# QC Review

## Organization Name

June 14, 2022

Prepared by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

QAPP version: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Data Quality Objectives

|  | Frequency % | | | | |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter | Field Duplicate | Lab Duplicate | Field Blank | Lab Blank | Spike/Check Accuracy | % Completeness |
| Water Temp | 10.0 | 10.0 | - | - | - | 90.0 |
| pH | 10.0 | 10.0 | - | - | 10.0 | 90.0 |
| DO | 10.0 | 10.0 | - | 10.0 | 10.0 | 90.0 |
| Conductivity | 10.0 | 10.0 | - | 10.0 | 10.0 | 90.0 |
| TSS | 10.0 | 5.0 | 10.0 | 5.0 | 5.0 | 90.0 |
| TP | 10.0 | 5.0 | 10.0 | 5.0 | 5.0 | 90.0 |
| Ortho P | 10.0 | 5.0 | 10.0 | 5.0 | 5.0 | 90.0 |
| Nitrate | 10.0 | 5.0 | 10.0 | 5.0 | 5.0 | 90.0 |
| Ammonia | 10.0 | 5.0 | 10.0 | 5.0 | 5.0 | 90.0 |
| Chloride | 10.0 | 5.0 | 10.0 | 5.0 | 5.0 | 90.0 |
| Chl a | 10.0 | 5.0 | 10.0 | 5.0 | 5.0 | 90.0 |

| Parameter | uom | MDL | UQL | Value Range | Field Duplicate | Lab Duplicate | Field Blank | Lab Blank | Spike/Check Accuracy |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Water Temp | deg C | - | - | all | <= 10% | <= 10% | - | - | - |
| pH | - | - | - | all | <= 0.5 | <= 0.5 | - | - | <= 0.2 |
| DO | mg/l | 0.1 | - | < 4 | <= 20% | <= 20% | < 0.1 | < 0.1 | <= 5% |
| DO | mg/l | 0.1 | - | >= 4 | <= 10% | <= 10% | < 0.1 | < 0.1 | <= 5% |
| Sp Conductance | uS/cm | 1.0 | - | < 250 | <= 30% | <= 20% | < 25 | < 25 | <= 50 |
| Sp Conductance | uS/cm | 1.0 | - | >= 250 | <= 20% | <= 10% | < 25 | < 25 | <= 50 |
| TSS | mg/l | 1.0 | - | < 3 | <= 1 | <= 20% | BDL | BDL | - |
| TSS | mg/l | 1.0 | - | >= 3 | <= 30% | <= 20% | BDL | BDL | - |
| TP | mg/l | 0.0 | - | < 0.05 | <= 0.02 | <= 0.01 | BDL | BDL | <= 0.01 |
| TP | mg/l | 0.0 | - | >= 0.05 | <= 30% | <= 20% | BDL | BDL | <= 15% |
| Ortho P | mg/l | 0.0 | - | < 0.05 | <= 0.01 | <= 20% | BDL | BDL | <= 0.01 |
| Ortho P | mg/l | 0.0 | - | >= 0.05 | <= 20% | <= 20% | BDL | BDL | <= 15% |
| Nitrate | mg/l | 0.0 | - | all | <= 30% | <= 20% | BDL | BDL | <= 15% |
| Ammonia | mg/l | 0.0 | - | all | <= 30% | <= 20% | BDL | BDL | <= 15% |
| Chloride | mg/l | 1.0 | - | all | <= 30% | <= 20% | BDL | BDL | <= 15% |
| Chl a | ug/l | 2.0 | - | < 15 | <= 2 | <= 20% | BDL | BDL | - |
| Chl a | ug/l | 2.0 | - | >= 15 | <= 20% | <= 20% | BDL | BDL | - |
| E.coli | cfu/100ml | 10.0 | 2,400.0 | <50 | <=log30% | <=log30% | BDL | BDL | - |
| E.coli | cfu/100ml | 10.0 | 2,400.0 | >=50 | <=log20% | <=log20% | BDL | BDL | - |
| E.coli | cfu/100ml | 10.0 | 2,400.0 | >=500 | <=log10% | <=log10% | BDL | BDL | - |
| E.coli | cfu/100ml | 10.0 | 2,400.0 | >=5000 | <=log5% | <=log5% | BDL | BDL | - |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### QC Frequencies for 1/14/2021 to 11/14/2021

