

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
CHAIN OF CUSTODY FORM

**Date:** 10/18/2021  
**Customer:** WAS  
**RQ:** RQ-2021-10-18-06

**Collected By:** Blake Spencer, Evelyn Becerra  
**Sampling Agency:** FDEP  
**Project ID:** SMP

PLEASE RETURN THE ORIGINAL OF THIS FORM WITH SAMPLE SUBMITTAL  
FORMS AND THE COOLER PACKING WORKSHEET TO THE LAB

**Number of Coolers Shipped:** 1

**Delivery Method:** HandDelivered

**FIELD ID (Labels) submitted under this RQ for this collection date.**

| Site Location              | Field ID/WIN ID                                                                             |
|----------------------------|---------------------------------------------------------------------------------------------|
| Wakulla River at boat tram | <br>44059 |

RELINQUISHED BY(SIGNATURE):



DATE/TIME: 10/18/2021

EST

**THIS SECTION TO BE COMPLETED BY LABORATORY**

**Rec'd/Inspected By:**

**Rec'd/Inspected Date:**



# FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PLAN FIELD SHEET

January 2020

Meter Passed End  
of Day CCV  
Yes / No

**WIN Station Name:** Wakulla River at boat tram **Date:** 10/18/2021  
**WIN/Field ID:** 44059 **WBID:** 1006 **ENR:** - **Latitude:** 30.2346  
**County:** WAKULLA **Org ID:** 21FLWQA **Longitude:** -84.29  
**Receiving Body of Water:** Ochlockonee - St. Marks **RQ:** 2021-10-18-06

| Sampling Team Members               |                   | WQ Measurements | Sample Collection | Documentation | Preservation | Preservation Check |
|-------------------------------------|-------------------|-----------------|-------------------|---------------|--------------|--------------------|
| <input checked="" type="checkbox"/> | Blake Spencer     | x               |                   |               |              |                    |
| <input checked="" type="checkbox"/> | Evelyn Becerra    | x               |                   | x             |              |                    |
| <input checked="" type="checkbox"/> | Jesse Pfadenhauer |                 | x                 |               | x            | x                  |
| <input type="checkbox"/>            |                   |                 |                   |               |              |                    |

| Sampling Equipment                                   |                                                    |
|------------------------------------------------------|----------------------------------------------------|
| <input checked="" type="checkbox"/> Sample Container | <input type="checkbox"/> Carboy                    |
| <input type="checkbox"/> Dipper                      | <input type="checkbox"/> Van Dorn                  |
| <input checked="" type="checkbox"/> Syringe          | <input type="checkbox"/> Pole                      |
| Depth measured with: Sonar                           |                                                    |
| Secchi Equipment ID:                                 |                                                    |
| Collection Method                                    |                                                    |
| <input type="checkbox"/> Wading                      | <input type="checkbox"/> Canoe/Kayak               |
| <input type="checkbox"/> From Shore                  | <input type="checkbox"/> Electric Motor            |
| <input type="checkbox"/> Other                       | <input checked="" type="checkbox"/> Gasoline Motor |

|                                                                                                                                                                                                                                                                                                                    |  |                   |  |              |  |                                  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------|--|--------------|--|----------------------------------|--|--|--|--|--|
| <b>Water Level:</b> <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Dry <input type="checkbox"/> Pooled <input type="checkbox"/> Flooded                                                                                            |  |                   |  |              |  | <b>Meter ID#</b> EXO #1          |  |  |  |  |  |
| <b>Photos:</b> NO                                                                                                                                                                                                                                                                                                  |  | <b>Flow:</b> FLOW |  | <b>Tide:</b> |  | <b>Tide Times:</b><br>High: Low: |  |  |  |  |  |
| <b>Biological Samples Collected:</b> <input type="checkbox"/> None <input checked="" type="checkbox"/> HA <input checked="" type="checkbox"/> SCI <input checked="" type="checkbox"/> RPS <input checked="" type="checkbox"/> Algae ID <input checked="" type="checkbox"/> LVS <input type="checkbox"/> LVI Other: |  |                   |  |              |  |                                  |  |  |  |  |  |
| <b>SBIO ID Numbers:</b> SBIO:83309 LIMS:2284221 RPS:9792 Macrophyte:11987 HA: 17075                                                                                                                                                                                                                                |  |                   |  |              |  |                                  |  |  |  |  |  |
| <b>Notes:</b><br>DARK, TANNIC WATER                                                                                                                                                                                                                                                                                |  |                   |  |              |  |                                  |  |  |  |  |  |

## Duplicate Sample

|                             |              |                      |              |
|-----------------------------|--------------|----------------------|--------------|
| <b>Time Zone:</b> EST       | <b>Time:</b> | <b>Field ID:</b> N/A | (WIN ID_DUP) |
| <b>WIN DMT Activity ID:</b> |              |                      |              |

## Blank

|                                |              |                           |                       |
|--------------------------------|--------------|---------------------------|-----------------------|
| <b>Time Zone:</b>              | <b>Time:</b> | <b>Field ID:</b>          | (Blank Type_DDDMMYYY) |
| <b>DI Source:</b>              |              | <b>Location:</b>          |                       |
| <b>DI Type:</b>                |              | <b>Equipment ID:</b>      |                       |
| <b>DI Container (Name/ID):</b> |              | <b>DI Container Type:</b> |                       |

**LIMS EVENT ID:** WAS-SECT-2021-10-18-01 **WIN Import ID:** 21FLWQA\_WAS-SECT-2021-10-18-01\_12-13-2021.TXT  
**Enter Field Parameters, Verify Station ID In LIMS DMT:** ESB 11/4/21 **QC Station ID, Field Parameters In LIMS DMT:** CLC 12/2/2021  
(Initials/Date) (Initials/Date)  
**Scan/Save Field Sheets** ESB 11/4/21 **Migrate Data to WIN:** DT/12/13/21 **Verify Data In WIN:**  
(Initials/Date) (Initials/Date) (Initials/Date)



RQ-2021-10-18-06

Customer: WQAP

Project ID: SMP

Collected By: Blake Spencer, Evelyn Becerra

Field Report Prepared By: Blake Spencer

Sampling Agency: FDEP

Place Label Here

WIN ID/Field ID:



44059

Location: Wakulla River at boat tram

Comments:

Matrix: Fresh

(Check one)

