



# FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

PAGE 1 OF 1

March 2017

Data Qualified?

Yes / No

Location/STORET Station Name: Withlacoochee Near Suwannee

Date: 10/03/2018

(mm/dd/yyyy)

STORET # G1WA0065

WBID: 3315

Latitude: 30.391449

County: Madison

RQ - 2017-10-02-43

ORG ID: 21FLWQA

Longitude: -83.173721

(Decimal Degrees)

Receiving Body of Water: Suwannee River

Field ID: G1WA0065\_10032017

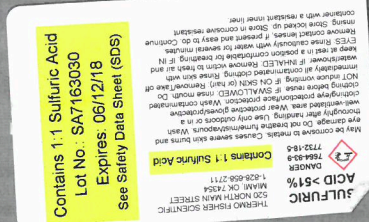
(Decimal Degrees)

| Sampling Team Members |  |  |  | WQ Measurements | Sample Collection | Documentation | Preservation | Preservation Check | Sampling Equipment                                   |                                             |                               |  |
|-----------------------|--|--|--|-----------------|-------------------|---------------|--------------|--------------------|------------------------------------------------------|---------------------------------------------|-------------------------------|--|
| Curtis Musson         |  |  |  |                 | X                 | X             | X            | X                  | <input checked="" type="checkbox"/> Sample Container | <input type="checkbox"/> Van Dorn           | <input type="checkbox"/> Pole |  |
| Ben Ralys             |  |  |  |                 | X                 | X             |              |                    | <input type="checkbox"/> Carboy                      | <input checked="" type="checkbox"/> Syringe |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | <input type="checkbox"/> Dipper                      | <input type="checkbox"/> Other              |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | Equipment ID                                         |                                             |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | Collection Method                                    |                                             |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | <input type="checkbox"/> Wading                      |                                             |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | <input type="checkbox"/> From Shore                  |                                             |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | <input type="checkbox"/> Other (note below)          |                                             |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | <input type="checkbox"/> Via Boat                    |                                             |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | <input type="checkbox"/> Canoe/Kayak                 |                                             |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | <input type="checkbox"/> Electric Motor              |                                             |                               |  |
|                       |  |  |  |                 |                   |               |              |                    | <input checked="" type="checkbox"/> Gasoline Motor   |                                             |                               |  |

| Water Level: Dry / Pooled / Low / Normal / <u>High</u> / Flooded |       |                  |                 |                         |           |      |                |                                    |                    | Matrix: <u>Fresh</u> / Marine / DI |  |
|------------------------------------------------------------------|-------|------------------|-----------------|-------------------------|-----------|------|----------------|------------------------------------|--------------------|------------------------------------|--|
| Meter ID# BIO 2                                                  |       |                  |                 | Photos: Yes / <u>No</u> |           |      |                | Tide Falling: Yes / No / <u>NA</u> |                    |                                    |  |
| Time Zone                                                        | Time  | Sample Depth (m) | Total Depth (m) | DO (mg/L)               | DO (%SAT) | pH   | Salinity (ppt) | Secchi Disk (m)                    | Sp COND (µmhos/cm) | Temp. (C°)                         |  |
| EST                                                              | 10:00 | 0.3              | 5.0             | 4.43                    | 51.6      | 7.70 | 0.15           | 1.6                                | 308                | 22.74                              |  |
| CEN                                                              | 10:05 | 4.5              |                 | 4.35                    | 50.5      | 7.64 | 0.15           |                                    | 308                | 22.76                              |  |

Biological Samples Collected: None HA SCI RPS Algae LVS LVI Other \_\_\_\_\_  
SBO ID Numbers: SBO-ID: 78000 RPS-ID: 8824 Macrophyte-ID: C2m LIMS#: 1933641

| Parameter Suite             | Parameter Methods                                                                                                                                                                                                                                       | Preservation                                                                      | Acid Lot#  | Expiration | pH Check                               |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------|------------|----------------------------------------|
| Preserved Nutrients         | <input checked="" type="checkbox"/> W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP                                                                                                                                                                         | <input checked="" type="checkbox"/> Ice <input checked="" type="checkbox"/> H2SO4 | SA 7163030 | 06/12/18   | <input checked="" type="checkbox"/> <2 |
| Metals                      | <input checked="" type="checkbox"/> W-ICPMS <input type="checkbox"/> W-ICP                                                                                                                                                                              | <input type="checkbox"/> Ice <input type="checkbox"/> HNO3                        |            |            | <input type="checkbox"/> <2            |
| Filtered Nutrients          | <input checked="" type="checkbox"/> W-PO4-F <input checked="" type="checkbox"/> Field Filtered 0.45 µm Filter                                                                                                                                           | <input checked="" type="checkbox"/> Ice                                           |            |            |                                        |
| Chlorophyll                 | <input checked="" type="checkbox"/> CHLSUITE-W                                                                                                                                                                                                          | <input checked="" type="checkbox"/> Ice                                           |            |            |                                        |
| Physical/Aggregate (Fresh)  | <input checked="" type="checkbox"/> Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS                                                                                                                                         | <input checked="" type="checkbox"/> Ice                                           |            |            |                                        |
| Physical/Aggregate (Marine) | <input type="checkbox"/> Alkalinity / W-F / W-TSS / TURBIDITY                                                                                                                                                                                           | <input type="checkbox"/> Ice                                                      |            |            |                                        |
| Macroinvertebrates          | <input type="checkbox"/> MI-FW-QLDC                                                                                                                                                                                                                     | <input type="checkbox"/> Formalin                                                 |            |            |                                        |
| Periphyton                  | <input checked="" type="checkbox"/> ALGAE-ID                                                                                                                                                                                                            | <input checked="" type="checkbox"/> Ice                                           |            |            |                                        |
| Microbiology                | <input type="checkbox"/> E Coli <input type="checkbox"/> F Coli <input type="checkbox"/> Enterococci <input type="checkbox"/> qPCR                                                                                                                      | <input type="checkbox"/> Ice                                                      |            |            |                                        |
| Tracers                     | <input type="checkbox"/> W-SUC-AA-R <input type="checkbox"/> W-UHERB-AA <input type="checkbox"/> W-AHERB-AA                                                                                                                                             | <input type="checkbox"/> Ice                                                      |            |            |                                        |
| Pesticides                  | <input type="checkbox"/> W-PSNP-TQ <input type="checkbox"/> W-AHERB-AA <input type="checkbox"/> W-PYR-AA-R <input type="checkbox"/> W-PCL-SQ-R <input type="checkbox"/> W-UHERB-AA <input type="checkbox"/> W-GLYPH <input type="checkbox"/> W-SUC-AA-R | <input type="checkbox"/> Ice <input type="checkbox"/> Other                       |            |            |                                        |