| Type | Parameter | Number of Data Records | Number of Dups/Blanks/Spikes | Frequency % | Hit/Miss |
| --- | --- | --- | --- | --- | --- |
| Field Duplicates |  |  |  |  |  |
|  | Ammonia | 138 | 0 | 0% | MISS |
|  | Chl a | 18 | 0 | 0% | MISS |
|  | DO | 199 | 0 | 0% | MISS |
|  | Nitrate | 96 | 8 | 8% | MISS |
|  | Ortho P | 175 | 0 | 0% | MISS |
|  | pH | 199 | 0 | 0% | MISS |
|  | TP | 205 | 15 | 7% | MISS |
|  | TSS | 202 | 0 | 0% | MISS |
|  | Water Temp | 382 | 43 | 11% |  |
| Lab Duplicates |  |  |  |  |  |
|  | Ammonia | 138 | 0 | 0% | MISS |
|  | Chl a | 18 | 0 | 0% | MISS |
|  | DO | 199 | 0 | 0% | MISS |
|  | Nitrate | 96 | 11 | 11% |  |
|  | Ortho P | 175 | 0 | 0% | MISS |
|  | pH | 199 | 4 | 2% | MISS |
|  | TP | 205 | 12 | 6% |  |
|  | TSS | 202 | 0 | 0% | MISS |
|  | Water Temp | 382 | 0 | 0% | MISS |
| Field Blanks |  |  |  |  |  |
|  | Ammonia | 138 | 7 | 5% | MISS |
|  | Chl a | 18 | 0 | 0% | MISS |
|  | Nitrate | 96 | 0 | 0% | MISS |
|  | Ortho P | 175 | 0 | 0% | MISS |
|  | TP | 205 | 9 | 4% | MISS |
|  | TSS | 202 | 0 | 0% | MISS |
| Lab Blanks |  |  |  |  |  |
|  | Ammonia | 138 | 7 | 5% |  |
|  | Chl a | 18 | 0 | 0% | MISS |
|  | DO | 199 | 0 | 0% | MISS |
|  | Nitrate | 96 | 0 | 0% | MISS |
|  | Ortho P | 175 | 0 | 0% | MISS |
|  | TP | 205 | 8 | 4% | MISS |
|  | TSS | 202 | 0 | 0% | MISS |
| Lab Spikes |  |  |  |  |  |
|  | Ammonia | 138 | 0 | 0% | MISS |
|  | Chl a | 18 | 0 | 0% | MISS |
|  | Nitrate | 96 | 6 | 6% |  |
|  | Ortho P | 175 | 8 | 5% | MISS |
|  | TP | 205 | 21 | 10% |  |
|  | TSS | 202 | 0 | 0% | MISS |
| Instrument Checks |  |  |  |  |  |
|  | DO | 199 | 0 | 0% | MISS |
|  | pH | 199 | 6 | 3% | MISS |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

| Parameter | Field Duplicate | Lab Duplicate | Field Blank | Lab Blank | Spike/Check Accuracy |
| --- | --- | --- | --- | --- | --- |
| Ammonia | 0% | 0% | 5% | 5% | 0% |
| Chl a | 0% | 0% | 0% | 0% | 0% |
| DO | 0% | 0% | - | 0% | 0% |
| Nitrate | 8% | 11% | 0% | 0% | 6% |
| Ortho P | 0% | 0% | 0% | 0% | 5% |
| pH | 0% | 2% | - | - | 3% |
| TP | 7% | 6% | 4% | 4% | 10% |
| TSS | 0% | 0% | 0% | 0% | 0% |
| Water Temp | 11% | 0% | - | - | - |

### QC Accuracy Summary for 1/14/2021 to 11/14/2021

| Type | Parameter | Number of QC Checks | Number of Misses | % Acceptance |
| --- | --- | --- | --- | --- |
| Field Duplicates |  |  |  |  |
|  | E.coli | 22 | 8 | 64 % |
|  | Nitrate | 8 | 2 | 75 % |
|  | Sp Conductance | 4 | 1 | 75 % |
|  | TP | 15 | 6 | 60 % |
|  | Water Temp | 43 | 1 | 98 % |
| Lab Duplicates |  |  |  |  |
|  | E.coli | 6 | 3 | 50 % |
|  | Nitrate | 11 | 5 | 55 % |
|  | pH | 4 | 1 | 75 % |
|  | TP | 12 | 4 | 67 % |
| Field Blanks |  |  |  |  |
|  | Ammonia | 7 | 2 | 71 % |
|  | E.coli | 3 | 2 | 33 % |
|  | TP | 9 | 3 | 67 % |
| Lab Blanks |  |  |  |  |
|  | Ammonia | 7 | 2 | 71 % |
|  | Sp Conductance | 5 | 2 | 60 % |
|  | TP | 8 | 3 | 62 % |
| Lab Spikes |  |  |  |  |
|  | Nitrate | 6 | 2 | 67 % |
|  | Ortho P | 8 | 3 | 62 % |
|  | TP | 21 | 2 | 90 % |
| Instrument Checks |  |  |  |  |
|  | pH | 6 | 5 | 17 % |
|  | Sp Conductance | 10 | 4 | 60 % |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