☒ GRAB☐ COMPOSITE

| Date                                  | Time        | DO (mg/L)                                                                                                                        | DO (%SAT)                                     | Temp. (C°)                                    | pH         | Sample Depth (m)                                                                   | Secchi Disk (m)                                    | Total Depth (m)                        | Sp COND (µmhos/cm)    | Salinity (PPT) |  |  |
|---------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|------------|------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------|-----------------------|----------------|--|--|
|                                       | 1201<br>EST | 3.52                                                                                                                             | 39.6                                          | 21.25                                         | 7.37       | 0.3                                                                                | 0.5<br><input checked="" type="checkbox"/> VOB (S) | 0.5                                    | 298                   | 0.14           |  |  |
| 10/18/2021                            |             |                                                                                                                                  |                                               |                                               |            |                                                                                    |                                                    |                                        |                       |                |  |  |
|                                       | EST         |                                                                                                                                  |                                               |                                               |            |                                                                                    |                                                    |                                        |                       |                |  |  |
| Parameter Suite                       |             | Parameter Methods                                                                                                                |                                               |                                               |            | Preservation                                                                       |                                                    | pH Check                               | # Bottles sent to Lab | Bottle Group   |  |  |
| Preserved Nutrients (P-500ML)         |             | <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* |                                                    | <input checked="" type="checkbox"/> <2 | 1                     | A              |  |  |
|                                       |             | Lot #                                                                                                                            | SA0293040                                     |                                               | Exp:       | 10/19/21                                                                           |                                                    |                                        |                       |                |  |  |
| Metals (P-500ML)                      |             | <input checked="" type="checkbox"/> W-ICPMS <input checked="" type="checkbox"/> W-ICP <input checked="" type="checkbox"/> W-HARD |                                               |                                               |            | <input checked="" type="checkbox"/> Ice <input checked="" type="checkbox"/> HNO3*  |                                                    | <input checked="" type="checkbox"/> <2 | 1                     | A              |  |  |
|                                       |             | Lot #                                                                                                                            | NA0344060                                     |                                               | Exp:       | 01/04/22                                                                           |                                                    |                                        |                       |                |  |  |
| Filtered Nutrients (P125ML)           |             | <input checked="" type="checkbox"/> W-PO4-F <input checked="" type="checkbox"/> Field Filtered 0.45 µm Filter                    |                                               |                                               |            | <input checked="" type="checkbox"/> Ice                                            |                                                    |                                        | 1                     | A              |  |  |
|                                       |             | Filter Lot #                                                                                                                     | 17347262                                      |                                               |            |                                                                                    |                                                    |                                        |                       |                |  |  |
|                                       |             | Syringe Lot #                                                                                                                    | 1091364                                       |                                               |            |                                                                                    |                                                    |                                        |                       |                |  |  |
| Chlorophyll (BP-1L)                   |             | <input checked="" type="checkbox"/> CHLSUITE-W                                                                                   |                                               |                                               |            | <input checked="" type="checkbox"/> Ice                                            |                                                    |                                        | 1                     | A              |  |  |
| Physical/Aggregate (Fresh) (P-1L)     |             | <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                                            |                                                    |                                        | 1                     | A              |  |  |
| Physical/Aggregate (Marine) (P-1L)    |             | <input type="checkbox"/> Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY                                                          |                                               |                                               |            | <input type="checkbox"/> Ice                                                       |                                                    |                                        |                       |                |  |  |
| Macroinvertebrates (PJ-2L)            |             | <input checked="" type="checkbox"/> MI-FW-QLDC                                                                                   | Formalin Lot #                                | 9.28091819TR                                  |            | <input checked="" type="checkbox"/> Formalin                                       |                                                    |                                        | 2                     | B              |  |  |
| Periphyton (PT-50ML)                  |             | <input checked="" type="checkbox"/> ALGAE-ID                                                                                     |                                               |                                               |            | <input checked="" type="checkbox"/> Ice                                            |                                                    |                                        | 1                     | B              |  |  |
| Microbiology (Contract Lab Bottle)    |             | <input type="checkbox"/> E Coli <input type="checkbox"/> F Coli <input type="checkbox"/> Enterococci                             |                                               |                                               |            | <input type="checkbox"/> Ice                                                       |                                                    |                                        |                       |                |  |  |
| Molecular (QPCR-P-500ML)              |             | <input type="checkbox"/> PCR-HF183 <input type="checkbox"/> PCR-BacR <input type="checkbox"/> PCR-DG3                            |                                               |                                               |            | <input type="checkbox"/> Ice                                                       |                                                    |                                        |                       |                |  |  |
|                                       |             | <input type="checkbox"/> PCR-GULL2 <input type="checkbox"/> PCR-GFD <input type="checkbox"/>                                     |                                               |                                               |            | <input type="checkbox"/> Ice                                                       |                                                    |                                        |                       |                |  |  |
| Tracers (BG-500ML)                    |             | <input type="checkbox"/> W-E8321-DI <input type="checkbox"/> W-E8321-MS                                                          |                                               |                                               |            | <input type="checkbox"/> Ice                                                       |                                                    |                                        |                       |                |  |  |
| Pesticides (BG-500ML) (BG-1L)         |             | <input checked="" type="checkbox"/> W-E8321-DI                                                                                   | <input checked="" type="checkbox"/> WE8321-MS | <input checked="" type="checkbox"/> W-PSNP-TQ | W-CT-CL-R  | <input checked="" type="checkbox"/> Ice                                            |                                                    |                                        | 5                     | A              |  |  |
| Phytoplankton/Periphyton              |             | W-PCL-TQ-R                                                                                                                       |                                               | W-CARB-AA ( 5 ml of MCAA** Buffer Solution)   |            |                                                                                    |                                                    |                                        |                       |                |  |  |
|                                       |             |                                                                                                                                  |                                               | DTY-QN-C                                      |            |                                                                                    |                                                    |                                        |                       |                |  |  |
|                                       |             |                                                                                                                                  |                                               | PKD-QN-BV                                     |            |                                                                                    |                                                    | <input type="checkbox"/> Ice           |                       |                |  |  |
| Name: Blake Spencer<br>Evelyn Becerra |             |                                                                                                                                  |                                               |                                               | Signature: |                                                                                    |                                                    |                                        | Date:                 |                |  |  |

\*2.0 ml of Preservative used unless noted otherwise.

