 | 8.13 | 8.11 |
| 07-OWAL\_T46-0.1 | Phycocyanin (Probe) | µg/L |  | 2 | 0.025 | 0.025 | 0.05 | 0 |
| 07-OWAL\_T46-0.1 | Phycocyanin (Probe) | RFU |  | 2 | 0.05 | 0.05 | 0.1 | 0 |
| 07-OWAL\_T46-0.1 | Salinity | ppt |  | 2 | 0.255 | 0.255 | 0.26 | 0.25 |
| 07-OWAL\_T46-0.1 | Specific Conductance | uS/cm |  | 2 | 527 | 527 | 535 | 519 |
| 07-OWAL\_T46-0.1 | Temperature | °C |  | 2 | 17 | 17 | 19 | 15 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-OWAL\_T46-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-16 | 6.7 | 0.53 | 0.26 | 4 |

### 07-OWAL\_T9-0.1 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table : Applicable Standards: 07-OWAL\_T9-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L. |
| C | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-OWAL\_T9-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 1 | 225 | 225 | 225 | 225 |
| Aluminum | µg/L | total | 1 | 91.3 | 91.3 | 91.3 | 91.3 |
| Ammonia | µg/L | total | 1 | 7.5 | 7.5 | 7.5 | 7.5 |
| Arsenic | µg/L | total | 1 | 0.62 | 0.62 | 0.62 | 0.62 |
| Cadmium | µg/L | total | 1 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 1 | 83100 | 83100 | 83100 | 83100 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 2 | NaN |  | -Inf | Inf |
| Carbon, Total Organic | mg/L | total | 1 | 1.8 | 1.8 | 1.8 | 1.8 |
| Chloride | mg/L | total | 1 | 13.7 | 13.7 | 13.7 | 13.7 |
| Chlorophyll A | µg/L | total | 1 | 0.259 | 0.259 | 0.259 | 0.259 |
| Copper | µg/L | total | 1 | 1.1 | 1.1 | 1.1 | 1.1 |
| Dissolved Oxygen | mg/L | dissolved | 2 | 9.33 | 9.33 | 9.6 | 9.06 |
| Hardness | mg/L | total | 1 | 282 | 282 | 282 | 282 |
| Iron | µg/L | total | 1 | 150 | 150 | 150 | 150 |
| Lead | µg/L | total | 1 | 0.97 | 0.97 | 0.97 | 0.97 |
| Magnesium | µg/L | total | 1 | 18000 | 18000 | 18000 | 18000 |
| Nickel | µg/L | total | 1 | 1.5 | 1.5 | 1.5 | 1.5 |
| Nitrate | mg/L | total | 1 | 2.99 | 2.99 | 2.99 | 2.99 |
| Nitrite | mg/L | total | 1 | 0.004 | 0.004 | 0.004 | 0.004 |
| Nitrite (As N) | mg/L | total | 3 | 2.747 | 2.78 | 2.99 | 2.47 |
| Nitrogen Total | mg/L | total | 2 | NaN |  | -Inf | Inf |
| Nitrogen, Kjeldahl, Total | mg/L | total | 1 | 0.21 | 0.21 | 0.21 | 0.21 |
| Nitrogen, Total | mg/L | total | 1 | 3.2 | 3.2 | 3.2 | 3.2 |
| Phosphorus | mg/L | total | 3 | 0.123 | 0.088 | 0.219 | 0.062 |
| Phosphorus, Dissolved | mg/L | dissolved | 2 | 0.086 | 0.086 | 0.12 | 0.052 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 1 | 0.085 | 0.085 | 0.085 | 0.085 |
| Silver | µg/L | total | 1 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 3 | 5.1 | 5.1 | 5.1 | 5.1 |
| Turbidity | NTU | total | 1 | 5.47 | 5.47 | 5.47 | 5.47 |
| Zinc | µg/L | total | 1 | 1.25 | 1.25 | 1.25 | 1.25 |

Table : In-Situ Measurements: 07-OWAL\_T9-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-OWAL\_T9-0.1 | Chlorophyll A (Probe) | µg/L |  | 2 | 2.655 | 2.655 | 4.81 | 0.5 |
| 07-OWAL\_T9-0.1 | Chlorophyll A (Probe) | RFU |  | 2 | 0.65 | 0.65 | 1.14 | 0.16 |
| 07-OWAL\_T9-0.1 | Dissolved Oxygen Saturation | % |  | 2 | 95.8 | 95.8 | 96.1 | 95.5 |
| 07-OWAL\_T9-0.1 | pH | pH units | total | 2 | 8.35 | 8.35 | 8.36 | 8.34 |
| 07-OWAL\_T9-0.1 | Phycocyanin (Probe) | µg/L |  | 2 | 0.115 | 0.115 | 0.23 | 0 |
| 07-OWAL\_T9-0.1 | Phycocyanin (Probe) | RFU |  | 2 | 0.1 | 0.1 | 0.2 | 0 |
| 07-OWAL\_T9-0.1 | Salinity | ppt |  | 2 | 290.145 | 290.145 | 580 | 0.29 |
| 07-OWAL\_T9-0.1 | Specific Conductance | uS/cm |  | 1 | 594 | 594 | 594 | 594 |
| 07-OWAL\_T9-0.1 | Temperature | °C |  | 2 | 16.5 | 16.5 | 18 | 15 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-OWAL\_T9-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-16 | 6.6 | 0.24 | 0.09 | 8 |

### 07-SCKR-0.1 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table : Applicable Standards: 07-SCKR-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L. |
| C | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-SCKR-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 1 | 242 | 242 | 242 | 242 |
| Aluminum | µg/L | total | 1 | 99 | 99 | 99 | 99 |
| Ammonia | µg/L | total | 6 | 26.667 | 20.95 | 71.6 | 0.4 |
| Arsenic | µg/L | total | 1 | 0.85 | 0.85 | 0.85 | 0.85 |
| Cadmium | µg/L | total | 1 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 1 | 78900 | 78900 | 78900 | 78900 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 11 | 7.691 | 8.4 | 11 | 4.8 |
| Carbon, Total Organic | mg/L | total | 1 | 10.8 | 10.8 | 10.8 | 10.8 |
| Chloride | mg/L | total | 1 | 31.8 | 31.8 | 31.8 | 31.8 |
| Chlorophyll A | µg/L | total | 1 | 2.02 | 2.02 | 2.02 | 2.02 |
| Copper | µg/L | total | 1 | 0.95 | 0.95 | 0.95 | 0.95 |
| Dissolved Oxygen | mg/L | dissolved | 11 | 10.486 | 10.14 | 14.92 | 6.82 |
| Hardness | mg/L | total | 1 | 276 | 276 | 276 | 276 |
| Iron | µg/L | total | 1 | 344 | 344 | 344 | 344 |
| Lead | µg/L | total | 1 | 0.285 | 0.285 | 0.285 | 0.285 |
| Magnesium | µg/L | total | 1 | 19300 | 19300 | 19300 | 19300 |
| Nickel | µg/L | total | 1 | 1.6 | 1.6 | 1.6 | 1.6 |
| Nitrate | mg/L | total | 12 | 0.33 | 0.352 | 0.54 | 0.013 |
| Nitrite | mg/L | total | 10 | 0.006 | 0.003 | 0.023 | 0.002 |
| Nitrite (As N) | mg/L | total | 8 | 0.371 | 0.364 | 0.54 | 0.22 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 12 | 0.563 | 0.575 | 0.83 | 0.3 |
| Nitrogen, Total | mg/L | total | 1 | 1.21 | 1.21 | 1.21 | 1.21 |
| Phosphorus | mg/L | total | 12 | 0.025 | 0.022 | 0.05 | 0.008 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 12 | 0.005 | 0.001 | 0.022 | 0.001 |
| Silver | µg/L | total | 1 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 12 | 3.9 | 3 | 8.7 | 1.5 |
| Total Volatile Solids | mg/L | total | 11 | 72 | 73 | 87 | 55 |
| Turbidity | NTU | total | 12 | 3.413 | 2.765 | 5.4 | 2.06 |
| Zinc | µg/L | total | 1 | 1.25 | 1.25 | 1.25 | 1.25 |

Table : In-Situ Measurements: 07-SCKR-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-SCKR-0.1 | Chlorophyll A (Probe) | µg/L |  | 2 | 5.025 | 5.025 | 5.4 | 4.65 |
| 07-SCKR-0.1 | Chlorophyll A (Probe) | RFU |  | 2 | 1.25 | 1.25 | 1.3 | 1.2 |
| 07-SCKR-0.1 | Dissolved Oxygen Saturation | % |  | 10 | 89.594 | 97.3 | 123.4 | 12.94 |
| 07-SCKR-0.1 | pH | pH units | total | 8 | 8.305 | 8.245 | 8.73 | 7.85 |
| 07-SCKR-0.1 | Phycocyanin (Probe) | µg/L |  | 2 | 0.17 | 0.17 | 0.3 | 0.04 |
| 07-SCKR-0.1 | Phycocyanin (Probe) | RFU |  | 2 | 0.24 | 0.24 | 0.4 | 0.08 |
| 07-SCKR-0.1 | Salinity | ppt |  | 2 | 0.27 | 0.27 | 0.28 | 0.26 |
| 07-SCKR-0.1 | Specific Conductance | uS/cm |  | 10 | 520.6 | 525 | 578 | 448 |
| 07-SCKR-0.1 | Temperature | °C |  | 12 | 12.5 | 14 | 25 | 1 |