| Parameter | Field Duplicate | Lab Duplicate | Field Blank | Lab Blank | Spike/Check Accuracy |
| --- | --- | --- | --- | --- | --- |
| Ammonia | - | - | 71% | 71% | - |
| E.coli | 64% | 50% | 33% | - | - |
| Nitrate | 75% | 55% | - | - | 67% |
| Ortho P | - | - | - | - | 62% |
| pH | - | 75% | - | - | 17% |
| Sp Conductance | 75% | - | - | 60% | 60% |
| TP | 60% | 67% | 67% | 62% | 90% |
| Water Temp | 98% | - | - | - | - |

### Data Completeness for 1/14/2021 to 11/14/2021

| Parameter | Number of Data Records | Number of Qualified Records | % Completeness | Hit/Miss | Number of Censored Records | Notes |
| --- | --- | --- | --- | --- | --- | --- |
| Ammonia | 138 | 0 | 100% |  |  |  |
| Chl a | 18 | 0 | 100% |  |  |  |
| DO | 199 | 19 | 90% |  |  |  |
| Nitrate | 96 | 0 | 100% |  |  |  |
| Ortho P | 175 | 0 | 100% |  |  |  |
| pH | 199 | 6 | 97% |  |  |  |
| TP | 205 | 32 | 84% | MISS |  |  |
| TSS | 202 | 0 | 100% |  |  |  |
| Water Temp | 382 | 1 | 100% |  |  |  |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### QC Raw Data for 1/14/2021 to 11/14/2021

#### Field Blanks

| Parameter | Date | Site | Result | Threshold | Hit/Miss |
| --- | --- | --- | --- | --- | --- |
| Ammonia |  |  |  |  |  |
|  | 2021-07-11 | ABT-062 | 0.2 mg/l | 0.05 mg/l | MISS |
|  | 2021-07-11 | ABT-237 | BDL | 0.05 mg/l |  |
|  | 2021-07-11 | ABT-301 | 0.1 mg/l | 0.05 mg/l | MISS |
|  | 2021-07-11 | DAN-013 | BDL | 0.05 mg/l |  |
|  | 2021-07-11 | CND-036 | 0.02 mg/l | 0.05 mg/l |  |
|  | 2021-07-11 | ABT-144 | BDL | 0.05 mg/l |  |
|  | 2021-07-11 | ABT-026 | BDL | 0.05 mg/l |  |
| E.coli |  |  |  |  |  |
|  | 2021-09-13 | SUD-236 | BDL | 10 cfu/100ml |  |
|  | 2021-09-13 | NSH-002 | 15 cfu/100ml | 10 cfu/100ml | MISS |
|  | 2021-09-13 | ABT-162 | 128 cfu/100ml | 50 cfu/100ml | MISS |
| TP |  |  |  |  |  |
|  | 2021-06-13 | ABT-062 | BDL | 0.01 mg/l |  |
|  | 2021-06-13 | CND-110 | BDL | 0.01 mg/l |  |
|  | 2021-06-13 | CND-036 | BDL | 0.02 mg/l |  |
|  | 2021-06-13 | CND-009 | 0.01 mg/l | 0.01 mg/l |  |
|  | 2021-06-13 | HBS-016 | 0.1 mg/l | 0.01 mg/l | MISS |
|  | 2021-06-13 | ABT-026 | BDL | 0.01 mg/l |  |
|  | 2021-06-13 | NSH-002 | BDL | 0.01 mg/l |  |
|  | 2021-06-13 | NSH-047 | 0.02 mg/l | 0.01 mg/l | MISS |
|  | 2021-06-15 | CND-036 | 0.008 mg/l | 0.001 mg/l | MISS |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### Lab Blanks