\*\*MCAA: Monochloroacetic acid buffer solution

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

|                                 |                           |                                               |                                |                                                    |
|---------------------------------|---------------------------|-----------------------------------------------|--------------------------------|----------------------------------------------------|
| SAMPLING AGENCY:<br><u>FAEP</u> |                           | STORET STATION NUMBER:<br><u>44059</u>        | DATE (MM/DD/YY):               | RECEIVING BODY OF WATER:<br><u>St. Marks River</u> |
| REMARKS:                        | COUNTY:<br><u>Wakulla</u> | LOCATION:<br><u>Wakulla River @ Boat Tram</u> | FIELD ID/NAME:<br><u>44059</u> |                                                    |

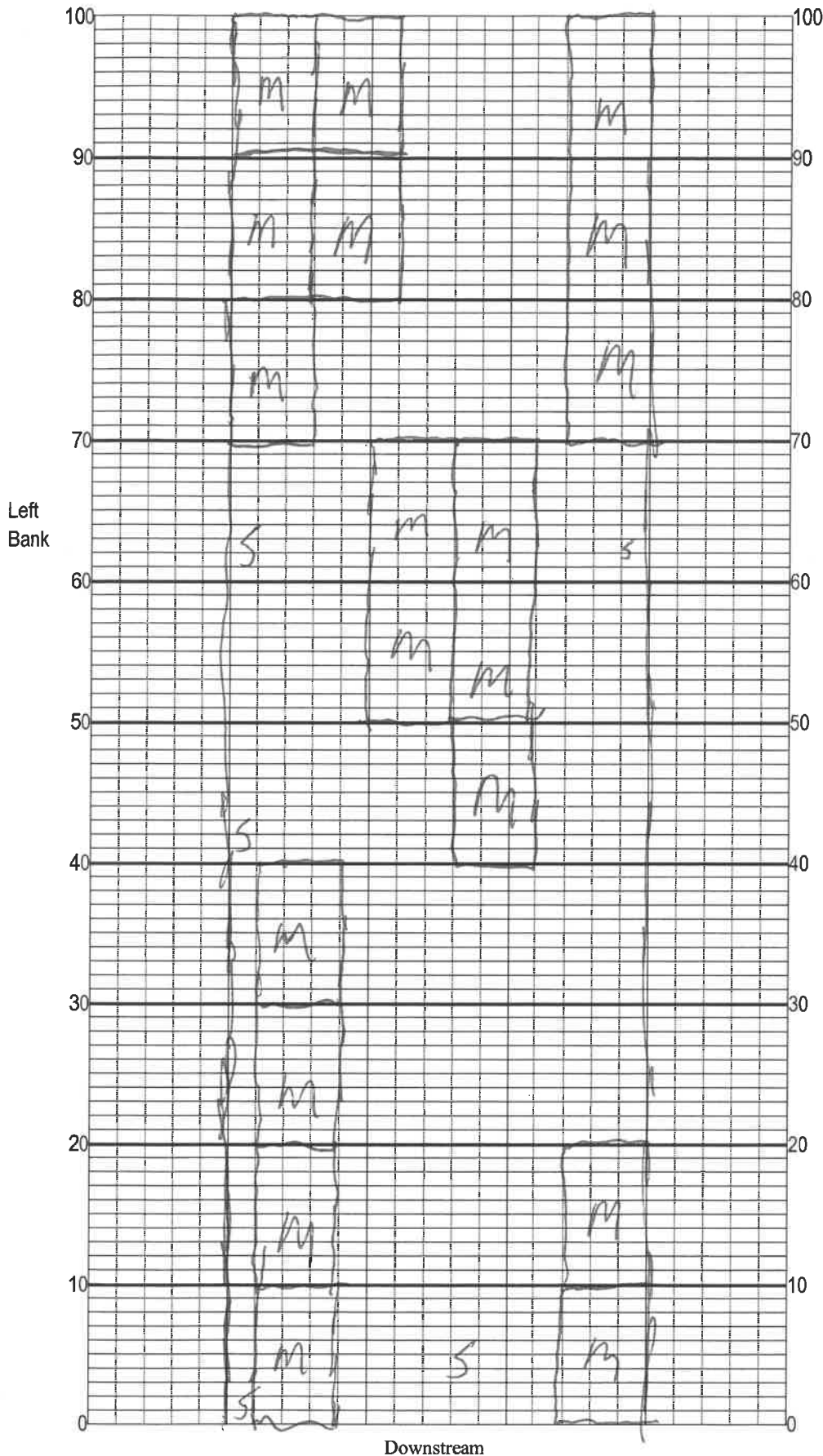
| Habitat Parameter                                                                 | Optimal                                                                                                                                                                                                           | Suboptimal                                                                                                                                                     | Marginal                                                                                                                                   | Poor                                                                                                                          |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Primary Habitat Components                                                        | 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>9</u>                                                      | 20 19 18 17 16                                                                                                                                                                                                    | 15 14 13 12 11                                                                                                                                                 | 10 9 8 7 6                                                                                                                                 | 5 4 3 2 1                                                                                                                     |
| Substrate Availability <u>20</u>                                                  | Greater than 30% major productive habitat present at site<br>20 19 18 17 16                                                                                                                                       | 16% to 30% major productive habitat, by aerial extent<br>15 14 13 12 11                                                                                        | 6% to 15% major productive habitat<br>10 9 8 7 6                                                                                           | Less than 5% major productive habitat<br>5 4 3 2 1                                                                            |
| Water Velocity <u>20</u>                                                          | Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec<br>≥0.33 0.31 0.29 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>11</u><br>.....<br>Primary Score <u>60</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                                                      | Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.                                                                                                   | Good sinuosity within old channelized area. Evidence of dredging or straightening in the past (>25 yrs) but mostly recovered.                                  | Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.                        | Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. |
| Artificial Channelization <u>20</u>                                               | 20 19 18 17 16                                                                                                                                                                                                    | 15 14 13 12 11                                                                                                                                                 | 10 9 8 7 6                                                                                                                                 | 5 4 3 2 1                                                                                                                     |
| Bank Stability                                                                    | Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the woody root zone with few raw, eroded areas.                                                      | Only meets 2 of the 3 requirements for optimal bank stability.                                                                                                 | Only meets 1 of the 3 requirements for optimal bank stability.                                                                             | Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the woody root zone with raw, eroded areas.             |
| Right Bank <u>10</u><br>Left Bank <u>10</u>                                       | 10 9                                                                                                                                                                                                              | 8 7 6                                                                                                                                                          | 5 4                                                                                                                                        | 3 2 1                                                                                                                         |
| Riparian Buffer Zone Width                                                        | Width of vegetation greater than 18 m                                                                                                                                                                             | Width of vegetation >12 to 18m                                                                                                                                 | Width of vegetation 6 to 12 m. human activities close to system                                                                            | Less than 6 m of buffer zone due to intensive human activities                                                                |
| Right Bank <u>10</u><br>Left Bank <u>10</u>                                       | 10 9                                                                                                                                                                                                              | 8 7 6                                                                                                                                                          | 5 4                                                                                                                                        | 3 2 1                                                                                                                         |
| Riparian Zone Vegetation Quality                                                  | 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. | >50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. | 25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. | Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).     |
| Right Bank <u>10</u><br>Left Bank <u>10</u><br>.....<br>Secondary Score <u>80</u> | 10 9                                                                                                                                                                                                              | 8 7 6                                                                                                                                                          | 5 4                                                                                                                                        | 3 2 1                                                                                                                         |

