Stream Survey Data Report

NYSDEC SMAS

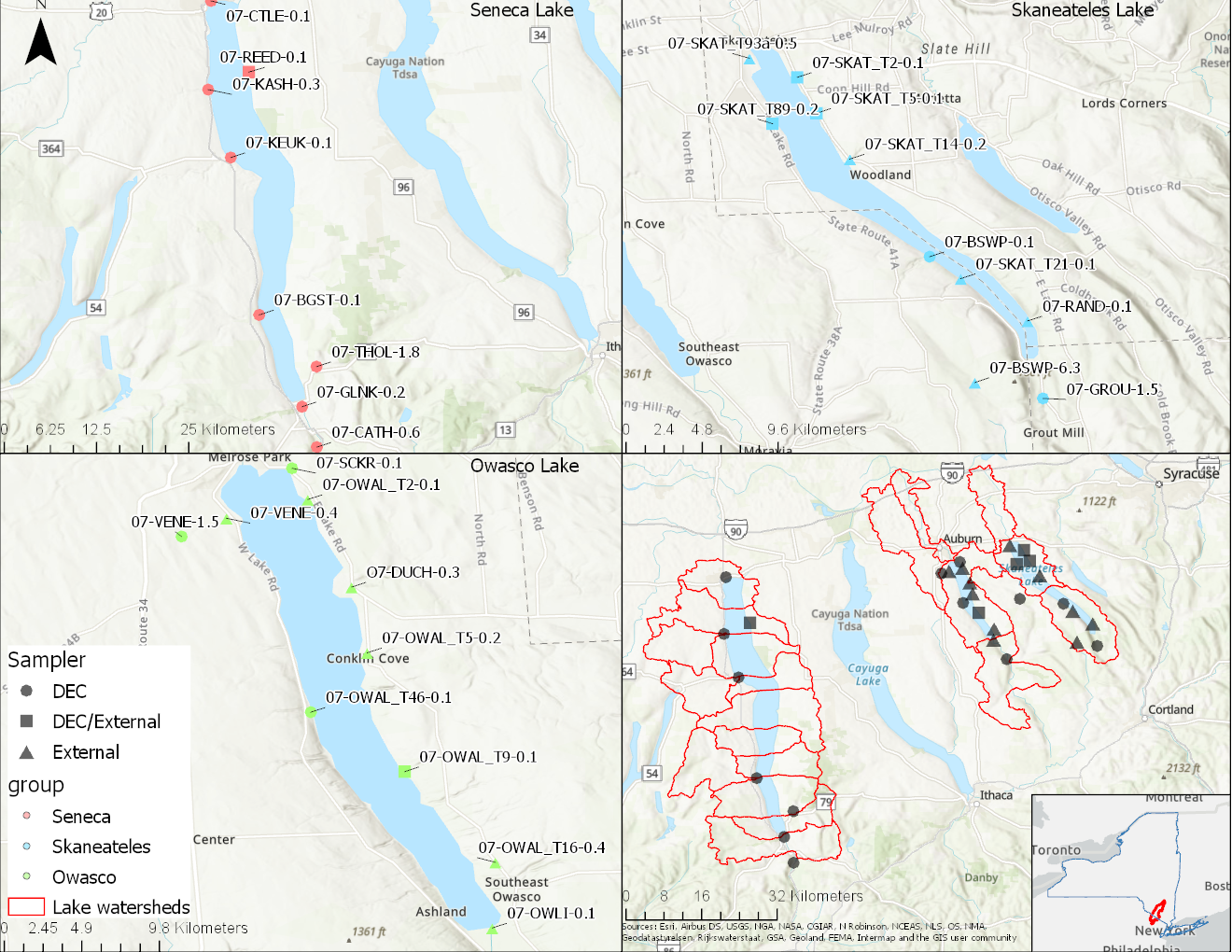
Report Date: 2022-06-10

# General

The Finger Lakes Advanced Stream Monitoring site descriptions (Table [1](#sites-table)) and locations (Figure [**1**](#site-map)), and sampling dates (Table [2](#sites-dates)) are included below.

Table 1. Sampling locations.

| **Location ID** | **Group** | **Stream** | **WI/PWL ID** | **Waterbody Classification** | **Description** | **Latitude** | **Longitude** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 07-CATH-0.6 | Seneca | Catherine Creek | 0705-0011 | C(TS) | South genesee st bridge. | 42.32875 | -76.84401 |
| 07-KASH-0.3 | Seneca | Kashong Creek | 0705-0017 | C | At west lake rd. | 42.76482 | -76.97656 |
| 07-KEUK-0.1 | Seneca | Keuka Outlet | 0705-0020 | C(T) | 0.5 m u.s. Of mouth. | 42.682 | -76.949 |
| 07-REED-0.1 | Seneca | Reeder Creek | 0705-0074 | C(T) | 300' west of intersection with 125. | 42.7862 | -76.927 |
| 07-GLNK-0.2 | Seneca | Glen Creek | 0705-0082 | C(TS) | Junction of mcgee and shannon street. | 42.378 | -76.862 |
| 07-BGST-0.1 | Seneca | Big Stream | 0705-0087 | C(TS) | At south glenora rd. | 42.49 | -76.9143 |
| 07-THOL-1.8 | Seneca | Tug Hollow Creek | 0705-0073 | C | 10 m above satterly hill rd. Bridge. | 42.42696 | -76.84438 |
| 07-CTLE-0.1 | Seneca | Castle Creek | 0705-0027 | C | 50 m from trib mouth. | 42.873 | -76.973 |
| 07-OWLI-3.0 | Owasco | Owasco Lake Inlet | 0706-0002 | C(T) | 20 m below sr 38. | 42.71667 | -76.43773 |
| 07-SCKR-0.1 | Owasco | Sucker Brook | 0706-0010 | C | 100 m upstream of sr 38a. | 42.902 | -76.527 |
| 07-OWAL\_T2-0.1 | Owasco |  | 0706-0010 | C |  | 42.892 | -76.522 |
| 07-VENE-1.5 | Owasco | Veness Brook | 0706-0010 | C | Downstream of silver street rd. Bridge. | 42.88016 | -76.56232 |
| 07-VENE-0.4 | Owasco | Veness Brook | 0706-0010 | C | Veness brook at oltz residence | 42.886 | -76.548 |
| 07-DUCH-0.3 | Owasco | Dutch Hollow Brook | 0706-0003 | C(TS) | East lake rd. | 42.864 | -76.508 |
| 07-DUCH-8.3 | Owasco | Dutch Hollow Brook | 0706-0003 | C(TS) | 10 m above old state rd. Bridge. | 42.83167 | -76.41277 |
| 07-OWAL\_T5-0.2 | Owasco |  | 0706-0010 | C |  | 42.843 | -76.503 |
| 07-OWAL\_T46-0.1 | Owasco | Unnamed TributaryTo Owasco Lake | 0706-0010 | C | Off fire lane near sr 38. | 42.824 | -76.521 |
| 07-OWAL\_T9-0.1 | Owasco | Unnamed TributaryTo Owasco Lake | 0706-0010 | C | Off widewaters rd. | 42.805 | -76.491 |
| 07-OWAL\_T9-0.1 | Owasco |  | 0706-0010 | C |  | 42.805 | -76.491 |
| 07-OWAL\_T16-0.4 | Owasco |  | 0706-0010 | C |  | 42.776 | -76.462 |
| 07-OWLI-0.1 | Owasco |  | 0706-0002 | C(T) |  | 42.755 | -76.463 |
| 07-SKAT\_T93a-0.5 | Skaneateles | Unnamed Tributary To Skaneateles Lake | 0707-0005 | AA | Just upstream of culvert on west lake rd. | 42.93523 | -76.43204 |
| 07-SKAT\_T2-0.1 | Skaneateles | Unnamed Tributary To Skaneateles Lake | 0707-0005 | AA | East lake rd. At public fishing access. | 42.92439 | -76.40494 |
| 07-SKAT\_T5-0.1 | Skaneateles | Unnamed Tributary To Skaneateles Lake | 0707-0005 | AA | East lake rd. Bridge. | 42.904 | -76.39399 |
| 07-SKAT\_T89-0.2 | Skaneateles | Unnamed Tributary To Skaneateles Lake | 0707-0005 | AA | West lake rd. Bridge. | 42.898 | -76.419 |
| 07-SKAT\_T14-0.2 | Skaneateles | Unnamed Tributary To Skaneateles Lake | 0707-0005 | AA | At route 41 bridge. | 42.878 | -76.37499 |
| 07-BSWP-0.1 | Skaneateles | Bear Swamp Creek | 0707-0005 | AA(T) | Appletree fire lane. | 42.82246 | -76.32969 |
| 07-SKAT\_T21-0.1 | Skaneateles |  | 0707-0005 | AA |  | 42.81 | -76.312 |
| 07-RAND-0.1 | Skaneateles |  | 0707-0005 | AA |  | 42.786 | -76.274 |
| 07-BSWP-6.3 | Skaneateles |  | 0707-0005 | AA |  | 42.751 | -76.304 |
| 07-GROU-1.5 | Skaneateles | Grout Brook | 0706-0001 | AA(T) | Co rte 101 at sweeney hill rd. Bridge. | 42.74194 | -76.26528 |



**Figure** **1**. Map of sampling locations. Site names reference the Location ID and River Mile.

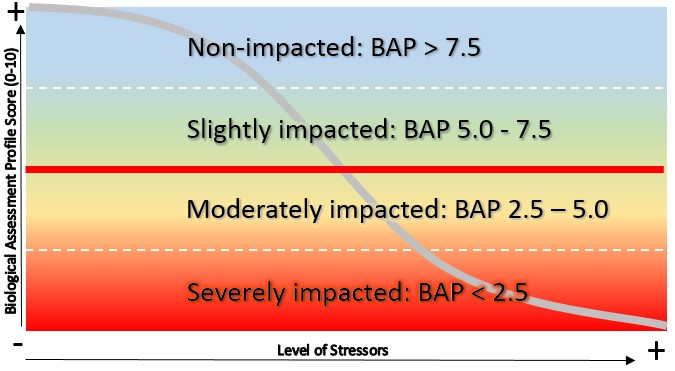
Table 2. Sampling dates and overall parameters for the study period included in this report.

| **Site Id** | **Sampler** | **Lake** | **Chemistry** | **Macroinvertebrates** |
| --- | --- | --- | --- | --- |
| 07-BGST-0.1 | DEC | Seneca | 06/20/2019-10/05/2020 | 7/18/2019 |
| 07-CATH-0.6 | DEC | Seneca | 06/20/2019-10/30/2020 | 7/18/2019 |
| 07-CTLE-0.1 | DEC | Seneca | 03/29/2020-10/30/2020 | 7/17/2019 |
| 07-GLNK-0.2 | DEC | Seneca | 06/20/2019-08/15/2019 | 7/18/2019 |
| 07-KASH-0.3 | DEC | Seneca | 06/20/2019-07/12/2020 | 7/18/2019 |
| 07-KEUK-0.1 | DEC | Seneca | 06/19/2019-08/15/2019 | 7/18/2019 |
| 07-THOL-1.8 | DEC | Seneca | 06/20/2019-08/15/2019 | 7/18/2019 |
| 07-REED-0.1 | DEC/External | Seneca | 08/01/2018-10/30/2020 | 7/12/2016 |
| 07-DUCH-8.3 | DEC | Owasco | 07/22/2021-07/22/2021 | 7/13/2016 |
| 07-OWAL\_T46-0.1 | DEC | Owasco | 04/05/2017-07/16/2019 | 7/16/2019 |
| 07-OWLI-3.0 | DEC | Owasco | 03/12/2018-07/16/2019 | 7/16/2019 |
| 07-SCKR-0.1 | DEC | Owasco | 03/12/2018-07/16/2019 | 7/16/2019 |
| 07-VENE-1.5 | DEC | Owasco | 06/19/2019-07/22/2021 | 7/16/2019 |
| 07-OWAL\_T9-0.1 | DEC/External | Owasco | 11/15/2017-07/16/2019 | 7/16/2019 |
| 07-OWAL\_T16-0.4 | External | Owasco | 11/15/2017-12/01/2017 |  |
| 07-OWAL\_T2-0.1 | External | Owasco | 04/05/2017-10/23/2018 |  |
| 07-OWAL\_T5-0.2 | External | Owasco | 04/05/2017-12/01/2017 |  |
| 07-OWLI-0.1 | External | Owasco | 04/05/2017-11/02/2018 |  |
| 07-VENE-0.4 | External | Owasco | 04/05/2017-11/02/2018 |  |
| O7-DUCH-0.3 | External | Owasco | 04/05/2017-11/02/2018 |  |
| 07-BSWP-0.1 | DEC | Skaneateles | 05/30/2018-11/25/2019 | 7/17/2019 |
| 07-GROU-1.5 | DEC | Skaneateles | 05/30/2018-11/25/2019 | 7/31/2018 |
| 07-SKAT\_T2-0.1 | DEC/External | Skaneateles | 04/05/2018-12/16/2020 | 7/17/2019 |
| 07-SKAT\_T5-0.1 | DEC/External | Skaneateles | 05/10/2019-12/16/2020 | 7/17/2019 |
| 07-SKAT\_T89-0.2 | DEC/External | Skaneateles | 05/30/2018-12/16/2020 | 7/31/2018 |
| 07-BSWP-6.3 | External | Skaneateles | 05/10/2019-11/14/2019 |  |
| 07-RAND-0.1 | External | Skaneateles | 05/10/2019-11/14/2019 |  |
| 07-SKAT\_T14-0.2 | External | Skaneateles | 05/10/2019-11/14/2019 | 7/13/2016 |
| 07-SKAT\_T21-0.1 | External | Skaneateles | 05/10/2019-11/14/2019 |  |
| 07-SKAT\_T93a-0.5 | External | Skaneateles | 05/10/2019-12/16/2020 | 7/17/2019 |

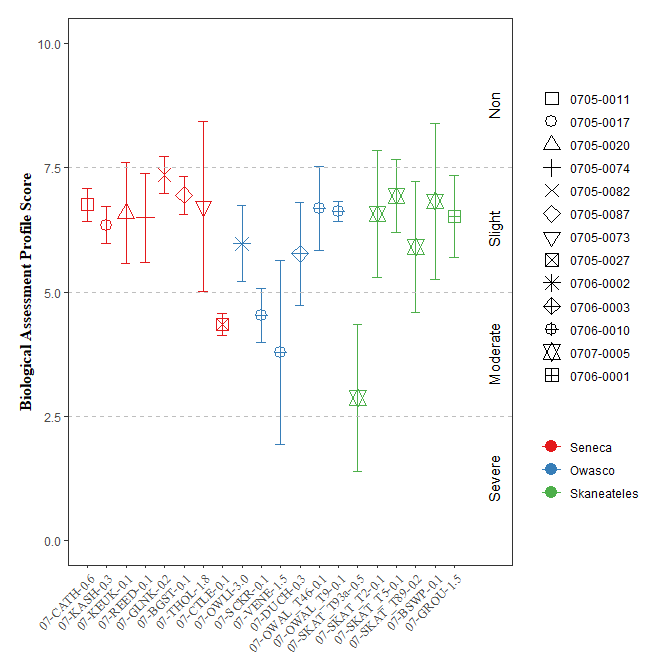
# Section I: Overview of Sampling Events

1. Benthic Macroinvertebrate Community Analysis – DEC SamplesBiological 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 results alone. These biological assessments of water quality are generated using calculated Biological Assessment Profile (BAP) scores (NYSDEC 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 [**2**](#BAPfig); SOP #208-21). A final BAP score below of less than 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 of greater than 5 indicates that aquatic life in the sampled stream reflects that of natural conditions or only slightly altered from natural (Figure [**3**](#BAP)). Expected variability in the results of benthic macroinvertebrate community samples is presented in Smith and Bode (2004)."

Several WI/PWL segments had mean BAP scores below 5, including 0705-0027 and 0705-0005 (Figure [**3**](#BAP)). Two additional segments in 0706-0010 had mean BAP less than 5 but 95 percent confidence intervals suggest inconclusive results for that segment. Sites with a low BAP can be investigated for sources of biological impacts.



**Figure** **2**. Biological Assessment Profile (BAP) score impact categories based on the macroinvertebrate community.



**Figure** **3**. 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.

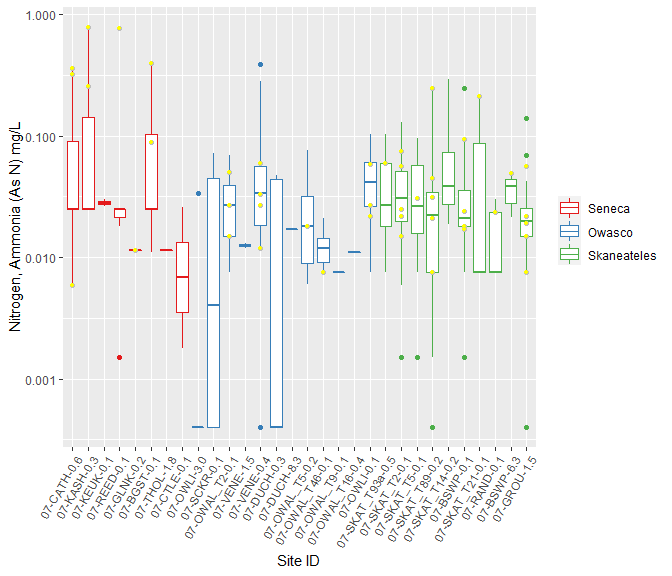
2. Water Quality Measurements – DEC and External SamplesDEC establishes water quality standards (WQS) and guidance values for many specific substances. Waters are classified for their best uses and WQS are set to protect those uses (6 NYCRR Part 703). The data presented below does not meet the minimum data requirements for a confirmed best use assessment[[1]](#footnote-1) (CALM, 2021). For the best use assessment, please see [DEC Info Locator](https://gisservices.dec.ny.gov/gis/dil/) and factsheets[[2]](#footnote-2) for individual WI/PWL ID segments presented in this report (Table 1). (WI/PWL ID 0705-0011, 0705-0017, 0705-0020, 0705-0074, 0705-0082, 0705-0087, 0705-0073, 0705-0027, 0706-0002, 0706-0010, 0706-0003, 0707-0005, 0706-0001).

*NYSDEC Samples*Ambient water chemistry sampling included in-situ and lab measured water quality analytes (Table [3](#Analytes)). A total of 31 lab-measured and 8 in-situ water quality parameters were collected. Samples were collected by SMAS using the direct grab method (NYSDEC 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 (NYSDEC 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). An excursion is defined as a samples exceedance of its applicable water quality standard.*External Samples*All External samples were collected under Quality Assurance Project Plans (QAPPs) and processed through the same QC procedures as described above for NYSDEC samples. External data were mostly nutrients (phosphorus and nitrogen).

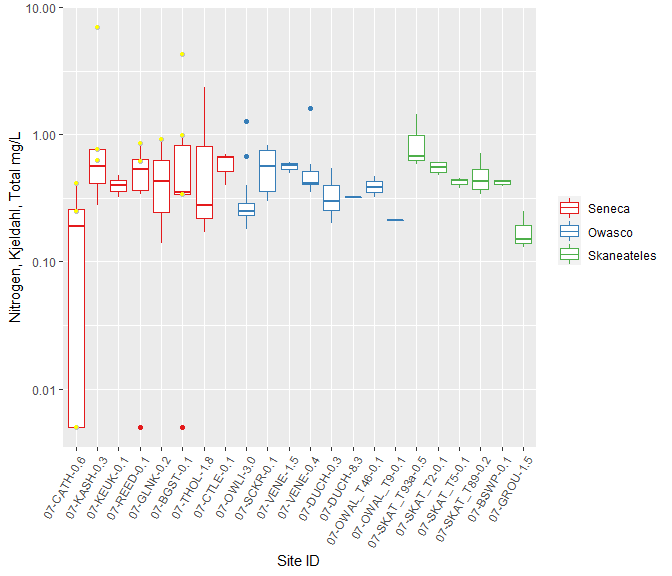
Plots illustrating the range of analyte concentration values for each site are included below. Analytes selected for presentation were subset to those of specific interest to the study and include nitrate, nitrate + nitrite (as N), nitrite (as N), total nitrogen, ammonia, total kjeldahl nitrogen (TKN),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

Table 3. Water chemistry analytes sampled as part of the Stream Assessment Survey. Table lists sampled analytes and analytical specifications.

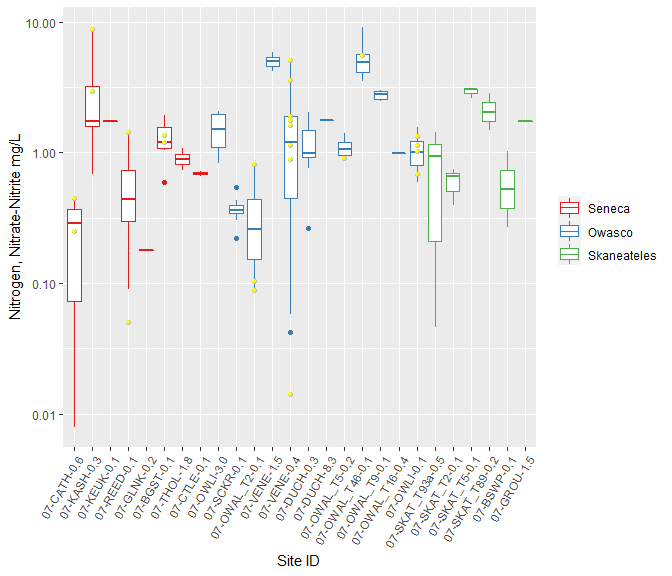
| **Analytes** | **Analytical Lab** | **Method** | **Precision** | **Accuracy** | **Calibration: Initial** | **Calibration: Ongoing** | **Calibration: Blanks** | **Detection Limit** | **Reporting Limit** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity | ALS | SM 2320B | ^ | ± 25% | Daily | Every 10 | Every 10 | 1.0 mg/L | 2.0 mg/L |
| Aluminum (total) | ALS | EPA 200.8 | ^ | ± 25% | Daily | Every 10 | Every 10 | 7.6 µ/L | 10 µ/L |
| Arsenic (total) | ALS | EPA 200.8 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.3 µ/L | 1 µ/L |
| Cadmium (total) | ALS | EPA 200.8 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.03 µ/L | 1 µ/L |
| Calcium | ALS | EPA 200.7 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.1 mg/L | 1.0 mg/L |
| Dissolved Organic Carbon | ALS | 5310C | ^ | ± 25% | As needed | Ever 10 | Every 10 | 0.4 mg/L | 10 mg/L |
| Chloride | ALS | EPA 300.0 | ^ | ± 25% | As needed | Every 10 | Every 10 | 0.02 mg/L | 0.2 mg/L |
| Chlorophyll A | ALS | SM 10200 H | ^ | N/A | Daily | Every 20 | Every 10 |  | 0.4 µ/L |
| Copper (total) | ALS | EPA 200.8 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.04 µ/L | 1 µ/L |
| Hardness | ALS | SM 2340B | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.3 mg/L | 6.62 mg/L |
| Iron (total) | ALS | EPA 200.7 | ^ | ± 25% | Daily | Every 10 | Every 10 | 20 µ/L | 100 µ/L |
| Lead (total) | ALS | EPA 200.8 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.19 µ/L | 1 µ/L |
| Magnesium | ALS | EPA 200.7 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.04 mg/L | 1.0 mg/L |
| Nickel (total) | ALS | EPA 200.8 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.04 µ/L | 1 µ/L |
| Ammonia | ALS | D6919-09 | ^ | ± 25% | As needed | Every 10 | Every 10 | 0.0025 mg/L | 0.01 mg/L |
| Total Kjeldahl Nitrogen | ALS | EPA 351.2 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.08 mg/L | 0.1 mg/L |
| Nitrate-nitrite | ALS | EPA 351.2 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.007 mg/L | 0.01 mg/L |
| Nitrogen, Nitrate | ALS | EPA 353.2 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.007 mg/L | 0.01 mg/L |
| Nitrogen, Nitrite | ALS | EPA 351.2 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.007 mg/L | 0.01 mg/L |
| Nitrogen, Total | ALS | Calculated | ^ |  |  |  |  |  |  |
| Ortho-phosphate | ALS | EPA 365.1 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.001 mg/L | 0.005 mg/L |
| Total Phosphorus | ALS | EPA 365.1 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.002 mg/L | 0.003 mg/L |
| Silver (total) | ALS | EPA 200.8 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.07 µ/L | 1 µ/L |
| Turbidity | ALS | EPA 180.1 | ^ | ± 20% | Daily | Every 10 | Every 10 | 0.06 NTU | 0.1 NTU |
| Zinc (total) | ALS | EPA 200.8 | ^ | ± 25% | Daily | Every 10 | Every 10 | 0.7 µ/L | 10 µ/L |
| ^ Precision objectives are defined by results of duplicate samples as described in SOP #102-20, and #110-21. | | | | | | | | | |
| ~ Not Applicable | | | | | | | | | |