| Parameter | Date | Sample ID | Result | Threshold | Hit/Miss |
| --- | --- | --- | --- | --- | --- |
| Ammonia |  |  |  |  |  |
|  | 2021-07-11 |  | 0.4 mg/l | 0.05 mg/l | MISS |
|  | 2021-07-11 |  | BDL | 0.05 mg/l |  |
|  | 2021-07-11 |  | BDL | 0.05 mg/l |  |
|  | 2021-07-11 |  | BDL | 0.05 mg/l |  |
|  | 2021-07-11 |  | 0.11 mg/l | 0.05 mg/l | MISS |
|  | 2021-07-11 |  | BDL | 0.05 mg/l |  |
|  | 2021-07-11 |  | BDL | 0.05 mg/l |  |
| Sp Conductance |  |  |  |  |  |
|  | 2021-04-11 |  | 45 uS/cm | 25 uS/cm | MISS |
|  | 2021-04-11 |  | 5 uS/cm | 25 uS/cm |  |
|  | 2021-04-11 |  | 25 uS/cm | 25 uS/cm | MISS |
|  | 2021-04-12 |  | BDL | 50 uS/cm |  |
|  | 2021-04-13 |  | BDL | 25 uS/cm |  |
| TP |  |  |  |  |  |
|  | 2021-06-13 | K17452-MB1 | BDL | 0.01 mg/l |  |
|  | 2021-06-13 | K17453-MB1 | 0.1 mg/l | 0.01 mg/l | MISS |
|  | 2021-06-13 | K17452-MB2 | BDL | 0.01 mg/l |  |
|  | 2021-06-13 | K17453-MB2 | BDL | 0.01 mg/l |  |
|  | 2021-06-13 | K17452-MB3 | 0.02 mg/l | 0.01 mg/l | MISS |
|  | 2021-06-13 | K17453-MB3 | BDL | 0.01 mg/l |  |
|  | 2021-06-13 | K17452-MB4 | BDL | 0.01 mg/l |  |
|  | 2021-06-13 | K17453-MB4 | 0.03 mg/l | 0.01 mg/l | MISS |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### Field Duplicates