140

## TOTAL SCORE

|                       |                               |                                                                                                  |
|-----------------------|-------------------------------|--------------------------------------------------------------------------------------------------|
| Date: <u>10/18/21</u> | Analyst: <u>Blake Spencer</u> | Signature:  |
|-----------------------|-------------------------------|--------------------------------------------------------------------------------------------------|

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



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

Location: Wakulla River @ Boat Tram  
Date: 10/18/21  
Sampler: Blake Spencer

|                                                                                                                |                               |
|----------------------------------------------------------------------------------------------------------------|-------------------------------|
| 100 m: Latitude                                                                                                | _____                         |
| Longitude                                                                                                      | _____                         |
| 0 m: Latitude                                                                                                  | _____                         |
| Longitude                                                                                                      | _____                         |
| Substrates: Code key, draw proportionate habitat abundance. %                                                  |                               |
| <input type="checkbox"/> S                                                                                     | Snags <u>1</u>                |
| <input type="checkbox"/> R                                                                                     | Roots/undercut banks _____    |
| <input type="checkbox"/> L                                                                                     | Leaf Packs (or mats) _____    |
| <input type="checkbox"/> M                                                                                     | Aquatic Macrophytes <u>30</u> |
| <input type="checkbox"/>                                                                                       | _____                         |
| <input type="checkbox"/>                                                                                       | _____                         |
| <input type="checkbox"/>                                                                                       | total # observed = _____      |
| <input type="checkbox"/>                                                                                       | # range expected = _____      |
| Average width <u>85</u> m                                                                                      |                               |
| Average depth <u>0.5</u> m                                                                                     |                               |
| Velocity measured at <u>60</u> meter mark.                                                                     |                               |
| WQ & chemistry taken at <u>60</u> meter mark.                                                                  |                               |
| Habitat Smothering:<br>Note areas (on map) where sand or silt is smothering substrates, limiting habitability. |                               |
| Bank Stability:<br>Note areas (on map) with unstable, eroding banks.                                           |                               |
| Riparian Buffer Width:<br>Note areas (on map) where natural vegetation is altered or eliminated.               |                               |

Plants observed / other notes:

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

| Site: <i>Wakulla River @ Boat Tram</i> |                            |                                  |           |              | County: <i>Wakulla</i> |                            | Date: <i>10-18-21</i>            |           | Investigators: <i>Blake Spencer &amp; Evelyn Becerra</i> |                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------|----------------------------|----------------------------------|-----------|--------------|------------------------|----------------------------|----------------------------------|-----------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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                                             | STORET Station Number:                                                                                                                                                                                                                                                                                                                                              |
| 8                                      | 1                          | X                                |           |              | 8                      | 1                          | N                                |           |                                                          | Secchi depth <i>0.5</i><br>Estimated? <i>N</i>                                                                                                                                                                                                                                                                                                                      |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | N                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 6                                      | 1                          | X                                |           |              | 2                      | 1                          | 6                                |           |                                                          | # points ranked 4-6 <i>53</i><br>total points assessed <i>89</i><br>% points ranked 4-6 <i>60%</i>                                                                                                                                                                                                                                                                  |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | N                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 8                                      | 1                          | X                                |           |              | 8                      | 1                          | 6                                |           |                                                          | Check accompanying data collected at same site/date.<br>Algal mat sample <input checked="" type="checkbox"/><br>Linear Veg Survey <input checked="" type="checkbox"/><br>Habitat Assessment <input checked="" type="checkbox"/><br>SCI/Biorecon <input checked="" type="checkbox"/><br>Water sample <input checked="" type="checkbox"/><br>RQ- <i>2021-10-18-05</i> |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | N                                |           |              |                        | 4                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | N                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 10                                     | 1                          | X                                |           |              | 70                     | 1                          | 6                                |           |                                                          | Algal Thickness Rank<br>N rough, no algae, slimy, algae up to 1mm<br>3 >1mm - 6mm<br>4 >6mm - 20mm<br>5 >20mm - 10 cm<br>6 >10 cm                                                                                                                                                                                                                                   |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | N                                |           |              |                        | 4                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | N                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 5                                      | 1                          | N                                |           |              | 5                      | 1                          | X                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | N                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 9                                      | 1                          | N                                |           |              | 8                      | 1                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | N                                |           |              |                        | 6                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 20                                     | 1                          | 6                                |           |              | 80                     | 1                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | N                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 6                                      | 1                          | N                                |           |              | 6                      | 1                          | X                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | N                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 9                                      | 1                          | 6                                |           |              | 7                      | 1                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | N                                |           |              |                        | 6                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 30                                     | 1                          | 6                                |           |              | 90                     | 1                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | N                                |           |              |                        | 6                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 6                                      | 1                          | N                                |           |              | 3                      | 1                          | X                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | N                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | 6                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | 6                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 9                                      | 1                          | N                                |           |              | 8                      | 1                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | N                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | N                                |           |              |                        | 8                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 40                                     | 1                          | 6                                |           |              | 100                    | 1                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | N                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | N                                |           |              |                        | 8                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 5                                      | 1                          | N                                |           |              | 5                      | 1                          | X                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | 6                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | N                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | N                                |           |              |                        | 8                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 7                                      | 1                          | X                                |           |              | 50                     | 1                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | N                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | N                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | N                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
| 4                                      | 1                          | X                                |           |              | 4                      | 1                          | X                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 2                          | 6                                |           |              |                        | 2                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 3                          | N                                |           |              |                        | 3                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 4                          | 6                                |           |              |                        | 4                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 5                          | 6                                |           |              |                        | 5                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 6                          | 6                                |           |              |                        | 6                          | 6                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 7                          | N                                |           |              |                        | 7                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 8                          | N                                |           |              |                        | 8                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |
|                                        | 9                          | N                                |           |              |                        | 9                          | N                                |           |                                                          |                                                                                                                                                                                                                                                                                                                                                                     |