Table : Water Quality Standard Excursions: 07-SCKR-0.1

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2018-06-19 | Dissolved\_oxygen | 4.1 | dissolved | mg/l | fishing | 5.0 | Excursion |
| 2018-03-12 | Ph | 8.7 | total | ph units | fishing | 8.5 | Excursion |

Table : Biological Assessment Score (BAP) Summary: 07-SCKR-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-16 | 4.5 | 0.34 | 0.17 | 4 |

### 07-VENE-1.5 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table : Applicable Standards: 07-VENE-1.5

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L. |
| C | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-VENE-1.5

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 2 | 267.5 | 267.5 | 295 | 240 |
| Aluminum | µg/L | total | 2 | 62.9 | 62.9 | 93.6 | 32.2 |
| Ammonia | µg/L | total | 1 | 12 | 12 | 12 | 12 |
| Arsenic | µg/L | total | 2 | 0.61 | 0.61 | 0.8 | 0.42 |
| Cadmium | µg/L | total | 2 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 2 | 103600 | 103600 | 113000 | 94200 |
| Carbon, Total Organic | mg/L | total | 2 | 4.65 | 4.65 | 4.9 | 4.4 |
| Chloride | mg/L | total | 2 | 52.15 | 52.15 | 59.4 | 44.9 |
| Chlorophyll A | µg/L | total | 2 | 3.9 | 3.9 | 4.5 | 3.3 |
| Copper | µg/L | total | 2 | 1.25 | 1.25 | 1.4 | 1.1 |
| Dissolved Oxygen | mg/L | dissolved | 4 | 9.42 | 9.185 | 10.2 | 9.11 |
| Hardness | mg/L | total | 2 | 363 | 363 | 387 | 339 |
| Iron | µg/L | total | 2 | 100.3 | 100.3 | 139 | 61.6 |
| Lead | µg/L | total | 2 | 0.632 | 0.632 | 0.98 | 0.285 |
| Magnesium | µg/L | total | 2 | 25350 | 25350 | 25400 | 25300 |
| Nickel | µg/L | total | 2 | 2.05 | 2.05 | 2.1 | 2 |
| Nitrate | mg/L | total | 2 | 4.015 | 4.015 | 4.19 | 3.84 |
| Nitrite | mg/L | total | 2 | 0.016 | 0.016 | 0.022 | 0.011 |
| Nitrite (As N) | mg/L | total | 1 | 4.2 | 4.2 | 4.2 | 4.2 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 2 | 0.59 | 0.59 | 0.61 | 0.57 |
| Nitrogen, Total | mg/L | total | 2 | 4.62 | 4.62 | 4.77 | 4.47 |
| Phosphorus | mg/L | total | 2 | 0.021 | 0.021 | 0.022 | 0.02 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 2 | 0.01 | 0.01 | 0.011 | 0.008 |
| Silver | µg/L | total | 2 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 2 | 5.35 | 5.35 | 8.1 | 2.6 |
| Turbidity | NTU | total | 2 | 3.36 | 3.36 | 5.01 | 1.71 |
| Zinc | µg/L | total | 2 | 1.25 | 1.25 | 1.25 | 1.25 |

Table : In-Situ Measurements: 07-VENE-1.5

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-VENE-1.5 | Chlorophyll A (Probe) | µg/L |  | 2 | 12.755 | 12.755 | 22.31 | 3.2 |
| 07-VENE-1.5 | Chlorophyll A (Probe) | RFU |  | 2 | 3.08 | 3.08 | 5.3 | 0.86 |
| 07-VENE-1.5 | Dissolved Oxygen Saturation | % |  | 3 | 104.133 | 107.3 | 109.3 | 95.8 |
| 07-VENE-1.5 | pH | pH units | total | 3 | 8.187 | 8.18 | 8.39 | 7.99 |
| 07-VENE-1.5 | Phycocyanin (Probe) | µg/L |  | 2 | 0.915 | 0.915 | 1.8 | 0.03 |
| 07-VENE-1.5 | Phycocyanin (Probe) | RFU |  | 2 | 0.95 | 0.95 | 1.8 | 0.1 |
| 07-VENE-1.5 | Salinity | ppt |  | 3 | 0.367 | 0.36 | 0.39 | 0.35 |
| 07-VENE-1.5 | Specific Conductance | uS/cm |  | 3 | 744.667 | 732 | 788 | 714 |
| 07-VENE-1.5 | Temperature | °C |  | 3 | 19.9 | 18 | 24 | 17.7 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-VENE-1.5

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-16 | 3.8 | 1.2 | 0.58 | 4 |

### 07-GROU-1.5 | Waterbody Class: AA(T) | WI/PWL ID: 0706-0001

Table : Applicable Standards: 07-GROU-1.5

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |

Table : Chemistry Measurements: 07-GROU-1.5

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 155.333 | 156 | 166 | 144 |
| Aluminum | µg/L | total | 2 | 91.6 | 91.6 | 160 | 23.2 |
| Ammonia | µg/L | total | 25 | 26.504 | 20 | 141 | 0.4 |
| Arsenic | µg/L | total | 3 | 0.427 | 0.45 | 0.67 | 0.16 |
| Cadmium | µg/L | total | 3 | 0.137 | 0.19 | 0.19 | 0.032 |
| Calcium | µg/L | total | 3 | 54300 | 52200 | 58800 | 51900 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 26 | 2.085 | 1.5 | 6.5 | 1.1 |
| Carbon, Total Organic | mg/L | total | 2 | 1.25 | 1.25 | 1.3 | 1.2 |
| Chloride | mg/L | total | 2 | 16.25 | 16.25 | 16.6 | 15.9 |
| Chlorophyll A | µg/L | total | 2 | 3.025 | 3.025 | 3.76 | 2.29 |
| Copper | µg/L | total | 3 | 0.33 | 0.33 | 0.33 | 0.33 |
| Dissolved Oxygen | mg/L | dissolved | 8 | 10.217 | 10.23 | 10.26 | 10.15 |
| Hardness | mg/L | total | 3 | 188.667 | 180 | 206 | 180 |
| Iron | µg/L | total | 3 | 167.867 | 166 | 296 | 41.6 |
| Lead | µg/L | total | 3 | 0.389 | 0.285 | 0.81 | 0.071 |
| Magnesium | µg/L | total | 3 | 12933.333 | 12300 | 14400 | 12100 |
| Nickel | µg/L | total | 3 | 0.767 | 0.75 | 0.88 | 0.67 |
| Nitrate | mg/L | total | 3 | 1.59 | 1.54 | 1.72 | 1.51 |
| Nitrite | mg/L | total | 3 | 0.004 | 0.004 | 0.004 | 0.004 |
| Nitrite (As N) | mg/L | total | 1 | 1.72 | 1.72 | 1.72 | 1.72 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 32 | 1.208 | 1.27 | 1.71 | 0.149 |
| Nitrogen Total | mg/L | total | 33 | 1.464 | 1.466 | 2.22 | 0.969 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 3 | 0.177 | 0.15 | 0.25 | 0.13 |
| Nitrogen, Total | mg/L | total | 3 | 1.767 | 1.76 | 1.86 | 1.68 |
| Phosphorus | mg/L | total | 31 | 0.057 | 0.011 | 1.02 | 0.005 |
| Phosphorus Dissolved | mg/L | dissolved | 20 | 0.011 | 0.008 | 0.035 | 0.005 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 29 | 0.005 | 0.005 | 0.014 | 0.002 |
| Silver | µg/L | total | 3 | 0.056 | 0.075 | 0.075 | 0.02 |
| Total Suspended Solids | mg/L | total | 22 | 16.033 | 1.7 | 168.1 | 0.5 |
| Turbidity | FNU | total | 32 | 39.403 | 1.3 | 1039 | 0.6 |
| Turbidity | NTU | total | 3 | 3.97 | 5.42 | 6.07 | 0.42 |
| Zinc | µg/L | total | 3 | 1.25 | 1.25 | 1.25 | 1.25 |

Table : In-Situ Measurements: 07-GROU-1.5

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-GROU-1.5 | Chlorophyll A (Probe) | µg/L |  | 3 | 0.46 | 0.25 | 1.13 | 0 |
| 07-GROU-1.5 | Chlorophyll A (Probe) | RFU |  | 3 | 0.127 | 0.09 | 0.26 | 0.03 |
| 07-GROU-1.5 | Dissolved Oxygen Saturation | % |  | 4 | 99.25 | 97.8 | 104 | 97.4 |
| 07-GROU-1.5 | pH | pH units | total | 4 | 8.348 | 8.32 | 8.5 | 8.25 |
| 07-GROU-1.5 | Phycocyanin (Probe) | µg/L |  | 3 | 0.037 | 0.05 | 0.06 | 0 |
| 07-GROU-1.5 | Phycocyanin (Probe) | RFU |  | 3 | 0.05 | 0.06 | 0.09 | 0 |
| 07-GROU-1.5 | Salinity | ppt |  | 4 | 0.192 | 0.195 | 0.21 | 0.17 |
| 07-GROU-1.5 | Specific Conductance | uS/cm |  | 4 | 320 | 374 | 427 | 105 |
| 07-GROU-1.5 | Specific Conductance | uS/cm | total | 37 | NaN |  | -Inf | Inf |
| 07-GROU-1.5 | Temperature | °C |  | 4 | 13.75 | 13.5 | 15 | 13 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-GROU-1.5