| Parameter | Date | Site | Initial Result | Dup. Result | Diff./RPD | Hit/Miss |
| --- | --- | --- | --- | --- | --- | --- |
| E.coli |  |  |  |  |  |  |
|  | 2021-06-07 | RVM-001 | 530 cfu/100ml | 600 cfu/100ml | 2% logRPD |  |
|  | 2021-06-07 | RME-003 | 260 cfu/100ml | 260 cfu/100ml | 0% logRPD |  |
|  | 2021-06-14 | RVM-027 | 170 cfu/100ml | 500 cfu/100ml | 19% logRPD |  |
|  | 2021-06-14 | HBS-057 | 10 cfu/100ml | 12 cfu/100ml | 8% logRPD |  |
|  | 2021-06-28 | RVM-022 | 280 cfu/100ml | 45 cfu/100ml | 39% logRPD | MISS |
|  | 2021-06-28 | SUD-096 | 50 cfu/100ml | 45 cfu/100ml | 3% logRPD |  |
|  | 2021-07-06 | RVM-001 | 890 cfu/100ml | 950 cfu/100ml | 1% logRPD |  |
|  | 2021-07-19 | CND-009 | 10 cfu/100ml | 20 cfu/100ml | 26% logRPD |  |
|  | 2021-07-19 | RVM-001 | 10 cfu/100ml | 30 cfu/100ml | 39% logRPD | MISS |
|  | 2021-07-26 | HBS-031 | 192 cfu/100ml | 60 cfu/100ml | 25% logRPD | MISS |
|  | 2021-07-26 | RVM-022 | 160 cfu/100ml | 120 cfu/100ml | 6% logRPD |  |
|  | 2021-07-26 | SUD-236 | 140 cfu/100ml | 110 cfu/100ml | 5% logRPD |  |
|  | 2021-08-09 | RME-003 | 340 cfu/100ml | 1300 cfu/100ml | 21% logRPD | MISS |
|  | 2021-08-09 | ABT-077 | 5500 cfu/100ml | 8000 cfu/100ml | 4% logRPD |  |
|  | 2021-08-16 | RVM-001 | 320 cfu/100ml | 600 cfu/100ml | 10% logRPD |  |
|  | 2021-08-16 | RVM-004 | 5500 cfu/100ml | 9999 cfu/100ml | 7% logRPD | MISS |
|  | 2021-08-24 | SUD-236 | 808 cfu/100ml | 1000 cfu/100ml | 3% logRPD |  |
|  | 2021-08-30 | SUD-236 | 36 cfu/100ml | 31 cfu/100ml | 4% logRPD |  |
|  | 2021-08-30 | CND-110 | 32 cfu/100ml | 80 cfu/100ml | 23% logRPD | MISS |
|  | 2021-09-07 | RVM-0015 | 1020 cfu/100ml | 2500 cfu/100ml | 12% logRPD | MISS |
|  | 2021-09-07 | RVM-012 | 1020 cfu/100ml | 1800 cfu/100ml | 8% logRPD |  |
|  | 2021-09-13 | RVM-005 | AQL | 450 cfu/100ml | 15% logRPD | MISS |
| Nitrate |  |  |  |  |  |  |
|  | 2021-05-16 | ABT-026 | 0.71 mg/l | 0.8 mg/l | 12% RPD |  |
|  | 2021-05-16 | NSH-047 | 0.25 mg/l | 0.3 mg/l | 18% RPD |  |
|  | 2021-05-16 | NSH-002 | 0.23 mg/l | 0.45 mg/l | 65% RPD | MISS |
|  | 2021-05-16 | ABT-077 | 0.82 mg/l | 0.8 mg/l | 2% RPD |  |
|  | 2021-05-16 | ELZ-004 | 0.1 mg/l | 0.12 mg/l | 18% RPD |  |
|  | 2021-05-16 | CND-009 | 0.34 mg/l | 0.34 mg/l | 0% RPD |  |
|  | 2021-05-16 | HBS-016 | 0.46 mg/l | 0.45 mg/l | 2% RPD |  |
|  | 2021-05-16 | DAN-013 | BDL | 0.08 mg/l | 46% RPD | MISS |
| Sp Conductance |  |  |  |  |  |  |
|  | 2021-07-26 | HBS-098 | 928 uS/cm | 930 uS/cm | 0% RPD |  |
|  | 2021-08-15 | ABT-062 | 625 uS/cm | 725 uS/cm | 15% RPD |  |
|  | 2021-08-15 | SUD-086 | 531 uS/cm | 515 uS/cm | 3% RPD |  |
|  | 2021-08-15 | CND-110 | 510 uS/cm | 800 uS/cm | 44% RPD | MISS |
| TP |  |  |  |  |  |  |
|  | 2021-05-16 | ABT-301 | 0.03 mg/l | 0.06 mg/l | 0 mg/l | MISS |
|  | 2021-06-13 | ABT-062 | 0.1 mg/l | 0.11 mg/l | 10% RPD |  |
|  | 2021-06-13 | CND-110 | 0.09 mg/l | 0.1 mg/l | 11% RPD |  |
|  | 2021-06-13 | CND-036 | 0.14 mg/l | 0.15 mg/l | 7% RPD |  |
|  | 2021-06-13 | CND-009 | 0.07 mg/l | 0.07 mg/l | 0% RPD |  |
|  | 2021-06-13 | HBS-016 | 0.16 mg/l | 0.1 mg/l | 46% RPD | MISS |
|  | 2021-06-13 | ABT-026 | 0.14 mg/l | 0.2 mg/l | 35% RPD | MISS |
|  | 2021-06-13 | NSH-002 | 0.07 mg/l | 0.08 mg/l | 13% RPD |  |
|  | 2021-06-13 | NSH-047 | 0.12 mg/l | 0.2 mg/l | 50% RPD | MISS |
|  | 2021-07-11 | ABT-237 | 0.05 mg/l | 0.04 mg/l | 0 mg/l |  |
|  | 2021-07-11 | SUD-064 | 0.05 mg/l | 0.03 mg/l | 0 mg/l |  |
|  | 2021-07-11 | DAN-013 | 0.05 mg/l | 0.02 mg/l | 0 mg/l | MISS |
|  | 2021-07-11 | HBS-016 | BDL | 0.04 mg/l | 0 mg/l |  |
|  | 2021-07-12 | HBS-016 | BDL | BDL | 0 mg/l |  |
|  | 2021-07-13 | HBS-016 | 0.05 mg/l | BDL | 0 mg/l | MISS |
| Water Temp |  |  |  |  |  |  |
|  | 2021-01-14 | HBS-016 | 1 deg C | 1 deg C | 0% RPD |  |
|  | 2021-01-14 | LND-007 | 1 deg C | 1 deg C | 0% RPD |  |
|  | 2021-01-14 | HBS-031 | 2 deg C | 2 deg C | 0% RPD |  |
|  | 2021-01-14 | HBS-065 | 2 deg C | 2 deg C | 0% RPD |  |
|  | 2021-01-14 | CRN-002 | 2 deg C | 2 deg C | 0% RPD |  |
|  | 2021-01-14 | HBS-085 | 3 deg C | 3 deg C | 0% RPD |  |
|  | 2021-01-14 | HBS-095 | 4.5 deg C | 4.5 deg C | 0% RPD |  |
|  | 2021-02-15 | HBS-095 | 3.5 deg C | 3.5 deg C | 0% RPD |  |
|  | 2021-02-15 | HBS-031 | 0.5 deg C | 0.5 deg C | 0% RPD |  |
|  | 2021-02-15 | CRN-002 | 1.5 deg C | 1.5 deg C | 0% RPD |  |
|  | 2021-02-15 | HBS-076 | 1.5 deg C | 1.5 deg C | 0% RPD |  |
|  | 2021-02-15 | HBS-085 | 2.5 deg C | 3.5 deg C | 33% RPD | MISS |
|  | 2021-03-21 | NSH-002 | 5.5 deg C | 5.6 deg C | 2% RPD |  |
|  | 2021-03-21 | SUD-005 | 5.5 deg C | 5.5 deg C | 0% RPD |  |
|  | 2021-03-21 | NSH-047 | 3.7 deg C | 3.7 deg C | 0% RPD |  |
|  | 2021-03-21 | ABT-026 | 5.2 deg C | 5.2 deg C | 0% RPD |  |
|  | 2021-03-21 | DAN-013 | 3 deg C | 3 deg C | 0% RPD |  |
|  | 2021-03-21 | ABT-312 | 5.4 deg C | 5.4 deg C | 0% RPD |  |
|  | 2021-03-31 | LND-007 | 9 deg C | 9 deg C | 0% RPD |  |
|  | 2021-03-31 | CRN-002 | 9 deg C | 9 deg C | 0% RPD |  |
|  | 2021-03-31 | HBS-095 | 11 deg C | 11 deg C | 0% RPD |  |
|  | 2021-05-16 | NSH-002 | 16.8 deg C | 16.8 deg C | 0% RPD |  |
|  | 2021-05-16 | ABT-301 | 16.5 deg C | 16.5 deg C | 0% RPD |  |
|  | 2021-05-16 | ELZ-004 | 16 deg C | 16 deg C | 0% RPD |  |
|  | 2021-05-16 | ABT-312 | 18 deg C | 18 deg C | 0% RPD |  |
|  | 2021-05-16 | DAN-013 | 15.5 deg C | 15.5 deg C | 0% RPD |  |
|  | 2021-05-19 | HBS-057 | 20 deg C | 20 deg C | 0% RPD |  |
|  | 2021-05-19 | HBS-085 | 20.2 deg C | 20.2 deg C | 0% RPD |  |
|  | 2021-06-07 | CND-009 | 22 deg C | 22 deg C | 0% RPD |  |
|  | 2021-06-07 | SUD-236 | 20 deg C | 20 deg C | 0% RPD |  |
|  | 2021-06-07 | RVM-001 | 23 deg C | 23 deg C | 0% RPD |  |
|  | 2021-06-07 | ABT-162 | 22 deg C | 22 deg C | 0% RPD |  |
|  | 2021-06-07 | RVM-005 | 23 deg C | 23 deg C | 0% RPD |  |
|  | 2021-06-07 | SUD-096 | 24 deg C | 24 deg C | 0% RPD |  |
|  | 2021-06-07 | ABT-077 | 22 deg C | 22 deg C | 0% RPD |  |
|  | 2021-06-07 | RVM-022 | 23 deg C | 23 deg C | 0% RPD |  |
|  | 2021-06-07 | RME-003 | 21 deg C | 21 deg C | 0% RPD |  |
|  | 2021-06-07 | CND-110 | 23 deg C | 23 deg C | 0% RPD |  |
|  | 2021-06-13 | ABT-301 | 19.2 deg C | 19.2 deg C | 0% RPD |  |
|  | 2021-06-13 | DAN-013 | 17.8 deg C | 17.8 deg C | 0% RPD |  |
|  | 2021-06-13 | ELZ-004 | 19.3 deg C | 19.3 deg C | 0% RPD |  |
|  | 2021-06-14 | CND-009 | 22.8 deg C | 22.8 deg C | 0% RPD |  |
|  | 2021-09-14 | HBS-057 | 18.3 deg C | 18.3 deg C | 0% RPD |  |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### Lab Duplicates