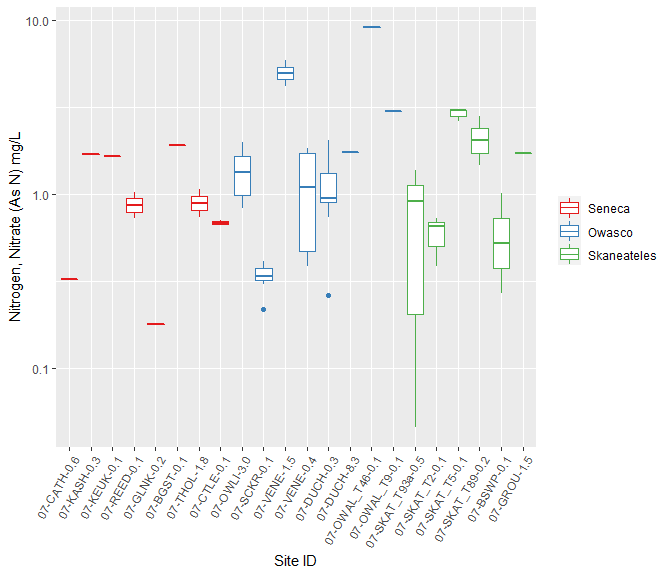
**Figure 4**. Nitrogen, Ammonia (As N), Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



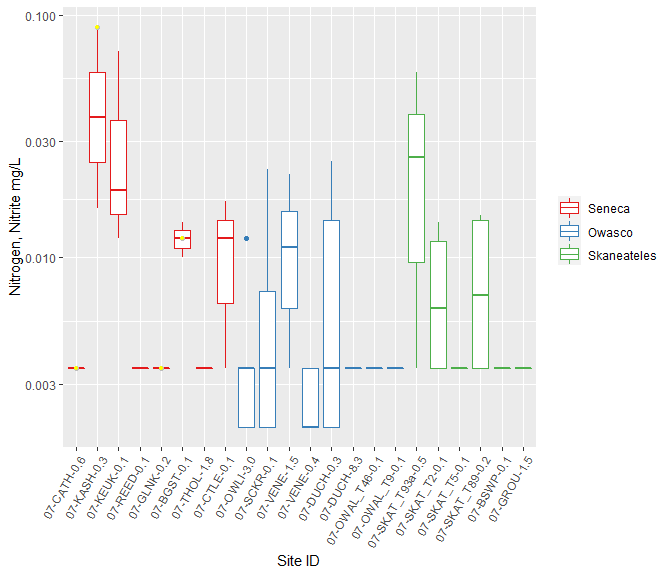
**Figure 5**. Nitrogen, Kjeldahl, Total, Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



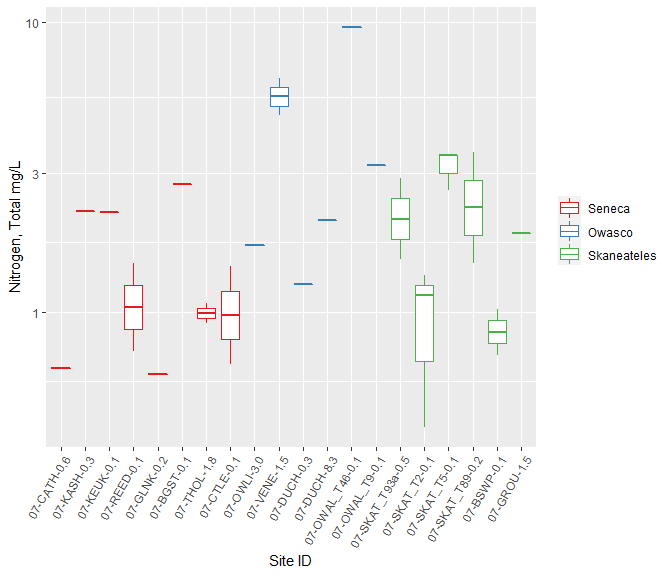
**Figure 6**. Nitrogen, Nitrate-Nitrite, Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



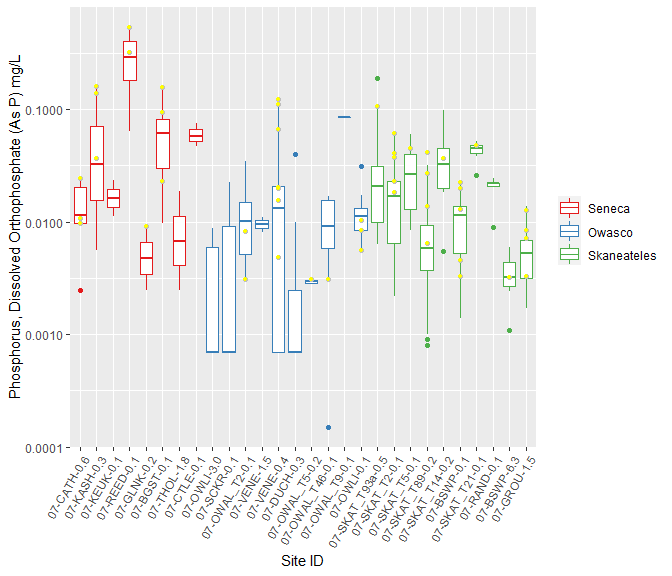
**Figure 7**. Nitrogen, Nitrate (As N), Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



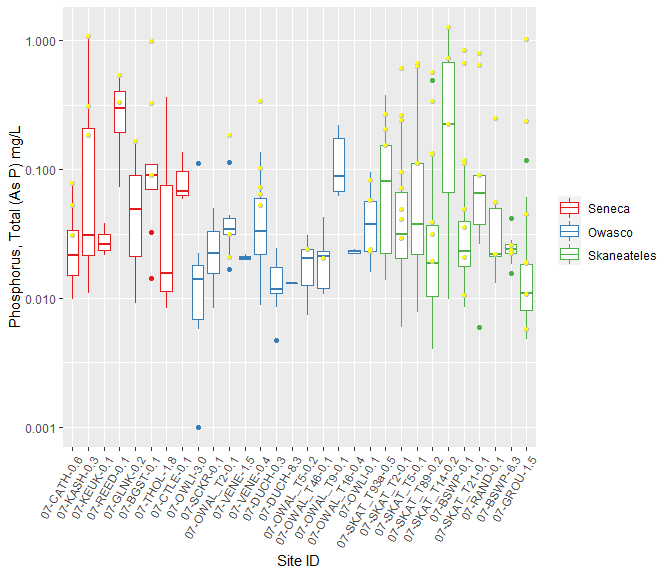
**Figure 8**. Nitrogen, Nitrite, Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



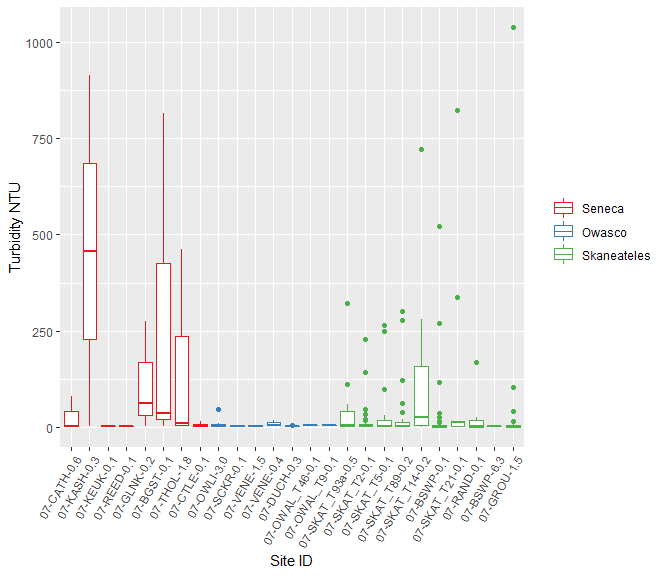
**Figure 9**. Nitrogen, Total, Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



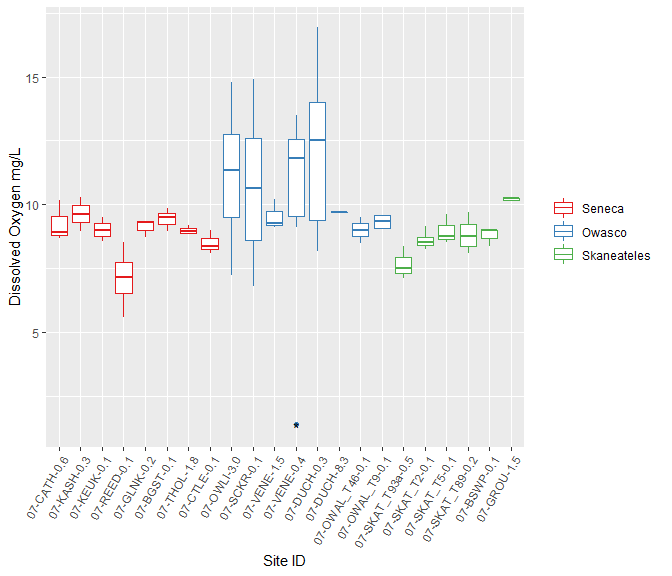
**Figure 10**. Phosphorus, Dissolved Orthophosphate (As P), Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



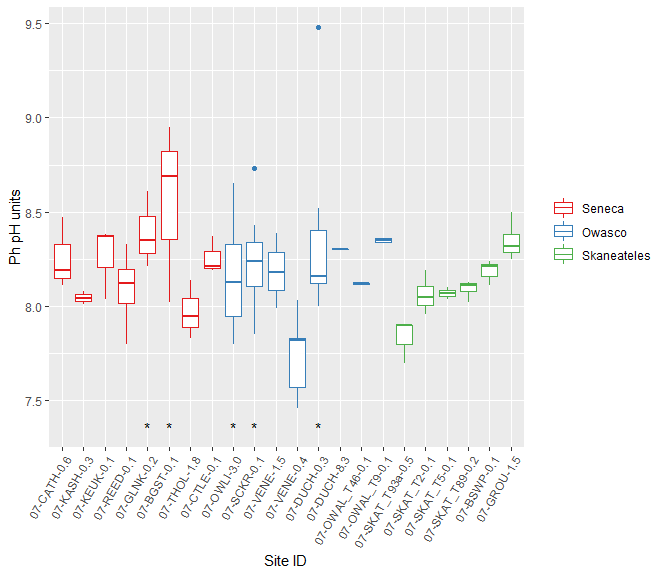
**Figure** **11**. Phosphorus, Total (As P), Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



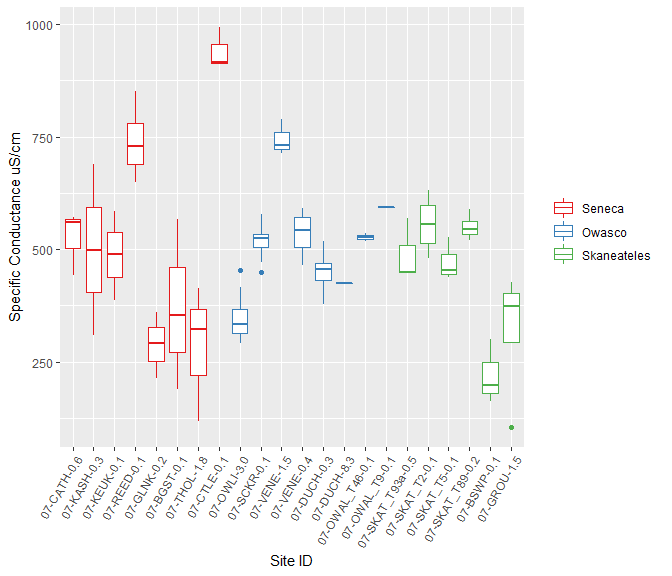
**Figure** **12**. Turbidity, Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



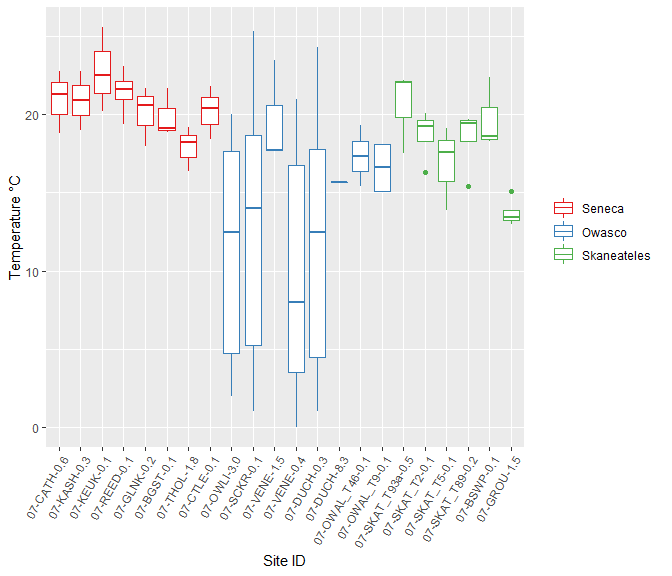
**Figure 13**. Dissolved Oxygen, Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



**Figure 14**. Ph, Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



**Figure 15**. Specific Conductance, Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.



**Figure** **16**. Temperature, Stars at the bottom of the graph indicate a violation of a WQS (if applicable). Axis are presented in log scale for comparison. The total number of reported values illustrated for each sampling location can vary due to non-detection and QA/QC procedures. Color corresponds to watershed group indicated in legend. Yellow dots (if included) indicate samples taken at event flow rates.

3. Stream Reach Physical Habitat Characteristics – DEC SamplesAssessments of the physical habitat were also collected to calculate the Habitat Model Affinity (HMA; ) (Table 34). 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 (NYSDEC 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. Individual characteristics evaluated: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);

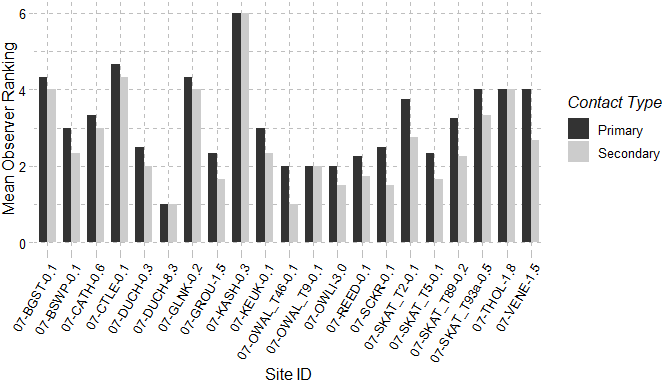
Table 4. Ranked habitat characteristics and calculated HMA. Epifaunal substrate (Epi. Cover); Embeddedness/Pool Substrate Characterization (Embed. Pool.); Velocity Depth Regime/Pool Variability (Vel/Dep Reg.); Sediment Deposition (Sed. Dep.); Channel Flow Status (Flow Status); Channel Alteration (Chan. 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.** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0705-0011 | 07-CATH-0.6 | High | 14 | 17 | 17 | 18.0 | 10 | 13.0 | 10 | 3 | 3.0 | 7.0 | 7 | 3.0 | 3.0 | 69 | Moderate |
| 0705-0017 | 07-KASH-0.3 | High | 11 | 16 | 18 | 13.0 | 7 | 13.0 | 15 | 8 | 4.0 | 8.0 | 1 | 8.0 | 0.0 | 67 | Moderate |
| 0705-0020 | 07-KEUK-0.1 | High | 14 | 15 | 19 | 14.0 | 16 | 14.0 | 19 | 9 | 9.0 | 9.0 | 9 | 9.0 | 9.0 | 91 | Natural |
| 0705-0074 | 07-REED-0.1 | High | 16 | 17 | 12 | 7.0 | 10 | 20.0 | 16 | 10 | 6.0 | 9.0 | 9 | 5.0 | 5.0 | 77 | Altered |
| 07-REED-0.1 | Low | 13 | 17 | 13 | 17.0 | 13 | 13.0 | 14 | 8 | 7.0 | 1.0 | 4 | 0.0 | 4.0 | 76 | Altered |
| 0705-0082 | 07-GLNK-0.2 | High | 12 | 18 | 19 | 20.0 | 13 | 8.0 | 18 | 8 | 4.0 | 2.0 | 2 | 1.0 | 1.0 | 68 | Moderate |
| 0705-0087 | 07-BGST-0.1 | High | 8 | 17 | 19 | 20.0 | 18 | 18.0 | 18 | 9 | 9.0 | 9.0 | 4 | 10.0 | 1.0 | 87 | Natural |
| 0705-0073 | 07-THOL-1.8 | High | 17 | 16 | 19 | 17.0 | 14 | 18.0 | 19 | 8 | 8.0 | 10.0 | 10 | 10.0 | 10.0 | 95 | Natural |
| 0705-0027 | 07-CTLE-0.1 | High | 10 | 10 | 9 | 18.0 | 15 | 5.0 | 17 | 9 | 9.0 | 4.0 | 4 | 1.0 | 1.0 | 62 | Moderate |
| 0706-0002 | 07-OWLI-3.0 | High | 14 | 17 | 15 | 13.0 | 19 | 17.0 | 18 | 6 | 6.0 | 8.0 | 9 | 5.0 | 4.0 | 83 | Natural |
| 0706-0010 | 07-SCKR-0.1 | High | 15 | 16 | 6 | 16.0 | 7 |  | 13 | 9 | 10.0 | 7.0 | 7 | 7.0 | 8.0 | 76 | Altered |
| 07-VENE-1.5 | High | 10 | 12 | 10 | 9.5 | 16 | 15.5 | 7 | 8 | 8.0 | 9.0 | 9 | 8.5 | 5.5 | 72 | Altered |
| 0706-0003 | 07-DUCH-0.3 | High | 17 | 18 | 18 | 18.0 | 18 | 18.0 | 19 | 9 | 9.0 | 9.0 | 9 | 8.0 | 9.0 | 98 | Natural |
| 07-DUCH-8.3 | High | 8 | 12 | 12 | 10.0 | 12 | 12.0 | 12 | 6 | 6.0 | 6.0 | 7 | 7.0 | 7.0 | 65 | Moderate |
| 0706-0010 | 07-OWAL\_T46-0.1 | High | 17 | 18 | 13 | 18.0 | 18 | 19.0 | 19 | 9 | 8.0 | 9.0 | 8 | 3.0 | 2.0 | 88 | Natural |
| 07-OWAL\_T9-0.1 | High | 14 | 15 | 9 | 10.0 | 14 | 17.0 | 16 | 8 | 7.0 | 7.0 | 8 | 4.0 | 4.0 | 74 | Altered |
| 07-OWAL\_T9-0.1 | High | 14 | 15 | 9 | 10.0 | 14 | 17.0 | 16 | 8 | 7.0 | 7.0 | 8 | 4.0 | 4.0 | 74 | Altered |
| 0707-0005 | 07-SKAT\_T93a-0.5 | High | 14 | 14 | 13 | 16.0 | 17 | 13.0 | 11 | 6 | 5.0 | 8.0 | 7 | 7.0 | 7.0 | 76 | Altered |
| 07-SKAT\_T2-0.1 | High | 13 | 9 | 14 | 16.0 | 15 | 9.5 | 16 | 8 | 7.0 | 8.5 | 6 | 6.0 | 6.0 | 74 | Altered |
| 07-SKAT\_T5-0.1 | High | 19 |  | 18 | 17.0 | 10 | 16.0 | 18 | 8 | 6.0 | 9.0 | 9 | 9.0 | 9.0 | 90 | Natural |
| 07-SKAT\_T89-0.2 | High | 12 | 16 | 13 | 14.5 | 13 | 12.0 | 16 | 7 | 6.0 | 8.0 | 7 | 9.0 | 8.0 | 79 | Altered |
| 07-BSWP-0.1 | High | 18 | 17 | 16 | 12.0 | 16 | 17.0 | 19 | 7 | 8.0 | 9.0 | 3 | 9.0 | 2.0 | 84 | Natural |
| 0706-0001 | 07-GROU-1.5 | High | 16 | 16 | 15 | 18.0 | 16 | 13.0 | 18 | 9 | 9.5 | 9.5 | 5 | 8.0 | 3.5 | 86 | Natural |

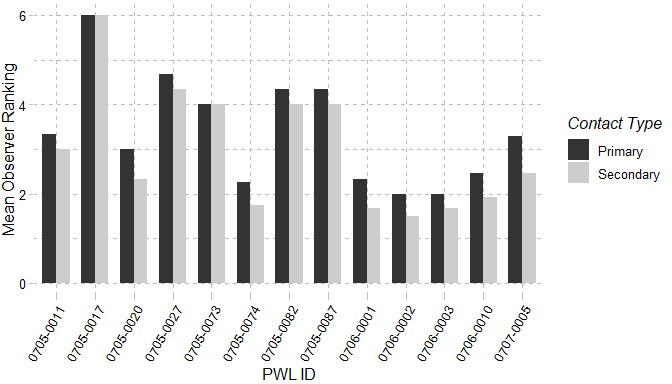
## User Perception

Perceptions of recreational ability were ranked at all sampling locations as per standard site visit protocols (SOP #208-21). The observer (NYSDEC field staff) 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 above slightly impacted (rank of 3) are indicative of significant impacts to recreational ability (Smith et al., 2014). The ranking assesses primary and secondary 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 primary and secondary contact recreation. Results of this ranking are the primary gauge of whether the Finger Lakes Advanced Stream Monitoring sites are achieving the designated recreational uses. Figure [**17**](#userP-rank) illustrates the average observer ranking for desire to participate in primary and secondary 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 and above (Smith et al., 2014). Results of this survey suggest observers considered the desire to participate in primary and secondary contact recreation to be slightly impacted (ranked > 3) at 8 WI/PWL segments 0705-0011, 0705-0017, 0705-0020, 0705-0027, 0705-0073, 0705-0082, 0705-0087, 0707-0005(Figure [**18**](#userP-rankb)).



**Figure** **17**. Mean observer ranking of recreational ability for each sampling location. Columns represent observer rankings for the desire to participate in primary and secondary contact recreation. Ranking of recreation ability was performed for all locations during each site visit.



**Figure** **18**. Mean observer ranking of recreational ability for sampling locations, grouped by WI/PWL. Columns represent observer rankings for the desire to participate in primary and secondary contact recreation. Ranking of recreational 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 [5](#UserP-mean-factor) shows the mean recorded value for these factors at each sampling location and Table [6](#UserP-dominant-factor) lists the users selection of the most dominant impediment that reduces the observer’s desire to participate in recreational activities, which can include the factors above, as well as ease of access and proximity to development.