Notes:

Kit A  
RPS  
LVS  
HA

STORET ↓

Withlacoochee  
Near Suwannee

G1WA0065

Field ID →

Withlacoochee  
Near Suwannee

Oct 3, 2017



G1WA0065\_10032017

Signature:

Date:

10/31/17

Field Parameters Entered into LIMS:

cm 10/5/17

Field Parameters QC in LIMS:

Date Migrated to STORET:

(Initials/Date)

Field Sheets Scanned/Saved:

(Initials/Date)

(Initials/Date)

(Initials/Date)



# DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Wahlgroeben Near Suwannee County: Madison Date: 10/3/17 Investigators: Curtis Mussen

STORET Station Number: GIWA0065

| Transect (m) | Point<br>1=right<br>9=left | Algal Thickness Rank<br>(N-6, X) | Estimated | Canopy Cover | Transect (m) | Point<br>1=right<br>9=left | Algal Thickness Rank<br>(N-6, X) | Estimated | Canopy Cover |
|--------------|----------------------------|----------------------------------|-----------|--------------|--------------|----------------------------|----------------------------------|-----------|--------------|
| 0            | 1                          | N                                | Y         |              | 60           | 1                          | N <sup>4</sup>                   | Yes       |              |
|              | 2                          | N                                |           |              |              | 2                          | N                                |           |              |
|              | 3                          |                                  |           |              |              | 3                          |                                  |           |              |
|              | 4                          |                                  |           |              |              | 4                          |                                  |           |              |
|              | 5                          |                                  |           | 0            |              | 5                          |                                  |           | 0            |
|              | 6                          |                                  |           |              |              | 6                          |                                  |           |              |
|              | 7                          |                                  |           |              |              | 7                          |                                  |           |              |
|              | 8                          | N                                |           |              |              | 8                          | N                                |           |              |
|              | 9                          | N                                |           |              |              | 9                          | N                                |           |              |
| 10           | 1                          | N <sup>4</sup>                   |           |              | 70           | 1                          | N <sup>5</sup>                   |           |              |
|              | 2                          | N                                |           |              |              | 2                          | N                                |           |              |
|              | 3                          |                                  |           |              |              | 3                          |                                  |           |              |
|              | 4                          |                                  |           |              |              | 4                          |                                  |           |              |
|              | 5                          |                                  |           | 0            |              | 5                          |                                  |           | 0            |
|              | 6                          |                                  |           |              |              | 6                          |                                  |           |              |
|              | 7                          |                                  |           |              |              | 7                          |                                  |           |              |
|              | 8                          | N                                |           |              |              | 8                          | N                                |           |              |
|              | 9                          | N                                |           |              |              | 9                          | N                                |           |              |
| 20           | 1                          | N <sup>4</sup>                   |           |              | 80           | 1                          | N <sup>4</sup>                   |           |              |
|              | 2                          | N                                |           |              |              | 2                          | N                                |           |              |
|              | 3                          |                                  |           |              |              | 3                          |                                  |           |              |
|              | 4                          |                                  |           |              |              | 4                          |                                  |           |              |
|              | 5                          |                                  |           | 0            |              | 5                          |                                  |           | 0            |
|              | 6                          |                                  |           |              |              | 6                          |                                  |           |              |
|              | 7                          |                                  |           |              |              | 7                          |                                  |           |              |
|              | 8                          | N                                |           |              |              | 8                          | N                                |           |              |
|              | 9                          | N                                |           |              |              | 9                          | N                                |           |              |
| 30           | 1                          | N                                |           |              | 90           | 1                          | N <sup>4</sup>                   |           |              |
|              | 2                          | N                                |           |              |              | 2                          | N                                |           |              |
|              | 3                          |                                  |           |              |              | 3                          |                                  |           |              |
|              | 4                          |                                  |           |              |              | 4                          |                                  |           |              |
|              | 5                          |                                  |           | 0            |              | 5                          |                                  |           | 0            |
|              | 6                          |                                  |           |              |              | 6                          |                                  |           |              |
|              | 7                          |                                  |           |              |              | 7                          |                                  |           |              |
|              | 8                          | N                                |           |              |              | 8                          | N                                |           |              |
|              | 9                          | N                                |           |              |              | 9                          | N                                |           |              |
| 40           | 1                          | N <sup>4</sup>                   |           |              | 100          | 1                          | N <sup>4</sup>                   |           |              |
|              | 2                          | N                                |           |              |              | 2                          | N                                |           |              |
|              | 3                          |                                  |           |              |              | 3                          |                                  |           |              |
|              | 4                          |                                  |           |              |              | 4                          |                                  |           |              |
|              | 5                          |                                  |           | 0            |              | 5                          |                                  |           | 0            |
|              | 6                          |                                  |           |              |              | 6                          |                                  |           |              |
|              | 7                          |                                  |           |              |              | 7                          |                                  |           |              |
|              | 8                          | N                                |           |              |              | 8                          | N                                |           |              |
|              | 9                          | N                                |           |              |              | 9                          | N                                |           |              |
| 50           | 1                          | N <sup>4</sup>                   |           |              |              | 1                          | N <sup>4</sup>                   |           |              |
|              | 2                          | N                                |           |              |              | 2                          | N                                |           |              |
|              | 3                          |                                  |           |              |              | 3                          |                                  |           |              |
|              | 4                          |                                  |           |              |              | 4                          |                                  |           |              |
|              | 5                          |                                  |           | 0            |              | 5                          |                                  |           | 0            |
|              | 6                          |                                  |           |              |              | 6                          |                                  |           |              |
|              | 7                          |                                  |           |              |              | 7                          |                                  |           |              |
|              | 8                          | N                                |           |              |              | 8                          | N                                |           |              |
|              | 9                          | N                                |           |              |              | 9                          | N                                |           |              |