| Parameter | Date | Sample ID | Initial Result | Dup. Result | Diff./RPD | Hit/Miss |
| --- | --- | --- | --- | --- | --- | --- |
| E.coli |  |  |  |  |  |  |
|  | 2021-07-12 | R2546-9 | 40 cfu/100ml | 10 cfu/100ml | 46% logRPD | MISS |
|  | 2021-07-12 | R2546-10 | 35 cfu/100ml | 37 cfu/100ml | 2% logRPD |  |
|  | 2021-07-19 | R2546-11 | 100 cfu/100ml | 400 cfu/100ml | 26% logRPD | MISS |
|  | 2021-07-19 | R2546-13 | 100 cfu/100ml | 250 cfu/100ml | 18% logRPD |  |
|  | 2021-07-19 | R2546-12 | 800 cfu/100ml | 400 cfu/100ml | 11% logRPD | MISS |
|  | 2021-09-13 | R2546-8 | 128 cfu/100ml | 150 cfu/100ml | 3% logRPD |  |
| Nitrate |  |  |  |  |  |  |
|  | 2021-05-16 | K16452-MB1 | 0.8 mg/l | 0.9 mg/l | 12% RPD |  |
|  | 2021-05-16 | K16453-MB1 | 0.3 mg/l | 0.3 mg/l | 0% RPD |  |
|  | 2021-05-16 | K16454-MB1 | 0.45 mg/l | 0.3 mg/l | 40% RPD | MISS |
|  | 2021-05-16 | K16452-MB2 | 0.8 mg/l | 0.82 mg/l | 2% RPD |  |
|  | 2021-05-16 | K16453-MB2 | 0.12 mg/l | 0.3 mg/l | 86% RPD | MISS |
|  | 2021-05-16 | K16454-MB2 | 0.34 mg/l | 0.21 mg/l | 47% RPD | MISS |
|  | 2021-05-16 | K16452-MB3 | 0.45 mg/l | 0.46 mg/l | 2% RPD |  |
|  | 2021-05-16 | K16453-MB3 | 0.08 mg/l | 0.08 mg/l | 0% RPD |  |
|  | 2021-06-16 | K16452-MB3 | 0.05 mg/l | 0.07 mg/l | 33% RPD | MISS |
|  | 2021-06-16 | K16452-MB3 | 0.02 mg/l | 0.03 mg/l | 40% RPD | MISS |
|  | 2021-06-16 | K16452-MB3 | BDL | 0.11 mg/l | 10% RPD |  |
| pH |  |  |  |  |  |  |
|  | 2021-07-12 |  | 7.2 s.u. | 7.25 s.u. | 0 s.u. |  |
|  | 2021-07-12 |  | 6.1 s.u. | 6.5 s.u. | 0 s.u. |  |
|  | 2021-07-12 |  | 6.85 s.u. | 6.95 s.u. | 0 s.u. |  |
|  | 2021-07-12 |  | 7.2 s.u. | 9 s.u. | 2 s.u. | MISS |
| TP |  |  |  |  |  |  |
|  | 2021-06-13 |  | 0.11 mg/l | 0.12 mg/l | 9% RPD |  |
|  | 2021-06-13 |  | 0.1 mg/l | 0.09 mg/l | 11% RPD |  |
|  | 2021-06-13 |  | 0.15 mg/l | BDL | 175% RPD | MISS |
|  | 2021-06-13 |  | 0.07 mg/l | 0.08 mg/l | 13% RPD |  |
|  | 2021-06-13 |  | 0.07 mg/l | 0.1 mg/l | 35% RPD | MISS |
|  | 2021-06-13 |  | 0.04 mg/l | 0.01 mg/l | 0 mg/l | MISS |
|  | 2021-06-13 |  | 0.04 mg/l | 0.05 mg/l | 0 mg/l |  |
|  | 2021-06-13 |  | 0.4 mg/l | 0.44 mg/l | 10% RPD |  |
|  | 2021-06-13 |  | 0.2 mg/l | 0.4 mg/l | 67% RPD | MISS |
|  | 2021-06-13 |  | 0.08 mg/l | 0.08 mg/l | 0% RPD |  |
|  | 2021-06-13 |  | 0.2 mg/l | 0.21 mg/l | 5% RPD |  |
|  | 2021-08-14 |  | 0.0085 mg/l | 0.0095 mg/l | 0 mg/l |  |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### Lab Spikes