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

Waterbody: Wakulla River @ Boat Tram Date: 6/19/21 County: Wakulla Storet Number: 44059  
 Analyst: Blake Spencer Signature: Blake

## Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1m<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 |                            |
| <i>Alternanthera philoxeroides</i>                             |            |       |       |       |       |       |       |       |       |        |                            | <i>Micranthemum glomeratum</i>   |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Bacopa caroliniana</i>                                      |            |       |       |       |       |       |       |       |       |        |                            | <i>Micranthemum umbrosum</i>     |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Bacopa monnieri</i>                                         |            |       |       |       |       |       |       |       |       |        |                            | <i>Myriophyllum aquaticum</i>    |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Bidens mitis</i>                                            |            |       |       |       |       |       |       |       |       |        |                            | <i>Najas guadelupensis</i>       |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Boehmeria cylindrica</i>                                    |            |       |       |       |       |       |       |       |       |        |                            | <i>Nuphar luteum</i>             |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Centella asiatica</i>                                       |            |       |       |       |       |       |       |       |       |        |                            | <i>Orontium aquaticum</i>        |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Ceratophyllum demersum</i>                                  |            |       |       |       |       |       |       |       |       |        |                            | <i>Panicum hemitomon</i>         |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Chara</i>                                                   |            |       |       |       |       |       |       |       |       |        |                            | <i>Panicum repens</i>            |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Cicuta maculata</i>                                         | X          | X     | X     | X     | X     | X     | X     | X     | X     | X      |                            | <i>Panicum rigidulum</i>         |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Cladium jamaicense</i>                                      | X          | X     | X     | X     | X     | X     | X     | X     | X     | X      |                            | <i>Pistia stratioides</i>        |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Colocasia esculenta</i>                                     |            |       |       |       |       |       |       |       |       |        |                            | <i>Polygonum glabra</i>          | X          | X     | X     | X     | X     |       |       | X     | X     |        |                            |
| <i>Commelina diffusa</i>                                       |            |       |       |       |       |       |       |       |       |        |                            | <i>Polygonum hydropiperoides</i> |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Commelina virginica</i>                                     |            |       |       |       |       |       |       |       |       |        |                            | <i>Polygonum punctatum</i>       |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Crinum americanum</i>                                       |            |       |       |       |       |       |       |       |       |        |                            | <i>Pontedaria cordata</i>        | X          | X     | X     | X     | X     | X     | X     | X     | X     |        |                            |
| <i>Diodia virginiana</i>                                       |            |       |       |       |       |       |       |       |       |        |                            | <i>Potamogeton illinoensis</i>   |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Eichhornia crassipes</i>                                    |            |       |       |       |       |       |       |       |       |        |                            | <i>Ruellia simplex</i>           |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Eleocharis (wispy viviparous)</i>                           |            |       |       |       |       |       |       |       |       |        |                            | <i>Sacciolepis striata</i>       |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Hydrilla verticillata</i>                                   |            |       |       |       |       |       |       |       |       |        |                            | <i>Sagittaria kurziana</i>       | D          | D     | D     | D     | D     | D     | D     | D     | D     |        |                            |
| <i>Hydrocotyle</i>                                             | X          | X     | X     | X     | X     | X     | X     | X     | X     | X      |                            | <i>Sagittaria lancifolia</i>     | X          | X     | X     | X     | X     | X     | X     | X     | X     |        |                            |
| <i>Hygrophila polysperma</i>                                   |            |       |       |       |       |       |       |       |       |        |                            | <i>Sagittaria latifolia</i>      |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Hymenocallis</i>                                            |            |       |       |       |       |       |       |       |       |        |                            | <i>Salvinia minima</i>           |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Lachnanthes caroliniana</i>                                 |            |       |       |       |       |       |       |       |       |        |                            | <i>Samolus parviflora</i>        |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Landoltia punctata</i>                                      |            |       |       |       |       |       |       |       |       |        |                            | <i>Saururus cernuus</i>          |            |       |       |       |       |       |       | X     | X     |        |                            |
| <i>Lemna</i>                                                   | X          | X     | X     | X     | X     | X     | X     | X     | X     | X      |                            | <i>Sparganium americanum</i>     |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Limnophila sessiflora</i>                                   |            |       |       |       |       |       |       |       |       |        |                            | <i>Typha</i>                     |            | X     | X     |       |       |       |       |       |       |        |                            |
| <i>Ludwigia leptocarpa</i>                                     |            |       |       |       |       |       |       |       |       |        |                            | <i>Vallisneria americana</i>     |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Ludwigia palustris</i>                                      |            |       |       |       |       |       |       |       |       |        |                            | <i>Zizania aquatica</i>          |            |       |       |       |       |       |       |       |       |        |                            |
| <i>Ludwigia peruviana</i>                                      |            |       |       |       |       |       |       |       |       |        |                            | <i>Mikania scandens</i>          | X          | X     | X     | X     | X     | X     | X     | X     | X     |        |                            |
| <i>Ludwigia repens</i>                                         | X          |       | X     | X     | X     | X     | X     | X     | X     | X      |                            | <i>Rhynchospora inundata</i>     | X          | X     | X     | X     | X     | X     | X     | X     | X     |        |                            |
| <i>Luziola fluitans</i>                                        |            |       |       |       |       |       |       |       |       |        |                            | <i>Rumex verticillatus</i>       |            |       | X     |       |       |       |       |       |       |        |                            |
|                                                                |            |       |       |       |       |       |       |       |       |        |                            | <i>Scirpus californicus</i>      | X          | X     | X     | X     | X     | X     | X     | X     | X     |        |                            |
|                                                                |            |       |       |       |       |       |       |       |       |        |                            | <i>Unknown 1</i>                 | X          |       | X     |       |       |       |       |       |       |        |                            |
|                                                                |            |       |       |       |       |       |       |       |       |        |                            | <i>Lobelia cardinalis</i>        |            |       |       | X     | X     |       |       |       |       |        |                            |
|                                                                |            |       |       |       |       |       |       |       |       |        |                            | <i>Unknown 2</i>                 |            |       |       |       |       |       | X     | X     | X     |        |                            |
|                                                                |            |       |       |       |       |       |       |       |       |        |                            | <i>Conoclinium coelestinum</i>   |            |       |       |       |       |       | X     | X     | X     |        |                            |
|                                                                |            |       |       |       |       |       |       |       |       |        |                            | <i>Riccia sp.</i>                | X          |       | X     |       |       |       |       |       |       |        |                            |
| 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                                      |            |       |       |       |       |       |       |       |       |        |                            |                                  |            |       |       |       |       |       |       |       |       |        |                            |

## DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID \_\_\_\_\_ ORG ID 21FLW0A LATITUDE 30.23459  
 COUNTY Wakulla STORET # 44059 LONGITUDE -84.29447  
 DATE 10/19/21 TIME 1201 SAMPLING AGENCY FDEP  
 SITE NAME Wakulla River @ Boat Tram  
 FIELD ID/NAME 44059 RECEIVING BODY OF WATER St. Marks River

## RIPARIAN ZONE / STREAM FEATURES

|                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |                                                                                                                                                                                                              |  |  |  |                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PREDOMINANT LAND-USE IN WATERSHED</b> (specify relative percent in each category):<br>Forest/Natural <u>78</u> Silviculture <u>0</u> Field/Pasture <u>2</u> Agricultural <u>0.9</u> Residential <u>17</u> Commercial <u>0.7</u> Industry <u>0.9</u> Other (Specify) <u>Water</u>                                                                                |  |  |  |                                                                                                                                                                                                              |  |  |  | <b>Landscape Development Intensity Index (LDI)</b><br><u>1.17</u>                                                                                                                         |
| Local Watershed Erosion (select one): <input type="checkbox"/> None <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy<br>Local Watershed NPS Pollution: <input type="checkbox"/> No evidence <input checked="" type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy |  |  |  |                                                                                                                                                                                                              |  |  |  | <b>Typical Width (m) Depth (m)/Velocity (m/sec) Transect</b><br><u>45</u> m wide<br><u>0.5</u> m/s <u>0.5</u> m/s <u>0.5</u> m/s<br><u>0.8</u> m deep <u>0.8</u> m deep <u>0.8</u> m deep |
| <b>Width of Riparian Vegetation (m) on Each Buffer Side</b><br>Left Bank: <u>&gt;18m</u> Right Bank: <u>&gt;18m</u>                                                                                                                                                                                                                                                |  |  |  | <b>Hydrologic Modification Score</b> (per FT 3101) <u>3-4</u>                                                                                                                                                |  |  |  |                                                                                                                                                                                           |
| <b>High Water Mark:</b> <u>0.5</u> + <u>0.5</u> = <u>1.0</u><br>(m) (above present water level) (present depth) (above bed)                                                                                                                                                                                                                                        |  |  |  | <b>Artificially Impounded</b><br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                                                                                         |  |  |  |                                                                                                                                                                                           |
| <b>Artificially</b> <input checked="" type="checkbox"/> No <input type="checkbox"/> Mostly recovered, more sinuous<br><b>Channelized:</b> <input type="checkbox"/> Some recovery <input type="checkbox"/> Recent, severe                                                                                                                                           |  |  |  | <b>Canopy Cover %</b> <input checked="" type="checkbox"/> Open <input type="checkbox"/> Lightly Shaded (11-45%)<br><input type="checkbox"/> Heavily Shaded <input type="checkbox"/> Moderate Shaded (46-80%) |  |  |  |                                                                                                                                                                                           |