Secchi depth 1.6  
Estimated? No

# points ranked 4-6 19  
total points assessed 99  
% points ranked 4-6 19%

Check accompanying data collected at same site/date.

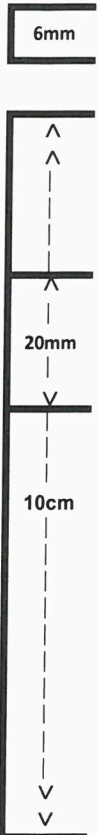
Algal mat sample ☐  
Linear Veg Survey ☐  
Habitat Assessment ☐  
SCI/Biorecon ☐  
Water sample ☐  
RQ-2017-10-02-43

| Algal Thickness Rank |                                         |
|----------------------|-----------------------------------------|
| N                    | rough, no algae, slimy, algae up to 1mm |
| 3                    | >1mm - 6mm                              |
| 4                    | >6mm - 20mm                             |
| 5                    | >20mm - 10 cm                           |
| 6                    | >10 cm                                  |

This is a deep and dark river

SBFD ID: 78000

RPS ID: 8824



Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.



# DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

GIWFO065

|                                                                                                                                                                                                                                                                                                                                                                             |                                 |                        |                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------|----------------|
| Waterbody: <u>Withlacoochee River</u>                                                                                                                                                                                                                                                                                                                                       | Date: <u>10/3/17</u>            | County: <u>Madison</u> | Storet Number: |
| Analyst: <u>Curtis Mussen</u>                                                                                                                                                                                                                                                                                                                                               | Signature: <u>Curtis Mussen</u> |                        |                |
| Comments: SMP Sampling                                                                                                                                                                                                                                                                                                                                                      |                                 |                        |                |
| Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m <sup>2</sup> of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names. |                                 |                        |                |