| Parameter | Date | Sample ID | Spike | Amt Recovered | % Recovery | Hit/Miss |
| --- | --- | --- | --- | --- | --- | --- |
| Nitrate |  |  |  |  |  |  |
|  | 2021-05-16 | NO3-1 | 0.8 mg/l | 0.9 mg/l | 112% |  |
|  | 2021-05-16 | NO3-2 | 0.3 mg/l | 0.3 mg/l | 100% |  |
|  | 2021-05-16 | NO3-3 | 0.45 mg/l | 0.3 mg/l | 67% | MISS |
|  | 2021-05-16 | NO3-4 | 0.8 mg/l | 0.82 mg/l | 102% |  |
|  | 2021-05-16 | NO3-5 | 0.12 mg/l | 0.15 mg/l | 125% | MISS |
|  | 2021-05-16 | NO3-6 | 0.34 mg/l | 0.38 mg/l | 112% |  |
| Ortho P |  |  |  |  |  |  |
|  | 2021-02-12 |  | BDL | BDL | 100% |  |
|  | 2021-02-13 |  | 0.02 mg/l | BDL | 50% |  |
|  | 2021-02-14 |  | 0.05 mg/l | 0.04 mg/l | 80% |  |
|  | 2021-02-15 |  | 0.06 mg/l | 0.04 mg/l | 67% | MISS |
|  | 2021-02-16 |  | 0.06 mg/l | 0.03 mg/l | 50% | MISS |
|  | 2021-02-17 |  | 0.054 mg/l | 0.046 mg/l | 85% |  |
|  | 2021-02-18 |  | 0.042 mg/l | 0.051 mg/l | 121% |  |
|  | 2021-02-19 |  | 0.0545 mg/l | 0.0455 mg/l | 83% | MISS |
| TP |  |  |  |  |  |  |
|  | 2021-06-13 |  | 0.11 mg/l | 0.12 mg/l | 109% |  |
|  | 2021-06-13 |  | 0.1 mg/l | 0.09 mg/l | 90% |  |
|  | 2021-06-13 |  | 0.15 mg/l | 0.2 mg/l | 133% | MISS |
|  | 2021-06-13 |  | 0.07 mg/l | 0.08 mg/l | 114% |  |
|  | 2021-06-13 |  | 0.07 mg/l | 0.1 mg/l | 143% | MISS |
|  | 2021-06-14 |  | 0.08 mg/l | 0.08 mg/l | 100% |  |
|  | 2021-06-14 |  | 0.08 mg/l | 0.08 mg/l | 100% |  |
|  | 2021-06-14 |  | 0.08 mg/l | 0.08 mg/l | 100% |  |
|  | 2021-06-14 |  | 0.08 mg/l | 0.08 mg/l | 100% |  |
|  | 2021-06-15 |  | 0.07 mg/l | 0.07 mg/l | 100% |  |
|  | 2021-06-15 |  | 0.07 mg/l | 0.07 mg/l | 100% |  |
|  | 2021-06-15 |  | 0.07 mg/l | 0.07 mg/l | 100% |  |
|  | 2021-06-15 |  | 0.07 mg/l | 0.07 mg/l | 100% |  |
|  | 2021-06-16 |  | 0.051 mg/l | 0.05 mg/l | 98% |  |
|  | 2021-06-16 |  | 0.051 mg/l | 0.05 mg/l | 98% |  |
|  | 2021-06-16 |  | 0.02 mg/l | 0.01 mg/l | 50% |  |
|  | 2021-06-16 |  | 0.051 mg/l | 0.05 mg/l | 98% |  |
|  | 2021-06-17 |  | 0.21 mg/l | 0.2 mg/l | 95% |  |
|  | 2021-06-17 |  | 0.21 mg/l | 0.2 mg/l | 95% |  |
|  | 2021-06-17 |  | 0.03 mg/l | 0.02 mg/l | 67% |  |
|  | 2021-06-17 |  | 0.21 mg/l | 0.2 mg/l | 95% |  |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### Instrument Checks (post sampling)