Table 5. Mean observer ranked value for factors influencing desire to participate in primary and secondary contact recreation. Factors were ranked on a 10 scale (0 – Best/Natural; 10 Worst/Severe) according to perceived impact on a location. Ranking of recreational ability was performed for all locations during each site visit

| **PWL** | **Site** | **Water Clarity** | **Susp. Phyto.** | **Periphyton** | **Macro.** | **Odor** | **Trash** | **Discharge Pipes** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0705-0011 | 07-CATH-0.6 | 3 | 0 | 2 | 1 | 0 | 0 | 0 |
| 0705-0017 | 07-KASH-0.3 | 6 | 0 | 2 | 0 | 0 | 0 | 0 |
| 0705-0020 | 07-KEUK-0.1 | 1 | 0 | 3 | 0 | 3 | 0 | 0 |
| 0705-0074 | 07-REED-0.1 | 2 | 1 | 2 | 1 | 0 | 0 | 0 |
| 0705-0082 | 07-GLNK-0.2 | 6 | 0 | 2 | 0 | 0 | 2 | 0 |
| 0705-0087 | 07-BGST-0.1 | 6 | 0 | 1 | 1 | 2 | 0 | 0 |
| 0705-0073 | 07-THOL-1.8 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0705-0027 | 07-CTLE-0.1 | 2 | 0 | 6 | 1 | 3 | 4 | 3 |
| 0706-0002 | 07-OWLI-3.0 | 4 | 1 | 2 | 1 | 0 | 0 | 0 |
| 0706-0010 | 07-SCKR-0.1 | 2 | 0 | 2 | 0 | 0 | 0 | 0 |
| 0706-0010 | 07-VENE-1.5 | 1 | 0 | 5 | 0 | 1 | 0 | 0 |
| 0706-0003 | 07-DUCH-0.3 | 4 | 0 | 2 | 0 | 0 | 0 | 0 |
| 0706-0003 | 07-DUCH-8.3 | 1 | 0 | 2 | 0 | 0 | 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 |
| 0707-0005 | 07-SKAT\_T93a-0.5 | 4 | 1 | 3 | 1 | 0 | 0 | 1 |
| 0707-0005 | 07-SKAT\_T2-0.1 | 3 | 2 | 3 | 1 | 1 | 0 | 0 |
| 0707-0005 | 07-SKAT\_T5-0.1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 0707-0005 | 07-SKAT\_T89-0.2 | 2 | 0 | 4 | 0 | 0 | 0 | 0 |
| 0707-0005 | 07-BSWP-0.1 | 2 | 0 | 2 | 0 | 0 | 1 | 0 |
| 0706-0001 | 07-GROU-1.5 | 2 | 0 | 4 | 0 | 0 | 0 | 0 |

Table 6. Most frequently ranked factor influencing observer desire to participate in primary and secondary contact recreation. Factors influencing desire to recreate were ranked and a primary factor influencing the desire to participate in primary and secondary contact recreation was chosen during each site visit. Column values represent the factor selected most frequently at each site.

| **PWL** | **SITE\_ID** | **Primary** | **Secondary** |
| --- | --- | --- | --- |
| 0705-0011 | 07-CATH-0.6 | Periphyton | Periphyton, Water Clarity |
| 07-CATH-0.6 | Water clarity | Periphyton, Water Clarity |
| 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 |
| 0705-0074 | 07-REED-0.1 | Periphyton | Periphyton |
| 07-REED-0.1 | Water clarity | Periphyton |
| 0705-0082 | 07-GLNK-0.2 | Periphyton | Trash |
| 07-GLNK-0.2 | Water clarity | Trash |
| 0705-0087 | 07-BGST-0.1 | Odor | Other, Periphyton, Water Clarity |
| 07-BGST-0.1 | Water clarity | Other, Periphyton, Water Clarity |
| 0705-0073 | 07-THOL-1.8 | Other | Other, Water Clarity |
| 07-THOL-1.8 | Water clarity | Other, Water Clarity |
| 0705-0027 | 07-CTLE-0.1 | Odor | Proximity to development roads, Trash, Water Clarity |
| 07-CTLE-0.1 | Periphyton | Proximity to development roads, Trash, Water Clarity |
| 0706-0002 | 07-OWLI-3.0 | Water clarity | Water Clarity |
| 0706-0010 | 07-SCKR-0.1 | Other | None, Water Clarity |
| 07-SCKR-0.1 | Water clarity | None, Water Clarity |
| 07-VENE-1.5 | Other | Other, Periphyton, Water Clarity |
| 07-VENE-1.5 | Periphyton | Other, Periphyton, Water Clarity |
| 0706-0003 | 07-DUCH-0.3 | Water clarity | Periphyton, Water Clarity |
| 07-DUCH-8.3 | Water clarity |  |
| 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 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Other | Trash, Water Clarity |
| 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 |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 07-OWAL\_T9-0.1 | Water clarity | Trash, Water Clarity |
| 0707-0005 | 07-SKAT\_T93a-0.5 | Periphyton | Periphyton |
| 07-SKAT\_T93a-0.5 | Water clarity | Periphyton |
| 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-BSWP-0.1 | Periphyton | Periphyton |
| 07-BSWP-0.1 | Water clarity | Periphyton |
| 0706-0001 | 07-GROU-1.5 | Periphyton | Periphyton |
| 07-GROU-1.5 | Water clarity | Periphyton |

# 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 and WQS excursion information. Tables also include 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 7. Applicable Standards: 07-CATH-0.6

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

Table 8. 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 |
| 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 | µg/L | total | 2 | 326 | 326 | 326 | 326 |
| Nitrate + Nitrite | µg/L | total | 8 | 240.488 | 288 | 450 | 7.9 |
| Nitrite | µg/L | total | 3 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 9 | 161.111 | 190 | 410 | 5 |
| Nitrogen, Total | µg/L | total | 2 | 640 | 640 | 640 | 640 |
| 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 9. Chemistry Measurements at Event Flow (high flow): 07-CATH-0.6

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-CATH-0.6 | 2019-06-20 | Alkalinity, Total (As Caco3) | mg/L | Total | 1 | 167 |
| 07-CATH-0.6 | 2019-06-20 | Aluminum | µg/L | Total | 1 | 1820 |
| 07-CATH-0.6 | 2019-06-20 | Arsenic | µg/L | Total | 1 | 1.6 |
| 07-CATH-0.6 | 2019-06-20 | Cadmium | µg/L | Total | 1 | 0.19 |
| 07-CATH-0.6 | 2019-06-20 | Calcium | µg/L | Total | 1 | 60700 |
| 07-CATH-0.6 | 2019-06-20 | Carbon, Total Organic | mg/L | Total | 1 | 4.5 |
| 07-CATH-0.6 | 2019-06-20 | Chloride | mg/L | Total | 1 | 37.3 |
| 07-CATH-0.6 | 2019-06-20 | Chlorophyll A | µg/L | Total | 1 | 0.81 |
| 07-CATH-0.6 | 2019-06-20 | Copper | µg/L | Total | 1 | 4.2 |
| 07-CATH-0.6 | 2019-06-20 | Hardness (As Caco3) | mg/L | Total | 1 | 215 |
| 07-CATH-0.6 | 2019-06-20 | Iron | µg/L | Total | 1 | 3360 |
| 07-CATH-0.6 | 2019-06-20 | Lead | µg/L | Total | 1 | 1.7 |
| 07-CATH-0.6 | 2019-06-20 | Magnesium | µg/L | Total | 1 | 15400 |
| 07-CATH-0.6 | 2019-06-20 | Nickel | µg/L | Total | 1 | 4.2 |
| 07-CATH-0.6 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.006 |
| 07-CATH-0.6 | 2019-06-20 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.41 |
| 07-CATH-0.6 | 2019-06-20 | Nitrogen, Nitrite | mg/L | Total | 1 | 0.004 |
| 07-CATH-0.6 | 2019-06-20 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.011 |
| 07-CATH-0.6 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.078 |
| 07-CATH-0.6 | 2019-06-20 | Silver | µg/L | Total | 1 | 0.075 |
| 07-CATH-0.6 | 2019-06-20 | Total Suspended Solids | mg/L | Total | 1 | 105 |
| 07-CATH-0.6 | 2019-06-20 | Turbidity | NTU | Total | 1 | 80.6 |
| 07-CATH-0.6 | 2019-06-20 | Zinc | µg/L | Total | 1 | 9.6 |
| 07-CATH-0.6 | 2020-03-29 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.323 |
| 07-CATH-0.6 | 2020-03-29 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.25 |
| 07-CATH-0.6 | 2020-03-29 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.45 |
| 07-CATH-0.6 | 2020-03-29 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.01 |
| 07-CATH-0.6 | 2020-03-29 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.052 |
| 07-CATH-0.6 | 2020-03-29 | Total Suspended Solids | mg/L | Total | 1 | 51.1 |
| 07-CATH-0.6 | 2020-10-30 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.364 |
| 07-CATH-0.6 | 2020-10-30 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.005 |
| 07-CATH-0.6 | 2020-10-30 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.25 |
| 07-CATH-0.6 | 2020-10-30 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.024 |
| 07-CATH-0.6 | 2020-10-30 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.031 |
| 07-CATH-0.6 | 2020-10-30 | Total Suspended Solids | mg/L | Total | 1 | 13.5 |

Table 10. In-Situ Measurements: 07-CATH-0.6

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 1.663 | 1.49 | 2.31 | 1.19 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.457 | 0.46 | 0.62 | 0.29 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 9.27 | 8.92 | 10.19 | 8.7 |
| Dissolved Oxygen Saturation | % | NA | 3 | 104.267 | 98.3 | 118.6 | 95.9 |
| pH | pH units | total | 3 | 8.257 | 8.19 | 8.47 | 8.11 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.047 | 0.04 | 0.07 | 0.03 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.083 | 0.1 | 0.11 | 0.04 |
| Salinity | ppt | NA | 3 | 0.253 | 0.27 | 0.28 | 0.21 |
| Specific Conductance | uS/cm | NA | 3 | 524.867 | 561 | 571 | 442.6 |
| Temperature | °C | NA | 3 | 20.967 | 21.3 | 22.8 | 18.8 |

*Water Quality Standard Excursions*

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

Table 11. 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 12. Applicable Standards: 07-KASH-0.3

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 13. 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 |
| 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 | µg/L | total | 1 | 1700 | 1700 | 1700 | 1700 |
| Nitrate + Nitrite | µg/L | total | 7 | 2977.143 | 1720 | 8840 | 680 |
| Nitrite | µg/L | total | 2 | 52.5 | 52.5 | 89 | 16 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 8 | 1337.5 | 570 | 6990 | 280 |
| Nitrogen, Total | µg/L | total | 1 | 2220 | 2220 | 2220 | 2220 |
| 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 14. Chemistry Measurements at Event Flow (high flow): 07-KASH-0.3

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-KASH-0.3 | 2019-06-20 | Alkalinity, Total (As Caco3) | mg/L | Total | 1 | 82 |
| 07-KASH-0.3 | 2019-06-20 | Aluminum | µg/L | Total | 1 | 24900 |
| 07-KASH-0.3 | 2019-06-20 | Arsenic | µg/L | Total | 1 | 4.4 |
| 07-KASH-0.3 | 2019-06-20 | Cadmium | µg/L | Total | 1 | 1.9 |
| 07-KASH-0.3 | 2019-06-20 | Calcium | µg/L | Total | 1 | 92400 |
| 07-KASH-0.3 | 2019-06-20 | Carbon, Total Organic | mg/L | Total | 1 | 11.2 |
| 07-KASH-0.3 | 2019-06-20 | Chloride | mg/L | Total | 1 | 18.7 |
| 07-KASH-0.3 | 2019-06-20 | Chlorophyll A | µg/L | Total | 1 | 12.7 |
| 07-KASH-0.3 | 2019-06-20 | Copper | µg/L | Total | 1 | 37.2 |
| 07-KASH-0.3 | 2019-06-20 | Hardness (As Caco3) | mg/L | Total | 1 | 326 |
| 07-KASH-0.3 | 2019-06-20 | Iron | µg/L | Total | 1 | 36700 |
| 07-KASH-0.3 | 2019-06-20 | Lead | µg/L | Total | 1 | 37 |
| 07-KASH-0.3 | 2019-06-20 | Magnesium | µg/L | Total | 1 | 23100 |
| 07-KASH-0.3 | 2019-06-20 | Nickel | µg/L | Total | 1 | 40.8 |
| 07-KASH-0.3 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.255 |
| 07-KASH-0.3 | 2019-06-20 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 6.99 |
| 07-KASH-0.3 | 2019-06-20 | Nitrogen, Nitrite | mg/L | Total | 1 | 0.089 |
| 07-KASH-0.3 | 2019-06-20 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.16 |
| 07-KASH-0.3 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 1.09 |
| 07-KASH-0.3 | 2019-06-20 | Silver | µg/L | Total | 1 | 0.75 |
| 07-KASH-0.3 | 2019-06-20 | Total Suspended Solids | mg/L | Total | 1 | 1010 |
| 07-KASH-0.3 | 2019-06-20 | Turbidity | NTU | Total | 1 | 914 |
| 07-KASH-0.3 | 2019-06-20 | Zinc | µg/L | Total | 1 | 157 |
| 07-KASH-0.3 | 2020-03-29 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.789 |
| 07-KASH-0.3 | 2020-03-29 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.63 |
| 07-KASH-0.3 | 2020-03-29 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 2.94 |
| 07-KASH-0.3 | 2020-03-29 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.037 |
| 07-KASH-0.3 | 2020-03-29 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.184 |
| 07-KASH-0.3 | 2020-03-29 | Total Suspended Solids | mg/L | Total | 1 | 78.4 |
| 07-KASH-0.3 | 2020-07-12 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.76 |
| 07-KASH-0.3 | 2020-07-12 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 8.84 |
| 07-KASH-0.3 | 2020-07-12 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.138 |
| 07-KASH-0.3 | 2020-07-12 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.312 |
| 07-KASH-0.3 | 2020-07-12 | Total Suspended Solids | mg/L | Total | 1 | 30.8 |

Table 15. In-Situ Measurements: 07-KASH-0.3

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 2 | 12.325 | 12.325 | 23.35 | 1.3 |
| Chlorophyll A (Probe) | RFU | NA | 2 | 3.095 | 3.095 | 5.82 | 0.37 |
| Dissolved Oxygen | mg/L | dissolved | 2 | 9.63 | 9.63 | 10.3 | 8.96 |
| Dissolved Oxygen Saturation | % | NA | 2 | 108.55 | 108.55 | 120.6 | 96.5 |
| pH | pH units | total | 2 | 8.045 | 8.045 | 8.08 | 8.01 |
| Phycocyanin (Probe) | µg/L | NA | 2 | 1.425 | 1.425 | 2.6 | 0.25 |
| Phycocyanin (Probe) | RFU | NA | 2 | 1.485 | 1.485 | 2.7 | 0.27 |
| Salinity | ppt | NA | 2 | 0.23 | 0.23 | 0.31 | 0.15 |
| Specific Conductance | uS/cm | NA | 2 | 498.85 | 498.85 | 689 | 308.7 |
| Temperature | °C | NA | 2 | 20.9 | 20.9 | 22.8 | 19 |

*Water Quality Standard Excursions*

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

Table 16. 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 17. Applicable Standards: 07-KEUK-0.1

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C(T) | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(T) | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C(T) | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 18. 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 |
| 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 | µg/L | total | 1 | 1650 | 1650 | 1650 | 1650 |
| Nitrate + Nitrite | µg/L | total | 1 | 1720 | 1720 | 1720 | 1720 |
| Nitrite | µg/L | total | 3 | 34 | 19 | 71 | 12 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 3 | 400 | 400 | 480 | 320 |
| Nitrogen, Total | µg/L | total | 1 | 2200 | 2200 | 2200 | 2200 |
| 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 19. In-Situ Measurements: 07-KEUK-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 1.5 | 0.67 | 3.42 | 0.41 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.38 | 0.15 | 0.85 | 0.14 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 9.02 | 8.99 | 9.52 | 8.55 |
| Dissolved Oxygen Saturation | % | NA | 3 | 104.933 | 99.3 | 116.6 | 98.9 |
| pH | pH units | total | 3 | 8.263 | 8.37 | 8.38 | 8.04 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.06 | 0 | 0.18 | 0 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.083 | 0 | 0.25 | 0 |
| Salinity | ppt | NA | 3 | 0.237 | 0.24 | 0.28 | 0.19 |
| Specific Conductance | uS/cm | NA | 3 | 487.167 | 489.7 | 584 | 387.8 |
| Temperature | °C | NA | 3 | 22.767 | 22.5 | 25.6 | 20.2 |

*Water Quality Standard Excursions*

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

Table 20. 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 21. Applicable Standards: 07-REED-0.1

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C(T) | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(T) | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C(T) | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 22. 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 |
| 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 | µg/L | total | 2 | 878 | 878 | 1030 | 726 |
| Nitrate + Nitrite | µg/L | total | 9 | 540.667 | 440 | 1440 | 50 |
| Nitrite | µg/L | total | 3 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 10 | 469 | 535 | 860 | 5 |
| Nitrogen, Total | µg/L | total | 2 | 1100 | 1100 | 1470 | 730 |
| 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 23. Chemistry Measurements at Event Flow (high flow): 07-REED-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-REED-0.1 | 2020-07-12 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.86 |
| 07-REED-0.1 | 2020-07-12 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 1.44 |
| 07-REED-0.1 | 2020-07-12 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.539 |
| 07-REED-0.1 | 2020-07-12 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.536 |
| 07-REED-0.1 | 2020-07-12 | Total Suspended Solids | mg/L | Total | 1 | 4.8 |
| 07-REED-0.1 | 2020-10-30 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.768 |
| 07-REED-0.1 | 2020-10-30 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.62 |
| 07-REED-0.1 | 2020-10-30 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.05 |
| 07-REED-0.1 | 2020-10-30 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.325 |
| 07-REED-0.1 | 2020-10-30 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.333 |
| 07-REED-0.1 | 2020-10-30 | Total Suspended Solids | mg/L | Total | 1 | 0.5 |

Table 24. In-Situ Measurements: 07-REED-0.1

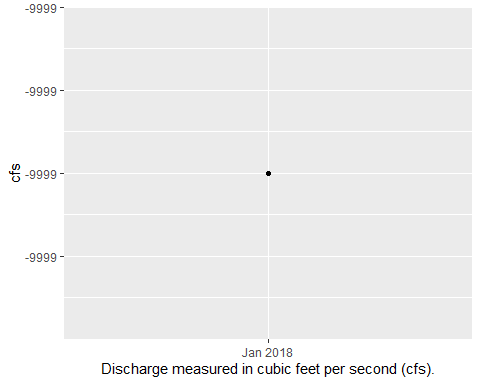
| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 1.553 | 1.7 | 2.11 | 0.85 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.503 | 0.45 | 0.66 | 0.4 |
| Dissolved Oxygen | mg/L | dissolved | 4 | 7.105 | 7.15 | 8.52 | 5.6 |
| Dissolved Oxygen Saturation | % | NA | 4 | 80.575 | 81.3 | 92.7 | 67 |
| pH | pH units | total | 4 | 8.092 | 8.12 | 8.33 | 7.8 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.047 | 0.06 | 0.06 | 0.02 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.073 | 0.06 | 0.11 | 0.05 |
| Salinity | ppt | NA | 4 | 0.362 | 0.355 | 0.42 | 0.32 |
| Specific Conductance | uS/cm | NA | 4 | 739.5 | 728.5 | 852 | 649 |
| Temperature | °C | NA | 4 | 21.45 | 21.65 | 23.1 | 19.4 |

*Water Quality Standard Excursions*

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

Table 25. 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 26. Applicable Standards: 07-GLNK-0.2

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

Table 27. 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 |
| 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 | µg/L | total | 1 | 180 | 180 | 180 | 180 |
| Nitrate + Nitrite | µg/L | total | 1 | 180 | 180 | 180 | 180 |
| Nitrite | µg/L | total | 3 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 3 | 496.667 | 430 | 920 | 140 |
| Nitrogen, Total | µg/L | total | 1 | 610 | 610 | 610 | 610 |
| 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 28. Chemistry Measurements at Event Flow (high flow): 07-GLNK-0.2

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-GLNK-0.2 | 2019-06-20 | Alkalinity, Total (As Caco3) | mg/L | Total | 1 | 88.4 |
| 07-GLNK-0.2 | 2019-06-20 | Aluminum | µg/L | Total | 1 | 3980 |
| 07-GLNK-0.2 | 2019-06-20 | Arsenic | µg/L | Total | 1 | 2.7 |
| 07-GLNK-0.2 | 2019-06-20 | Cadmium | µg/L | Total | 1 | 0.19 |
| 07-GLNK-0.2 | 2019-06-20 | Calcium | µg/L | Total | 1 | 31300 |
| 07-GLNK-0.2 | 2019-06-20 | Carbon, Total Organic | mg/L | Total | 1 | 5.9 |
| 07-GLNK-0.2 | 2019-06-20 | Chloride | mg/L | Total | 1 | 12.2 |
| 07-GLNK-0.2 | 2019-06-20 | Chlorophyll A | µg/L | Total | 1 | 3.45 |
| 07-GLNK-0.2 | 2019-06-20 | Copper | µg/L | Total | 1 | 8.3 |
| 07-GLNK-0.2 | 2019-06-20 | Hardness (As Caco3) | mg/L | Total | 1 | 113 |
| 07-GLNK-0.2 | 2019-06-20 | Iron | µg/L | Total | 1 | 8000 |
| 07-GLNK-0.2 | 2019-06-20 | Lead | µg/L | Total | 1 | 5 |
| 07-GLNK-0.2 | 2019-06-20 | Magnesium | µg/L | Total | 1 | 8370 |
| 07-GLNK-0.2 | 2019-06-20 | Nickel | µg/L | Total | 1 | 9.9 |
| 07-GLNK-0.2 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.012 |
| 07-GLNK-0.2 | 2019-06-20 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.92 |
| 07-GLNK-0.2 | 2019-06-20 | Nitrogen, Nitrite | mg/L | Total | 1 | 0.004 |
| 07-GLNK-0.2 | 2019-06-20 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.009 |
| 07-GLNK-0.2 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.167 |
| 07-GLNK-0.2 | 2019-06-20 | Silver | µg/L | Total | 1 | 0.075 |
| 07-GLNK-0.2 | 2019-06-20 | Total Suspended Solids | mg/L | Total | 1 | 238 |
| 07-GLNK-0.2 | 2019-06-20 | Turbidity | NTU | Total | 1 | 275 |
| 07-GLNK-0.2 | 2019-06-20 | Zinc | µg/L | Total | 1 | 28.4 |

Table 29. In-Situ Measurements: 07-GLNK-0.2

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 2.77 | 2.33 | 3.65 | 2.33 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.733 | 0.74 | 0.92 | 0.54 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 9.123 | 9.31 | 9.35 | 8.71 |
| Dissolved Oxygen Saturation | % | NA | 3 | 100.433 | 99 | 104.1 | 98.2 |
| pH | pH units | total | 3 | 8.39 | 8.35 | 8.61 | 8.21 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.167 | 0.2 | 0.28 | 0.02 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.197 | 0.24 | 0.26 | 0.09 |
| Salinity | ppt | NA | 3 | 0.137 | 0.14 | 0.17 | 0.1 |
| Specific Conductance | uS/cm | NA | 3 | 288.567 | 290.7 | 361.2 | 213.8 |
| Temperature | °C | NA | 3 | 20.1 | 20.6 | 21.7 | 18 |

Table 30. Water Quality Standard Excursions: 07-GLNK-0.2

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2019-08-15 | pH | 8.6 | total | pH units | 8.5 |

Table 31. 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 32. Applicable Standards: 07-BGST-0.1