| HERBACEOUS SPECIES            | Meter Mark |       |       |       |       |       |       |       |       |        | Specimen collected (check) | HERBACEOUS SPECIES                   | Meter Mark |       |       |       |       |       |       |       |       |        | Specimen collected (check) |
|-------------------------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|----------------------------|--------------------------------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|----------------------------|
|                               | 0-10       | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 |                            |                                      | 0-10       | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 |                            |
| Alternanthera philoxeroides   |            |       | X     |       | X     |       |       |       |       |        |                            | Myriophyllum heterophyllum           |            |       |       |       |       |       |       |       |       |        |                            |
| Bacopa caroliniana            |            |       |       |       |       |       |       |       |       |        |                            | Najas guadelupensis                  |            |       |       |       |       |       |       |       |       |        |                            |
| Bacopa monnieri               |            |       |       |       |       |       |       |       |       |        |                            | Nuphar luteum                        |            |       |       |       |       |       |       |       |       |        |                            |
| Bidens mitis                  |            |       |       |       |       |       |       |       |       |        |                            | Orontium aquaticum                   |            |       |       |       |       |       |       |       |       |        |                            |
| Boehmeria cylindrica          |            |       |       |       |       |       |       |       |       |        |                            | Panicum hemitomon                    |            |       |       |       |       |       |       |       |       |        |                            |
| Centella asiatica             |            |       |       |       |       |       |       |       |       |        |                            | Panicum repens                       |            |       |       |       |       |       |       |       |       |        |                            |
| Ceratophyllum demersum        |            |       |       |       |       |       |       |       |       |        |                            | Panicum rigidulum                    |            |       |       |       |       |       |       |       |       |        |                            |
| Chara                         |            |       |       |       |       |       |       |       |       |        |                            | Peltandra virginica                  |            |       |       |       |       |       |       |       |       |        |                            |
| Cicuta maculata               |            |       |       |       |       |       |       |       |       |        |                            | Pistia stratioides                   |            |       |       |       |       |       |       |       |       |        |                            |
| Cladium jamaicense            |            |       |       |       |       |       |       |       |       |        |                            | Polygonum glabra                     |            |       |       |       |       |       |       |       |       |        |                            |
| Colocasia esculenta           |            |       |       |       |       |       |       |       |       |        |                            | Polygonum hydropiperoides            |            |       |       |       |       |       |       |       |       |        |                            |
| Commelina diffusa             |            |       |       |       |       |       |       |       |       |        |                            | Polygonum punctatum                  |            |       |       |       |       |       |       |       |       |        |                            |
| Commelina virginica           |            |       |       |       |       |       |       |       |       |        |                            | Pontedaria cordata                   |            |       |       |       |       |       |       |       |       |        |                            |
| Crinum americanum             |            |       |       |       |       |       |       |       |       |        |                            | Potamogeton illinoensis              |            |       |       |       |       |       |       |       |       |        |                            |
| Diodia virginiana             |            |       |       |       |       |       |       |       |       |        |                            | Rhynchospora inundata                |            |       |       |       |       |       |       |       |       |        |                            |
| Eichhornia crassipes          |            |       |       |       |       |       |       |       |       |        |                            | Rosa palustris                       |            |       |       |       |       |       |       |       |       |        |                            |
| Eleocharis (wispy viviparous) |            |       |       |       |       |       |       |       |       |        |                            | Ruellia simplex                      |            |       |       |       |       |       |       |       |       |        |                            |
| Hydrilla verticillata         |            |       |       |       |       |       |       |       |       |        |                            | Rumex verticillatus                  |            |       |       |       |       |       |       |       |       |        |                            |
| Hydrocotyle                   |            |       |       |       |       |       |       |       |       |        |                            | Sacciolepis striata                  |            |       |       |       |       |       |       |       |       |        |                            |
| Hygrophila polysperma         |            |       |       |       |       |       |       |       |       |        |                            | Sagittaria kurziana                  |            |       |       |       |       |       |       |       |       |        |                            |
| Hymenocallis                  |            |       |       |       |       |       |       |       |       |        |                            | Sagittaria lancifolia                |            |       |       |       |       |       |       |       |       |        |                            |
| Lachnanthes caroliniana       |            |       |       |       |       |       |       |       |       |        |                            | Sagittaria latifolia                 |            |       |       |       |       |       |       |       |       |        |                            |
| Landoltia punctata            |            |       |       |       |       |       |       |       |       |        |                            | Salvinia minima                      |            |       |       |       |       |       |       |       |       |        |                            |
| Lemna                         |            |       |       |       |       |       |       |       |       |        |                            | Samolus parviflora                   |            |       |       |       |       |       |       |       |       |        |                            |
| Limnophila sessiflora         |            |       |       |       |       |       |       |       |       |        |                            | Saururus cernuus                     |            |       |       |       |       |       |       |       |       |        |                            |
| Ludwigia leptocarpa           |            |       |       |       |       |       |       |       |       |        |                            | Scirpus (schenoplectus) californicus |            |       |       |       |       |       |       |       |       |        |                            |
| Ludwigia palustris            |            |       |       |       |       |       |       |       |       |        |                            | Sparganium americanum                |            |       |       |       |       |       |       |       |       |        |                            |
| Ludwigia peruviana            |            |       |       |       |       |       |       |       |       |        |                            | Typha                                |            |       |       |       |       |       |       |       |       |        |                            |
| Ludwigia repens               |            |       |       |       |       |       |       |       |       |        |                            | Vallisneria americana                |            |       |       |       |       |       |       |       |       |        |                            |
| Luziola fluitans              |            |       |       |       |       |       |       |       |       |        |                            | Zizania aquatica                     |            |       |       |       |       |       |       |       |       |        |                            |
| Micranthemum glomeratum       |            |       |       |       |       |       |       |       |       |        |                            |                                      |            |       |       |       |       |       |       |       |       |        |                            |
| Micranthemum umbrosum         |            |       |       |       |       |       |       |       |       |        |                            |                                      |            |       |       |       |       |       |       |       |       |        |                            |
| Mikania scandens              |            |       | X     |       |       | X     |       |       |       |        |                            |                                      |            |       |       |       |       |       |       |       |       |        |                            |
| Myriophyllum aquaticum        |            |       |       |       |       |       |       |       |       |        |                            |                                      |            |       |       |       |       |       |       |       |       |        |                            |

|                                                                |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| If no Dominant or Co-Dominant were selected, indicate with "X" |  |  |  |  |  |  |  |  |  |  |  |
| Indicate % cover macrophytes per section                       |  |  |  |  |  |  |  |  |  |  |  |
| 0-5% Macrophyte Coverage                                       |  |  |  |  |  |  |  |  |  |  |  |
| >5 and ≤10% Macrophyte Coverage                                |  |  |  |  |  |  |  |  |  |  |  |
| >10 and ≤25% Macrophyte Coverage                               |  |  |  |  |  |  |  |  |  |  |  |
| >25 and ≤50% Macrophyte Coverage                               |  |  |  |  |  |  |  |  |  |  |  |
| > 50% Macrophyte Coverage                                      |  |  |  |  |  |  |  |  |  |  |  |

Notes:





SBF ID: 7800

## DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

|                                                                    |                           |                                               |                                    |                                                   |
|--------------------------------------------------------------------|---------------------------|-----------------------------------------------|------------------------------------|---------------------------------------------------|
| SAMPLING AGENCY:<br>Florida Department of Environmental Protection |                           | STORET STATION NUMBER:<br><u>61WTC0065</u>    | DATE (MM/DD/YY):<br><u>10/3/17</u> | RECEIVING BODY OF WATER:<br><u>Suwannee River</u> |
| REMARKS:<br><u>RB/LVS</u>                                          | COUNTY:<br><u>Madison</u> | LOCATION:<br><u>With/Cooper Near Suwannee</u> |                                    | FIELD ID/NAME:                                    |