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2018-07-31 | 6.4 | NA | NA | 1 |
| 2019-07-17 | 6.6 | 0.76 | 0.38 | 4 |

### 07-SKAT\_T2-0.1 | Waterbody Class: AA AA(T) | WI/PWL ID: 0707-0005

Table : Applicable Standards: 07-SKAT\_T2-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| AA | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| AA | Ammonia | total | µg/L | NH3 + NH4+ as N; 2,000 ug/L |
| AA | Cadmium | total | µg/L | 5 ug/L |
| AA | Copper | total | µg/L | 200 ug/L |
| AA | Lead | total | µg/L | 50 ug/L |
| AA | Nickel | total | µg/L | 100 ug/L |
| AA | Nitrate\_nitrite | total | µg/L | 10,000 ug/L |
| AA | Nitrite | total | µg/L | 1,000 ug/L |
| AA | Silver | total | µg/L | 50 ug/L |

Table : Chemistry Measurements: 07-SKAT\_T2-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 8 | 202.5 | 205 | 233 | 167 |
| Aluminum | µg/L | total | 6 | 54.567 | 58.6 | 75 | 30.1 |
| Ammonia | µg/L | total | 282 | 39.845 | 29.5 | 130 | 1.5 |
| Arsenic | µg/L | total | 8 | 0.691 | 0.735 | 1.1 | 0.195 |
| Cadmium | µg/L | total | 8 | 0.15 | 0.19 | 0.19 | 0.032 |
| Calcium | µg/L | total | 8 | 68725 | 70450 | 81500 | 52500 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 76 | 5.262 | 5.05 | 8.5 | 2.6 |
| Carbon, Total Organic | mg/L | total | 6 | 6.933 | 7 | 7.7 | 6.1 |
| Chloride | mg/L | total | 6 | 47.7 | 47.8 | 63.4 | 31.9 |
| Chlorophyll A | µg/L | total | 6 | 1.714 | 1.33 | 3.03 | 0.782 |
| Copper | µg/L | total | 8 | 1.272 | 1.235 | 1.7 | 0.92 |
| Dissolved Oxygen | mg/L | dissolved | 8 | 8.615 | 8.535 | 9.14 | 8.25 |
| Hardness | mg/L | total | 8 | 237 | 244 | 279 | 181 |
| Iron | µg/L | total | 8 | 376.75 | 338 | 678 | 153 |
| Lead | µg/L | total | 8 | 0.432 | 0.285 | 1 | 0.16 |
| Magnesium | µg/L | total | 8 | 15825 | 16500 | 18300 | 12000 |
| Nickel | µg/L | total | 8 | 1.35 | 1.4 | 1.5 | 1.1 |
| Nitrate | mg/L | total | 8 | 0.654 | 0.69 | 0.85 | 0.385 |
| Nitrite | mg/L | total | 8 | 0.008 | 0.007 | 0.014 | 0.004 |
| Nitrite (As N) | mg/L | total | 6 | 0.596 | 0.655 | 0.738 | 0.396 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 86 | 1.13 | 0.901 | 7.35 | 0.131 |
| Nitrogen Total | mg/L | total | 90 | 1.553 | 1.33 | 8.75 | 0.045 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 8 | 0.55 | 0.555 | 0.61 | 0.48 |
| Nitrogen, Total | mg/L | total | 8 | 1.085 | 1.24 | 1.46 | 0.4 |
| Phosphorus | mg/L | total | 90 | 0.061 | 0.031 | 0.611 | 0.006 |
| Phosphorus Dissolved | mg/L | dissolved | 64 | 0.059 | 0.024 | 0.906 | 0.005 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 84 | 0.018 | 0.017 | 0.061 | 0.002 |
| Silver | µg/L | total | 8 | 0.061 | 0.075 | 0.075 | 0.02 |
| Total Suspended Solids | mg/L | total | 70 | 4.207 | 1.35 | 22 | 0.5 |
| Turbidity | FNU | total | 88 | 13.552 | 2 | 229 | 0.1 |
| Turbidity | NTU | total | 8 | 4.982 | 4.105 | 11.2 | 0.52 |
| Zinc | µg/L | total | 8 | 1.25 | 1.25 | 1.25 | 1.25 |

Table : In-Situ Measurements: 07-SKAT\_T2-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T2-0.1 | Chlorophyll A (Probe) | µg/L |  | 6 | 3.6 | 3.18 | 6.28 | 1.34 |
| 07-SKAT\_T2-0.1 | Chlorophyll A (Probe) | RFU |  | 6 | 0.923 | 0.76 | 1.64 | 0.37 |
| 07-SKAT\_T2-0.1 | Dissolved Oxygen Saturation | % |  | 8 | 92.975 | 92.4 | 96 | 91.1 |
| 07-SKAT\_T2-0.1 | pH | pH units | total | 8 | 8.062 | 8.05 | 8.19 | 7.96 |
| 07-SKAT\_T2-0.1 | Phycocyanin (Probe) | µg/L |  | 6 | 0.05 | 0 | 0.15 | 0 |
| 07-SKAT\_T2-0.1 | Phycocyanin (Probe) | RFU |  | 6 | 0.21 | 0.13 | 0.5 | 0 |
| 07-SKAT\_T2-0.1 | Salinity | ppt |  | 8 | 0.27 | 0.27 | 0.31 | 0.23 |
| 07-SKAT\_T2-0.1 | Specific Conductance | uS/cm |  | 8 | 555.75 | 555.5 | 632 | 480 |
| 07-SKAT\_T2-0.1 | Specific Conductance | uS/cm | total | 98 | NaN |  | -Inf | Inf |
| 07-SKAT\_T2-0.1 | Temperature | °C |  | 8 | 18.75 | 19.5 | 20 | 16 |

Table : Water Quality Standard Excursions: 07-SKAT\_T2-0.1

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2019-07-17 | Iron | 678 | total | ug/l | source of water supply | 300 | Excursion |
| 2019-08-14 | Iron | 397 | total | ug/l | source of water supply | 300 | Excursion |

Table : Biological Assessment Score (BAP) Summary: 07-SKAT\_T2-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-17 | 6.6 | 0.81 | 0.4 | 4 |

### 07-SKAT\_T5-0.1 | Waterbody Class: AA AA(T) | WI/PWL ID: 0707-0005

Table : Applicable Standards: 07-SKAT\_T5-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| AA | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| AA | Ammonia | total | µg/L | NH3 + NH4+ as N; 2,000 ug/L |
| AA | Cadmium | total | µg/L | 5 ug/L |
| AA | Copper | total | µg/L | 200 ug/L |
| AA | Lead | total | µg/L | 50 ug/L |
| AA | Nickel | total | µg/L | 100 ug/L |
| AA | Nitrate\_nitrite | total | µg/L | 10,000 ug/L |
| AA | Nitrite | total | µg/L | 1,000 ug/L |
| AA | Silver | total | µg/L | 50 ug/L |

Table : Chemistry Measurements: 07-SKAT\_T5-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 6 | 175.333 | 182 | 185 | 159 |
| Aluminum | µg/L | total | 4 | 48.3 | 48.3 | 63.5 | 33.1 |
| Ammonia | µg/L | total | 72 | 35.856 | 26.4 | 94.9 | 1.5 |
| Arsenic | µg/L | total | 6 | 0.4 | 0.4 | 0.64 | 0.16 |
| Cadmium | µg/L | total | 6 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 6 | 65900 | 69300 | 70900 | 57500 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 26 | 5.362 | 4.5 | 10.6 | 2.2 |
| Carbon, Total Organic | mg/L | total | 6 | 3.367 | 3.7 | 3.9 | 2.5 |
| Chloride | mg/L | total | 4 | 31.7 | 31.7 | 41.9 | 21.5 |
| Chlorophyll A | µg/L | total | 6 | 0.915 | 0.629 | 1.65 | 0.467 |
| Copper | µg/L | total | 6 | 1.9 | 1.5 | 2.9 | 1.3 |
| Dissolved Oxygen | mg/L | dissolved | 6 | 8.973 | 8.75 | 9.63 | 8.54 |
| Hardness | mg/L | total | 6 | 215.333 | 226 | 232 | 188 |
| Iron | µg/L | total | 6 | 103.667 | 114 | 148 | 49 |
| Lead | µg/L | total | 6 | 0.443 | 0.285 | 0.76 | 0.285 |
| Magnesium | µg/L | total | 6 | 12366.667 | 13000 | 13400 | 10700 |
| Nickel | µg/L | total | 6 | 1.333 | 1.1 | 1.8 | 1.1 |
| Nitrate | mg/L | total | 6 | 2.91 | 3.03 | 3.08 | 2.62 |
| Nitrite | mg/L | total | 6 | 0.004 | 0.004 | 0.004 | 0.004 |
| Nitrite (As N) | mg/L | total | 6 | 2.91 | 3.03 | 3.08 | 2.62 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 28 | 2.826 | 2.7 | 4.53 | 0.158 |
| Nitrogen Total | mg/L | total | 30 | 3.025 | 3.035 | 5.34 | 0.045 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 6 | 0.423 | 0.44 | 0.45 | 0.38 |
| Nitrogen, Total | mg/L | total | 6 | 3.187 | 3.46 | 3.48 | 2.62 |
| Phosphorus | mg/L | total | 34 | 0.14 | 0.038 | 0.664 | 0.008 |
| Phosphorus Dissolved | mg/L | dissolved | 22 | 0.268 | 0.038 | 2.44 | 0.011 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 32 | 0.028 | 0.027 | 0.06 | 0.009 |
| Silver | µg/L | total | 6 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 32 | 33.731 | 3.3 | 312.1 | 0.5 |
| Turbidity | FNU | total | 30 | 45.967 | 3.8 | 264 | 0.1 |
| Turbidity | NTU | total | 6 | 3.653 | 3.56 | 5.7 | 1.7 |
| Zinc | µg/L | total | 6 | 4.5 | 1.25 | 11 | 1.25 |