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

Table 33. 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 |
| 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 | µg/L | total | 1 | 1920 | 1920 | 1920 | 1920 |
| Nitrate + Nitrite | µg/L | total | 7 | 1290 | 1200 | 1940 | 590 |
| Nitrite | µg/L | total | 3 | 12 | 12 | 14 | 10 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 9 | 830 | 350 | 4250 | 5 |
| Nitrogen, Total | µg/L | total | 1 | 2750 | 2750 | 2750 | 2750 |
| 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 34. Chemistry Measurements at Event Flow (high flow): 07-BGST-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-BGST-0.1 | 2019-06-20 | Alkalinity, Total (As Caco3) | mg/L | Total | 1 | 66.8 |
| 07-BGST-0.1 | 2019-06-20 | Aluminum | µg/L | Total | 1 | 30900 |
| 07-BGST-0.1 | 2019-06-20 | Arsenic | µg/L | Total | 1 | 6 |
| 07-BGST-0.1 | 2019-06-20 | Cadmium | µg/L | Total | 1 | 0.95 |
| 07-BGST-0.1 | 2019-06-20 | Calcium | µg/L | Total | 1 | 43100 |
| 07-BGST-0.1 | 2019-06-20 | Carbon, Total Organic | mg/L | Total | 1 | 10.8 |
| 07-BGST-0.1 | 2019-06-20 | Chloride | mg/L | Total | 1 | 11.1 |
| 07-BGST-0.1 | 2019-06-20 | Chlorophyll A | µg/L | Total | 1 | 3.53 |
| 07-BGST-0.1 | 2019-06-20 | Copper | µg/L | Total | 1 | 51.2 |
| 07-BGST-0.1 | 2019-06-20 | Hardness (As Caco3) | mg/L | Total | 1 | 186 |
| 07-BGST-0.1 | 2019-06-20 | Iron | µg/L | Total | 1 | 58500 |
| 07-BGST-0.1 | 2019-06-20 | Lead | µg/L | Total | 1 | 43.6 |
| 07-BGST-0.1 | 2019-06-20 | Magnesium | µg/L | Total | 1 | 19200 |
| 07-BGST-0.1 | 2019-06-20 | Nickel | µg/L | Total | 1 | 60.1 |
| 07-BGST-0.1 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.089 |
| 07-BGST-0.1 | 2019-06-20 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 4.25 |
| 07-BGST-0.1 | 2019-06-20 | Nitrogen, Nitrite | mg/L | Total | 1 | 0.012 |
| 07-BGST-0.1 | 2019-06-20 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.094 |
| 07-BGST-0.1 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.99 |
| 07-BGST-0.1 | 2019-06-20 | Silver | µg/L | Total | 1 | 0.075 |
| 07-BGST-0.1 | 2019-06-20 | Total Suspended Solids | mg/L | Total | 1 | 1680 |
| 07-BGST-0.1 | 2019-06-20 | Turbidity | NTU | Total | 1 | 816 |
| 07-BGST-0.1 | 2019-06-20 | Zinc | µg/L | Total | 1 | 179 |
| 07-BGST-0.1 | 2020-03-29 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.394 |
| 07-BGST-0.1 | 2020-03-29 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.34 |
| 07-BGST-0.1 | 2020-03-29 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 1.2 |
| 07-BGST-0.1 | 2020-03-29 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.023 |
| 07-BGST-0.1 | 2020-03-29 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.09 |
| 07-BGST-0.1 | 2020-03-29 | Total Suspended Solids | mg/L | Total | 1 | 40.8 |
| 07-BGST-0.1 | 2020-07-12 | Nitrogen, Kjeldahl, Total | mg/L | Total | 1 | 0.99 |
| 07-BGST-0.1 | 2020-07-12 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 1.36 |
| 07-BGST-0.1 | 2020-07-12 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.158 |
| 07-BGST-0.1 | 2020-07-12 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.325 |
| 07-BGST-0.1 | 2020-07-12 | Total Suspended Solids | mg/L | Total | 1 | 99 |

Table 35. In-Situ Measurements: 07-BGST-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 7.393 | 5.5 | 14.28 | 2.4 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 1.7 | 1.5 | 2.95 | 0.65 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 9.43 | 9.51 | 9.84 | 8.94 |
| Dissolved Oxygen Saturation | % | NA | 3 | 103.3 | 101.7 | 106.5 | 101.7 |
| pH | pH units | total | 3 | 8.553 | 8.69 | 8.95 | 8.02 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.81 | 0.2 | 2.04 | 0.19 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.83 | 0.23 | 2.06 | 0.2 |
| Salinity | ppt | NA | 3 | 0.18 | 0.17 | 0.28 | 0.09 |
| Specific Conductance | uS/cm | NA | 3 | 369.733 | 353 | 567 | 189.2 |
| Temperature | °C | NA | 3 | 19.9 | 19.1 | 21.7 | 18.9 |

Table 36. Water Quality Standard Excursions: 07-BGST-0.1

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2019-07-18 | pH | 9.0 | total | pH units | 8.5 |
| 2019-08-15 | pH | 8.7 | total | pH units | 8.5 |

Table 37. 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 38. Applicable Standards: 07-THOL-1.8

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 39. 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 |
| 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 | µg/L | total | 2 | 903.5 | 903.5 | 1070 | 737 |
| Nitrate + Nitrite | µg/L | total | 2 | 903.5 | 903.5 | 1070 | 737 |
| Nitrite | µg/L | total | 3 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 3 | 940 | 280 | 2370 | 170 |
| Nitrogen, Total | µg/L | total | 2 | 990 | 990 | 1070 | 910 |
| 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 40. In-Situ Measurements: 07-THOL-1.8

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 2.803 | 0.61 | 7.75 | 0.05 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.723 | 0.15 | 1.97 | 0.05 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 9 | 8.96 | 9.21 | 8.83 |
| Dissolved Oxygen Saturation | % | NA | 3 | 95.033 | 94.1 | 97.2 | 93.8 |
| pH | pH units | total | 3 | 7.973 | 7.95 | 8.14 | 7.83 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.367 | 0.02 | 1.08 | 0 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.393 | 0.01 | 1.17 | 0 |
| Salinity | ppt | NA | 3 | 0.137 | 0.15 | 0.2 | 0.06 |
| Specific Conductance | uS/cm | NA | 3 | 284.1 | 321.6 | 412.5 | 118.2 |
| Temperature | °C | NA | 3 | 17.933 | 18.2 | 19.2 | 16.4 |

*Water Quality Standard Excursions*

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

Table 41. 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-CTLE-0.1 | Waterbody Class: C | WI/PWL ID: 0705-0027

Table 42. Applicable Standards: 07-CTLE-0.1

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 43. Chemistry Measurements: 07-CTLE-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 235.667 | 206 | 299 | 202 |
| Aluminum | µg/L | total | 2 | 28.05 | 28.05 | 31.6 | 24.5 |
| Ammonia | µg/L | total | 2 | 13.9 | 13.9 | 26 | 1.8 |
| Arsenic | µg/L | total | 3 | 1.4 | 1.4 | 1.5 | 1.3 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 86966.667 | 84000 | 105000 | 71900 |
| Carbon, Total Organic | mg/L | total | 3 | 7.2 | 7.5 | 9.8 | 4.3 |
| Chloride | mg/L | total | 3 | 134.333 | 130 | 159 | 114 |
| Chlorophyll A | µg/L | total | 3 | 1.619 | 0.65 | 3.79 | 0.417 |
| Copper | µg/L | total | 3 | 3.867 | 2.8 | 6.2 | 2.6 |
| Hardness | mg/L | total | 3 | 312.333 | 300 | 378 | 259 |
| Iron | µg/L | total | 3 | 203.6 | 77.3 | 459 | 74.5 |
| Lead | µg/L | total | 3 | 1.257 | 0.285 | 3.2 | 0.285 |
| Magnesium | µg/L | total | 3 | 23200 | 21900 | 28300 | 19400 |
| Nickel | µg/L | total | 3 | 2.133 | 2.1 | 2.6 | 1.7 |
| Nitrate | µg/L | total | 2 | 685 | 685 | 707 | 663 |
| Nitrate + Nitrite | µg/L | total | 2 | 693.5 | 693.5 | 724 | 663 |
| Nitrite | µg/L | total | 3 | 10.833 | 12 | 17 | 3.5 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 3 | 586.667 | 660 | 700 | 400 |
| Nitrogen, Total | µg/L | total | 2 | 1045 | 1045 | 1430 | 660 |
| Phosphorus | mg/L | total | 3 | 0.088 | 0.068 | 0.136 | 0.059 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 3 | 0.06 | 0.058 | 0.075 | 0.047 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 3 | 6.967 | 1.2 | 18.6 | 1.1 |
| Turbidity | NTU | total | 3 | 6.003 | 1.65 | 15 | 1.36 |
| Zinc | µg/L | total | 3 | 6.617 | 3.1 | 15.5 | 1.25 |

Table 44. In-Situ Measurements: 07-CTLE-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 3.453 | 2.55 | 5.7 | 2.11 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 1.067 | 0.68 | 1.95 | 0.57 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 8.49 | 8.38 | 8.99 | 8.1 |
| Dissolved Oxygen Saturation | % | NA | 3 | 93.833 | 93.1 | 96 | 92.4 |
| pH | pH units | total | 3 | 8.257 | 8.21 | 8.37 | 8.19 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.133 | 0.07 | 0.3 | 0.03 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.123 | 0.07 | 0.23 | 0.07 |
| Salinity | ppt | NA | 3 | 0.463 | 0.45 | 0.49 | 0.45 |
| Specific Conductance | uS/cm | NA | 3 | 940.667 | 916 | 994 | 912 |
| Temperature | °C | NA | 3 | 20.2 | 20.4 | 21.8 | 18.4 |

*Water Quality Standard Excursions*

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

Table 45. Biological Assessment Score (BAP) Summary: 07-CTLE-0.1

| **DATE** | **BAP** | **Standard Deviation** | **Standard Error** | **Replicate** |
| --- | --- | --- | --- | --- |
| 2019-07-17 | 4.3 | 0.27 | 0.1 | 8 |

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

Table 46. Applicable Standards: 07-OWLI-3.0

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C(T) | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C(T) | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C(T) | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 47. 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 |
| 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 | µg/L | total | 8 | 1358.125 | 1340 | 1980 | 832 |
| Nitrate + Nitrite | µg/L | total | 10 | 1499.5 | 1505 | 2070 | 832 |
| Nitrite | µg/L | total | 11 | 3.591 | 3.5 | 12 | 2 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 12 | 370.833 | 250 | 1260 | 180 |
| Nitrogen, Total | µg/L | total | 1 | 1700 | 1700 | 1700 | 1700 |
| 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 48. In-Situ Measurements: 07-OWLI-3.0

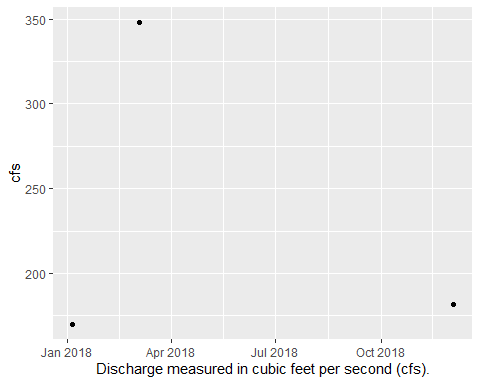
| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 2 | 1.175 | 1.175 | 1.6 | 0.75 |
| Chlorophyll A (Probe) | RFU | NA | 2 | 0.19 | 0.19 | 0.22 | 0.16 |
| Dissolved Oxygen | mg/L | dissolved | 10 | 11.317 | 11.33 | 14.78 | 7.25 |
| Dissolved Oxygen Saturation | % | NA | 10 | 100.857 | 102.85 | 106 | 80.7 |
| pH | pH units | total | 7 | 8.163 | 8.13 | 8.65 | 7.8 |
| Phycocyanin (Probe) | µg/L | NA | 2 | 0.11 | 0.11 | 0.14 | 0.08 |
| Phycocyanin (Probe) | RFU | NA | 2 | 0.2 | 0.2 | 0.25 | 0.15 |
| Salinity | ppt | NA | 2 | 0.195 | 0.195 | 0.22 | 0.17 |
| Specific Conductance | uS/cm | NA | 10 | 348.79 | 333 | 454.4 | 291 |
| Temperature | °C | NA | 12 | 11.433 | 12.5 | 20 | 2 |

Table 49. Water Quality Standard Excursions: 07-OWLI-3.0

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2018-03-12 | pH | 8.7 | total | pH units | 8.5 |

Table 50. 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-SCKR-0.1 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table 51. Applicable Standards: 07-SCKR-0.1

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 52. 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 |
| 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 | µg/L | total | 7 | 338.143 | 340 | 415 | 220 |
| Nitrate + Nitrite | µg/L | total | 8 | 370.75 | 364 | 540 | 220 |
| Nitrite | µg/L | total | 10 | 5.85 | 2.75 | 23 | 2 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 12 | 563.333 | 575 | 830 | 300 |
| 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 53. In-Situ Measurements: 07-SCKR-0.1

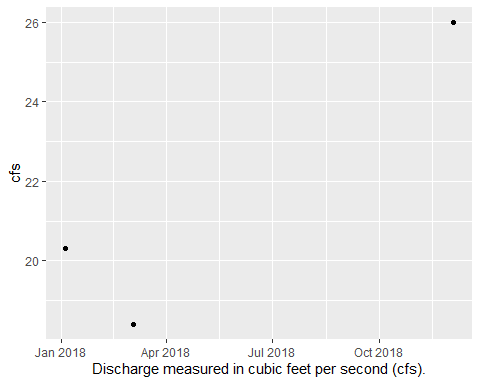
| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 2 | 5.025 | 5.025 | 5.4 | 4.65 |
| Chlorophyll A (Probe) | RFU | NA | 2 | 1.25 | 1.25 | 1.3 | 1.2 |
| Dissolved Oxygen | mg/L | dissolved | 10 | 10.748 | 10.625 | 14.92 | 6.82 |
| Dissolved Oxygen Saturation | % | NA | 10 | 89.594 | 97.3 | 123.4 | 12.94 |
| pH | pH units | total | 7 | 8.244 | 8.24 | 8.73 | 7.85 |
| Phycocyanin (Probe) | µg/L | NA | 2 | 0.17 | 0.17 | 0.3 | 0.04 |
| Phycocyanin (Probe) | RFU | NA | 2 | 0.24 | 0.24 | 0.4 | 0.08 |
| Salinity | ppt | NA | 2 | 0.27 | 0.27 | 0.28 | 0.26 |
| Specific Conductance | uS/cm | NA | 10 | 520.6 | 525 | 578 | 448 |
| Temperature | °C | NA | 12 | 12.542 | 14 | 25.3 | 1 |

Table 54. Water Quality Standard Excursions: 07-SCKR-0.1

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2018-03-12 | pH | 8.7 | total | pH units | 8.5 |

Table 55. 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-OWAL\_T2-0.1 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table 56. Applicable Standards: 07-OWAL\_T2-0.1

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

Table 57. 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 |
| Nitrate + Nitrite | µg/L | total | 12 | 313.333 | 258.5 | 812 | 88 |
| 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 58. Chemistry Measurements at Event Flow (high flow): 07-OWAL\_T2-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-OWAL\_T2-0.1 | 2017-04-05 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |
| 07-OWAL\_T2-0.1 | 2017-04-05 | Nitrogen Total | mg/L | Total | 1 | NaN |
| 07-OWAL\_T2-0.1 | 2017-04-05 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.015 |
| 07-OWAL\_T2-0.1 | 2017-04-05 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.103 |
| 07-OWAL\_T2-0.1 | 2017-04-05 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.009 |
| 07-OWAL\_T2-0.1 | 2017-04-05 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.003 |
| 07-OWAL\_T2-0.1 | 2017-04-05 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.021 |
| 07-OWAL\_T2-0.1 | 2017-04-05 | Total Suspended Solids | mg/L | Total | 1 | NaN |
| 07-OWAL\_T2-0.1 | 2017-10-30 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |
| 07-OWAL\_T2-0.1 | 2017-10-30 | Nitrogen Total | mg/L | Total | 1 | NaN |
| 07-OWAL\_T2-0.1 | 2017-10-30 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.027 |
| 07-OWAL\_T2-0.1 | 2017-10-30 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.812 |
| 07-OWAL\_T2-0.1 | 2017-10-30 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.053 |
| 07-OWAL\_T2-0.1 | 2017-10-30 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.183 |
| 07-OWAL\_T2-0.1 | 2017-10-30 | Total Suspended Solids | mg/L | Total | 1 | NaN |
| 07-OWAL\_T2-0.1 | 2018-05-23 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |
| 07-OWAL\_T2-0.1 | 2018-05-23 | Nitrogen Total | mg/L | Total | 1 | 0.801 |
| 07-OWAL\_T2-0.1 | 2018-05-23 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.05 |
| 07-OWAL\_T2-0.1 | 2018-05-23 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.088 |
| 07-OWAL\_T2-0.1 | 2018-05-23 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.016 |
| 07-OWAL\_T2-0.1 | 2018-05-23 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.008 |
| 07-OWAL\_T2-0.1 | 2018-05-23 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.032 |

*Water Quality Standard Excursions*

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

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

Table 59. Applicable Standards: 07-VENE-1.5

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 60. Chemistry Measurements: 07-VENE-1.5

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 288.333 | 295 | 330 | 240 |
| Aluminum | µg/L | total | 3 | 51.467 | 32.2 | 93.6 | 28.6 |
| Ammonia | µg/L | total | 2 | 12.5 | 12.5 | 13 | 12 |
| Arsenic | µg/L | total | 3 | 0.623 | 0.65 | 0.8 | 0.42 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 106066.667 | 111000 | 113000 | 94200 |
| Carbon, Total Organic | mg/L | total | 2 | 4.65 | 4.65 | 4.9 | 4.4 |
| Chloride | mg/L | total | 3 | 51.2 | 49.3 | 59.4 | 44.9 |
| Chlorophyll A | µg/L | total | 2 | 3.9 | 3.9 | 4.5 | 3.3 |
| Copper | µg/L | total | 3 | 1.16 | 1.1 | 1.4 | 0.98 |
| Hardness | mg/L | total | 3 | 368.333 | 379 | 387 | 339 |
| Iron | µg/L | total | 3 | 84.6 | 61.6 | 139 | 53.2 |
| Lead | µg/L | total | 3 | 0.453 | 0.285 | 0.98 | 0.095 |
| Magnesium | µg/L | total | 3 | 25066.667 | 25300 | 25400 | 24500 |
| Nickel | µg/L | total | 3 | 2.133 | 2.1 | 2.3 | 2 |
| Nitrate | µg/L | total | 2 | 5030 | 5030 | 5870 | 4190 |
| Nitrate + Nitrite | µg/L | total | 2 | 5035 | 5035 | 5870 | 4200 |
| Nitrite | µg/L | total | 3 | 12.167 | 11 | 22 | 3.5 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 3 | 560 | 570 | 610 | 500 |
| Nitrogen, Total | µg/L | total | 2 | 5575 | 5575 | 6380 | 4770 |
| Phosphorus | mg/L | total | 3 | 0.021 | 0.02 | 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 | 3 | 0.057 | 0.075 | 0.075 | 0.021 |
| 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 | 3 | 11.1 | 1.25 | 30.8 | 1.25 |

Table 61. In-Situ Measurements: 07-VENE-1.5

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 2 | 12.755 | 12.755 | 22.31 | 3.2 |
| Chlorophyll A (Probe) | RFU | NA | 2 | 3.08 | 3.08 | 5.3 | 0.86 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 9.523 | 9.26 | 10.2 | 9.11 |
| Dissolved Oxygen Saturation | % | NA | 3 | 104.133 | 107.3 | 109.3 | 95.8 |
| pH | pH units | total | 3 | 8.187 | 8.18 | 8.39 | 7.99 |
| Phycocyanin (Probe) | µg/L | NA | 2 | 0.915 | 0.915 | 1.8 | 0.03 |
| Phycocyanin (Probe) | RFU | NA | 2 | 0.95 | 0.95 | 1.8 | 0.1 |
| Salinity | ppt | NA | 3 | 0.367 | 0.36 | 0.39 | 0.35 |
| Specific Conductance | uS/cm | NA | 3 | 744.667 | 732 | 788 | 714 |
| Temperature | °C | NA | 3 | 19.633 | 17.7 | 23.5 | 17.7 |

*Water Quality Standard Excursions*

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

Table 62. 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-VENE-0.4 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table 63. Applicable Standards: 07-VENE-0.4

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 64. 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 |
| Nitrate | µg/L | total | 5 | 1099 | 1090 | 1840 | 386 |
| Nitrate + Nitrite | µg/L | total | 24 | 1570.292 | 1193.5 | 5080 | 14 |
| Nitrite | µg/L | total | 8 | 2.562 | 2 | 3.5 | 2 |
| Nitrogen Total | mg/L | total | 19 | 2.512 | 1.95 | 5.85 | 0.55 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 10 | 552 | 415 | 1600 | 350 |
| 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 65. Chemistry Measurements at Event Flow (high flow): 07-VENE-0.4

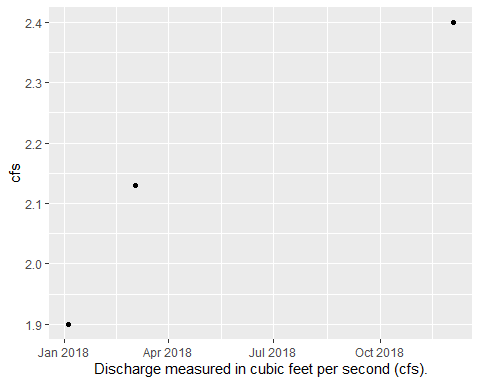
| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 07-VENE-0.4 | 2017-04-05 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2017-04-05 | Nitrogen Total | mg/L | Total | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2017-04-05 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.027 | 0.027 | 0.027 | 0.027 |
| 07-VENE-0.4 | 2017-04-05 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 1.137 | 1.137 | 1.137 | 1.137 |
| 07-VENE-0.4 | 2017-04-05 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.014 | 0.014 | 0.014 | 0.014 |
| 07-VENE-0.4 | 2017-04-05 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.005 | 0.005 | 0.005 | 0.005 |
| 07-VENE-0.4 | 2017-04-05 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.102 | 0.102 | 0.102 | 0.102 |
| 07-VENE-0.4 | 2017-04-05 | Total Suspended Solids | mg/L | Total | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2017-05-02 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2017-05-02 | Nitrogen Total | mg/L | Total | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2017-05-02 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.033 | 0.033 | 0.033 | 0.033 |
| 07-VENE-0.4 | 2017-05-02 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.891 | 0.891 | 0.891 | 0.891 |
| 07-VENE-0.4 | 2017-05-02 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.027 | 0.027 | 0.027 | 0.027 |
| 07-VENE-0.4 | 2017-05-02 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.072 | 0.072 | 0.072 | 0.072 |
| 07-VENE-0.4 | 2017-05-02 | Total Suspended Solids | mg/L | Total | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2017-10-30 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2017-10-30 | Nitrogen Total | mg/L | Total | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2017-10-30 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.06 | 0.06 | 0.06 | 0.06 |
| 07-VENE-0.4 | 2017-10-30 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 3 | 1.757 | 1.75 | 1.91 | 1.61 |
| 07-VENE-0.4 | 2017-10-30 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.084 | 0.084 | 0.084 | 0.084 |
| 07-VENE-0.4 | 2017-10-30 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 3 | 0.101 | 0.112 | 0.124 | 0.066 |
| 07-VENE-0.4 | 2017-10-30 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.342 | 0.342 | 0.342 | 0.342 |
| 07-VENE-0.4 | 2017-10-30 | Total Suspended Solids | mg/L | Total | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2018-07-25 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |  | -Inf | Inf |
| 07-VENE-0.4 | 2018-07-25 | Nitrogen Total | mg/L | Total | 1 | 0.609 | 0.609 | 0.609 | 0.609 |
| 07-VENE-0.4 | 2018-07-25 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.012 | 0.012 | 0.012 | 0.012 |
| 07-VENE-0.4 | 2018-07-25 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.014 | 0.014 | 0.014 | 0.014 |
| 07-VENE-0.4 | 2018-07-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.025 | 0.025 | 0.025 | 0.025 |
| 07-VENE-0.4 | 2018-07-25 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.016 | 0.016 | 0.016 | 0.016 |
| 07-VENE-0.4 | 2018-07-25 | Total Suspended Solids | mg/L | Total | 1 | 5.1 | 5.1 | 5.1 | 5.1 |
| 07-VENE-0.4 | 2018-10-29 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.8 | 6.8 | 6.8 | 6.8 |
| 07-VENE-0.4 | 2018-10-29 | Nitrogen Total | mg/L | Total | 1 | 5.07 | 5.07 | 5.07 | 5.07 |
| 07-VENE-0.4 | 2018-10-29 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 5.08 | 5.08 | 5.08 | 5.08 |
| 07-VENE-0.4 | 2018-10-29 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.021 | 0.021 | 0.021 | 0.021 |
| 07-VENE-0.4 | 2018-10-29 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.02 | 0.02 | 0.02 | 0.02 |
| 07-VENE-0.4 | 2018-10-29 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.064 | 0.064 | 0.064 | 0.064 |
| 07-VENE-0.4 | 2018-10-29 | Total Suspended Solids | mg/L | Total | 1 | 6.6 | 6.6 | 6.6 | 6.6 |
| 07-VENE-0.4 | 2018-11-02 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.8 | 6.8 | 6.8 | 6.8 |
| 07-VENE-0.4 | 2018-11-02 | Nitrogen Total | mg/L | Total | 1 | 4.23 | 4.23 | 4.23 | 4.23 |
| 07-VENE-0.4 | 2018-11-02 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 3.6 | 3.6 | 3.6 | 3.6 |
| 07-VENE-0.4 | 2018-11-02 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.027 | 0.027 | 0.027 | 0.027 |
| 07-VENE-0.4 | 2018-11-02 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.02 | 0.02 | 0.02 | 0.02 |
| 07-VENE-0.4 | 2018-11-02 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.053 | 0.053 | 0.053 | 0.053 |
| 07-VENE-0.4 | 2018-11-02 | Total Suspended Solids | mg/L | Total | 1 | 14.4 | 14.4 | 14.4 | 14.4 |