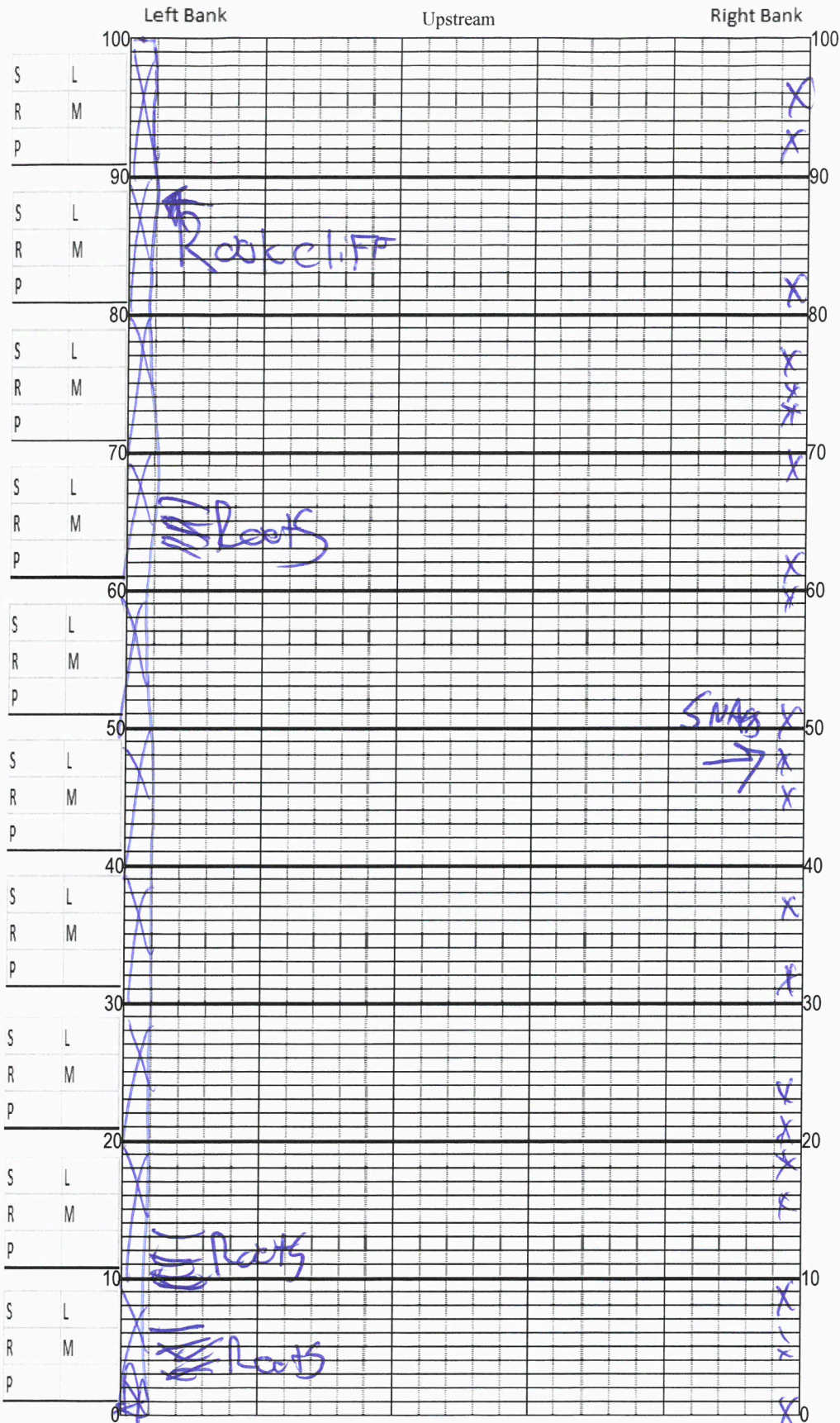
| Habitat Parameter                                                                                                                 | Optimal                                                                                                                                                                                                                   | Suboptimal                                                                                                                                                              | Marginal                                                                                                                                          | Poor                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Primary Habitat Components<br><u>Snag</u> <u>Roots</u><br>Leaf Aquatic Vegetation Rock                                            | Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)                                                                                              | Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)                                                      | Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed                                               | One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered                                         |
| Substrate Diversity <u>12</u>                                                                                                     | 20 19 18 17 16                                                                                                                                                                                                            | 15 14 13 12 11                                                                                                                                                          | 10 9 8 7 6                                                                                                                                        | 5 4 3 2 1                                                                                                                                  |
| Substrate Availability <u>6</u><br>%                                                                                              | Major productive habitat present at site<br>(>30% 27.2% 25.8% 24.4% 26.6%)<br>20 19 18 17 16                                                                                                                              | Major productive habitat, by aerial extent<br>(21.6% 20.2% 18.8% 17.4% 16%)<br>15 14 13 12 11                                                                           | 6% to 15% major productive habitat<br>(15% 13% 11% 9% 6%)<br>10 9 8 7 6                                                                           | Less than 5% major productive habitat<br>5 4 3 2 1                                                                                         |
| Water Velocity <u>18</u><br><u>29</u> m/s                                                                                         | Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec<br>≥0.33 0.31 <u>0.29</u> 0.27 >0.25<br>20 19 18 17 16                                                                                                     | Max. observed at typical transect: >0.1 to 0.25 m/sec<br>0.25 0.21 0.17 0.13 >0.1<br>15 14 13 12 11                                                                     | Max. observed at typical transect: 0.05 to 0.1 m/sec<br>0.1 0.09 0.07 0.06 0.05<br>10 9 8 7 6                                                     | Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec<br><0.05 0.04 0.03 0.01 <0.01<br>5 4 3 2 1                   |
| Habitat Smothering <u>18</u><br>-----<br>Primary Score <u>54</u>                                                                  | Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae.<br>20 19 18 17 16                                                                                         | Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae.<br>15 14 13 12 11                                       | Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth).<br>10 9 8 7 6                | Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation.<br>5 4 3 2 1                                         |
| Secondary Habitat Components<br>Artificial Channelization <u>20</u>                                                               | Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.<br>20 19 18 17 16                                                                                         | Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.<br>15 14 13 12 11                                          | Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.<br>10 9 8 7 6                 | Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.<br>5 4 3 2 1 |
| Bank Stability<br>Right Bank <u>10</u><br>Left Bank <u>10</u><br>If Banks are PipeClay, BedRock or Concrete at Bank full: Optimal | Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. (+,+,+) 10 9                                                       | Only meets 2 of the 3 requirements for optimal bank stability. (+,+,+) 8 7 6                                                                                            | Only meets 1 of the 3 requirements for optimal bank stability. (+,+,+) 5 4                                                                        | Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. (-,-,-) 3 2 1                  |
| Riparian Buffer Zone Width<br>Right Bank <u>10</u><br>Left Bank <u>10</u>                                                         | Width of vegetation greater than 18 m<br>10 9                                                                                                                                                                             | Width of vegetation >12 to 18m<br>8 7 6<br>(18m 15m 12m)                                                                                                                | Width of vegetation 6 to 12 m. human activities close to system<br>5 4<br>(9m)                                                                    | Less than 6 m of buffer zone due to intensive human activities<br>3 2 1<br>(6-5m) (4-3m) (<2m)                                             |
| Riparian Zone Vegetation Quality<br>Right Bank <u>10</u><br>Left Bank <u>10</u><br>-----<br>Secondary Score <u>80</u>             | Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance.<br>10 9 | >50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.<br>8 7 6 | 25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.<br>5 4 | Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).<br>3 2 1         |