Table : In-Situ Measurements: 07-SKAT\_T5-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T5-0.1 | Chlorophyll A (Probe) | µg/L |  | 6 | 1.777 | 1.9 | 2.93 | 0.5 |
| 07-SKAT\_T5-0.1 | Chlorophyll A (Probe) | RFU |  | 6 | 0.43 | 0.55 | 0.56 | 0.18 |
| 07-SKAT\_T5-0.1 | Dissolved Oxygen Saturation | % |  | 6 | 92.567 | 92.4 | 93.4 | 91.9 |
| 07-SKAT\_T5-0.1 | pH | pH units | total | 4 | 8.07 | 8.07 | 8.1 | 8.04 |
| 07-SKAT\_T5-0.1 | Phycocyanin (Probe) | µg/L |  | 6 | 0.027 | 0.02 | 0.06 | 0 |
| 07-SKAT\_T5-0.1 | Phycocyanin (Probe) | RFU |  | 6 | 0.04 | 0.03 | 0.09 | 0 |
| 07-SKAT\_T5-0.1 | Salinity | ppt |  | 6 | 0.23 | 0.22 | 0.26 | 0.21 |
| 07-SKAT\_T5-0.1 | Specific Conductance | uS/cm |  | 6 | 471.667 | 452 | 526 | 437 |
| 07-SKAT\_T5-0.1 | Specific Conductance | uS/cm | total | 28 | 428.85 | 445.4 | 518.9 | 241.4 |
| 07-SKAT\_T5-0.1 | Temperature | °C |  | 6 | 17 | 18 | 19 | 14 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

Table : Biological Assessment Score (BAP) Summary: 07-SKAT\_T5-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-17 | 6.9 | 0.46 | 0.23 | 4 |

### 07-SKAT\_T89-0.2 | Waterbody Class: AA(T) AA | WI/PWL ID: 0707-0005

Table : Applicable Standards: 07-SKAT\_T89-0.2

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| AA | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L. |
| AA | Chloride | total | µg/L | 250,000 ug/L |
| AA | Arsenic | total | µg/L | 50 ug/L |
| AA | Magnesium | total | µg/L | 35,000 ug/L |
| AA | Iron | total | µg/L | 300 ug/L |
| AA | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| AA | Nitrate | total | µg/L | 10,000 ug/L |
| AA | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-SKAT\_T89-0.2

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 8 | 239 | 241.5 | 266 | 207 |
| Aluminum | µg/L | total | 6 | 164.1 | 99.5 | 346 | 46.8 |
| Ammonia | µg/L | total | 228 | 34.725 | 22 | 249 | 0.4 |
| Arsenic | µg/L | total | 8 | 0.51 | 0.605 | 0.67 | 0.16 |
| Cadmium | µg/L | total | 8 | 0.15 | 0.19 | 0.19 | 0.032 |
| Calcium | µg/L | total | 8 | 81950 | 83900 | 89500 | 70500 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 62 | 3.703 | 3.1 | 8.5 | 2 |
| Carbon, Total Organic | mg/L | total | 6 | 4.767 | 3.8 | 7 | 3.5 |
| Chloride | mg/L | total | 6 | 22.533 | 22.3 | 23.1 | 22.2 |
| Chlorophyll A | µg/L | total | 6 | 1.245 | 1.28 | 1.82 | 0.636 |
| Copper | µg/L | total | 8 | 1.218 | 1.115 | 1.9 | 0.74 |
| Dissolved Oxygen | mg/L | dissolved | 8 | 8.84 | 8.77 | 9.72 | 8.1 |
| Hardness | mg/L | total | 8 | 284.5 | 291.5 | 311 | 244 |
| Iron | µg/L | total | 8 | 419.25 | 442 | 640 | 153 |
| Lead | µg/L | total | 8 | 0.59 | 0.438 | 1.2 | 0.285 |
| Magnesium | µg/L | total | 8 | 19425 | 19950 | 21300 | 16500 |
| Nickel | µg/L | total | 8 | 1.475 | 1.45 | 1.8 | 1.2 |
| Nitrate | mg/L | total | 8 | 2.335 | 2.29 | 3.29 | 1.47 |
| Nitrite | mg/L | total | 8 | 0.009 | 0.009 | 0.015 | 0.004 |
| Nitrite (As N) | mg/L | total | 4 | 2.155 | 2.155 | 2.84 | 1.47 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 76 | 1.942 | 1.88 | 3.47 | 0.209 |
| Nitrogen Total | mg/L | total | 78 | 2.178 | 2.14 | 4.86 | 0.045 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 8 | 0.478 | 0.43 | 0.71 | 0.34 |
| Nitrogen, Total | mg/L | total | 8 | 2.725 | 2.83 | 3.77 | 1.47 |
| Phosphorus | mg/L | total | 74 | 0.062 | 0.019 | 0.572 | 0.004 |
| Phosphorus Dissolved | mg/L | dissolved | 54 | 0.09 | 0.012 | 1.95 | 0.003 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 72 | 0.009 | 0.006 | 0.042 | 0.001 |
| Silver | µg/L | total | 8 | 0.061 | 0.075 | 0.075 | 0.02 |
| Total Suspended Solids | mg/L | total | 58 | 16.696 | 2.65 | 219 | 0.5 |
| Turbidity | FNU | total | 76 | 25.978 | 2.9 | 302 | 0.8 |
| Turbidity | NTU | total | 8 | 6.808 | 4.93 | 15.8 | 1.57 |
| Zinc | µg/L | total | 8 | 3.587 | 3.6 | 5.9 | 1.25 |

Table : In-Situ Measurements: 07-SKAT\_T89-0.2

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T89-0.2 | Chlorophyll A (Probe) | µg/L |  | 6 | 2.337 | 3.05 | 3.4 | 0.56 |
| 07-SKAT\_T89-0.2 | Chlorophyll A (Probe) | RFU |  | 6 | 0.613 | 0.8 | 0.83 | 0.21 |
| 07-SKAT\_T89-0.2 | Dissolved Oxygen Saturation | % |  | 8 | 96.775 | 97.65 | 99.2 | 92.6 |
| 07-SKAT\_T89-0.2 | pH | pH units | total | 8 | 8.092 | 8.11 | 8.13 | 8.02 |
| 07-SKAT\_T89-0.2 | Phycocyanin (Probe) | µg/L |  | 6 | 0.077 | 0.1 | 0.13 | 0 |
| 07-SKAT\_T89-0.2 | Phycocyanin (Probe) | RFU |  | 6 | 0.05 | 0.02 | 0.13 | 0 |
| 07-SKAT\_T89-0.2 | Salinity | ppt |  | 8 | 0.28 | 0.28 | 0.3 | 0.26 |
| 07-SKAT\_T89-0.2 | Specific Conductance | uS/cm |  | 8 | 550.25 | 545.5 | 590 | 520 |
| 07-SKAT\_T89-0.2 | Specific Conductance | uS/cm | total | 86 | NaN |  | -Inf | Inf |
| 07-SKAT\_T89-0.2 | Temperature | °C |  | 8 | 18.5 | 19.5 | 20 | 15 |

Table : Water Quality Standard Excursions: 07-SKAT\_T89-0.2

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2019-07-17 | Iron | 640 | total | ug/l | source of water supply | 300 | Excursion |
| 2018-07-31 | Iron | 616 | total | ug/l | source of water supply | 300 | Excursion |

Table : Biological Assessment Score (BAP) Summary: 07-SKAT\_T89-0.2

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2018-07-31 | 7.2 | NA | NA | 1 |
| 2019-07-17 | 5.6 | 0.88 | 0.44 | 4 |