Table 66. In-Situ Measurements: 07-VENE-0.4

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Dissolved Oxygen | mg/L | dissolved | 7 | 10.121 | 11.82 | 13.49 | 1.39 |
| Dissolved Oxygen Saturation | % | NA | 7 | 80.686 | 91.5 | 96 | 15.7 |
| pH | pH units | total | 5 | 7.742 | 7.82 | 8.03 | 7.46 |
| Specific Conductance | uS/cm | NA | 7 | 536 | 543 | 592 | 464 |
| Temperature | °C | NA | 10 | 9.9 | 8 | 21 | 0 |

Table 67. Water Quality Standard Excursions: 07-VENE-0.4

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2018-06-19 | Dissolved oxygen | 1.4 | dissolved | mg/l | 4 |
| 2018-06-19 | Dissolved oxygen | 4.1 | dissolved | mg/l | 5 |



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

Table 68. Applicable Standards: 07-DUCH-0.3

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

Table 69. 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 |
| 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 | µg/L | total | 9 | 1074.667 | 944 | 2030 | 263 |
| Nitrate + Nitrite | µg/L | total | 10 | 1145 | 979 | 2030 | 263 |
| Nitrite | µg/L | total | 12 | 8.333 | 3.5 | 25 | 2 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 11 | 340.909 | 300 | 540 | 200 |
| Nitrogen, Total | µg/L | total | 1 | 1240 | 1240 | 1240 | 1240 |
| 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 70. In-Situ Measurements: 07-DUCH-0.3

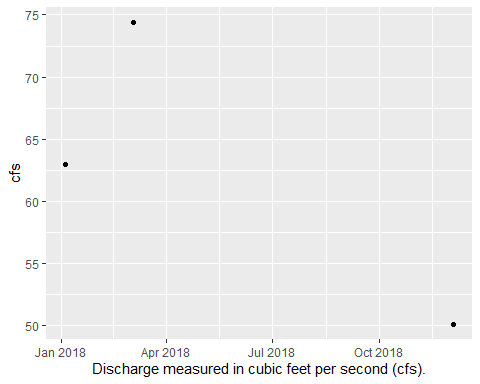
| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 2 | 0.93 | 0.93 | 1.2 | 0.66 |
| Chlorophyll A (Probe) | RFU | NA | 2 | 0.25 | 0.25 | 0.28 | 0.22 |
| Dissolved Oxygen | mg/L | dissolved | 9 | 12.302 | 12.5 | 16.95 | 8.17 |
| Dissolved Oxygen Saturation | % | NA | 10 | 107.94 | 109 | 122 | 91 |
| pH | pH units | total | 7 | 8.386 | 8.16 | 9.48 | 8 |
| Phycocyanin (Probe) | µg/L | NA | 2 | 0.05 | 0.05 | 0.1 | 0 |
| Phycocyanin (Probe) | RFU | NA | 2 | 0.1 | 0.1 | 0.16 | 0.04 |
| Salinity | ppt | NA | 2 | 0.225 | 0.225 | 0.23 | 0.22 |
| Specific Conductance | uS/cm | NA | 10 | 449.12 | 455.3 | 518 | 377 |
| Temperature | °C | NA | 12 | 12.017 | 12.5 | 24.3 | 1 |

Table 71. Water Quality Standard Excursions: 07-DUCH-0.3

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2018-03-12 | pH | 9.5 | total | pH units | 8.5 |

Table 72. 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 73. Applicable Standards: 07-DUCH-8.3

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

Table 74. Chemistry Measurements: 07-DUCH-8.3

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 1 | 179 |
| Aluminum | µg/L | total | 1 | 103 |
| Ammonia | µg/L | total | 1 | 17 |
| Arsenic | µg/L | total | 1 | 0.54 |
| Cadmium | µg/L | total | 1 | 0.19 |
| Calcium | µg/L | total | 1 | 62600 |
| Chloride | mg/L | total | 1 | 23.4 |
| Copper | µg/L | total | 1 | 0.88 |
| Hardness | mg/L | total | 1 | 188 |
| Iron | µg/L | total | 1 | 197 |
| Lead | µg/L | total | 1 | 0.21 |
| Magnesium | µg/L | total | 1 | 7690 |
| Nickel | µg/L | total | 1 | 1.1 |
| Nitrate | µg/L | total | 1 | 1750 |
| Nitrate + Nitrite | µg/L | total | 1 | 1750 |
| Nitrite | µg/L | total | 1 | 3.5 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 1 | 320 |
| Nitrogen, Total | µg/L | total | 1 | 2070 |
| Phosphorus | mg/L | total | 1 | 0.013 |
| Silver | µg/L | total | 1 | 0.021 |
| Zinc | µg/L | total | 1 | 1.25 |

Table 75. In-Situ Measurements: 07-DUCH-8.3

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- |
| Dissolved Oxygen | mg/L | dissolved | 1 | 9.7 |
| Dissolved Oxygen Saturation | % | NA | 1 | 97.8 |
| pH | pH units | total | 1 | 8.3 |
| Salinity | ppt | NA | 1 | 0.2 |
| Specific Conductance | uS/cm | NA | 1 | 424.2 |
| Temperature | °C | NA | 1 | 15.7 |

*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 76. Applicable Standards: 07-OWAL\_T5-0.2

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

Table 77. 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 |
| Nitrate + Nitrite | µg/L | total | 4 | 1104.25 | 1057 | 1400 | 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 78. Chemistry Measurements at Event Flow (high flow): 07-OWAL\_T5-0.2

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-OWAL\_T5-0.2 | 2017-04-05 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |
| 07-OWAL\_T5-0.2 | 2017-04-05 | Nitrogen Total | mg/L | Total | 1 | NaN |
| 07-OWAL\_T5-0.2 | 2017-04-05 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.018 |
| 07-OWAL\_T5-0.2 | 2017-04-05 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.903 |
| 07-OWAL\_T5-0.2 | 2017-04-05 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.01 |
| 07-OWAL\_T5-0.2 | 2017-04-05 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.003 |
| 07-OWAL\_T5-0.2 | 2017-04-05 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.024 |
| 07-OWAL\_T5-0.2 | 2017-04-05 | Total Suspended Solids | mg/L | Total | 1 | NaN |

*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 79. Applicable Standards: 07-OWAL\_T46-0.1

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 80. 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 |
| 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 | µg/L | total | 1 | 9120 | 9120 | 9120 | 9120 |
| Nitrate + Nitrite | µg/L | total | 10 | 5156.7 | 4945 | 9120 | 3480 |
| Nitrite | µg/L | total | 2 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nitrogen Total | mg/L | total | 11 | 4.574 | 4.35 | 6.07 | 3.7 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 2 | 395 | 395 | 470 | 320 |
| Nitrogen, Total | µg/L | total | 1 | 9590 | 9590 | 9590 | 9590 |
| 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 81. Chemistry Measurements at Event Flow (high flow): 07-OWAL\_T46-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-OWAL\_T46-0.1 | 2017-04-05 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |
| 07-OWAL\_T46-0.1 | 2017-04-05 | Nitrogen Total | mg/L | Total | 1 | NaN |
| 07-OWAL\_T46-0.1 | 2017-04-05 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.007 |
| 07-OWAL\_T46-0.1 | 2017-04-05 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 5.529 |
| 07-OWAL\_T46-0.1 | 2017-04-05 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.006 |
| 07-OWAL\_T46-0.1 | 2017-04-05 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.003 |
| 07-OWAL\_T46-0.1 | 2017-04-05 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.02 |
| 07-OWAL\_T46-0.1 | 2017-04-05 | Total Suspended Solids | mg/L | Total | 1 | NaN |

Table 82. In-Situ Measurements: 07-OWAL\_T46-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 2 | 0.14 | 0.14 | 0.18 | 0.1 |
| Chlorophyll A (Probe) | RFU | NA | 2 | 0.04 | 0.04 | 0.05 | 0.03 |
| Dissolved Oxygen | mg/L | dissolved | 2 | 9.005 | 9.005 | 9.51 | 8.5 |
| Dissolved Oxygen Saturation | % | NA | 2 | 93.75 | 93.75 | 95.2 | 92.3 |
| pH | pH units | total | 2 | 8.12 | 8.12 | 8.13 | 8.11 |
| Phycocyanin (Probe) | µg/L | NA | 2 | 0.025 | 0.025 | 0.05 | 0 |
| Phycocyanin (Probe) | RFU | NA | 2 | 0.05 | 0.05 | 0.1 | 0 |
| Salinity | ppt | NA | 2 | 0.255 | 0.255 | 0.26 | 0.25 |
| Specific Conductance | uS/cm | NA | 2 | 527 | 527 | 535 | 519 |
| Temperature | °C | NA | 2 | 17.35 | 17.35 | 19.3 | 15.4 |

*Water Quality Standard Excursions*

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

Table 83. 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 84. Applicable Standards: 07-OWAL\_T9-0.1

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| C | Dissolved Oxygen | dissolved | Fishing | 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 | Fishing | pH units | Shall not be less than 6.5 nor more than 8.5. |
| C | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| C | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 85. 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 |
| 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 | µg/L | total | 1 | 2990 | 2990 | 2990 | 2990 |
| Nitrate + Nitrite | µg/L | total | 3 | 2746.667 | 2780 | 2990 | 2470 |
| Nitrite | µg/L | total | 1 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nitrogen Total | mg/L | total | 2 | NaN |  | -Inf | Inf |
| Nitrogen, Kjeldahl, Total | µg/L | total | 1 | 210 | 210 | 210 | 210 |
| Nitrogen, Total | µg/L | total | 1 | 3200 | 3200 | 3200 | 3200 |
| 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 86. In-Situ Measurements: 07-OWAL\_T9-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 2 | 2.655 | 2.655 | 4.81 | 0.5 |
| Chlorophyll A (Probe) | RFU | NA | 2 | 0.65 | 0.65 | 1.14 | 0.16 |
| Dissolved Oxygen | mg/L | dissolved | 2 | 9.33 | 9.33 | 9.6 | 9.06 |
| Dissolved Oxygen Saturation | % | NA | 2 | 95.8 | 95.8 | 96.1 | 95.5 |
| pH | pH units | total | 2 | 8.35 | 8.35 | 8.36 | 8.34 |
| Phycocyanin (Probe) | µg/L | NA | 2 | 0.115 | 0.115 | 0.23 | 0 |
| Phycocyanin (Probe) | RFU | NA | 2 | 0.1 | 0.1 | 0.2 | 0 |
| Salinity | ppt | NA | 2 | 290.145 | 290.145 | 580 | 0.29 |
| Specific Conductance | uS/cm | NA | 1 | 594 | 594 | 594 | 594 |
| Temperature | °C | NA | 2 | 16.6 | 16.6 | 18.1 | 15.1 |

*Water Quality Standard Excursions*

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

Table 87. 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-OWAL\_T16-0.4 | Waterbody Class: C | WI/PWL ID: 0706-0010

Table 88. Applicable Standards: 07-OWAL\_T16-0.4

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

Table 89. 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 |
| Nitrate + Nitrite | µg/L | total | 1 | 991 | 991 | 991 | 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 |

*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 90. Applicable Standards: 07-OWLI-0.1

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

Table 91. 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 |
| Nitrate + Nitrite | µg/L | total | 17 | 988.941 | 996 | 1570 | 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 92. Chemistry Measurements at Event Flow (high flow): 07-OWLI-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-OWLI-0.1 | 2017-04-05 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |
| 07-OWLI-0.1 | 2017-04-05 | Nitrogen Total | mg/L | Total | 1 | NaN |
| 07-OWLI-0.1 | 2017-04-05 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.022 |
| 07-OWLI-0.1 | 2017-04-05 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 1.017 |
| 07-OWLI-0.1 | 2017-04-05 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.016 |
| 07-OWLI-0.1 | 2017-04-05 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.006 |
| 07-OWLI-0.1 | 2017-04-05 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.058 |
| 07-OWLI-0.1 | 2017-04-05 | Total Suspended Solids | mg/L | Total | 1 | NaN |
| 07-OWLI-0.1 | 2017-05-02 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |
| 07-OWLI-0.1 | 2017-05-02 | Nitrogen Total | mg/L | Total | 1 | NaN |
| 07-OWLI-0.1 | 2017-05-02 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.027 |
| 07-OWLI-0.1 | 2017-05-02 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.684 |
| 07-OWLI-0.1 | 2017-05-02 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.022 |
| 07-OWLI-0.1 | 2017-05-02 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.082 |
| 07-OWLI-0.1 | 2017-05-02 | Total Suspended Solids | mg/L | Total | 1 | NaN |
| 07-OWLI-0.1 | 2018-07-25 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | NaN |
| 07-OWLI-0.1 | 2018-07-25 | Nitrogen Total | mg/L | Total | 1 | 1.25 |
| 07-OWLI-0.1 | 2018-07-25 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.058 |
| 07-OWLI-0.1 | 2018-07-25 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 0.687 |
| 07-OWLI-0.1 | 2018-07-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.022 |
| 07-OWLI-0.1 | 2018-07-25 | Total Suspended Solids | mg/L | Total | 1 | 90.9 |
| 07-OWLI-0.1 | 2018-10-29 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 4.3 |
| 07-OWLI-0.1 | 2018-10-29 | Nitrogen Total | mg/L | Total | 1 | 1.48 |
| 07-OWLI-0.1 | 2018-10-29 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 1.14 |
| 07-OWLI-0.1 | 2018-10-29 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.015 |
| 07-OWLI-0.1 | 2018-10-29 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.01 |
| 07-OWLI-0.1 | 2018-10-29 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.024 |
| 07-OWLI-0.1 | 2018-10-29 | Total Suspended Solids | mg/L | Total | 1 | 6.8 |
| 07-OWLI-0.1 | 2018-11-02 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 0.6 |
| 07-OWLI-0.1 | 2018-11-02 | Nitrogen Total | mg/L | Total | 1 | 1.66 |
| 07-OWLI-0.1 | 2018-11-02 | Nitrogen, Nitrate-Nitrite | mg/L | Total | 1 | 1.32 |
| 07-OWLI-0.1 | 2018-11-02 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.012 |
| 07-OWLI-0.1 | 2018-11-02 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.009 |
| 07-OWLI-0.1 | 2018-11-02 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.023 |
| 07-OWLI-0.1 | 2018-11-02 | Total Suspended Solids | mg/L | Total | 1 | 5.8 |

*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 93. Applicable Standards: 07-SKAT\_T93a-0.5

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| AA | Cadmium | total | Source of water supply | µg/L | 5 ug/L |
| AA | Copper | total | Source of water supply | µg/L | 200 ug/L |
| AA | Lead | total | Source of water supply | µg/L | 50 ug/L |
| AA | Nickel | total | Source of water supply | µg/L | 100 ug/L |
| AA | Nitrate-nitrite | total | Source of water supply | µg/L | 10,000 ug/L |
| AA | Nitrite | total | Source of water supply | µg/L | 1,000 ug/L |
| AA | Silver | total | Source of water supply | µg/L | 50 ug/L |

Table 94. Chemistry Measurements: 07-SKAT\_T93a-0.5

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 178.667 | 175 | 236 | 125 |
| Aluminum | µg/L | total | 2 | 96.35 | 96.35 | 131 | 61.7 |
| Ammonia | µg/L | total | 9 | 44.333 | 26.7 | 104 | 7.5 |
| Arsenic | µg/L | total | 3 | 1.063 | 1.2 | 1.3 | 0.69 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 62133.333 | 58700 | 80400 | 47300 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 13 | 6.808 | 6.9 | 11.4 | 3.7 |
| Carbon, Total Organic | mg/L | total | 3 | 9.233 | 8.3 | 12.7 | 6.7 |
| Chloride | mg/L | total | 2 | 36.05 | 36.05 | 43.6 | 28.5 |
| Chlorophyll A | µg/L | total | 3 | 6.087 | 5.8 | 10.6 | 1.86 |
| Copper | µg/L | total | 3 | 2.633 | 1.8 | 4.6 | 1.5 |
| Hardness | mg/L | total | 3 | 211.333 | 201 | 273 | 160 |
| Iron | µg/L | total | 3 | 659.667 | 436 | 1360 | 183 |
| Lead | µg/L | total | 3 | 1.29 | 0.285 | 3.3 | 0.285 |
| Magnesium | µg/L | total | 3 | 13600 | 13200 | 17500 | 10100 |
| Nickel | µg/L | total | 3 | 2.1 | 1.6 | 3.2 | 1.5 |
| Nitrate | µg/L | total | 3 | 777 | 915 | 1370 | 46 |
| Nitrate + Nitrite | µg/L | total | 3 | 805.7 | 941 | 1430 | 46.1 |
| Nitrite | µg/L | total | 3 | 29.167 | 26 | 58 | 3.5 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 14 | 434.079 | 400.5 | 1810 | 10.6 |
| Nitrogen Total | mg/L | total | 15 | 0.917 | 0.771 | 2.73 | 0.045 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 3 | 900 | 670 | 1450 | 580 |
| Nitrogen, Total | µg/L | total | 3 | 2200 | 2200 | 2880 | 1520 |
| Phosphorus | mg/L | total | 17 | 0.105 | 0.081 | 0.375 | 0.014 |
| Phosphorus, Dissolved | mg/L | dissolved | 11 | 0.218 | 0.033 | 1.69 | 0.01 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 15 | 0.037 | 0.021 | 0.189 | 0.006 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 16 | 24.831 | 4.8 | 158.8 | 1.6 |
| Turbidity | FNU | total | 15 | 42.04 | 4.6 | 321 | 1.5 |
| Turbidity | NTU | total | 3 | 19.21 | 8.72 | 46.1 | 2.81 |
| Zinc | µg/L | total | 3 | 4.733 | 1.25 | 11.7 | 1.25 |

Table 95. Chemistry Measurements at Event Flow (high flow): 07-SKAT\_T93a-0.5

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T93a-0.5 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 7.3 |
| 07-SKAT\_T93a-0.5 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 0.954 |
| 07-SKAT\_T93a-0.5 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.267 |
| 07-SKAT\_T93a-0.5 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 106.4 |
| 07-SKAT\_T93a-0.5 | 2019-05-10 | Turbidity | FNU | Total | 1 | 55.9 |
| 07-SKAT\_T93a-0.5 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 11.4 |
| 07-SKAT\_T93a-0.5 | 2019-06-20 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.619 |
| 07-SKAT\_T93a-0.5 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 1.678 |
| 07-SKAT\_T93a-0.5 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.059 |
| 07-SKAT\_T93a-0.5 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.063 |
| 07-SKAT\_T93a-0.5 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.154 |
| 07-SKAT\_T93a-0.5 | 2019-06-20 | Turbidity | FNU | Total | 1 | 28.2 |
| 07-SKAT\_T93a-0.5 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 8.4 |
| 07-SKAT\_T93a-0.5 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.194 |
| 07-SKAT\_T93a-0.5 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 0.881 |
| 07-SKAT\_T93a-0.5 | 2019-10-07 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.097 |
| 07-SKAT\_T93a-0.5 | 2019-10-07 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.107 |
| 07-SKAT\_T93a-0.5 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.205 |
| 07-SKAT\_T93a-0.5 | 2019-10-07 | Turbidity | FNU | Total | 1 | 59.2 |

Table 96. In-Situ Measurements: 07-SKAT\_T93a-0.5

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 6.543 | 7.28 | 10.62 | 1.73 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 1.69 | 2 | 2.6 | 0.47 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 7.65 | 7.49 | 8.36 | 7.1 |
| Dissolved Oxygen Saturation | % | NA | 3 | 84.933 | 86.1 | 87.6 | 81.1 |
| pH | pH units | total | 3 | 7.833 | 7.9 | 7.9 | 7.7 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 2.61 | 0.19 | 7.64 | 0 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.72 | 0.24 | 1.92 | 0 |
| Salinity | ppt | NA | 3 | 0.24 | 0.22 | 0.28 | 0.22 |
| Specific Conductance | uS/cm | NA | 3 | 488.367 | 449.1 | 569 | 447 |
| Temperature | °C | NA | 3 | 20.6 | 22.1 | 22.2 | 17.5 |

Table 97. Water Quality Standard Excursions: 07-SKAT\_T93a-0.5

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2019-08-14 | Iron | 436 | total | ug/l | 300 |
| 2019-07-17 | Iron | 1,360 | total | ug/l | 300 |

Table 98. 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-SKAT\_T2-0.1 | Waterbody Class: AA(T) AA | WI/PWL ID: 0707-0005

Table 99. Applicable Standards: 07-SKAT\_T2-0.1

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| AA | Dissolved Oxygen | dissolved | Fishing; secondary contact recreation; primary contact recreation; source of water supply | 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 | pH | total | Fishing; secondary contact recreation; primary contact recreation; source of water supply | pH units | Shall not be less than 6.5 nor more than 8.5. |
| AA | Ammonia | total | Source of water supply | µg/L | NH3 + NH4+ as N; 2,000 ug/L |
| AA | Chloride | total | Source of water supply | µg/L | 250,000 ug/L |
| AA | Arsenic | total | Source of water supply | µg/L | 50 ug/L |
| AA | Magnesium | total | Source of water supply | µg/L | 35,000 ug/L |
| AA | Iron | total | Source of water supply | µg/L | 300 ug/L |
| AA | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| AA | Nitrate | total | Source of water supply | µg/L | 10,000 ug/L |
| AA | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 100. Chemistry Measurements: 07-SKAT\_T2-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 4 | 202.5 | 205 | 233 | 167 |
| Aluminum | µg/L | total | 3 | 54.567 | 58.6 | 75 | 30.1 |
| Ammonia | µg/L | total | 36 | 39.778 | 30.45 | 130 | 1.5 |
| Arsenic | µg/L | total | 4 | 0.691 | 0.735 | 1.1 | 0.195 |
| Cadmium | µg/L | total | 4 | 0.15 | 0.19 | 0.19 | 0.032 |
| Calcium | µg/L | total | 4 | 68725 | 70450 | 81500 | 52500 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 38 | 5.262 | 5.05 | 8.5 | 2.6 |
| Carbon, Total Organic | mg/L | total | 3 | 6.933 | 7 | 7.7 | 6.1 |
| Chloride | mg/L | total | 3 | 47.7 | 47.8 | 63.4 | 31.9 |
| Chlorophyll A | µg/L | total | 3 | 1.714 | 1.33 | 3.03 | 0.782 |
| Copper | µg/L | total | 4 | 1.272 | 1.235 | 1.7 | 0.92 |
| Hardness | mg/L | total | 4 | 237 | 244 | 279 | 181 |
| Iron | µg/L | total | 4 | 376.75 | 338 | 678 | 153 |
| Lead | µg/L | total | 4 | 0.432 | 0.285 | 1 | 0.16 |
| Magnesium | µg/L | total | 4 | 15825 | 16500 | 18300 | 12000 |
| Nickel | µg/L | total | 4 | 1.35 | 1.4 | 1.5 | 1.1 |
| Nitrate | µg/L | total | 3 | 588.333 | 655 | 725 | 385 |
| Nitrate + Nitrite | µg/L | total | 3 | 596.333 | 655 | 738 | 396 |
| Nitrite | µg/L | total | 4 | 8 | 7.25 | 14 | 3.5 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 43 | 1130 | 901 | 7350 | 131 |
| Nitrogen Total | mg/L | total | 45 | 1.553 | 1.33 | 8.75 | 0.045 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 4 | 550 | 555 | 610 | 480 |
| Nitrogen, Total | µg/L | total | 3 | 960 | 1140 | 1340 | 400 |
| Phosphorus | mg/L | total | 45 | 0.061 | 0.031 | 0.611 | 0.006 |
| Phosphorus, Dissolved | mg/L | dissolved | 32 | 0.059 | 0.024 | 0.906 | 0.005 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 42 | 0.018 | 0.017 | 0.061 | 0.002 |
| Silver | µg/L | total | 4 | 0.061 | 0.075 | 0.075 | 0.02 |
| Total Suspended Solids | mg/L | total | 35 | 4.207 | 1.35 | 22 | 0.5 |
| Turbidity | FNU | total | 44 | 13.552 | 2 | 229 | 0.1 |
| Turbidity | NTU | total | 4 | 4.982 | 4.105 | 11.2 | 0.52 |
| Zinc | µg/L | total | 4 | 1.25 | 1.25 | 1.25 | 1.25 |