TOTAL SCORE

|                        |                               |                                 |
|------------------------|-------------------------------|---------------------------------|
| Date: <u>10/3/2017</u> | Analyst: <u>Curtis Musson</u> | Signature: <u>Curtis Musson</u> |
|------------------------|-------------------------------|---------------------------------|



# DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Bilwacoos

Date: 10-3-2017

Sampler: C. Mussey

100 m: Latitude \_\_\_\_\_  
Longitude \_\_\_\_\_

0 m: Latitude \_\_\_\_\_  
Longitude \_\_\_\_\_

Substrates: Code key, draw proportionate habitat abundance. %

|                             |                      |                          |
|-----------------------------|----------------------|--------------------------|
| <input type="checkbox"/> S  | Snags                | <u>71</u>                |
| <input type="checkbox"/> R  | Roots/undercut banks | <u>71</u>                |
| <input type="checkbox"/> L  | Leaf Packs (or mats) | <u>0</u>                 |
| <input type="checkbox"/> M  | Aquatic Macrophytes  | <u>0</u>                 |
| <input type="checkbox"/> Rc | Rock                 | <u>5</u>                 |
| <input type="checkbox"/>    |                      |                          |
| <input type="checkbox"/> P  | Pools                | <u>Yes</u>               |
|                             |                      | total # observed = _____ |
|                             |                      | # range expected = _____ |

Average width \_\_\_\_\_ m

Average depth 5.0 m

Velocity measured at 30 meter mark.

Velocity 10 m/s

WQ & chemistry taken at 30 meter mark.

Habitat Smothering:  
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:  
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:  
Note areas (on map) where natural vegetation is altered or eliminated.

Notes/Plants Observed:  
2m<sup>2</sup> = 16 Sweeps

| # of Sweeps               | Conversion | m <sup>2</sup> | % |
|---------------------------|------------|----------------|---|
| Snag                      | ÷ 8        | m <sup>2</sup> |   |
| Root                      | ÷ 8        | m <sup>2</sup> |   |
| Leaf                      | ÷ 8        | m <sup>2</sup> |   |
| Macrophyte                | ÷ 8        | m <sup>2</sup> |   |
| Rock                      | ÷ 8        | m <sup>2</sup> |   |
| Total Available Habitat   |            | m <sup>2</sup> |   |
| Total Area                |            | m <sup>2</sup> |   |
| Total Unavailable Habitat |            | m <sup>2</sup> |   |

| Meter Mark | Depth (m) | Width (m) | Velocity Measurement (Sec) |
|------------|-----------|-----------|----------------------------|
|            |           |           | <u>3.5</u>                 |
|            |           |           |                            |
|            |           |           |                            |
| Avg.       |           |           |                            |

Length of grid represents 100 m of stream (not linear meters). (Horizontal scale is double vertical scale, draw proportionately).

Expected Number of Pools

$$\left( \frac{100}{12 * W} \right) * 1 =$$

$$\left( \frac{100}{12 * W} \right) * 2 =$$

# CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there is qualified data on this page.

Meter ID: B10 #2

RQ- 2017-10-02-43

Project: Snp

- Notes: (1) Always wait for meter to stabilize before recording any readings.  
 (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).  
 (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification

| DO DEP SOP FT 1500 | Name          | Date    | Time CT-ET | Temp  | D.O. Chart mg/L | Meter D.O. mg/L | % DO  | Probe Charge | Probe Gain | Pass / Fail | Lab / Field |
|--------------------|---------------|---------|------------|-------|-----------------|-----------------|-------|--------------|------------|-------------|-------------|
| Calibr.            | Curtis Mussen | 10/3/17 | 713        | 21.67 | 8.794           | 8.81            | 100.1 | 55           | -          | P/F         | L/F         |
| ICV                | Curtis Mussen | 10/3/17 | 715        | 21.58 | 8.812           | 8.83            | 100.2 | 54           | -          | P/F         | L/F         |
| CCV                | Curtis Mussen | 10/3/17 | 1443       | 23.51 | 8.498           | 8.55            | 100.6 | 54           | -          | P/F         | L/F         |
| CCV                |               |         |            |       |                 |                 |       |              |            | P/F         | L/F         |

DO Acceptance criteria from Table  $\pm 0.3$  mg/L.