### 07-BSWP-0.1 | Waterbody Class: AA(T) AA | WI/PWL ID: 0707-0005

Table : Applicable Standards: 07-BSWP-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| AA | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L. |
| AA | Chloride | total | µg/L | 250,000 ug/L |
| AA | Arsenic | total | µg/L | 50 ug/L |
| AA | Magnesium | total | µg/L | 35,000 ug/L |
| AA | Iron | total | µg/L | 300 ug/L |
| AA | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| AA | Nitrate | total | µg/L | 10,000 ug/L |
| AA | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-BSWP-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 6 | 87 | 78 | 111 | 72 |
| Aluminum | µg/L | total | 4 | 46.2 | 46.2 | 67.7 | 24.7 |
| Ammonia | µg/L | total | 200 | 35.68 | 21 | 246 | 1.5 |
| Arsenic | µg/L | total | 6 | 0.553 | 0.65 | 0.66 | 0.35 |
| Cadmium | µg/L | total | 6 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 6 | 30866.667 | 26300 | 40600 | 25700 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 52 | 5.281 | 5.25 | 7.4 | 2.4 |
| Carbon, Total Organic | mg/L | total | 6 | 5.467 | 5.7 | 6.3 | 4.4 |
| Chloride | mg/L | total | 4 | 12.9 | 12.9 | 18.5 | 7.3 |
| Chlorophyll A | µg/L | total | 6 | 1.861 | 0.979 | 3.95 | 0.655 |
| Copper | µg/L | total | 6 | 0.677 | 0.76 | 0.94 | 0.33 |
| Dissolved Oxygen | mg/L | dissolved | 6 | 8.797 | 9 | 9.03 | 8.36 |
| Hardness | mg/L | total | 6 | 96.1 | 81.9 | 126 | 80.4 |
| Iron | µg/L | total | 6 | 275.033 | 304 | 462 | 59.1 |
| Lead | µg/L | total | 6 | 0.507 | 0.285 | 0.95 | 0.285 |
| Magnesium | µg/L | total | 6 | 4653.333 | 3960 | 6050 | 3950 |
| Nickel | µg/L | total | 6 | 0.687 | 0.63 | 0.84 | 0.59 |
| Nitrate | mg/L | total | 6 | 0.531 | 0.305 | 1.02 | 0.269 |
| Nitrite | mg/L | total | 6 | 0.004 | 0.004 | 0.004 | 0.004 |
| Nitrite (As N) | mg/L | total | 4 | 0.645 | 0.645 | 1.02 | 0.269 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 60 | 0.48 | 0.438 | 1.12 | 0.13 |
| Nitrogen Total | mg/L | total | 64 | 0.86 | 0.774 | 2.02 | 0.409 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 6 | 0.42 | 0.43 | 0.44 | 0.39 |
| Nitrogen, Total | mg/L | total | 6 | 0.807 | 0.71 | 1.02 | 0.69 |
| Phosphorus | mg/L | total | 64 | 0.077 | 0.023 | 0.839 | 0.009 |
| Phosphorus Dissolved | mg/L | dissolved | 48 | 0.019 | 0.017 | 0.046 | 0.004 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 60 | 0.011 | 0.012 | 0.023 | 0.001 |
| Silver | µg/L | total | 6 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 44 | 33.614 | 2.5 | 640 | 0.5 |
| Turbidity | FNU | total | 62 | 33.61 | 2.3 | 523 | 0.5 |
| Turbidity | NTU | total | 6 | 7.3 | 5.09 | 15.3 | 1.51 |
| Zinc | µg/L | total | 6 | 1.25 | 1.25 | 1.25 | 1.25 |

Table : In-Situ Measurements: 07-BSWP-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-BSWP-0.1 | Chlorophyll A (Probe) | µg/L |  | 6 | 2.273 | 2.4 | 2.82 | 1.6 |
| 07-BSWP-0.1 | Chlorophyll A (Probe) | RFU |  | 6 | 0.613 | 0.71 | 0.73 | 0.4 |
| 07-BSWP-0.1 | Dissolved Oxygen Saturation | % |  | 6 | 96.3 | 96.5 | 96.8 | 95.6 |
| 07-BSWP-0.1 | pH | pH units | total | 6 | 8.187 | 8.21 | 8.24 | 8.11 |
| 07-BSWP-0.1 | Phycocyanin (Probe) | µg/L |  | 6 | 0.067 | 0.06 | 0.1 | 0.04 |
| 07-BSWP-0.1 | Phycocyanin (Probe) | RFU |  | 6 | 0.077 | 0.06 | 0.11 | 0.06 |
| 07-BSWP-0.1 | Salinity | ppt |  | 6 | 0.103 | 0.09 | 0.14 | 0.08 |
| 07-BSWP-0.1 | Specific Conductance | uS/cm |  | 6 | 220.333 | 198 | 300 | 163 |
| 07-BSWP-0.1 | Specific Conductance | uS/cm | total | 72 | NaN |  | -Inf | Inf |
| 07-BSWP-0.1 | Temperature | °C |  | 6 | 19.667 | 19 | 22 | 18 |

Table : Water Quality Standard Excursions: 07-BSWP-0.1

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2019-06-18 | Iron | 304 | total | ug/l | source of water supply | 300 | Excursion |
| 2019-07-17 | Iron | 462 | total | ug/l | source of water supply | 300 | Excursion |

Table : Biological Assessment Score (BAP) Summary: 07-BSWP-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-17 | 6.8 | 0.99 | 0.5 | 4 |

### 07-BSWP-6.3 | Waterbody Class: AA AA(T) | WI/PWL ID: 0707-0005

Table : Applicable Standards: 07-BSWP-6.3

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| AA | Ammonia | total | µg/L | NH3 + NH4+ as N; 2,000 ug/L |

Table : Chemistry Measurements: 07-BSWP-6.3

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 40 | 36.36 | 38.5 | 49.4 | 21.6 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 16 | 5.888 | 6.5 | 6.6 | 4 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 16 | 0.019 | 0.012 | 0.063 | 0.004 |
| Nitrogen Total | mg/L | total | 18 | 0.479 | 0.478 | 0.64 | 0.322 |
| Phosphorus | mg/L | total | 18 | 0.025 | 0.024 | 0.042 | 0.016 |
| Phosphorus Dissolved | mg/L | dissolved | 10 | 0.011 | 0.012 | 0.014 | 0.008 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 14 | 0.003 | 0.003 | 0.006 | 0.001 |
| Total Suspended Solids | mg/L | total | 14 | 4.271 | 3.7 | 8.7 | 0.5 |
| Turbidity | FNU | total | 18 | 2.411 | 2.3 | 3.7 | 0.7 |

Table : In-Situ Measurements: 07-BSWP-6.3

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-BSWP-6.3 | Specific Conductance | uS/cm | total | 16 | 179.5 | 189.3 | 202.6 | 139 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-MASH-0.1 | Waterbody Class: C | WI/PWL ID: 0705-0027

Table : Applicable Standards: 07-MASH-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-MASH-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 6 | 207 | 25 | 674 | 25 |
| Nitrite (As N) | mg/L | total | 6 | 0.375 | 0.37 | 0.51 | 0.24 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 6 | 0.321 | 0.33 | 0.61 | 0.005 |
| Phosphorus | mg/L | total | 6 | 0.07 | 0.073 | 0.119 | 0.016 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 6 | 0.045 | 0.038 | 0.094 | 0.012 |
| Total Suspended Solids | mg/L | total | 6 | 10.475 | 0.5 | 59.6 | 0.5 |

Table : In-Situ Measurements: 07-MASH-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-MASH-0.1 | Specific Conductance | uS/cm | NA | 3 | 1002 | 997 | 1106 | 903 |
| 07-MASH-0.1 | Temperature | °C | NA | 5 | 7.8 | 7 | 19 | 1 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-OWAL\_T16-0.4 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table : Applicable Standards: 07-OWAL\_T16-0.4

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-OWAL\_T16-0.4

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 1 | 11 | 11 | 11 | 11 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 2 | NaN |  | -Inf | Inf |
| Nitrite (As N) | mg/L | total | 1 | 0.991 | 0.991 | 0.991 | 0.991 |
| Nitrogen Total | mg/L | total | 2 | NaN |  | -Inf | Inf |
| Phosphorus | mg/L | total | 2 | 0.023 | 0.023 | 0.024 | 0.022 |
| Phosphorus, Dissolved | mg/L | dissolved | 2 | 0.006 | 0.006 | 0.008 | 0.005 |
| Total Suspended Solids | mg/L | total | 2 | NaN |  | -Inf | Inf |

Table : In-Situ Measurements: 07-OWAL\_T16-0.4

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-OWAL\_T2-0.1 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table : Applicable Standards: 07-OWAL\_T2-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-OWAL\_T2-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 9 | 30.833 | 27 | 70 | 7.5 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 11 | 9.367 | 11.6 | 12.3 | 4.2 |
| Nitrite (As N) | mg/L | total | 12 | 0.313 | 0.258 | 0.812 | 0.088 |
| Nitrogen Total | mg/L | total | 13 | 1.008 | 0.998 | 1.36 | 0.76 |
| Phosphorus | mg/L | total | 11 | 0.053 | 0.034 | 0.183 | 0.017 |
| Phosphorus, Dissolved | mg/L | dissolved | 11 | 0.021 | 0.02 | 0.053 | 0.009 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 9 | 0.013 | 0.01 | 0.034 | 0.003 |
| Total Suspended Solids | mg/L | total | 10 | 10.52 | 2.6 | 34 | 0.5 |

Table : In-Situ Measurements: 07-OWAL\_T2-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-OWAL\_T5-0.2 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table : Applicable Standards: 07-OWAL\_T5-0.2

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-OWAL\_T5-0.2

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 5 | 28.4 | 18 | 77 | 6 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 6 | NaN |  | -Inf | Inf |
| Nitrite (As N) | mg/L | total | 4 | 1.104 | 1.057 | 1.4 | 0.903 |
| Nitrogen Total | mg/L | total | 6 | NaN |  | -Inf | Inf |
| Phosphorus | mg/L | total | 5 | 0.019 | 0.021 | 0.031 | 0.007 |
| Phosphorus, Dissolved | mg/L | dissolved | 6 | 0.01 | 0.009 | 0.019 | 0.004 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 2 | 0.003 | 0.003 | 0.003 | 0.003 |
| Total Suspended Solids | mg/L | total | 6 | NaN |  | -Inf | Inf |