Table 101. Chemistry Measurements at Event Flow (high flow): 07-SKAT\_T2-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T2-0.1 | 2018-07-25 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 7.35 |
| 07-SKAT\_T2-0.1 | 2018-07-25 | Nitrogen Total | mg/L | Total | 1 | 8.75 |
| 07-SKAT\_T2-0.1 | 2018-07-25 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.075 |
| 07-SKAT\_T2-0.1 | 2018-07-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.076 |
| 07-SKAT\_T2-0.1 | 2018-07-25 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.061 |
| 07-SKAT\_T2-0.1 | 2018-07-25 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.24 |
| 07-SKAT\_T2-0.1 | 2018-07-25 | Turbidity | FNU | Total | 1 | 142 |
| 07-SKAT\_T2-0.1 | 2018-08-14 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.976 |
| 07-SKAT\_T2-0.1 | 2018-08-14 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.038 |
| 07-SKAT\_T2-0.1 | 2018-08-14 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.072 |
| 07-SKAT\_T2-0.1 | 2018-08-14 | Turbidity | FNU | Total | 1 | 8.1 |
| 07-SKAT\_T2-0.1 | 2018-09-10 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.837 |
| 07-SKAT\_T2-0.1 | 2018-09-10 | Nitrogen Total | mg/L | Total | 1 | 1.27 |
| 07-SKAT\_T2-0.1 | 2018-09-10 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.022 |
| 07-SKAT\_T2-0.1 | 2018-09-10 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.048 |
| 07-SKAT\_T2-0.1 | 2018-09-10 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.041 |
| 07-SKAT\_T2-0.1 | 2018-09-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.095 |
| 07-SKAT\_T2-0.1 | 2018-09-25 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 7.6 |
| 07-SKAT\_T2-0.1 | 2018-09-25 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.937 |
| 07-SKAT\_T2-0.1 | 2018-09-25 | Nitrogen Total | mg/L | Total | 1 | 1.51 |
| 07-SKAT\_T2-0.1 | 2018-09-25 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.015 |
| 07-SKAT\_T2-0.1 | 2018-09-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.04 |
| 07-SKAT\_T2-0.1 | 2018-10-29 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 1.86 |
| 07-SKAT\_T2-0.1 | 2018-10-29 | Nitrogen Total | mg/L | Total | 1 | 2.27 |
| 07-SKAT\_T2-0.1 | 2018-10-29 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.024 |
| 07-SKAT\_T2-0.1 | 2018-10-29 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.018 |
| 07-SKAT\_T2-0.1 | 2018-10-29 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.041 |
| 07-SKAT\_T2-0.1 | 2018-10-29 | Total Suspended Solids | mg/L | Total | 1 | 4 |
| 07-SKAT\_T2-0.1 | 2018-10-29 | Turbidity | FNU | Total | 1 | 7.2 |
| 07-SKAT\_T2-0.1 | 2018-11-27 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 5.3 |
| 07-SKAT\_T2-0.1 | 2018-11-27 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 1.66 |
| 07-SKAT\_T2-0.1 | 2018-11-27 | Nitrogen Total | mg/L | Total | 1 | 2.03 |
| 07-SKAT\_T2-0.1 | 2018-11-27 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.025 |
| 07-SKAT\_T2-0.1 | 2018-11-27 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.029 |
| 07-SKAT\_T2-0.1 | 2018-11-27 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.023 |
| 07-SKAT\_T2-0.1 | 2018-11-27 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.049 |
| 07-SKAT\_T2-0.1 | 2018-11-27 | Turbidity | FNU | Total | 1 | 11.2 |
| 07-SKAT\_T2-0.1 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 5.2 |
| 07-SKAT\_T2-0.1 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 0.883 |
| 07-SKAT\_T2-0.1 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.029 |
| 07-SKAT\_T2-0.1 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 7.2 |
| 07-SKAT\_T2-0.1 | 2019-05-10 | Turbidity | FNU | Total | 1 | 4.2 |
| 07-SKAT\_T2-0.1 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 8.5 |
| 07-SKAT\_T2-0.1 | 2019-06-20 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.901 |
| 07-SKAT\_T2-0.1 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 2.2 |
| 07-SKAT\_T2-0.1 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.057 |
| 07-SKAT\_T2-0.1 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.107 |
| 07-SKAT\_T2-0.1 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.611 |
| 07-SKAT\_T2-0.1 | 2019-06-20 | Turbidity | FNU | Total | 1 | 229 |
| 07-SKAT\_T2-0.1 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 8.2 |
| 07-SKAT\_T2-0.1 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.466 |
| 07-SKAT\_T2-0.1 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 1.11 |
| 07-SKAT\_T2-0.1 | 2019-10-07 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.079 |
| 07-SKAT\_T2-0.1 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.265 |
| 07-SKAT\_T2-0.1 | 2019-10-07 | Turbidity | FNU | Total | 1 | 45.5 |

Table 102. In-Situ Measurements: 07-SKAT\_T2-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 3.6 | 3.18 | 6.28 | 1.34 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.923 | 0.76 | 1.64 | 0.37 |
| Dissolved Oxygen | mg/L | dissolved | 4 | 8.615 | 8.535 | 9.14 | 8.25 |
| Dissolved Oxygen Saturation | % | NA | 4 | 92.975 | 92.4 | 96 | 91.1 |
| pH | pH units | total | 4 | 8.062 | 8.05 | 8.19 | 7.96 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.05 | 0 | 0.15 | 0 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.21 | 0.13 | 0.5 | 0 |
| Salinity | ppt | NA | 4 | 0.27 | 0.27 | 0.31 | 0.23 |
| Specific Conductance | uS/cm | NA | 4 | 555.8 | 555.5 | 632 | 480.2 |
| Temperature | °C | NA | 4 | 18.725 | 19.25 | 20.1 | 16.3 |

Table 103. Water Quality Standard Excursions: 07-SKAT\_T2-0.1

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2019-08-14 | Iron | 397 | total | ug/l | 300 |
| 2019-07-17 | Iron | 678 | total | ug/l | 300 |

Table 104. 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(T) AA | WI/PWL ID: 0707-0005

Table 105. Applicable Standards: 07-SKAT\_T5-0.1

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| AA | Dissolved Oxygen | dissolved | Fishing; secondary contact recreation; primary contact recreation; source of water supply | 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 | pH | total | Fishing; secondary contact recreation; primary contact recreation; source of water supply | pH units | Shall not be less than 6.5 nor more than 8.5. |
| AA | Ammonia | total | Source of water supply | µg/L | NH3 + NH4+ as N; 2,000 ug/L |
| AA | Chloride | total | Source of water supply | µg/L | 250,000 ug/L |
| AA | Arsenic | total | Source of water supply | µg/L | 50 ug/L |
| AA | Magnesium | total | Source of water supply | µg/L | 35,000 ug/L |
| AA | Iron | total | Source of water supply | µg/L | 300 ug/L |
| AA | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| AA | Nitrate | total | Source of water supply | µg/L | 10,000 ug/L |
| AA | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 106. Chemistry Measurements: 07-SKAT\_T5-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 175.333 | 182 | 185 | 159 |
| Aluminum | µg/L | total | 2 | 48.3 | 48.3 | 63.5 | 33.1 |
| Ammonia | µg/L | total | 9 | 35.856 | 26.4 | 94.9 | 1.5 |
| Arsenic | µg/L | total | 3 | 0.4 | 0.4 | 0.64 | 0.16 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 65900 | 69300 | 70900 | 57500 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 13 | 5.362 | 4.5 | 10.6 | 2.2 |
| Carbon, Total Organic | mg/L | total | 3 | 3.367 | 3.7 | 3.9 | 2.5 |
| Chloride | mg/L | total | 2 | 31.7 | 31.7 | 41.9 | 21.5 |
| Chlorophyll A | µg/L | total | 3 | 0.915 | 0.629 | 1.65 | 0.467 |
| Copper | µg/L | total | 3 | 1.9 | 1.5 | 2.9 | 1.3 |
| Hardness | mg/L | total | 3 | 215.333 | 226 | 232 | 188 |
| Iron | µg/L | total | 3 | 103.667 | 114 | 148 | 49 |
| Lead | µg/L | total | 3 | 0.443 | 0.285 | 0.76 | 0.285 |
| Magnesium | µg/L | total | 3 | 12366.667 | 13000 | 13400 | 10700 |
| Nickel | µg/L | total | 3 | 1.333 | 1.1 | 1.8 | 1.1 |
| Nitrate | µg/L | total | 3 | 2910 | 3030 | 3080 | 2620 |
| Nitrate + Nitrite | µg/L | total | 3 | 2910 | 3030 | 3080 | 2620 |
| Nitrite | µg/L | total | 3 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 14 | 2826.143 | 2700 | 4530 | 158 |
| Nitrogen Total | mg/L | total | 15 | 3.025 | 3.035 | 5.34 | 0.045 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 3 | 423.333 | 440 | 450 | 380 |
| Nitrogen, Total | µg/L | total | 3 | 3186.667 | 3460 | 3480 | 2620 |
| Phosphorus | mg/L | total | 17 | 0.14 | 0.038 | 0.664 | 0.008 |
| Phosphorus, Dissolved | mg/L | dissolved | 11 | 0.268 | 0.038 | 2.44 | 0.011 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 16 | 0.028 | 0.027 | 0.06 | 0.009 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 16 | 33.731 | 3.3 | 312.1 | 0.5 |
| Turbidity | FNU | total | 15 | 45.967 | 3.8 | 264 | 0.1 |
| Turbidity | NTU | total | 3 | 3.653 | 3.56 | 5.7 | 1.7 |
| Zinc | µg/L | total | 3 | 4.5 | 1.25 | 11 | 1.25 |

Table 107. Chemistry Measurements at Event Flow (high flow): 07-SKAT\_T5-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T5-0.1 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 8.1 |
| 07-SKAT\_T5-0.1 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 2.21 |
| 07-SKAT\_T5-0.1 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.664 |
| 07-SKAT\_T5-0.1 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 312.1 |
| 07-SKAT\_T5-0.1 | 2019-05-10 | Turbidity | FNU | Total | 1 | 250 |
| 07-SKAT\_T5-0.1 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 9.5 |
| 07-SKAT\_T5-0.1 | 2019-06-20 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 3.97 |
| 07-SKAT\_T5-0.1 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 5.34 |
| 07-SKAT\_T5-0.1 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.031 |
| 07-SKAT\_T5-0.1 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.106 |
| 07-SKAT\_T5-0.1 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.63 |
| 07-SKAT\_T5-0.1 | 2019-06-20 | Turbidity | FNU | Total | 1 | 264 |
| 07-SKAT\_T5-0.1 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.7 |
| 07-SKAT\_T5-0.1 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 2.58 |
| 07-SKAT\_T5-0.1 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 3.81 |
| 07-SKAT\_T5-0.1 | 2019-10-07 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.078 |
| 07-SKAT\_T5-0.1 | 2019-10-07 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.045 |
| 07-SKAT\_T5-0.1 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.112 |
| 07-SKAT\_T5-0.1 | 2019-10-07 | Turbidity | FNU | Total | 1 | 19.1 |

Table 108. In-Situ Measurements: 07-SKAT\_T5-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 1.777 | 1.9 | 2.93 | 0.5 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.43 | 0.55 | 0.56 | 0.18 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 8.973 | 8.75 | 9.63 | 8.54 |
| Dissolved Oxygen Saturation | % | NA | 3 | 92.567 | 92.4 | 93.4 | 91.9 |
| pH | pH units | total | 2 | 8.07 | 8.07 | 8.1 | 8.04 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.027 | 0.02 | 0.06 | 0 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.04 | 0.03 | 0.09 | 0 |
| Salinity | ppt | NA | 3 | 0.23 | 0.22 | 0.26 | 0.21 |
| Specific Conductance | uS/cm | NA | 3 | 471.9 | 452.4 | 526 | 437.3 |
| Temperature | °C | NA | 3 | 16.867 | 17.6 | 19.1 | 13.9 |

*Water Quality Standard Excursions*

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

Table 109. 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 110. Applicable Standards: 07-SKAT\_T89-0.2

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| AA | Dissolved Oxygen | dissolved | Fishing; secondary contact recreation; primary contact recreation; source of water supply | 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 | pH | total | Fishing; secondary contact recreation; primary contact recreation; source of water supply | pH units | Shall not be less than 6.5 nor more than 8.5. |
| AA | Ammonia | total | Source of water supply | µg/L | NH3 + NH4+ as N; 2,000 ug/L |
| AA | Chloride | total | Source of water supply | µg/L | 250,000 ug/L |
| AA | Arsenic | total | Source of water supply | µg/L | 50 ug/L |
| AA | Magnesium | total | Source of water supply | µg/L | 35,000 ug/L |
| AA | Iron | total | Source of water supply | µg/L | 300 ug/L |
| AA | Nitrite | total | Fishing | µg/L | Standard is 100 ug/L except 20 ug/L for trout waters (T or TS). |
| AA | Nitrate | total | Source of water supply | µg/L | 10,000 ug/L |
| AA | Ammonia | total | Fishing | µg/L | Standard is based on pH and temperature |

Table 111. Chemistry Measurements: 07-SKAT\_T89-0.2

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 4 | 239 | 241.5 | 266 | 207 |
| Aluminum | µg/L | total | 3 | 164.1 | 99.5 | 346 | 46.8 |
| Ammonia | µg/L | total | 30 | 35.077 | 22.35 | 249 | 0.4 |
| Arsenic | µg/L | total | 4 | 0.51 | 0.605 | 0.67 | 0.16 |
| Cadmium | µg/L | total | 4 | 0.15 | 0.19 | 0.19 | 0.032 |
| Calcium | µg/L | total | 4 | 81950 | 83900 | 89500 | 70500 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 31 | 3.703 | 3.1 | 8.5 | 2 |
| Carbon, Total Organic | mg/L | total | 3 | 4.767 | 3.8 | 7 | 3.5 |
| Chloride | mg/L | total | 3 | 22.533 | 22.3 | 23.1 | 22.2 |
| Chlorophyll A | µg/L | total | 3 | 1.245 | 1.28 | 1.82 | 0.636 |
| Copper | µg/L | total | 4 | 1.218 | 1.115 | 1.9 | 0.74 |
| Hardness | mg/L | total | 4 | 284.5 | 291.5 | 311 | 244 |
| Iron | µg/L | total | 4 | 419.25 | 442 | 640 | 153 |
| Lead | µg/L | total | 4 | 0.59 | 0.438 | 1.2 | 0.285 |
| Magnesium | µg/L | total | 4 | 19425 | 19950 | 21300 | 16500 |
| Nickel | µg/L | total | 4 | 1.475 | 1.45 | 1.8 | 1.2 |
| Nitrate | µg/L | total | 2 | 2145 | 2145 | 2820 | 1470 |
| Nitrate + Nitrite | µg/L | total | 2 | 2155 | 2155 | 2840 | 1470 |
| Nitrite | µg/L | total | 4 | 9 | 8.75 | 15 | 3.5 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 38 | 1942.395 | 1880 | 3470 | 209 |
| Nitrogen Total | mg/L | total | 39 | 2.178 | 2.14 | 4.86 | 0.045 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 4 | 477.5 | 430 | 710 | 340 |
| Nitrogen, Total | µg/L | total | 2 | 2510 | 2510 | 3550 | 1470 |
| Phosphorus | mg/L | total | 37 | 0.062 | 0.019 | 0.572 | 0.004 |
| Phosphorus, Dissolved | mg/L | dissolved | 27 | 0.09 | 0.012 | 1.95 | 0.003 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 36 | 0.009 | 0.006 | 0.042 | 0.001 |
| Silver | µg/L | total | 4 | 0.061 | 0.075 | 0.075 | 0.02 |
| Total Suspended Solids | mg/L | total | 29 | 16.696 | 2.65 | 219 | 0.5 |
| Turbidity | FNU | total | 38 | 25.978 | 2.9 | 302 | 0.8 |
| Turbidity | NTU | total | 4 | 6.808 | 4.93 | 15.8 | 1.57 |
| Zinc | µg/L | total | 4 | 3.587 | 3.6 | 5.9 | 1.25 |

Table 112. Chemistry Measurements at Event Flow (high flow): 07-SKAT\_T89-0.2

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T89-0.2 | 2018-07-25 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 3.47 |
| 07-SKAT\_T89-0.2 | 2018-07-25 | Nitrogen Total | mg/L | Total | 1 | 3.91 |
| 07-SKAT\_T89-0.2 | 2018-07-25 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.031 |
| 07-SKAT\_T89-0.2 | 2018-07-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.056 |
| 07-SKAT\_T89-0.2 | 2018-07-25 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.042 |
| 07-SKAT\_T89-0.2 | 2018-07-25 | Turbidity | FNU | Total | 1 | 278 |
| 07-SKAT\_T89-0.2 | 2018-08-14 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 2.11 |
| 07-SKAT\_T89-0.2 | 2018-08-14 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.006 |
| 07-SKAT\_T89-0.2 | 2018-08-14 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.039 |
| 07-SKAT\_T89-0.2 | 2018-08-14 | Turbidity | FNU | Total | 1 | 15.7 |
| 07-SKAT\_T89-0.2 | 2018-09-10 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 1.3 |
| 07-SKAT\_T89-0.2 | 2018-09-10 | Nitrogen Total | mg/L | Total | 1 | 1.67 |
| 07-SKAT\_T89-0.2 | 2018-09-10 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.021 |
| 07-SKAT\_T89-0.2 | 2018-09-10 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.033 |
| 07-SKAT\_T89-0.2 | 2018-09-10 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.027 |
| 07-SKAT\_T89-0.2 | 2018-09-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.133 |
| 07-SKAT\_T89-0.2 | 2018-09-25 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 5.2 |
| 07-SKAT\_T89-0.2 | 2018-09-25 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 1.78 |
| 07-SKAT\_T89-0.2 | 2018-09-25 | Nitrogen Total | mg/L | Total | 1 | 2.3 |
| 07-SKAT\_T89-0.2 | 2018-09-25 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.045 |
| 07-SKAT\_T89-0.2 | 2018-09-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.012 |
| 07-SKAT\_T89-0.2 | 2018-10-29 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 2.3 |
| 07-SKAT\_T89-0.2 | 2018-10-29 | Nitrogen Total | mg/L | Total | 1 | 2.67 |
| 07-SKAT\_T89-0.2 | 2018-10-29 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.011 |
| 07-SKAT\_T89-0.2 | 2018-10-29 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.006 |
| 07-SKAT\_T89-0.2 | 2018-10-29 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.019 |
| 07-SKAT\_T89-0.2 | 2018-10-29 | Total Suspended Solids | mg/L | Total | 1 | 4.8 |
| 07-SKAT\_T89-0.2 | 2018-10-29 | Turbidity | FNU | Total | 1 | 4.5 |
| 07-SKAT\_T89-0.2 | 2018-11-27 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 4.9 |
| 07-SKAT\_T89-0.2 | 2018-11-27 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 2.06 |
| 07-SKAT\_T89-0.2 | 2018-11-27 | Nitrogen Total | mg/L | Total | 1 | 2.36 |
| 07-SKAT\_T89-0.2 | 2018-11-27 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.007 |
| 07-SKAT\_T89-0.2 | 2018-11-27 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.019 |
| 07-SKAT\_T89-0.2 | 2018-11-27 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.014 |
| 07-SKAT\_T89-0.2 | 2018-11-27 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.031 |
| 07-SKAT\_T89-0.2 | 2018-11-27 | Turbidity | FNU | Total | 1 | 9.4 |
| 07-SKAT\_T89-0.2 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 5.4 |
| 07-SKAT\_T89-0.2 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 1.59 |
| 07-SKAT\_T89-0.2 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.339 |
| 07-SKAT\_T89-0.2 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 219 |
| 07-SKAT\_T89-0.2 | 2019-05-10 | Turbidity | FNU | Total | 1 | 123 |
| 07-SKAT\_T89-0.2 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 8.5 |
| 07-SKAT\_T89-0.2 | 2019-06-20 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 2.63 |
| 07-SKAT\_T89-0.2 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 4.86 |
| 07-SKAT\_T89-0.2 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.249 |
| 07-SKAT\_T89-0.2 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.071 |
| 07-SKAT\_T89-0.2 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.572 |
| 07-SKAT\_T89-0.2 | 2019-06-20 | Turbidity | FNU | Total | 1 | 302 |
| 07-SKAT\_T89-0.2 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 8 |
| 07-SKAT\_T89-0.2 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.83 |
| 07-SKAT\_T89-0.2 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 1.33 |
| 07-SKAT\_T89-0.2 | 2019-10-07 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.076 |
| 07-SKAT\_T89-0.2 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.131 |
| 07-SKAT\_T89-0.2 | 2019-10-07 | Turbidity | FNU | Total | 1 | 38.1 |

Table 113. In-Situ Measurements: 07-SKAT\_T89-0.2

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 2.337 | 3.05 | 3.4 | 0.56 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.613 | 0.8 | 0.83 | 0.21 |
| Dissolved Oxygen | mg/L | dissolved | 4 | 8.84 | 8.77 | 9.72 | 8.1 |
| Dissolved Oxygen Saturation | % | NA | 4 | 96.775 | 97.65 | 99.2 | 92.6 |
| pH | pH units | total | 4 | 8.092 | 8.11 | 8.13 | 8.02 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.077 | 0.1 | 0.13 | 0 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.05 | 0.02 | 0.13 | 0 |
| Salinity | ppt | NA | 4 | 0.28 | 0.28 | 0.3 | 0.26 |
| Specific Conductance | uS/cm | NA | 4 | 550.25 | 545.5 | 590 | 520 |
| Temperature | °C | NA | 4 | 18.5 | 19.45 | 19.7 | 15.4 |

Table 114. Water Quality Standard Excursions: 07-SKAT\_T89-0.2

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2019-07-17 | Iron | 640 | total | ug/l | 300 |
| 2018-07-31 | Iron | 616 | total | ug/l | 300 |

Table 115. Biological Assessment Score (BAP) Summary: 07-SKAT\_T89-0.2

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

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

Table 116. Applicable Standards: 07-SKAT\_T14-0.2

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

Table 117. Chemistry Measurements: 07-SKAT\_T14-0.2

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 4 | 97.025 | 39.15 | 291 | 18.8 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 8 | 8.85 | 9.7 | 14.3 | 3.3 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 7 | 1715.429 | 1850 | 2170 | 958 |
| Nitrogen Total | mg/L | total | 9 | 3.594 | 2.65 | 9 | 1.77 |
| Phosphorus | mg/L | total | 9 | 0.4 | 0.223 | 1.275 | 0.01 |
| Phosphorus, Dissolved | mg/L | dissolved | 6 | 0.114 | 0.099 | 0.303 | 0.021 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 7 | 0.038 | 0.032 | 0.098 | 0.005 |
| Total Suspended Solids | mg/L | total | 7 | 157.371 | 9.8 | 749.4 | 0.5 |
| Turbidity | FNU | total | 9 | 139.556 | 27 | 723 | 0.7 |

Table 118. Chemistry Measurements at Event Flow (high flow): 07-SKAT\_T14-0.2

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T14-0.2 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 11.7 |
| 07-SKAT\_T14-0.2 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 3.15 |
| 07-SKAT\_T14-0.2 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 1.275 |
| 07-SKAT\_T14-0.2 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 749.4 |
| 07-SKAT\_T14-0.2 | 2019-05-10 | Turbidity | FNU | Total | 1 | 723 |
| 07-SKAT\_T14-0.2 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 14.3 |
| 07-SKAT\_T14-0.2 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 9 |
| 07-SKAT\_T14-0.2 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.303 |
| 07-SKAT\_T14-0.2 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.735 |
| 07-SKAT\_T14-0.2 | 2019-06-20 | Turbidity | FNU | Total | 1 | 157 |
| 07-SKAT\_T14-0.2 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 9.3 |
| 07-SKAT\_T14-0.2 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 2.17 |
| 07-SKAT\_T14-0.2 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 3.8 |
| 07-SKAT\_T14-0.2 | 2019-10-07 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.08 |
| 07-SKAT\_T14-0.2 | 2019-10-07 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.037 |
| 07-SKAT\_T14-0.2 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.223 |
| 07-SKAT\_T14-0.2 | 2019-10-07 | Turbidity | FNU | Total | 1 | 27 |