## SEDIMENT / SUBSTRATE

| <b>Sediment Oils</b><br><input checked="" type="checkbox"/> Absent <input type="checkbox"/> Slight<br><input type="checkbox"/> Moderate <input type="checkbox"/> Profuse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |                          | <b>Sediment Odors</b><br><input checked="" type="checkbox"/> Normal <input type="checkbox"/> Sewage <input type="checkbox"/> Petroleum<br><input type="checkbox"/> Chemical <input type="checkbox"/> Anaerobic<br><input type="checkbox"/> Other (Specify): _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |              | <b>Smothering of Substrates</b><br>Sand Smothering: None <input type="checkbox"/> Slight <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/><br>Silt Smothering: None <input type="checkbox"/> Slight <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Severe <input type="checkbox"/><br>Algae Smothering: None <input type="checkbox"/> Slight <input type="checkbox"/> Moderate <input type="checkbox"/> Severe <input checked="" type="checkbox"/> |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|------------|--------------------------|--------------------------|-------------------------------------|--------------------------|-----------------|--------------------------|--------------------------|--------------------------|-------------------------------------|-----------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|-----------------------------------------|---------|--|--|--|--|--|--|--|------------|
| <b>SUBSTRATE TYPE</b><br>Assessment Tool: <input checked="" type="checkbox"/> SCI <input checked="" type="checkbox"/> RPS <input checked="" type="checkbox"/> LVS<br><input type="checkbox"/> LCI <input type="checkbox"/> BioRecon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                     |                          | <b>WATER QUALITY</b> <table border="1"> <thead> <tr> <th></th> <th>Depth (M)</th> <th>Temp. (°C)</th> <th>pH (SU)</th> <th>D.O. (MGL)</th> <th>D.O. Sat (%)</th> <th>Cond. (UMHO/CM)</th> <th>Salinity (PPT)</th> <th>SECCHI (M)</th> </tr> </thead> <tbody> <tr> <td>Top:</td> <td><u>0.3</u></td> <td><u>21.25</u></td> <td><u>7.37</u></td> <td><u>3.52</u></td> <td><u>39.6</u></td> <td><u>298</u></td> <td><u>0.14</u></td> <td><u>0.5</u></td> </tr> <tr> <td>Mid:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><input checked="" type="checkbox"/> VOB</td> </tr> <tr> <td>Bottom:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><u>0.5</u></td> </tr> </tbody> </table> |                                     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                                         |                          | Depth (M)                | Temp. (°C)               | pH (SU)                             | D.O. (MGL) | D.O. Sat (%)             | Cond. (UMHO/CM)          | Salinity (PPT)                      | SECCHI (M)               | Top:            | <u>0.3</u>               | <u>21.25</u>             | <u>7.37</u>              | <u>3.52</u>                         | <u>39.6</u>           | <u>298</u>                          | <u>0.14</u>              | <u>0.5</u>               | Mid:                     |                                                                                                                                                                                                                           |  |  |  |  |  |  | <input checked="" type="checkbox"/> VOB | Bottom: |  |  |  |  |  |  |  | <u>0.5</u> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Depth (M)                           | Temp. (°C)               | pH (SU)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | D.O. (MGL)                          | D.O. Sat (%) | Cond. (UMHO/CM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Salinity (PPT) | SECCHI (M)                              |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| Top:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <u>0.3</u>                          | <u>21.25</u>             | <u>7.37</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <u>3.52</u>                         | <u>39.6</u>  | <u>298</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <u>0.14</u>    | <u>0.5</u>                              |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| Mid:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | <input checked="" type="checkbox"/> VOB |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| Bottom:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                | <u>0.5</u>                              |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| Woody Debris (Snags) <u>10/0</u> <u>10/10</u> <u>10/10</u><br>Undercut Banks / Roots <u>10/0</u> <u>10/10</u> <u>10/10</u><br>Leaf Packs or Mat <u>10/0</u> <u>10/10</u> <u>10/10</u><br>Aquatic Vegetation <u>&gt;30/10</u> <u>10/10</u> <u>10/10</u><br>Rock or Shell Rubble <u>10/0</u> <u>10/10</u> <u>10/10</u><br>Sand <u>10/0</u> <u>10/10</u> <u>10/10</u><br>Mud / Muck / Silt <u>10/0</u> <u>10/10</u> <u>10/10</u><br>Other <u>10/0</u> <u>10/10</u> <u>10/10</u><br>Other <u>10/0</u> <u>10/10</u> <u>10/10</u>                                                                                                                                                                                                                                                                                                                                                                                               |                                     |                          | <b>Water Odors</b> Normal <input checked="" type="checkbox"/> Petroleum <input type="checkbox"/><br>Sewage <input type="checkbox"/> Chemical <input type="checkbox"/> Other <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                     |              | <b>Water Surface Oils</b> Normal <input checked="" type="checkbox"/> Sheen <input type="checkbox"/><br>Globbs <input type="checkbox"/> Slick <input type="checkbox"/> Other <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                          |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                          | Water Sample Taken? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Sample Preserved? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Lot Number: <u>See Field</u> Exp: <u>Sheet</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |              | <b>Color</b> Tannic <input checked="" type="checkbox"/> Green (Algae) <input type="checkbox"/><br>Clear <input type="checkbox"/> Other (Specify) <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                     |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                     |                          | Algae Sample Taken? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Sample Preserved? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br>Lot Number: <u>Ice</u> Exp: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                     |              | <b>Clarity</b> Clear <input checked="" type="checkbox"/> Slightly Turbid <input type="checkbox"/><br>Turbid <input type="checkbox"/> Opaque <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                          |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| <b>ABUNDANCE</b> <table border="1"> <thead> <tr> <th></th> <th>Not Obs.</th> <th>Rare</th> <th>Common</th> <th>Abundant</th> </tr> </thead> <tbody> <tr> <td>Periphyton:</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Fish:</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Aquatic Plants:</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Iron/Sulfur Bacteria:</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> |                                     |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Not Obs.                            | Rare         | Common                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Abundant       | Periphyton:                             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Fish:      | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Aquatic Plants: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Iron/Sulfur Bacteria: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <b>System Type:</b> Stream <input type="checkbox"/> Lake <input type="checkbox"/> Wetland <input type="checkbox"/> Estuary <input type="checkbox"/> Other (Specify) <input checked="" type="checkbox"/> <u>Spring Run</u> |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Not Obs.                            | Rare                     | Common                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Abundant                            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| Periphyton:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <input checked="" type="checkbox"/> |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| Fish:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <input type="checkbox"/>            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| Aquatic Plants:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <input type="checkbox"/>            | <input type="checkbox"/> | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <input checked="" type="checkbox"/> |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| Iron/Sulfur Bacteria:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <input type="checkbox"/>            |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |
| <b>AMBIENT FIELD CONDITIONS / NOTES:</b><br><input checked="" type="checkbox"/> The antecedent hydrologic conditions have been met to my best knowledge.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                     |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                     |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                                         |                          |                          |                          |                                     |            |                          |                          |                                     |                          |                 |                          |                          |                          |                                     |                       |                                     |                          |                          |                          |                                                                                                                                                                                                                           |  |  |  |  |  |  |                                         |         |  |  |  |  |  |  |  |            |

SAMPLING TEAM

Blake Spencer, Evelyn Becerra, Jesse Pfadenhauer

SIGNATURE:

B. Spencer

DATE:

10/19/21



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

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

Meter ID: Exo #1

RQ- 2021-10-18-06

Project: Wakulla RMAP

- 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.

## Temperature (Quarterly) FT 1400

Date of Last Temperature Verification \_\_\_\_\_

| DO DEP SOP FT 1500 | Name          | Date     | Time CT-ET | Temp °C | Baro-meter mmHg | D.O. Chart mg/L | Meter D.O. mg/L | % DO  | Probe Charge | Probe Gain | Pass / Fail | Lab / Field |
|--------------------|---------------|----------|------------|---------|-----------------|-----------------|-----------------|-------|--------------|------------|-------------|-------------|
| Calibr.            | Blake Spencer | 10/18/21 | 0745       | 20.9    | 760.2           | 8.9             | 8.95            | 100.0 | —            | 1.1581     | (P) F       | (L) F       |
| ICV                | Blake Spencer | 10/18/21 | 0746       | 20.7    | 760.3           | 8.9             | 8.96            | 99.8  | —            | —          | (P) F       | (L) F       |
| CCV                | Blake Spencer | 10/18/21 | 1354       | 20.6    | 760.3           | 9.0             | 9.25            | 101.3 | —            | —          | (P) F       | (L) F       |
| CCV                |               |          |            |         |                 |                 |                 |       |              |            | P / F       | L / F       |