Table : In-Situ Measurements: 07-OWAL\_T5-0.2

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-OWLI-0.1 | Waterbody Class: C(T) | WI/PWL ID: 0706-0002

Table : Applicable Standards: 07-OWLI-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(T) | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-OWLI-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 12 | 46.958 | 41.5 | 104 | 7.5 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 16 | 4.112 | 4.15 | 7.2 | 0.6 |
| Nitrite (As N) | mg/L | total | 17 | 0.989 | 0.996 | 1.57 | 0.594 |
| Nitrogen Total | mg/L | total | 18 | 1.464 | 1.5 | 1.66 | 1.25 |
| Phosphorus | mg/L | total | 14 | 0.044 | 0.038 | 0.094 | 0.016 |
| Phosphorus, Dissolved | mg/L | dissolved | 16 | 0.019 | 0.016 | 0.047 | 0.007 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 13 | 0.013 | 0.011 | 0.031 | 0.006 |
| Total Suspended Solids | mg/L | total | 16 | 20.575 | 5.1 | 90.9 | 1.5 |

Table : In-Situ Measurements: 07-OWLI-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-RAND-0.1 | Waterbody Class: AA(T) AA | WI/PWL ID: 0707-0005

Table : Applicable Standards: 07-RAND-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| AA | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-RAND-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 40 | 15.18 | 7.5 | 30 | 7.5 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 14 | 3.914 | 3.6 | 8 | 1.2 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 14 | 0.406 | 0.345 | 0.567 | 0.292 |
| Nitrogen Total | mg/L | total | 16 | 0.634 | 0.622 | 0.956 | 0.435 |
| Phosphorus | mg/L | total | 16 | 0.057 | 0.022 | 0.25 | 0.013 |
| Phosphorus Dissolved | mg/L | dissolved | 12 | 0.024 | 0.022 | 0.035 | 0.019 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 10 | 0.02 | 0.022 | 0.024 | 0.009 |
| Total Suspended Solids | mg/L | total | 12 | 11.95 | 2.2 | 45.8 | 0.5 |
| Turbidity | FNU | total | 16 | 26.6 | 1.15 | 169 | 0.4 |

Table : In-Situ Measurements: 07-RAND-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-RAND-0.1 | Specific Conductance | uS/cm | total | 14 | 363.9 | 367.6 | 452.8 | 225.7 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-SKAT\_T14-0.2 | Waterbody Class: AA AA(T) | WI/PWL ID: 0707-0005

Table : Applicable Standards: 07-SKAT\_T14-0.2

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| AA | Ammonia | total | µg/L | NH3 + NH4+ as N; 2,000 ug/L |

Table : Chemistry Measurements: 07-SKAT\_T14-0.2

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 32 | 97.025 | 39.15 | 291 | 18.8 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 16 | 8.85 | 9.7 | 14.3 | 3.3 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 14 | 1.715 | 1.85 | 2.17 | 0.958 |
| Nitrogen Total | mg/L | total | 18 | 3.594 | 2.65 | 9 | 1.77 |
| Phosphorus | mg/L | total | 18 | 0.4 | 0.223 | 1.275 | 0.01 |
| Phosphorus Dissolved | mg/L | dissolved | 12 | 0.114 | 0.099 | 0.303 | 0.021 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 14 | 0.038 | 0.032 | 0.098 | 0.005 |
| Total Suspended Solids | mg/L | total | 14 | 157.371 | 9.8 | 749.4 | 0.5 |
| Turbidity | FNU | total | 18 | 139.556 | 27 | 723 | 0.7 |

Table : In-Situ Measurements: 07-SKAT\_T14-0.2

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T14-0.2 | Specific Conductance | uS/cm | total | 16 | 469.262 | 512.45 | 596.1 | 275 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-SKAT\_T21-0.1 | Waterbody Class: AA(T) AA | WI/PWL ID: 0707-0005

Table : Applicable Standards: 07-SKAT\_T21-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| AA | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-SKAT\_T21-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 40 | 64.4 | 7.5 | 213 | 7.5 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 16 | 4.938 | 5.3 | 7.6 | 2.2 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 16 | 1.556 | 1.435 | 2.71 | 0.926 |
| Nitrogen Total | mg/L | total | 18 | 1.969 | 1.72 | 3.98 | 1.25 |
| Phosphorus | mg/L | total | 18 | 0.198 | 0.065 | 0.795 | 0.006 |
| Phosphorus Dissolved | mg/L | dissolved | 12 | 0.057 | 0.047 | 0.103 | 0.035 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 14 | 0.043 | 0.046 | 0.052 | 0.026 |
| Total Suspended Solids | mg/L | total | 14 | 81.371 | 6.5 | 528.5 | 0.5 |
| Turbidity | FNU | total | 18 | 134.178 | 11.9 | 822 | 0.7 |

Table : In-Situ Measurements: 07-SKAT\_T21-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T21-0.1 | Specific Conductance | uS/cm | total | 16 | 344.163 | 353.35 | 455.9 | 152.4 |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### 07-SKAT\_T93a-0.5 | Waterbody Class: AA AA(T) | WI/PWL ID: 0707-0005

Table : Applicable Standards: 07-SKAT\_T93a-0.5

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| AA | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| AA | Ammonia | total | µg/L | NH3 + NH4+ as N; 2,000 ug/L |
| AA | Cadmium | total | µg/L | 5 ug/L |
| AA | Copper | total | µg/L | 200 ug/L |
| AA | Lead | total | µg/L | 50 ug/L |
| AA | Nickel | total | µg/L | 100 ug/L |
| AA | Nitrate\_nitrite | total | µg/L | 10,000 ug/L |
| AA | Nitrite | total | µg/L | 1,000 ug/L |
| AA | Silver | total | µg/L | 50 ug/L |

Table : Chemistry Measurements: 07-SKAT\_T93a-0.5

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 6 | 178.667 | 175 | 236 | 125 |
| Aluminum | µg/L | total | 4 | 96.35 | 96.35 | 131 | 61.7 |
| Ammonia | µg/L | total | 72 | 44.333 | 26.7 | 104 | 7.5 |
| Arsenic | µg/L | total | 6 | 1.063 | 1.2 | 1.3 | 0.69 |
| Cadmium | µg/L | total | 6 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 6 | 62133.333 | 58700 | 80400 | 47300 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 26 | 6.808 | 6.9 | 11.4 | 3.7 |
| Carbon, Total Organic | mg/L | total | 6 | 9.233 | 8.3 | 12.7 | 6.7 |
| Chloride | mg/L | total | 4 | 36.05 | 36.05 | 43.6 | 28.5 |
| Chlorophyll A | µg/L | total | 6 | 6.087 | 5.8 | 10.6 | 1.86 |
| Copper | µg/L | total | 6 | 2.633 | 1.8 | 4.6 | 1.5 |
| Dissolved Oxygen | mg/L | dissolved | 6 | 7.65 | 7.49 | 8.36 | 7.1 |
| Hardness | mg/L | total | 6 | 211.333 | 201 | 273 | 160 |
| Iron | µg/L | total | 6 | 659.667 | 436 | 1360 | 183 |
| Lead | µg/L | total | 6 | 1.29 | 0.285 | 3.3 | 0.285 |
| Magnesium | µg/L | total | 6 | 13600 | 13200 | 17500 | 10100 |
| Nickel | µg/L | total | 6 | 2.1 | 1.6 | 3.2 | 1.5 |
| Nitrate | mg/L | total | 6 | 0.777 | 0.915 | 1.37 | 0.046 |
| Nitrite | mg/L | total | 6 | 0.029 | 0.026 | 0.058 | 0.004 |
| Nitrite (As N) | mg/L | total | 6 | 0.806 | 0.941 | 1.43 | 0.046 |
| Nitrogen Nitrate-Nitrite | mg/L | total | 28 | 0.434 | 0.4 | 1.81 | 0.011 |
| Nitrogen Total | mg/L | total | 30 | 0.917 | 0.771 | 2.73 | 0.045 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 6 | 0.9 | 0.67 | 1.45 | 0.58 |
| Nitrogen, Total | mg/L | total | 6 | 2.2 | 2.2 | 2.88 | 1.52 |
| Phosphorus | mg/L | total | 34 | 0.105 | 0.081 | 0.375 | 0.014 |
| Phosphorus Dissolved | mg/L | dissolved | 22 | 0.218 | 0.033 | 1.69 | 0.01 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 30 | 0.037 | 0.021 | 0.189 | 0.006 |
| Silver | µg/L | total | 6 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 32 | 24.831 | 4.8 | 158.8 | 1.6 |
| Turbidity | FNU | total | 30 | 42.04 | 4.6 | 321 | 1.5 |
| Turbidity | NTU | total | 6 | 19.21 | 8.72 | 46.1 | 2.81 |
| Zinc | µg/L | total | 6 | 4.733 | 1.25 | 11.7 | 1.25 |