| Parameter | Date | Sample ID | Calibration Standard | Instrument Reading | Accuracy | Hit/Miss |
| --- | --- | --- | --- | --- | --- | --- |
| pH |  |  |  |  |  |  |
|  | 2021-06-13 | pH-6-13-2 | 7 s.u. | 7.21 s.u. | 0 s.u. | MISS |
|  | 2021-06-13 | pH-6-13-3 | 7 s.u. | 7.38 s.u. | 0 s.u. | MISS |
|  | 2021-06-13 | pH-6-13-4 | 7 s.u. | 7.39 s.u. | 0 s.u. | MISS |
|  | 2021-06-13 | pH-6-13-5 | 7 s.u. | 7.23 s.u. | 0 s.u. | MISS |
|  | 2021-06-13 | pH-6-13-6 | 7 s.u. | 6.92 s.u. | 0 s.u. |  |
|  | 2021-06-13 | pH-6-13-7 | 7 s.u. | 7.23 s.u. | 0 s.u. | MISS |
| Sp Conductance |  |  |  |  |  |  |
|  | 2021-09-12 |  | 1000 uS/cm | 1010 uS/cm | 10 uS/cm |  |
|  | 2021-09-12 |  | 1000 uS/cm | 950 uS/cm | 50 uS/cm |  |
|  | 2021-09-12 |  | 1000 uS/cm | 1001 uS/cm | 1 uS/cm |  |
|  | 2021-09-12 |  | 1000 uS/cm | 1040 uS/cm | 40 uS/cm |  |
|  | 2021-09-12 |  | 1000 uS/cm | 1100 uS/cm | 100 uS/cm | MISS |
|  | 2021-09-12 |  | 100 uS/cm | 165 uS/cm | 65 uS/cm | MISS |
|  | 2021-09-12 |  | 1000 uS/cm | 750 uS/cm | 250 uS/cm | MISS |
|  | 2021-09-12 |  | 1000 uS/cm | 999 uS/cm | 1 uS/cm |  |
|  | 2021-09-12 |  | 1000 uS/cm | 980 uS/cm | 20 uS/cm |  |
|  | 2021-09-12 |  | 1000 uS/cm | 420 uS/cm | 580 uS/cm | MISS |

Notes: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_