Optical: DO gain range 0.85 to 1.15; DO charge N/A.

Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.

Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

| Spec. Cond. FT 1200 | Name          | Date    | Time CT-ET | Lot #   | Expir. Date | Standard $\mu$ mhos/cm | Meter Reading $\mu$ mhos/cm | Pass / Fail | Lab / Field |
|---------------------|---------------|---------|------------|---------|-------------|------------------------|-----------------------------|-------------|-------------|
| Calibr.             | Curtis Mussen | 10/3/17 | 716        | 170310D | 03/2018     | 1000                   | 1000                        | P/F         | L/F         |
| ICV                 | Curtis Mussen | 10/3/17 | 717        | 170310D | 03/2018     | 1000                   | 1000                        | P/F         | L/F         |
| CCV                 | Curtis Mussen | 10/3/17 | 1445       | 170614D | 06/2018     | 100                    | 104                         | P/F         | L/F         |
| CCV                 |               |         |            |         |             |                        |                             | P/F         | L/F         |

Conductivity Acceptance criteria  $\pm 5\%$

| pH DEP SOP FT 1100 | Name          | Date    | Time CT-ET | Lot #   | Expir. Date | pH Buffer SU | Meter reading SU | mV   | Pass / Fail | Lab / Field |
|--------------------|---------------|---------|------------|---------|-------------|--------------|------------------|------|-------------|-------------|
| Calibr.            | Curtis Mussen | 10/3/17 | 719        | 170310B | 9/2018      | 7.0          | 6.99             | 42   | P/F         | L/F         |
| Calibr.            | Curtis Mussen | 10/3/17 | 722        | 170614A | 6/2018      | 4.01         | 4.01             | 209  | P/F         | L/F         |
| Calibr.            | Curtis Mussen | 10/3/17 | 723        | 170310C | 9/2018      | 10.01        | 9.97             | -117 | P/F         | L/F         |
| ICV                | Curtis Mussen | 10/3/17 | 724        | 170614A | 6/2018      | 4.01         | 3.92             | 213  | P/F         | L/F         |
| CCV                | Curtis Mussen | 10/3/17 | 1446       | 170310C | 9/2018      | 10.01        | 9.96             | -116 | P/F         | L/F         |
| CCV                |               |         |            |         |             |              |                  |      | P/F         | L/F         |

pH Acceptance criteria  $\pm 0.2$  SU; mV pH 7 Range  $0 \pm 50$ ; mV pH 4 Range  $+180 \pm 50$ ; mV pH 10 Range  $-180 \pm 50$ ;

If mV are recorded: slope from 7 to 10 \_\_\_\_\_, slope from 4 to 7 \_\_\_\_\_ (both must be between 165 and 180 mV)

Is meter equipped with depth sensor? Yes / No If yes, list date of last quarterly depth verification

| Depth Sensor (Daily Calibration & ICV) | Name          | Date    | Time CT-ET | Calibrated Value (0.00 or Offset), meters | ICV Value meters | Pass / Fail | Lab / Field |
|----------------------------------------|---------------|---------|------------|-------------------------------------------|------------------|-------------|-------------|
| Pressure mode in air                   | Curtis Mussen | 10/3/17 | 726        | 0.000                                     | 0.000            | P/F         | L/F         |

Report two decimal places. Round numbers  $\leq 4$  down,  $\geq 5$  up. ICV acceptance criteria  $\pm 5\%$  or  $\pm 0.05$ m, whichever is greater.

COMMENTS:



Request Number: RQ-2017-10-02-43

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Central Lab Sample Submittal Form

Withlacoochee River RPS

Customer: WAS-SECT

Project ID: SMP

Requester: Curtis Musson

Page \_\_\_\_ of \_\_\_\_  
Field Report Prepared By: Curtis Musson  
Sampling Agency: FDEPCollected By: Curtis Musson, Ben Rags

Locat'

Withlacoochee  
Near Suwannee

Field

Field ID →

ST Withlacoochee  
Near Suwannee

Oct 3, 2017

G1WA0065\_10032017

☐ Comp  
☒ Grab

Collection (comp begin or grab)

Date 10/3/17 Time 10:00Eastern  
Central

Collection (comp begin or grab)

Date / Time /Bottle  
Group(s)

Matrix (Salt, Fresh)

FreshDiss. Oxygen  
(mg/L)4.43Temp  
(C)22.74

pH

7.70Sample Depts  
(m)0.3Sp. Conductance  
(umho/cm)308A, BSalinity  
(ppt)0.15

Comments

RPS

Latitude (Decimal Degrees)

Longitude (Decimal Degrees)

Locat'

Withlacoochee  
Near Pot Spring

Field

Field ID →

S Withlacoochee  
Near Pot Spring

Oct 03, 2017

G1WA0064\_10032017

☐ Comp  
☒ Grab

Collection (comp begin or grab)

Date 10/3/17 Time 1155Eastern  
Central

Collection (comp begin or grab)

Date / Time /Bottle  
Group(s)

Matrix (Salt, Fresh)

FRESHDiss. Oxygen  
(mg/L)5.12Temp  
(C)23.48

pH

7.22Sample Depts  
(m)0.3Sp. Conductance  
(umho/cm)276A, BSalinity  
(ppt)0.13

Comments

RPS

Latitude (Decimal Degrees)

Longitude (Decimal Degrees)

Location

☐ Comp  
☐ Grab

Collection (comp begin or grab)

Date Time

Eastern  
Central

Collection (comp begin or grab)

Date Time

Bottle  
Group(s)

Matrix (Salt, Fresh)

Diss. Oxygen  
(mg/L)Temp  
(C)

pH

Sample Depts  
(m)Sp. Conductance  
(umho/cm)Salinity  
(ppt)