*Water Quality Standard Excursions*

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

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

Table 119. Applicable Standards: 07-BSWP-0.1

| **Class** | **Parameter** | **Fraction** | **Applicable Use** | **Units** | **Standard Narrative** |
| --- | --- | --- | --- | --- | --- |
| AA | Cadmium | total | Source of water supply | µg/L | 5 ug/L |
| AA | Copper | total | Source of water supply | µg/L | 200 ug/L |
| AA | Lead | total | Source of water supply | µg/L | 50 ug/L |
| AA | Nickel | total | Source of water supply | µg/L | 100 ug/L |
| AA | Nitrate-nitrite | total | Source of water supply | µg/L | 10,000 ug/L |
| AA | Nitrite | total | Source of water supply | µg/L | 1,000 ug/L |
| AA | Silver | total | Source of water supply | µg/L | 50 ug/L |

Table 120. Chemistry Measurements: 07-BSWP-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alkalinity, Total (As Caco3) | mg/L | total | 3 | 87 | 78 | 111 | 72 |
| Aluminum | µg/L | total | 2 | 46.2 | 46.2 | 67.7 | 24.7 |
| Ammonia | µg/L | total | 25 | 35.68 | 21 | 246 | 1.5 |
| Arsenic | µg/L | total | 3 | 0.553 | 0.65 | 0.66 | 0.35 |
| Cadmium | µg/L | total | 3 | 0.19 | 0.19 | 0.19 | 0.19 |
| Calcium | µg/L | total | 3 | 30866.667 | 26300 | 40600 | 25700 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 26 | 5.281 | 5.25 | 7.4 | 2.4 |
| Carbon, Total Organic | mg/L | total | 3 | 5.467 | 5.7 | 6.3 | 4.4 |
| Chloride | mg/L | total | 2 | 12.9 | 12.9 | 18.5 | 7.3 |
| Chlorophyll A | µg/L | total | 3 | 1.861 | 0.979 | 3.95 | 0.655 |
| Copper | µg/L | total | 3 | 0.677 | 0.76 | 0.94 | 0.33 |
| Hardness | mg/L | total | 3 | 96.1 | 81.9 | 126 | 80.4 |
| Iron | µg/L | total | 3 | 275.033 | 304 | 462 | 59.1 |
| Lead | µg/L | total | 3 | 0.507 | 0.285 | 0.95 | 0.285 |
| Magnesium | µg/L | total | 3 | 4653.333 | 3960 | 6050 | 3950 |
| Nickel | µg/L | total | 3 | 0.687 | 0.63 | 0.84 | 0.59 |
| Nitrate | µg/L | total | 2 | 644.5 | 644.5 | 1020 | 269 |
| Nitrate + Nitrite | µg/L | total | 2 | 644.5 | 644.5 | 1020 | 269 |
| Nitrite | µg/L | total | 3 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 30 | 479.567 | 438.5 | 1120 | 130 |
| Nitrogen Total | mg/L | total | 32 | 0.86 | 0.774 | 2.02 | 0.409 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 3 | 420 | 430 | 440 | 390 |
| Nitrogen, Total | µg/L | total | 2 | 865 | 865 | 1020 | 710 |
| Phosphorus | mg/L | total | 32 | 0.077 | 0.023 | 0.839 | 0.009 |
| Phosphorus, Dissolved | mg/L | dissolved | 24 | 0.019 | 0.017 | 0.046 | 0.004 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 30 | 0.011 | 0.012 | 0.023 | 0.001 |
| Silver | µg/L | total | 3 | 0.075 | 0.075 | 0.075 | 0.075 |
| Total Suspended Solids | mg/L | total | 22 | 33.614 | 2.5 | 640 | 0.5 |
| Turbidity | FNU | total | 31 | 33.61 | 2.3 | 523 | 0.5 |
| Turbidity | NTU | total | 3 | 7.3 | 5.09 | 15.3 | 1.51 |
| Zinc | µg/L | total | 3 | 1.25 | 1.25 | 1.25 | 1.25 |

Table 121. Chemistry Measurements at Event Flow (high flow): 07-BSWP-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-BSWP-0.1 | 2018-07-25 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.445 |
| 07-BSWP-0.1 | 2018-07-25 | Nitrogen Total | mg/L | Total | 1 | 0.925 |
| 07-BSWP-0.1 | 2018-07-25 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.018 |
| 07-BSWP-0.1 | 2018-07-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.025 |
| 07-BSWP-0.1 | 2018-07-25 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.023 |
| 07-BSWP-0.1 | 2018-07-25 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.113 |
| 07-BSWP-0.1 | 2018-07-25 | Turbidity | FNU | Total | 1 | 117 |
| 07-BSWP-0.1 | 2018-08-14 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.02 |
| 07-BSWP-0.1 | 2018-08-14 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.049 |
| 07-BSWP-0.1 | 2018-08-14 | Turbidity | FNU | Total | 1 | 36.1 |
| 07-BSWP-0.1 | 2018-09-10 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.855 |
| 07-BSWP-0.1 | 2018-09-10 | Nitrogen Total | mg/L | Total | 1 | 1.15 |
| 07-BSWP-0.1 | 2018-09-10 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.017 |
| 07-BSWP-0.1 | 2018-09-10 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.017 |
| 07-BSWP-0.1 | 2018-09-10 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.013 |
| 07-BSWP-0.1 | 2018-09-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.036 |
| 07-BSWP-0.1 | 2018-09-25 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.9 |
| 07-BSWP-0.1 | 2018-09-25 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.229 |
| 07-BSWP-0.1 | 2018-09-25 | Nitrogen Total | mg/L | Total | 1 | 0.723 |
| 07-BSWP-0.1 | 2018-09-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.017 |
| 07-BSWP-0.1 | 2018-10-29 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.492 |
| 07-BSWP-0.1 | 2018-10-29 | Nitrogen Total | mg/L | Total | 1 | 0.782 |
| 07-BSWP-0.1 | 2018-10-29 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.005 |
| 07-BSWP-0.1 | 2018-10-29 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.003 |
| 07-BSWP-0.1 | 2018-10-29 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.011 |
| 07-BSWP-0.1 | 2018-10-29 | Total Suspended Solids | mg/L | Total | 1 | 2.4 |
| 07-BSWP-0.1 | 2018-10-29 | Turbidity | FNU | Total | 1 | 2.6 |
| 07-BSWP-0.1 | 2018-11-27 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 4.8 |
| 07-BSWP-0.1 | 2018-11-27 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.903 |
| 07-BSWP-0.1 | 2018-11-27 | Nitrogen Total | mg/L | Total | 1 | 1.11 |
| 07-BSWP-0.1 | 2018-11-27 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.024 |
| 07-BSWP-0.1 | 2018-11-27 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.009 |
| 07-BSWP-0.1 | 2018-11-27 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.005 |
| 07-BSWP-0.1 | 2018-11-27 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.021 |
| 07-BSWP-0.1 | 2018-11-27 | Turbidity | FNU | Total | 1 | 11.7 |
| 07-BSWP-0.1 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 5.7 |
| 07-BSWP-0.1 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 1.53 |
| 07-BSWP-0.1 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.668 |
| 07-BSWP-0.1 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 640 |
| 07-BSWP-0.1 | 2019-05-10 | Turbidity | FNU | Total | 1 | 270 |
| 07-BSWP-0.1 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.8 |
| 07-BSWP-0.1 | 2019-06-20 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 1.06 |
| 07-BSWP-0.1 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 2.02 |
| 07-BSWP-0.1 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.094 |
| 07-BSWP-0.1 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.046 |
| 07-BSWP-0.1 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.839 |
| 07-BSWP-0.1 | 2019-06-20 | Turbidity | FNU | Total | 1 | 523 |
| 07-BSWP-0.1 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 7.4 |
| 07-BSWP-0.1 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.629 |
| 07-BSWP-0.1 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 1.09 |
| 07-BSWP-0.1 | 2019-10-07 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.032 |
| 07-BSWP-0.1 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.118 |
| 07-BSWP-0.1 | 2019-10-07 | Turbidity | FNU | Total | 1 | 25.3 |

Table 122. In-Situ Measurements: 07-BSWP-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 2.273 | 2.4 | 2.82 | 1.6 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.613 | 0.71 | 0.73 | 0.4 |
| Dissolved Oxygen | mg/L | dissolved | 3 | 8.797 | 9 | 9.03 | 8.36 |
| Dissolved Oxygen Saturation | % | NA | 3 | 96.3 | 96.5 | 96.8 | 95.6 |
| pH | pH units | total | 3 | 8.187 | 8.21 | 8.24 | 8.11 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.067 | 0.06 | 0.1 | 0.04 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.077 | 0.06 | 0.11 | 0.06 |
| Salinity | ppt | NA | 3 | 0.103 | 0.09 | 0.14 | 0.08 |
| Specific Conductance | uS/cm | NA | 3 | 220.167 | 197.6 | 300.2 | 162.7 |
| Temperature | °C | NA | 3 | 19.767 | 18.6 | 22.4 | 18.3 |

Table 123. Water Quality Standard Excursions: 07-BSWP-0.1

| **Date** | **Parameter** | **Result** | **Fraction** | **Units** | **Threshold** |
| --- | --- | --- | --- | --- | --- |
| 2019-07-17 | Iron | 462 | total | ug/l | 300 |
| 2019-06-18 | Iron | 304 | total | ug/l | 300 |

Table 124. 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-SKAT\_T21-0.1 | Waterbody Class: AA AA(T) | WI/PWL ID: 0707-0005

Table 125. Applicable Standards: 07-SKAT\_T21-0.1

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

Table 126. Chemistry Measurements: 07-SKAT\_T21-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 5 | 64.4 | 7.5 | 213 | 7.5 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 8 | 4.938 | 5.3 | 7.6 | 2.2 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 8 | 1555.75 | 1435 | 2710 | 926 |
| Nitrogen Total | mg/L | total | 9 | 1.969 | 1.72 | 3.98 | 1.25 |
| Phosphorus | mg/L | total | 9 | 0.198 | 0.065 | 0.795 | 0.006 |
| Phosphorus, Dissolved | mg/L | dissolved | 6 | 0.057 | 0.047 | 0.103 | 0.035 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 7 | 0.043 | 0.046 | 0.052 | 0.026 |
| Total Suspended Solids | mg/L | total | 7 | 81.371 | 6.5 | 528.5 | 0.5 |
| Turbidity | FNU | total | 9 | 134.178 | 11.9 | 822 | 0.7 |

Table 127. Chemistry Measurements at Event Flow (high flow): 07-SKAT\_T21-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-SKAT\_T21-0.1 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 7.6 |
| 07-SKAT\_T21-0.1 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 2.03 |
| 07-SKAT\_T21-0.1 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.645 |
| 07-SKAT\_T21-0.1 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 528.5 |
| 07-SKAT\_T21-0.1 | 2019-05-10 | Turbidity | FNU | Total | 1 | 338 |
| 07-SKAT\_T21-0.1 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.4 |
| 07-SKAT\_T21-0.1 | 2019-06-20 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 2.71 |
| 07-SKAT\_T21-0.1 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 3.98 |
| 07-SKAT\_T21-0.1 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.213 |
| 07-SKAT\_T21-0.1 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.103 |
| 07-SKAT\_T21-0.1 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.795 |
| 07-SKAT\_T21-0.1 | 2019-06-20 | Turbidity | FNU | Total | 1 | 822 |
| 07-SKAT\_T21-0.1 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.2 |
| 07-SKAT\_T21-0.1 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 1.17 |
| 07-SKAT\_T21-0.1 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 1.58 |
| 07-SKAT\_T21-0.1 | 2019-10-07 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.068 |
| 07-SKAT\_T21-0.1 | 2019-10-07 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.048 |
| 07-SKAT\_T21-0.1 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.09 |
| 07-SKAT\_T21-0.1 | 2019-10-07 | Turbidity | FNU | Total | 1 | 11.9 |

*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 AA(T) | WI/PWL ID: 0707-0005

Table 128. Applicable Standards: 07-RAND-0.1

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

Table 129. Chemistry Measurements: 07-RAND-0.1

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 5 | 15.18 | 7.5 | 30 | 7.5 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 7 | 3.914 | 3.6 | 8 | 1.2 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 7 | 406.286 | 345 | 567 | 292 |
| Nitrogen Total | mg/L | total | 8 | 0.634 | 0.622 | 0.956 | 0.435 |
| Phosphorus | mg/L | total | 8 | 0.057 | 0.022 | 0.25 | 0.013 |
| Phosphorus, Dissolved | mg/L | dissolved | 6 | 0.024 | 0.022 | 0.035 | 0.019 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 5 | 0.02 | 0.022 | 0.024 | 0.009 |
| Total Suspended Solids | mg/L | total | 6 | 11.95 | 2.2 | 45.8 | 0.5 |
| Turbidity | FNU | total | 8 | 26.6 | 1.15 | 169 | 0.4 |

Table 130. Chemistry Measurements at Event Flow (high flow): 07-RAND-0.1

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-RAND-0.1 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 4.1 |
| 07-RAND-0.1 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 0.609 |
| 07-RAND-0.1 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.055 |
| 07-RAND-0.1 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 45.8 |
| 07-RAND-0.1 | 2019-05-10 | Turbidity | FNU | Total | 1 | 26.2 |
| 07-RAND-0.1 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.1 |
| 07-RAND-0.1 | 2019-06-20 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.292 |
| 07-RAND-0.1 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 0.956 |
| 07-RAND-0.1 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.023 |
| 07-RAND-0.1 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.035 |
| 07-RAND-0.1 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.25 |
| 07-RAND-0.1 | 2019-06-20 | Turbidity | FNU | Total | 1 | 169 |
| 07-RAND-0.1 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 3.6 |
| 07-RAND-0.1 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.567 |
| 07-RAND-0.1 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 0.766 |
| 07-RAND-0.1 | 2019-10-07 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.019 |
| 07-RAND-0.1 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.022 |
| 07-RAND-0.1 | 2019-10-07 | Turbidity | FNU | Total | 1 | 1.2 |

*Water Quality Standard Excursions*

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

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

Table 131. Applicable Standards: 07-BSWP-6.3

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

Table 132. Chemistry Measurements: 07-BSWP-6.3

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Ammonia | µg/L | total | 5 | 36.36 | 38.5 | 49.4 | 21.6 |
| Carbon, Dissolved Organic (Doc) | mg/L | dissolved | 8 | 5.888 | 6.5 | 6.6 | 4 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 8 | 19.25 | 11.95 | 62.9 | 3.5 |
| Nitrogen Total | mg/L | total | 9 | 0.479 | 0.478 | 0.64 | 0.322 |
| Phosphorus | mg/L | total | 9 | 0.025 | 0.024 | 0.042 | 0.016 |
| Phosphorus, Dissolved | mg/L | dissolved | 5 | 0.011 | 0.012 | 0.014 | 0.008 |
| Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 7 | 0.003 | 0.003 | 0.006 | 0.001 |
| Total Suspended Solids | mg/L | total | 7 | 4.271 | 3.7 | 8.7 | 0.5 |
| Turbidity | FNU | total | 9 | 2.411 | 2.3 | 3.7 | 0.7 |

Table 133. Chemistry Measurements at Event Flow (high flow): 07-BSWP-6.3

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-BSWP-6.3 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 4 |
| 07-BSWP-6.3 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 0.42 |
| 07-BSWP-6.3 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.023 |
| 07-BSWP-6.3 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 3.4 |
| 07-BSWP-6.3 | 2019-05-10 | Turbidity | FNU | Total | 1 | 3.2 |
| 07-BSWP-6.3 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 5 |
| 07-BSWP-6.3 | 2019-06-20 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.01 |
| 07-BSWP-6.3 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 0.442 |
| 07-BSWP-6.3 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.049 |
| 07-BSWP-6.3 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.014 |
| 07-BSWP-6.3 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.026 |
| 07-BSWP-6.3 | 2019-06-20 | Turbidity | FNU | Total | 1 | 2.3 |
| 07-BSWP-6.3 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.5 |
| 07-BSWP-6.3 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.036 |
| 07-BSWP-6.3 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 0.487 |
| 07-BSWP-6.3 | 2019-10-07 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.003 |
| 07-BSWP-6.3 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.022 |
| 07-BSWP-6.3 | 2019-10-07 | Turbidity | FNU | Total | 1 | 2 |

*Water Quality Standard Excursions*

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

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

Table 134. Applicable Standards: 07-GROU-1.5

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

Table 135. 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 |
| 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 | µg/L | total | 1 | 1720 | 1720 | 1720 | 1720 |
| Nitrate + Nitrite | µg/L | total | 1 | 1720 | 1720 | 1720 | 1720 |
| Nitrite | µg/L | total | 3 | 3.5 | 3.5 | 3.5 | 3.5 |
| Nitrogen Nitrate-Nitrite | µg/L | total | 32 | 1208.375 | 1270 | 1710 | 149 |
| Nitrogen Total | mg/L | total | 33 | 1.464 | 1.466 | 2.22 | 0.969 |
| Nitrogen, Kjeldahl, Total | µg/L | total | 3 | 176.667 | 150 | 250 | 130 |
| Nitrogen, Total | µg/L | total | 1 | 1860 | 1860 | 1860 | 1860 |
| 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 136. Chemistry Measurements at Event Flow (high flow): 07-GROU-1.5

| **Site** | **Date** | **Parameter** | **Units** | **Fraction** | **Record Count** | **Result** |
| --- | --- | --- | --- | --- | --- | --- |
| 07-GROU-1.5 | 2018-07-25 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.952 |
| 07-GROU-1.5 | 2018-07-25 | Nitrogen Total | mg/L | Total | 1 | 1.21 |
| 07-GROU-1.5 | 2018-07-25 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.015 |
| 07-GROU-1.5 | 2018-07-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.012 |
| 07-GROU-1.5 | 2018-07-25 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.009 |
| 07-GROU-1.5 | 2018-07-25 | Turbidity | FNU | Total | 1 | 6.4 |
| 07-GROU-1.5 | 2018-08-14 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 1.27 |
| 07-GROU-1.5 | 2018-08-14 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.006 |
| 07-GROU-1.5 | 2018-08-14 | Turbidity | FNU | Total | 1 | 1.6 |
| 07-GROU-1.5 | 2018-09-10 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.998 |
| 07-GROU-1.5 | 2018-09-10 | Nitrogen Total | mg/L | Total | 1 | 1.17 |
| 07-GROU-1.5 | 2018-09-10 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.019 |
| 07-GROU-1.5 | 2018-09-10 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.019 |
| 07-GROU-1.5 | 2018-09-10 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.013 |
| 07-GROU-1.5 | 2018-09-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.045 |
| 07-GROU-1.5 | 2018-09-25 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 2.5 |
| 07-GROU-1.5 | 2018-09-25 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.967 |
| 07-GROU-1.5 | 2018-09-25 | Nitrogen Total | mg/L | Total | 1 | 1.02 |
| 07-GROU-1.5 | 2018-09-25 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.007 |
| 07-GROU-1.5 | 2018-09-25 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.009 |
| 07-GROU-1.5 | 2018-10-29 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.961 |
| 07-GROU-1.5 | 2018-10-29 | Nitrogen Total | mg/L | Total | 1 | 1.05 |
| 07-GROU-1.5 | 2018-10-29 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.007 |
| 07-GROU-1.5 | 2018-10-29 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.003 |
| 07-GROU-1.5 | 2018-10-29 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.011 |
| 07-GROU-1.5 | 2018-10-29 | Total Suspended Solids | mg/L | Total | 1 | 2.8 |
| 07-GROU-1.5 | 2018-10-29 | Turbidity | FNU | Total | 1 | 1.8 |
| 07-GROU-1.5 | 2018-11-27 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 2.2 |
| 07-GROU-1.5 | 2018-11-27 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 1.1 |
| 07-GROU-1.5 | 2018-11-27 | Nitrogen Total | mg/L | Total | 1 | 1.22 |
| 07-GROU-1.5 | 2018-11-27 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.022 |
| 07-GROU-1.5 | 2018-11-27 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.009 |
| 07-GROU-1.5 | 2018-11-27 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | Dissolved | 1 | 0.007 |
| 07-GROU-1.5 | 2018-11-27 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.019 |
| 07-GROU-1.5 | 2018-11-27 | Turbidity | FNU | Total | 1 | 9.2 |
| 07-GROU-1.5 | 2019-05-10 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 4.2 |
| 07-GROU-1.5 | 2019-05-10 | Nitrogen Total | mg/L | Total | 1 | 1.3 |
| 07-GROU-1.5 | 2019-05-10 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.237 |
| 07-GROU-1.5 | 2019-05-10 | Total Suspended Solids | mg/L | Total | 1 | 168.1 |
| 07-GROU-1.5 | 2019-05-10 | Turbidity | FNU | Total | 1 | 103 |
| 07-GROU-1.5 | 2019-06-20 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 6.5 |
| 07-GROU-1.5 | 2019-06-20 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.475 |
| 07-GROU-1.5 | 2019-06-20 | Nitrogen Total | mg/L | Total | 1 | 2.22 |
| 07-GROU-1.5 | 2019-06-20 | Nitrogen, Ammonia (As N) | mg/L | Total | 1 | 0.056 |
| 07-GROU-1.5 | 2019-06-20 | Phosphorus, Dissolved | mg/L | Dissolved | 1 | 0.035 |
| 07-GROU-1.5 | 2019-06-20 | Phosphorus, Total (As P) | mg/L | Total | 1 | 1.02 |
| 07-GROU-1.5 | 2019-06-20 | Turbidity | FNU | Total | 1 | 1039 |
| 07-GROU-1.5 | 2019-10-07 | Carbon, Dissolved Organic (Doc) | mg/L | Dissolved | 1 | 3.4 |
| 07-GROU-1.5 | 2019-10-07 | Nitrogen Nitrate-Nitrite | mg/L | Total | 1 | 0.886 |
| 07-GROU-1.5 | 2019-10-07 | Nitrogen Total | mg/L | Total | 1 | 1.04 |
| 07-GROU-1.5 | 2019-10-07 | Phosphorus, Total (As P) | mg/L | Total | 1 | 0.019 |
| 07-GROU-1.5 | 2019-10-07 | Turbidity | FNU | Total | 1 | 3.2 |

Table 137. In-Situ Measurements: 07-GROU-1.5

| **Parameter** | **Units** | **Fraction** | **Record Count** | **Mean** | **Median** | **Max** | **Min** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorophyll A (Probe) | µg/L | NA | 3 | 0.46 | 0.25 | 1.13 | 0 |
| Chlorophyll A (Probe) | RFU | NA | 3 | 0.127 | 0.09 | 0.26 | 0.03 |
| Dissolved Oxygen | mg/L | dissolved | 4 | 10.217 | 10.23 | 10.26 | 10.15 |
| Dissolved Oxygen Saturation | % | NA | 4 | 99.25 | 97.8 | 104 | 97.4 |
| pH | pH units | total | 4 | 8.348 | 8.32 | 8.5 | 8.25 |
| Phycocyanin (Probe) | µg/L | NA | 3 | 0.037 | 0.05 | 0.06 | 0 |
| Phycocyanin (Probe) | RFU | NA | 3 | 0.05 | 0.06 | 0.09 | 0 |
| Salinity | ppt | NA | 4 | 0.192 | 0.195 | 0.21 | 0.17 |
| Specific Conductance | uS/cm | NA | 4 | 319.925 | 374.15 | 426.6 | 104.8 |
| Temperature | °C | NA | 4 | 13.725 | 13.4 | 15.1 | 13 |

*Water Quality Standard Excursions*

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

Table 138. Biological Assessment Score (BAP) Summary: 07-GROU-1.5

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

# Section III: Literature Cited

Classifications--Surface Waters and Groundwaters, 55 NY Jur 2d, Environmental Rights

And Remedies § 134 (2018).

Davis, W.S., Simon, T.P. (1995). Biological Assessment and Criteria: Tools for Water Resource

Planning and Decision Making. CRC Press, Boca Raton.