Table : In-Situ Measurements: 07-SKAT\_T93a-0.5

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T93a-0.5 | Chlorophyll A (Probe) | µg/L |  | 6 | 6.543 | 7.28 | 10.62 | 1.73 |
| 07-SKAT\_T93a-0.5 | Chlorophyll A (Probe) | RFU |  | 6 | 1.69 | 2 | 2.6 | 0.47 |
| 07-SKAT\_T93a-0.5 | Dissolved Oxygen Saturation | % |  | 6 | 84.933 | 86.1 | 87.6 | 81.1 |
| 07-SKAT\_T93a-0.5 | pH | pH units | total | 6 | 7.833 | 7.9 | 7.9 | 7.7 |
| 07-SKAT\_T93a-0.5 | Phycocyanin (Probe) | µg/L |  | 6 | 2.61 | 0.19 | 7.64 | 0 |
| 07-SKAT\_T93a-0.5 | Phycocyanin (Probe) | RFU |  | 6 | 0.72 | 0.24 | 1.92 | 0 |
| 07-SKAT\_T93a-0.5 | Salinity | ppt |  | 6 | 0.24 | 0.22 | 0.28 | 0.22 |
| 07-SKAT\_T93a-0.5 | Specific Conductance | uS/cm |  | 6 | 488.333 | 449 | 569 | 447 |
| 07-SKAT\_T93a-0.5 | Specific Conductance | uS/cm | total | 28 | 528.325 | 588.15 | 741.5 | 226.3 |
| 07-SKAT\_T93a-0.5 | Temperature | °C |  | 6 | 20.667 | 22 | 22 | 18 |

Table : Water Quality Standard Excursions: 07-SKAT\_T93a-0.5

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2019-08-14 | Iron | 436 | total | ug/l | source of water supply | 300 | Excursion |
| 2019-07-17 | Iron | 1360 | total | ug/l | source of water supply | 300 | Excursion |

Table : Biological Assessment Score (BAP) Summary: 07-SKAT\_T93a-0.5

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-17 | 2.9 | 0.93 | 0.46 | 4 |

### 07-VENE-0.4 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table : Applicable Standards: 07-VENE-0.4

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | mg/L | Minimum daily average shall not be less than 5.0 mg/L, and at no time shall the DO concentration be less than 4.0 mg/ L. |
| C | pH | total | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: 07-VENE-0.4

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 14 | 79.029 | 33.5 | 388 | 0.4 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 24 | 5.573 | 5.8 | 8.4 | 2.9 |
| Dissolved Oxygen | mg/L | dissolved | 7 | 10.121 | 11.82 | 13.49 | 1.39 |
| Nitrate | mg/L | total | 9 | 1.162 | 1.35 | 1.9 | 0.01 |
| Nitrite | mg/L | total | 8 | 0.003 | 0.002 | 0.004 | 0.002 |
| Nitrite (As N) | mg/L | total | 24 | 1.57 | 1.194 | 5.08 | 0.014 |
| Nitrogen Total | mg/L | total | 19 | 2.512 | 1.95 | 5.85 | 0.55 |
| Nitrogen, Kjeldahl, Total | mg/L | total | 10 | 0.552 | 0.415 | 1.6 | 0.35 |
| Phosphorus | mg/L | total | 25 | 0.055 | 0.033 | 0.342 | 0.009 |
| Phosphorus, Dissolved | mg/L | dissolved | 18 | 0.027 | 0.022 | 0.084 | 0.005 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 26 | 0.023 | 0.014 | 0.124 | 0.001 |
| Total Suspended Solids | mg/L | total | 27 | 7.161 | 5.65 | 17 | 0.5 |
| Total Volatile Solids | mg/L | total | 10 | 78.2 | 72 | 117 | 55 |
| Turbidity | NTU | total | 10 | 8.776 | 5.64 | 18.6 | 2.7 |

Table : In-Situ Measurements: 07-VENE-0.4

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-VENE-0.4 | Dissolved Oxygen Saturation | % |  | 7 | 80.686 | 91.5 | 96 | 15.7 |
| 07-VENE-0.4 | pH | pH units | total | 5 | 7.742 | 7.82 | 8.03 | 7.46 |
| 07-VENE-0.4 | Specific Conductance | uS/cm |  | 7 | 536 | 543 | 592 | 464 |
| 07-VENE-0.4 | Temperature | °C |  | 10 | 9.9 | 8 | 21 | 0 |

Table : Water Quality Standard Excursions: 07-VENE-0.4

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **use** | **Threshold** | **Excursion** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2018-06-19 | Dissolved\_oxygen | 4.1 | dissolved | mg/l | fishing | 5 | Excursion |
| 2018-06-19 | Dissolved\_oxygen | 1.4 | dissolved | mg/l | fishing | 4 | Excursion |

### O7-DUCH-0.3 | Waterbody Class: C(TS) | WI/PWL ID: 0706-0003

Table : Applicable Standards: O7-DUCH-0.3

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C(TS) | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: O7-DUCH-0.3

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 12 | 33.583 | 24 | 87 | 7.5 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 15 | 3.317 | 3.2 | 3.9 | 2.7 |
| Nitrite (As N) | mg/L | total | 17 | 1.394 | 1.34 | 2.82 | 0.288 |
| Nitrogen Total | mg/L | total | 20 | 1.681 | 1.835 | 3.12 | 0.611 |
| Phosphorus | mg/L | total | 17 | 0.063 | 0.031 | 0.475 | 0.008 |
| Phosphorus, Dissolved | mg/L | dissolved | 20 | 0.026 | 0.014 | 0.172 | 0.003 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 15 | 0.02 | 0.008 | 0.16 | 0.002 |
| Total Suspended Solids | mg/L | total | 17 | 12.988 | 7.45 | 30.5 | 1.9 |

Table : In-Situ Measurements: O7-DUCH-0.3

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

### O7-SCKR-0.1 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table : Applicable Standards: O7-SCKR-0.1

| **Class** | **Parameter** | **Fraction** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- |
| C | Ammonia | total | µg/L | Standard is based on pH and temperature |

Table : Chemistry Measurements: O7-SCKR-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 11 | 49.727 | 35 | 237 | 7 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 15 | 9.517 | 9.7 | 12 | 7.3 |
| Nitrite (As N) | mg/L | total | 17 | 0.6 | 0.472 | 1.53 | 0.135 |
| Nitrogen Total | mg/L | total | 18 | 1.376 | 1.32 | 2.26 | 0.816 |
| Phosphorus | mg/L | total | 15 | 0.085 | 0.045 | 0.383 | 0.012 |
| Phosphorus, Dissolved | mg/L | dissolved | 15 | 0.045 | 0.028 | 0.18 | 0.008 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 13 | 0.029 | 0.019 | 0.112 | 0.004 |
| Total Suspended Solids | mg/L | total | 16 | 10.8 | 5.1 | 41.2 | 0.5 |

Table : In-Situ Measurements: O7-SCKR-0.1

| **Site** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |

*Water Quality Standard Excursions*

There were no water quality standard excursions at this site during the sampling period.

# Section III: Literature Cited

# Section IV: Appendices

### Appendix I. QA/QC Results

The following tables represent all data excluded from the study, or samples that were taken during the study period but flagged for exclusion from reporting by the QA/QC methods described in SOP#110-21.

Table . Water chemistry analytes flagged as R (rejected) and not included in the analysis for the report.