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

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

Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

| Spec. Cond. FT 1200 | Name          | Date     | Time CT-ET | Lot #    | Expir. Date | Standard $\mu$ hos/cm | Meter Reading $\mu$ hos/cm | Pass / Fail | Lab / Field |
|---------------------|---------------|----------|------------|----------|-------------|-----------------------|----------------------------|-------------|-------------|
| Calibr.             | Blake Spencer | 10/18/21 | 0750       | 2108175  | 08/22       | 1000                  | 1000                       | (P) F       | (L) F       |
| ICV                 | Blake Spencer | 10/18/21 | 0751       | 2108175  | 08/22       | 1000                  | 1000                       | (P) F       | (L) F       |
| CCV                 | Blake Spencer | 10/18/21 | 1350       | 4103 K46 | 03/23       | 100                   | 101.1                      | (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 | Temp °C | Meter reading SU | mV     | Pass / Fail | Lab / Field |
|--------------------|---------------|----------|------------|---------|-------------|--------------|---------|------------------|--------|-------------|-------------|
| Calibr.            | Blake Spencer | 10/18/21 | 0753       | 210817A | 02/23       | 7.02         | 20.8    | 7.02             | -31.1  | (P) F       | (L) F       |
| Calibr.            | Blake Spencer | 10/18/21 | 0759       | 210817B | 02/23       | 4.00         | 20.7    | 4.00             | 146.9  | (P) F       | (L) F       |
| Calibr.            | Blake Spencer | 10/18/21 | 0802       | 200209B | 06/22       | 10.05        | 20.9    | 10.05            | -199.9 | (P) F       | (L) F       |
| ICV                | Blake Spencer | 10/18/21 | 0903       | 201209B | 06/22       | 10.05        | 20.9    | 10.02            | -200.1 | (P) F       | (L) F       |
| CCV                | Blake Spencer | 10/18/21 | 1353       | 210817D | 02/23       | 7.02         | 20.6    | 7.07             | -31.4  | (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)

Does meter have a depth sensor that will be used to measure total depth & sample depth? YES / NO / NA (not surf. water project)

If YES, complete daily Calibr. & ICV below and list date of last quarterly depth verification: \_\_\_\_\_

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: \_\_\_\_\_; Date of last 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                   | Blake |      |            |                                           |                   | 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:

Cooler Packing Worksheet for Request: RQ-2021-10-18-06

Wakulla BMAP

Ship Cooler On: 10/14/2021

Customer/Project: WAS-SECT/BMAP

Assigned To: SHAIK\_A

Requester: Curtis Musson

Priority: 3

850-245-8453

2600 Blair Stone Rd

Tallahassee, FL 32399

Attn: Curtis Musson

Comments:

Group A: Nutrients, Metals, Tracers, Q-PSNP-TQ

Group B: SCI, Algae\_ID

Packing Notes:

1 - case of sulfuric acid ✓

1 - case of nitric acid ✓

No FedEx Labels

No Trash Bag

Requested Analyses:

**Bottle Group: A**

**# of Sites: 1**

Container ID: P-1L

Qty: 1 Preservation: ICE

Lot # 00081379

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 CaCO<sub>3</sub>/L

Turbidity in aqueous matrices

Chloride in aqueous matrices

True Color measured at 450 nm (not valid for NPDES monitoring)

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 using a maximum of 250 mL of sample

Container ID: BP-1L

Qty: 1 Preservation: ICE

Lot # 1326677

Description: Brown Plastic Bottle 1L

**Analysis**

CHLSUITE-W

**Description**

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

Container ID: BG-500ML

Qty: 1

Preservation: ICE

Lot # 80737

Description: Brown Glass Bottle 500ML \*FILL Completely\*

Affix BLUE dot to container.

**Analysis**

W-E8321-DI

W-E8321-MS

**Description**

Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

Container ID: P-500ML

Qty: 1

Preservation: HNO3

Lot # 81236

Description: Plastic Bottle 500 mL

Affix RED nitric acid dot to container.

**Analysis**

W-HARD

W-ICP

W-ICPMS

**Description**

Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3

Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects

Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects

Container ID: P-500ML

Qty: 1

Preservation: ICE And H2SO4

Lot # 81236

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: 1

Preservation: FILTER-ICE

Lot # 80515

Description: Plastic Bottle 125 mL

**Analysis**

W-PO4-F

**Description**

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

Container ID: BG-1L

Qty: 4

Preservation: ICE

Lot # 8074098

Description: Brown Glass Bottle 1L

Affix BLUE dot to container.

**Analysis**

W-PSNP-TQ

**Description**

Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS

**Bottle Group: B**

**# of Sites: 1**

Container ID: PT-50ML

Qty: 1 Preservation: ICE

Lot # 11621053

Description: Plastic Tube 50 mL

Analysis

ALGAL\_ID

Description

Qualitative assessment of algal taxa present without counts

Container ID: PJ-2L

Qty: 2 Preservation: Formalin

Lot # B15509/20

Description: Plastic Jar 2 L

Analysis

MI-FW-QLDC

Description

No. Taxa of FW macroinverts, qual samp, 20 dipnets.

Cooler Packed By: ASB

Number of Coolers: 1

Date: 10-13-21

Kit must also include:

- ☒ Field Sheets
- ☒ Temperature Control Bottle
- ☒ FedEx Bills, if applicable
- ☒ Plastic Bags/Zip Ties
- ☒ Acid Labels (sets of 24)

If Preservation Included:

|    |                 |     |       |       |       |
|----|-----------------|-----|-------|-------|-------|
| ID | _____           | Exp | _____ | Lot # | _____ |
| ID | <b>H2S04</b>    | Exp | _____ | Lot # | _____ |
| ID | LOT# SA1105060  | Exp | _____ | Lot # | _____ |
| ID | EXP: 04/30/2022 | Exp | _____ | Lot # | _____ |
| ID | _____           | Exp | _____ | Lot # | _____ |
| ID | <b>HN03</b>     | Exp | _____ | Lot # | _____ |
| ID | LOT# NA1105100  | Exp | _____ | Lot # | _____ |
| ID | EXP: 06/07/2022 | Exp | _____ | Lot # | _____ |

**PLEASE RETURN ALL COOLERS . OR RQ-2021-10-18-06**