Karr, J. (1991). Biological integrity: a long-neglected aspect of water resource management.

Ecological applications 1: 66-84.

New York State Department of Environmental Conservation. (2021). *Standard Operating Procedure # 210-20: Collection of Water Column Samples for the Rotating Integrated Basin Studies (RIBS) Program as Part of the Statewide Ambient Water Quality Monitoring Strategy*. Division of Water, New York State Department of Environmental Conservation. 625 Broadway Albany, NY.

New York State Department of Environmental Conservation. (2019). *Quality Assurance Project Plan (QAPP): Rapid Biological Assessment Surveys (RAS).*  Division of Water, New York State Department of Environmental Conservation. 625 Broadway Albany, NY.

New York State Department of Environmental Conservation. (2021). *Standard Operating Procedure # 208-21: Biological Monitoring of Surface Waters in New York State*. Division of Water, New York State Department of Environmental Conservation. 625 Broadway Albany, NY.

New York State Department of Environmental Conservation. (2020). *Standard Operating Procedure # 102-20: Data Handling and Archival.* Division of Water, New York State Department of Environmental Conservation. 625 Broadway Albany, NY.

New York State Department of Environmental Conservation. (2021). *Standard Operating Procedure # 110-21: Data Validation and Verification.* Division of Water, New York State Department of Environmental Conservation. 625 Broadway Albany, NY.

New York State Department of Environmental Conservation (2021). Toxicity Testing Unit [Unit Webpage]. Retrieved from <https://www.dec.ny.gov/chemical/29854.html> (Last Accessed August 26, 2021).

R Core Team (2017). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>. (Last Accessed January 18, 2019)

Smith, A. J., Bode, R. W., and Kleppel, G. S. (2007). A nutrient biotic index (nbi) for use with benthic macroinvertebrate communities. *Ecological Indicators, 7*: 371-386.

Smith, A. J., and Tran, C. P. 2010. A weight-of-evidence approach to define nutrient criteria protective of aquatic life in large rivers. *Journal of the North American Benthological Society, 29*: 875-891.

Smith, A. J., Thomas, R. L. Nolan, J. K., Velinsky, D. J., Klein, S., and Duffy, B. T. (2013). Regional nutrient thresholds in wadeable streams of New York State protective of aquatic life. *Ecological Indicators, 29*: 455-467.

Smith, A. J., Duffy, B. T., and Novak, M. A. (2014). Observer rating of recreational use in wadeable streams of New York State, USA: Implications for nutrient criteria development. *Water Research, 69*: 195-209.

6 NYCRR Part 703, Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations, Environmental Conservation Law, §§ 3-0301[2][m], 15-0313 (2021).

# 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** **139**. 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\_T5-0.1 | 2019-07-17 | Aluminum | µg/L | total | 91.2000 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-SKAT\_T89-0.2 | 2019-07-17 | Aluminum | µg/L | total | 325.0000 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-SKAT\_T93a-0.5 | 2019-07-17 | Aluminum | µg/L | total | 772.0000 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-KASH-0.3 | 2019-07-18 | Aluminum | µg/L | total | 23.7000 | 2020-06-11 | R | lab error |
| 07-OWLI-3.0 | 2007-08-22 | Aluminum | µg/L | total | 67.5000 |  | R |  |
| 07-BSWP-0.1 | 2019-07-17 | Aluminum | µg/L | total | 186.0000 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-GROU-1.5 | 2019-07-17 | Aluminum | µg/L | total | 74.1000 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-REED-0.1 | 2019-07-17 | Aluminum | µg/L | total | 98.8000 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-SKAT\_T2-0.1 | 2019-07-17 | Aluminum | µg/L | total | 241.0000 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-CTLE-0.1 | 2019-07-17 | Aluminum | µg/L | total | 274.0000 | 2020-06-11 | R | lab error ; Accuracy error |
| 07-BGST-0.1 | 2019-07-18 | Aluminum | µg/L | total | 711.0000 | 2020-06-11 | R | lab error |
| 07-CATH-0.6 | 2019-08-15 | Chloride | mg/L | total | 50.6000 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T89-0.2 | 2019-06-18 | Chloride | mg/L | total | 20.8000 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T93a-0.5 | 2019-06-18 | Chloride | mg/L | total | 40.7000 | 2020-06-11 | R | Accuracy error |
| 07-BSWP-0.1 | 2019-06-18 | Chloride | mg/L | total | 8.3000 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2019-06-18 | Chloride | mg/L | total | 24.6000 | 2020-06-11 | R | Accuracy error |
| 07-BGST-0.1 | 2019-08-15 | Chloride | mg/L | total | 57.0000 | 2020-06-11 | R | Accuracy error |
| 07-GROU-1.5 | 2019-06-18 | Chloride | mg/L | total | 8.9000 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T5-0.1 | 2019-06-18 | Chloride | mg/L | total | 26.5000 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T2-0.1 | 2019-06-18 | Chloride | mg/L | total | 53.3000 | 2020-06-11 | R | Accuracy error |
| 07-THOL-1.8 | 2019-08-15 | Chloride | mg/L | total | 15.4000 | 2020-06-11 | R | Accuracy error |
| 07-GLNK-0.2 | 2019-08-15 | Chloride | mg/L | total | 18.7000 | 2020-06-11 | R | Accuracy error |
| 07-KEUK-0.1 | 2019-08-15 | Chloride | mg/L | total | 51.7000 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2007-08-22 | Iron | µg/L | total | 115.0000 |  | R |  |
| 07-DUCH-0.3 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0150 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-04-26 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0103 | 2020-06-11 | R | Equipment Blank error |
| 07-SKAT\_T5-0.1 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total |  | 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 | 0.0205 | 2020-06-11 | R | Equipment Blank error |
| 07-DUCH-0.3 | 2018-05-15 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0069 | 2020-06-11 | R | Equipment Blank error |
| 07-OWLI-3.0 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-BGST-0.1 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-CATH-0.6 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 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 | 0.0200 | 2020-06-11 | R | Equipment Blank error |
| 07-OWLI-3.0 | 2018-04-18 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0083 | 2020-06-11 | R | Equipment Blank error |
| 07-GROU-1.5 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-OWLI-3.0 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-THOL-1.8 | 2019-08-15 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0210 | 2020-06-11 | R | Equipment Blank error |
| 07-THOL-1.8 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-SCKR-0.1 | 2018-05-01 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0062 | 2020-06-11 | R | Equipment Blank error |
| 07-SKAT\_T89-0.2 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0129 | 2020-06-11 | R | Accuracy error ; Precision error |
| 07-GLNK-0.2 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0051 | 2020-06-11 | R | Accuracy error ; Precision error |
| 07-CTLE-0.1 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-VENE-1.5 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-KEUK-0.1 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-OWLI-3.0 | 2018-05-15 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0096 | 2020-06-11 | R | Equipment Blank error |
| 07-GROU-1.5 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-KASH-0.3 | 2019-07-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-VENE-0.4 | 2018-05-23 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0180 | 2020-06-11 | R | Equipment Blank error |
| 07-CATH-0.6 | 2019-08-15 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0230 | 2020-06-11 | R | Equipment Blank error |
| 07-SKAT\_T2-0.1 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0274 | 2020-06-11 | R | Accuracy error ; Precision error |
| 07-SKAT\_T89-0.2 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0054 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T93a-0.5 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0079 | 2020-06-11 | R | Accuracy error ; Precision error |
| 07-SKAT\_T2-0.1 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-DUCH-0.3 | 2018-06-19 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0055 | 2020-06-11 | R | Equipment Blank error |
| 07-DUCH-0.3 | 2019-06-19 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0054 | 2020-06-11 | R | Accuracy error |
| 07-VENE-0.4 | 2018-03-12 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0089 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-04-03 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0150 | 2020-06-11 | R | Equipment Blank error |
| 07-REED-0.1 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-BSWP-0.1 | 2019-07-17 | Nitrogen, Ammonia (As N) | mg/L | total |  | 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 | 0.0089 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2018-06-19 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0187 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-05-15 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0174 | 2020-06-11 | R | Equipment Blank error |
| 07-OWAL\_T46-0.1 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error ; Precision error |
| 07-SCKR-0.1 | 2018-04-03 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0082 | 2020-06-11 | R | Equipment Blank error |
| 07-SKAT\_T5-0.1 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-BSWP-0.1 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0130 | 2020-06-11 | R | Equipment Blank error |
| 07-OWAL\_T46-0.1 | 2019-06-19 | Nitrogen, Ammonia (As N) | mg/L | total |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-OWLI-3.0 | 2018-03-12 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0083 | 2020-06-11 | R | Equipment Blank error |
| 07-SKAT\_T93a-0.5 | 2019-06-18 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0076 | 2020-06-11 | R | Accuracy error |
| 07-OWAL\_T9-0.1 | 2019-07-16 | Nitrogen, Ammonia (As N) | mg/L | total |  | 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 | 0.0254 | 2020-06-11 | R | Equipment Blank error |
| 07-VENE-0.4 | 2018-05-01 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0066 | 2020-06-11 | R | Equipment Blank error |
| 07-SCKR-0.1 | 2018-04-26 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0114 | 2020-06-11 | R | Equipment Blank error |
| 07-SCKR-0.1 | 2018-04-18 | Nitrogen, Ammonia (As N) | mg/L | total | 0.0060 | 2020-06-11 | R | Equipment Blank error |
| 07-DUCH-0.3 | 2018-06-19 | Nitrogen, Kjeldahl, Total | mg/L | total | 0.3200 | 2020-06-11 | R | Equipment Blank error |
| 07-OWLI-3.0 | 2018-06-19 | Nitrogen, Kjeldahl, Total | mg/L | total | 0.2600 | 2020-06-11 | R | Equipment Blank error |
| 07-DUCH-0.3 | 2018-05-15 | Nitrogen, Kjeldahl, Total | mg/L | total | 0.3900 | 2020-06-11 | R | Equipment Blank error |
| 07-SCKR-0.1 | 2018-05-15 | Nitrogen, Nitrate (As N) | mg/L | total | 0.0130 | 2020-06-11 | R | calculated parameter\_see components |
| 07-THOL-1.8 | 2019-06-20 | Nitrogen, Nitrate (As N) | mg/L | total | 0.1830 | 2020-06-11 | R | calculated parameter\_see components |
| 07-GLNK-0.2 | 2019-08-15 | Nitrogen, Nitrate (As N) | mg/L | total | 0.0680 | 2020-06-11 | R | calculated parameter\_see components |
| 07-OWLI-3.0 | 2018-03-12 | Nitrogen, Nitrate (As N) | mg/L | total | 2.0700 | 2020-06-11 | R | calculated parameter\_see components |
| 07-DUCH-0.3 | 2019-06-19 | Nitrogen, Nitrate (As N) | mg/L | total | 1.6400 | 2020-06-11 | R | calculated parameter\_see components |
| 07-GROU-1.5 | 2018-07-31 | Nitrogen, Nitrate (As N) | mg/L | total | 1.5100 | 2020-05-12 | R | calculated parameter\_see components |
| 07-GLNK-0.2 | 2019-06-20 | Nitrogen, Nitrate (As N) | mg/L | total | 0.1390 | 2020-06-11 | R | calculated parameter\_see components |
| 07-OWLI-3.0 | 2019-06-18 | Nitrogen, Nitrate (As N) | mg/L | total | 1.2500 | 2020-06-11 | R | calculated parameter\_see components |
| 07-VENE-0.4 | 2018-05-01 | Nitrogen, Nitrate (As N) | mg/L | total | 1.3500 | 2020-06-11 | R | calculated parameter\_see components |
| 07-DUCH-0.3 | 2018-04-18 | Nitrogen, Nitrate (As N) | mg/L | total | 1.5600 | 2020-06-11 | R | calculated parameter\_see components |
| 07-BGST-0.1 | 2019-06-20 | Nitrogen, Nitrate (As N) | mg/L | total | 0.9620 | 2020-06-11 | R | calculated parameter\_see components |
| 07-CATH-0.6 | 2019-06-20 | Nitrogen, Nitrate (As N) | mg/L | total | 0.4980 | 2020-06-11 | R | calculated parameter\_see components |
| 07-DUCH-0.3 | 2018-03-12 | Nitrogen, Nitrate (As N) | mg/L | total | 1.7100 | 2020-06-11 | R | calculated parameter\_see components |
| 07-GROU-1.5 | 2019-06-18 | Nitrogen, Nitrate (As N) | mg/L | total | 1.5400 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SCKR-0.1 | 2018-03-12 | Nitrogen, Nitrate (As N) | mg/L | total | 0.5400 | 2020-06-11 | R | calculated parameter\_see components |
| 07-VENE-0.4 | 2018-03-12 | Nitrogen, Nitrate (As N) | mg/L | total | 1.9000 | 2020-06-11 | R | calculated parameter\_see components |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Nitrate (As N) | mg/L | total | 1.7000 | 2020-06-11 | R | calculated parameter\_see components |
| 07-CTLE-0.1 | 2019-06-19 | Nitrogen, Nitrate (As N) | mg/L | total | 0.7370 | 2020-06-11 | R | calculated parameter\_see components |
| 07-VENE-1.5 | 2019-06-19 | Nitrogen, Nitrate (As N) | mg/L | total | 3.8400 | 2020-06-11 | R | calculated parameter\_see components |
| 07-REED-0.1 | 2019-06-19 | Nitrogen, Nitrate (As N) | mg/L | total | 1.3900 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SKAT\_T2-0.1 | 2018-07-31 | Nitrogen, Nitrate (As N) | mg/L | total | 0.8500 | 2020-05-12 | R | calculated parameter\_see components |
| 07-SKAT\_T89-0.2 | 2019-06-18 | Nitrogen, Nitrate (As N) | mg/L | total | 1.7600 | 2020-06-11 | R | calculated parameter\_see components |
| 07-BGST-0.1 | 2019-08-15 | Nitrogen, Nitrate (As N) | mg/L | total | 1.5000 | 2020-06-11 | R | calculated parameter\_see components |
| 07-KASH-0.3 | 2019-06-20 | Nitrogen, Nitrate (As N) | mg/L | total | 5.7900 | 2020-06-11 | R | calculated parameter\_see components |
| 07-KEUK-0.1 | 2019-08-15 | Nitrogen, Nitrate (As N) | mg/L | total | 1.4900 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SKAT\_T89-0.2 | 2018-07-31 | Nitrogen, Nitrate (As N) | mg/L | total | 3.2900 | 2020-05-12 | R | calculated parameter\_see components |
| 07-DUCH-0.3 | 2018-05-01 | Nitrogen, Nitrate (As N) | mg/L | total | 1.4100 | 2020-06-11 | R | calculated parameter\_see components |
| 07-OWLI-3.0 | 2018-04-18 | Nitrogen, Nitrate (As N) | mg/L | total | 1.4200 | 2020-06-11 | R | calculated parameter\_see components |
| 07-OWAL\_T46-0.1 | 2019-06-19 | Nitrogen, Nitrate (As N) | mg/L | total | 8.4300 | 2020-06-11 | R | calculated parameter\_see components |
| 07-VENE-0.4 | 2018-06-19 | Nitrogen, Nitrate (As N) | mg/L | total | 0.0100 | 2020-06-11 | R | calculated parameter\_see components |
| 07-OWLI-3.0 | 2018-05-01 | Nitrogen, Nitrate (As N) | mg/L | total | 1.4800 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SCKR-0.1 | 2018-04-18 | Nitrogen, Nitrate (As N) | mg/L | total | 0.3630 | 2020-06-11 | R | calculated parameter\_see components |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Nitrate (As N) | mg/L | total | 1.7000 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SCKR-0.1 | 2018-05-01 | Nitrogen, Nitrate (As N) | mg/L | total | 0.1820 | 2020-06-11 | R | calculated parameter\_see components |
| 07-OWLI-3.0 | 2018-03-12 | Nitrogen, Nitrate (As N) | mg/L | total | 2.0500 | 2020-06-11 | R | calculated parameter\_see components |
| 07-BSWP-0.1 | 2019-06-18 | Nitrogen, Nitrate (As N) | mg/L | total | 0.3050 | 2020-06-11 | R | calculated parameter\_see components |
| 07-KEUK-0.1 | 2019-06-19 | Nitrogen, Nitrate (As N) | mg/L | total | 0.6220 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SCKR-0.1 | 2019-06-19 | Nitrogen, Nitrate (As N) | mg/L | total | 0.4930 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SCKR-0.1 | 2018-05-01 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.1820 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.4930 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2018-05-15 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.0133 | 2020-06-11 | R | Equipment Blank error |
| 07-SKAT\_T89-0.2 | 2018-07-31 | Nitrogen, Nitrate-Nitrite | mg/L | total | 3.2900 | 2020-05-12 | R | Accuracy error |
| 07-OWAL\_T46-0.1 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 8.4300 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.4200 | 2020-06-11 | R | Accuracy error |
| 07-DUCH-0.3 | 2018-05-01 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.4100 | 2020-06-11 | R | Accuracy error |
| 07-KASH-0.3 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 5.8800 | 2020-06-11 | R | Accuracy error |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.7000 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T89-0.2 | 2019-06-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.7700 | 2020-06-11 | R | Accuracy error |
| 07-GLNK-0.2 | 2019-08-15 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.0679 | 2020-06-11 | R | Accuracy error |
| 07-BGST-0.1 | 2019-08-15 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5100 | 2020-06-11 | R | Accuracy error |
| 07-THOL-1.8 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.1830 | 2020-06-11 | R | Accuracy error |
| 07-KEUK-0.1 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.6400 | 2020-06-11 | R | Accuracy error |
| 07-KEUK-0.1 | 2019-08-15 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5100 | 2020-06-11 | R | Accuracy error |
| 07-DUCH-0.3 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5600 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2018-05-01 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.4800 | 2020-06-11 | R | Accuracy error |
| 07-REED-0.1 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.3900 | 2020-06-11 | R | Accuracy error |
| 07-VENE-0.4 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.7000 | 2020-06-11 | R | Accuracy error |
| 07-GROU-1.5 | 2018-07-31 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5100 | 2020-05-12 | R | Accuracy error |
| 07-GLNK-0.2 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.1390 | 2020-06-11 | R | Accuracy error |
| 07-VENE-0.4 | 2018-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.0102 | 2020-06-11 | R | Equipment Blank error |
| 07-GROU-1.5 | 2019-06-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.5400 | 2020-06-11 | R | Accuracy error |
| 07-BSWP-0.1 | 2019-06-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.3050 | 2020-06-11 | R | Accuracy error |
| 07-CTLE-0.1 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.7490 | 2020-06-11 | R | Accuracy error |
| 07-DUCH-0.3 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.6600 | 2020-06-11 | R | Accuracy error |
| 07-VENE-1.5 | 2019-06-19 | Nitrogen, Nitrate-Nitrite | mg/L | total | 3.8600 | 2020-06-11 | R | Accuracy error |
| 07-CATH-0.6 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.4980 | 2020-06-11 | R | Accuracy error |
| 07-SKAT\_T2-0.1 | 2018-07-31 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.8500 | 2020-05-12 | R | Accuracy error |
| 07-VENE-0.4 | 2018-05-01 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.3500 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2018-04-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.3630 | 2020-06-11 | R | Accuracy error |
| 07-BGST-0.1 | 2019-06-20 | Nitrogen, Nitrate-Nitrite | mg/L | total | 0.9740 | 2020-06-11 | R | Accuracy error |
| 07-OWLI-3.0 | 2019-06-18 | Nitrogen, Nitrate-Nitrite | mg/L | total | 1.2500 | 2020-06-11 | R | Accuracy error |
| 07-SCKR-0.1 | 2018-04-26 | Nitrogen, Nitrite | mg/L | total |  | 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 |  | 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 |  | 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 |  | 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 |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-SCKR-0.1 | 2018-03-12 | Nitrogen, Nitrite | mg/L | total |  | 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 |  | 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 |  | 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 |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Holding Time error |
| 07-THOL-1.8 | 2019-06-20 | Nitrogen, Total | mg/L | total | 2.5500 | 2020-06-11 | R | calculated parameter\_see components |
| 07-DUCH-0.3 | 2019-06-19 | Nitrogen, Total | mg/L | total | 2.0700 | 2020-06-11 | R | calculated parameter\_see components |
| 07-VENE-1.5 | 2019-06-19 | Nitrogen, Total | mg/L | total | 4.4700 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SKAT\_T89-0.2 | 2019-06-18 | Nitrogen, Total | mg/L | total | 2.1100 | 2020-06-11 | R | calculated parameter\_see components |
| 07-GROU-1.5 | 2018-07-31 | Nitrogen, Total | mg/L | total | 1.7600 | 2020-05-12 | R | calculated parameter\_see components |
| 07-GLNK-0.2 | 2019-08-15 | Nitrogen, Total | mg/L | total |  | 2020-06-11 | R | calculated parameter\_see components |
| 07-OWLI-3.0 | 2019-06-18 | Nitrogen, Total | mg/L | total | 1.5000 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SCKR-0.1 | 2019-06-19 | Nitrogen, Total | mg/L | total | 1.2100 | 2020-06-11 | R | calculated parameter\_see components |
| 07-KEUK-0.1 | 2019-06-19 | Nitrogen, Total | mg/L | total | 1.0400 | 2020-06-11 | R | calculated parameter\_see components |
| 07-OWAL\_T46-0.1 | 2019-06-19 | Nitrogen, Total | mg/L | total | 8.7500 | 2020-06-11 | R | calculated parameter\_see components |
| 07-BSWP-0.1 | 2019-06-18 | Nitrogen, Total | mg/L | total | 0.6900 | 2020-06-11 | R | calculated parameter\_see components |
| 07-BGST-0.1 | 2019-06-20 | Nitrogen, Total | mg/L | total | 5.2200 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SKAT\_T2-0.1 | 2018-07-31 | Nitrogen, Total | mg/L | total | 1.4600 | 2020-05-12 | R | calculated parameter\_see components |
| 07-GLNK-0.2 | 2019-06-20 | Nitrogen, Total | mg/L | total | 1.0600 | 2020-06-11 | R | calculated parameter\_see components |
| 07-SKAT\_T89-0.2 | 2018-07-31 | Nitrogen, Total | mg/L | total | 3.7700 | 2020-05-12 | R | calculated parameter\_see components |
| 07-CTLE-0.1 | 2019-06-19 | Nitrogen, Total | mg/L | total | 1.4100 | 2020-06-11 | R | calculated parameter\_see components |
| 07-KEUK-0.1 | 2019-08-15 | Nitrogen, Total | mg/L | total | 1.5100 | 2020-06-11 | R | calculated parameter\_see components |
| 07-KASH-0.3 | 2019-06-20 | Nitrogen, Total | mg/L | total | 12.9000 | 2020-06-11 | R | calculated parameter\_see components |
| 07-GROU-1.5 | 2019-06-18 | Nitrogen, Total | mg/L | total | 1.6800 | 2020-06-11 | R | calculated parameter\_see components |
| 07-REED-0.1 | 2019-06-19 | Nitrogen, Total | mg/L | total | 2.0300 | 2020-06-11 | R | calculated parameter\_see components |
| 07-BGST-0.1 | 2019-08-15 | Nitrogen, Total | mg/L | total | 1.5100 | 2020-06-11 | R | calculated parameter\_see components |
| 07-CATH-0.6 | 2019-06-20 | Nitrogen, Total | mg/L | total | 0.9100 | 2020-06-11 | R | calculated parameter\_see components |
| 07-BGST-0.1 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 0.0658 | 2020-06-11 | R | Accuracy error |
| 07-KASH-0.3 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 0.0087 | 2020-06-11 | R | Accuracy error |
| 07-CATH-0.6 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved |  | 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 |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-KEUK-0.1 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved | 0.0099 | 2020-06-11 | R | Accuracy error |
| 07-THOL-1.8 | 2019-07-18 | Phosphorus, Dissolved Orthophosphate (As P) | mg/L | dissolved |  | 2020-06-11 | R | Analyte was analyzed for but not detected ; Accuracy error |
| 07-VENE-1.5 | 2021-07-22 | Turbidity | NTU | total | 7.6000 | 2022-02-17 | R | Equipment Blank error |
| 07-DUCH-8.3 | 2021-07-22 | Turbidity | NTU | total | 14.7000 | 2022-02-17 | R | Equipment Blank 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-1)
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-2)