Comments

Latitude (Decimal Degrees)

Longitude (Decimal Degrees)

Relinquished By:

Curtis Musson

Date/Time

10/3/17/1228

Number of Coolers

1

Received By:

ASB

Date/Time

10-3-17/12:28

|          |              |         |                 |               |               |                                     |        |
|----------|--------------|---------|-----------------|---------------|---------------|-------------------------------------|--------|
| Group: A | Bottle Type: | P-1L    | # of Bottles: 2 | Preservative: | ICE           | Enter Number of Bottles Sent to Lab | 2 of 2 |
|          | ALKALINITY   |         |                 |               |               |                                     |        |
|          | TURBIDITY    |         |                 |               |               |                                     |        |
|          | W-CL-IC      |         |                 |               |               |                                     |        |
|          | W-COLOR      |         |                 |               |               |                                     |        |
|          | W-F          |         |                 |               |               |                                     |        |
|          | W-SO4-IC     |         |                 |               |               |                                     |        |
|          | W-TDS        |         |                 |               |               |                                     |        |
|          | W-TSS        |         |                 |               |               |                                     |        |
| Group: A | Bottle Type: | BP-1L   | # of Bottles: 2 | Preservative: | ICE           | Enter Number of Bottles Sent to Lab | 2 of 2 |
|          | CHLSUITE-W   |         |                 |               |               |                                     |        |
| Group: A | Bottle Type: | P-500ML | # of Bottles: 2 | Preservative: | ICE And H2SO4 | Enter Number of Bottles Sent to Lab | 2 of 2 |
|          | W-NH3        |         |                 |               |               |                                     |        |
|          | W-NO2NO3     |         |                 |               |               |                                     |        |
|          | W-S-A-TP     |         |                 |               |               |                                     |        |
|          | W-TKN        |         |                 |               |               |                                     |        |
|          | W-TOC        |         |                 |               |               |                                     |        |
| Group: A | Bottle Type: | P-125ML | # of Bottles: 2 | Preservative: | ICE-FLTR      | Enter Number of Bottles Sent to Lab | 2 of 2 |
|          | W-PO4-F      |         |                 |               |               |                                     |        |
| Group: B | Bottle Type: | PT-50ML | # of Bottles: 2 | Preservative: | ICE           | Enter Number of Bottles Sent to Lab | 2 of 2 |
|          | ALGAL_ID     |         |                 |               |               |                                     |        |



**Cooler Packing Worksheet for Request: RQ-2017-10-02-43****Withlacoochee Rver RPS****Ship Cooler On: 9/29/2017****Customer/Project: WAS-SECT/SMP**

Assigned To: REAVES\_S

Requester: Curtis Musson

Priority: 3

850-245-8453  
2600 Blair Stone Rd

Tallahassee, FL 32399

Attn: Curtis Musson

**Comments:**

No preservatives needed.

Group A: Freshwater Kit

Group B: Algal ID

No feded Labels needed

Thanks

**Requested Analyses:****Bottle Group: A****# of Sites: 2****Container ID: P-1L****Qty: 2    Preservation: ICE****Lot #** 00068657**Description: Plastic Bottle 1L****Analysis**

ALKALINITY

TURBIDITY

W-CL-IC

W-COLOR

W-F

W-SO4-IC

W-TDS

W-TSS

**Description**

Alkalinity in aqueous matrices as mg CaCO3/L

Turbidity in aqueous matrices

Chloride in aqueous matrices

True Color measured at 450 nm

Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)

Sulfate in aqueous matrices

Total Dissolved Solids in aqueous matrices

Total Suspended Solids in aqueous matrices

**Container ID: BP-1L****Qty: 2    Preservation: ICE****Lot #** 1199138**Description: Brown Plastic Bottle 1L****Analysis**

CHLSUITE-W

**Description**

Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry

Container ID: P-500ML

Qty: 2 Preservation: ICE And H2SO4

Lot # 00068654

Description: Plastic Bottle 500 mL

Affix YELLOW sulfuric acid dot to container.

**Analysis**

W-NH3  
W-NO2NO3  
W-S-A-TP  
W-TKN  
W-TOC

**Description**

Ammonia in aqueous matrices as mg N/L  
Nitrite/Nitrate in aqueous matrices as mg N/L  
Total Phosphorus in aqueous matrices as mg P/L  
Total Kjeldahl Nitrogen in aqueous matrices  
Nonpurgeable Organic Carbon in aqueous matrices

Container ID: P-125ML

Qty: 2 Preservation: ICE-FLTR

Lot # 00068347

Description: Plastic Bottle 125 mL

**Analysis**

W-PO4-F

**Description**

Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L

**Bottle Group: B**

**# of Sites: 2**

Container ID: PT-50ML

Qty: 2 Preservation: ICE

Lot # 430897

Description: Plastic Tube 50 mL

**Analysis**

ALGAL\_ID

**Description**

Qualitative assessment of algal taxa present without counts

Cooler Packed By: SR

Number of Coolers: 1

Date: 9-26-17

Kit must also include:

- ☒ Field Sheets
- ☒ Temperature Control Bottle
- ☐ FedEx Bills, if applicable
- ☒ Plastic Bags
- ☐ Zip Ties

If Preservation Included:

|          |           |             |
|----------|-----------|-------------|
| ID _____ | Exp _____ | Lot # _____ |
| ID _____ | Exp _____ | Lot # _____ |
| ID _____ | Exp _____ | Lot # _____ |
| ID _____ | Exp _____ | Lot # _____ |
| ID _____ | Exp _____ | Lot # _____ |

**PLEASE RETURN ALL COOLERS FOR RQ-2017-10-02-43**