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Result** | **Validated** | **Validator** | **Explanation** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T89-0.2 | 2019-07-17 | Aluminum | µg/L | total | 3.2e+02 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-BSWP-0.1 | 2019-07-17 | Aluminum | µg/L | total | 1.9e+02 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-KASH-0.3 | 2019-07-18 | Aluminum | µg/L | total | 2.4e+01 | 2020-06-11 | R | lab error |
| 07-BGST-0.1 | 2019-07-18 | Aluminum | µg/L | total | 7.1e+02 | 2020-06-11 | R | lab error |
| 07-REED-0.1 | 2019-07-17 | Aluminum | µg/L | total | 9.9e+01 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-SKAT\_T93a-0.5 | 2019-07-17 | Aluminum | µg/L | total | 7.7e+02 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-SKAT\_T2-0.1 | 2019-07-17 | Aluminum | µg/L | total | 2.4e+02 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-GROU-1.5 | 2019-07-17 | Aluminum | µg/L | total | 7.4e+01 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-SKAT\_T5-0.1 | 2019-07-17 | Aluminum | µg/L | total | 9.1e+01 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-GLNK-0.2 | 2019-08-15 | Chloride | mg/L | total | 1.9e+01 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2019-06-18 | Chloride | mg/L | total | 2.5e+01 | 2020-06-11 | R | Accuracy error |
| 07-BGST-0.1 | 2019-08-15 | Chloride | mg/L | total | 5.7e+01 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T2-0.1 | 2019-06-18 | Chloride | mg/L | total | 5.3e+01 | 2020-06-11 | R | Accuracy error |
| 07-THOL-1.8 | 2019-08-15 | Chloride | mg/L | total | 1.5e+01 | 2020-06-11 | R | Accuracy error |
| 07-BSWP-0.1 | 2019-06-18 | Chloride | mg/L | total | 8.3e+00 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T89-0.2 | 2019-06-18 | Chloride | mg/L | total | 2.1e+01 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T93a-0.5 | 2019-06-18 | Chloride | mg/L | total | 4.1e+01 | 2020-06-11 | R | Accuracy error |
| 07-KEUK-0.1 | 2019-08-15 | Chloride | mg/L | total | 5.2e+01 | 2020-06-11 | R | Accuracy error |
| 07-CATH-0.6 | 2019-08-15 | Chloride | mg/L | total | 5.1e+01 | 2020-06-11 | R | Accuracy error |
| 07-GROU-1.5 | 2019-06-18 | Chloride | mg/L | total | 8.9e+00 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T5-0.1 | 2019-06-18 | Chloride | mg/L | total | 2.6e+01 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2018-05-01 | Nitrogen, Ammonia (As N) | mg/L | total | 6.2e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-SKAT\_T2-0.1 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | 2.7e-02 | 2020-06-11 | R | Accuracy error ; Precision error |
| 07-CATH-0.6 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-GLNK-0.2 | 2019-08-15 | Nitrogen, Ammonia (As N) | mg/L | total | 2.0e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-OWAL\_T9-0.1 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-VENE-0.4 | 2018-05-01 | Nitrogen, Ammonia (As N) | mg/L | total | 6.6e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-BSWP-0.1 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-GLNK-0.2 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total | 5.1e-03 | 2020-06-11 | R | Accuracy error ; Precision error |
| 07-OWLI-3.0 | 2018-04-18 | Nitrogen, Ammonia (As N) | mg/L | total | 8.3e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-SCKR-0.1 | 2018-04-26 | Nitrogen, Ammonia (As N) | mg/L | total | 1.1e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-04-03 | Nitrogen, Ammonia (As N) | mg/L | total | 1.5e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Ammonia (As N) | mg/L | total | 1.5e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-CATH-0.6 | 2019-08-15 | Nitrogen, Ammonia (As N) | mg/L | total | 2.3e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-KASH-0.3 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-SKAT\_T93a-0.5 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | 7.9e-03 | 2020-06-11 | R | Accuracy error ; Precision error |
| 07-OWLI-3.0 | 2018-05-15 | Nitrogen, Ammonia (As N) | mg/L | total | 9.6e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-DUCH-0.3 | 2018-06-19 | Nitrogen, Ammonia (As N) | mg/L | total | 5.5e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-SCKR-0.1 | 2018-04-03 | Nitrogen, Ammonia (As N) | mg/L | total | 8.2e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-SCKR-0.1 | 2018-06-19 | Nitrogen, Ammonia (As N) | mg/L | total | 1.9e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Ammonia (As N) | mg/L | total | 1.3e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-05-23 | Nitrogen, Ammonia (As N) | mg/L | total | 1.8e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-1.5 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-SKAT\_T89-0.2 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | 1.3e-02 | 2020-06-11 | R | Accuracy error ; Precision error |
| 07-OWAL\_T46-0.1 | 2019-06-19 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-OWAL\_T46-0.1 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-OWLI-3.0 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-DUCH-0.3 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-THOL-1.8 | 2019-08-15 | Nitrogen, Ammonia (As N) | mg/L | total | 2.1e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-04-26 | Nitrogen, Ammonia (As N) | mg/L | total | 1.0e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-SKAT\_T93a-0.5 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total | 7.6e-03 | 2020-06-11 | R | Accuracy error |
| 07-GROU-1.5 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-SKAT\_T5-0.1 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-OWLI-3.0 | 2018-05-29 | Nitrogen, Ammonia (As N) | mg/L | total | 2.5e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-BGST-0.1 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-OWLI-3.0 | 2018-05-23 | Nitrogen, Ammonia (As N) | mg/L | total | 2.0e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-DUCH-0.3 | 2018-05-15 | Nitrogen, Ammonia (As N) | mg/L | total | 6.9e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-OWLI-3.0 | 2018-03-12 | Nitrogen, Ammonia (As N) | mg/L | total | 8.3e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-GROU-1.5 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-SCKR-0.1 | 2019-06-19 | Nitrogen, Ammonia (As N) | mg/L | total | 8.9e-03 | 2020-06-11 | R | Accuracy error |
| 07-KEUK-0.1 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-SKAT\_T2-0.1 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-SKAT\_T89-0.2 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total | 5.4e-03 | 2020-06-11 | R | Accuracy error |
| 07-VENE-0.4 | 2018-03-12 | Nitrogen, Ammonia (As N) | mg/L | total | 8.9e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-05-15 | Nitrogen, Ammonia (As N) | mg/L | total | 1.7e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-THOL-1.8 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-DUCH-0.3 | 2019-06-19 | Nitrogen, Ammonia (As N) | mg/L | total | 5.4e-03 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-SCKR-0.1 | 2018-04-18 | Nitrogen, Ammonia (As N) | mg/L | total | 6.0e-03 | 2020-06-11 | R | Equipment Blank error |
| 07-SKAT\_T5-0.1 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-BSWP-0.1 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-REED-0.1 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-DUCH-0.3 | 2018-06-19 | Nitrogen, Kjeldahl, Total | mg/L | total | 3.2e-01 | 2020-06-11 | R | Equipment Blank error |
| 07-DUCH-0.3 | 2018-05-15 | Nitrogen, Kjeldahl, Total | mg/L | total | 3.9e-01 | 2020-06-11 | R | Equipment Blank error |
| 07-OWLI-3.0 | 2018-06-19 | Nitrogen, Kjeldahl, Total | mg/L | total | 2.6e-01 | 2020-06-11 | R | Equipment Blank error |
| 07-KEUK-0.1 | 2019-08-15 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5e+00 | 2020-06-11 | R | Accuracy error |
| 07-GROU-1.5 | 2019-06-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5e+00 | 2020-06-11 | R | Accuracy error |
| 07-REED-0.1 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.4e+00 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2018-05-01 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5e+00 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 4.9e-01 | 2020-06-11 | R | Accuracy error |
| 07-GROU-1.5 | 2018-07-31 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5e+00 | 2020-05-12 | R | Accuracy error |
| 07-VENE-1.5 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 3.9e+00 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T89-0.2 | 2019-06-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.8e+00 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T2-0.1 | 2018-07-31 | Nitrogen, Nitrate-Nitrite | mg/L | total | 8.5e-01 | 2020-05-12 | R | Accuracy error |
| 07-DUCH-0.3 | 2018-05-01 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.4e+00 | 2020-06-11 | R | Accuracy error |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.7e+00 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2018-05-01 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.8e-01 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.4e+00 | 2020-06-11 | R | Accuracy error |
| 07-DUCH-0.3 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.7e+00 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 3.6e-01 | 2020-06-11 | R | Accuracy error |
| 07-VENE-0.4 | 2018-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.0e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-KASH-0.3 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 5.9e+00 | 2020-06-11 | R | Accuracy error |
| 07-CATH-0.6 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 5.0e-01 | 2020-06-11 | R | Accuracy error |
| 07-OWAL\_T46-0.1 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 8.4e+00 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2018-05-15 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.3e-02 | 2020-06-11 | R | Equipment Blank error |
| 07-GLNK-0.2 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.4e-01 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T89-0.2 | 2018-07-31 | Nitrogen, Nitrate-Nitrite | mg/L | total | 3.3e+00 | 2020-05-12 | R | Accuracy error |
| 07-BSWP-0.1 | 2019-06-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 3.0e-01 | 2020-06-11 | R | Accuracy error |
| 07-DUCH-0.3 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.6e+00 | 2020-06-11 | R | Accuracy error |
| 07-GLNK-0.2 | 2019-08-15 | Nitrogen, Nitrate-Nitrite | mg/L | total | 6.8e-02 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2019-06-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.2e+00 | 2020-06-11 | R | Accuracy error |
| 07-VENE-0.4 | 2018-05-01 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.4e+00 | 2020-06-11 | R | Accuracy error |
| 07-KEUK-0.1 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 6.4e-01 | 2020-06-11 | R | Accuracy error |
| 07-BGST-0.1 | 2019-08-15 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5e+00 | 2020-06-11 | R | Accuracy error |
| 07-THOL-1.8 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.8e-01 | 2020-06-11 | R | Accuracy error |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.7e+00 | 2020-06-11 | R | Accuracy error |
| 07-BGST-0.1 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 9.7e-01 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2018-03-12 | Nitrogen, Nitrite | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-VENE-0.4 | 2018-03-12 | Nitrogen, Nitrite | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-DUCH-0.3 | 2018-03-12 | Nitrogen, Nitrite | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-OWLI-3.0 | 2018-03-12 | Nitrogen, Nitrite | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-DUCH-0.3 | 2018-04-26 | Nitrogen, Nitrite | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-VENE-0.4 | 2018-04-26 | Nitrogen, Nitrite | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-OWLI-3.0 | 2018-03-12 | Nitrogen, Nitrite | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-OWLI-3.0 | 2018-04-26 | Nitrogen, Nitrite | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-SCKR-0.1 | 2018-04-26 | Nitrogen, Nitrite | mg/L | total | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-BGST-0.1 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 6.6e-02 | 2020-06-11 | R | Accuracy error |
| 07-KASH-0.3 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 8.7e-03 | 2020-06-11 | R | Accuracy error |
| 07-KEUK-0.1 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 9.9e-03 | 2020-06-11 | R | Accuracy error |
| 07-THOL-1.8 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-GLNK-0.2 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-CATH-0.6 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | NA | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |

1. Best use assessment confirmation is based on 1) whether data are core or supplemental indicators, 2) how many years of data are available, and 3) how many samples were collected. (CALM, 2021) [↑](#footnote-ref-25)
2. Compilation of the state’s Integrated Report and updates to WI/PWL ID factsheets occur during even (2022, 2024) years. Best use assessments and factsheets may not immediately reflect data generated in this report. [↑](#footnote-ref-27)