Monitoring Plan

For

A-2 STA Downstream Monitoring

(A2STADS)

AGENCY: United States Army Corps of Engineers (ACOE)

Document Date: 01/05/2021 - FINAL

Water Quality Monitoring Section
Water Quality Bureau, Water Resources Division
South Florida Water Management District

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1.0 Project Organization

The following documents define the procedures used by South Florida Water Management District (SFWMD or District) personnel to meet the Florida Department of Environmental Protection's (FDEP or Department) Quality Assurance (QA) Rule, Florida Administrative Code (F.A.C.) 62-160, and should be referred to for details on key personnel and relevant responsibilities.

- Overall project organization and responsibilities -
    - SFWMD Water Quality Bureau (WQB) Quality Management Plan (QMP).
- Field activity and data validation responsibilities -
    - SFWMD Water Quality Monitoring Section's (WQM) Quality Manual (QM), Field Sampling Manual (FSM), and applicable Standard Operating Procedures (SOP).
- Laboratory analysis and data validation responsibilities –
    - SFWMD Analytical Service's (AS) Chemistry Laboratory Quality Manual (CLQM) and applicable SOPs.

2.0 Project Introduction and Background

This document serves as a reference for surface water quality monitoring for A-2 Stormwater Treatment Area (STA) Downstream (A2STADS). This monitoring plan was developed in response to permit SAJ-2018-03427 issued by the U.S. Army Corps of Engineers to the District for construction and operation of the A-2 STA. Specific Condition 10.b.iv states: To request authorization of Phase III construction to proceed, the Permittee must submit "a final water quality monitoring plan that includes the addition of two water quality monitoring stations near the northern boundary of Miccosukee Reservation lands in Water Conservation Area 3A. The monitoring plan shall include a plan to begin baseline sampling prior to implementation of A-2 STA project features". Samples and/or data are collected to satisfy the mandated monitoring requirements in accordance with the permit(s) to which this document is attached.

Baseline monitoring is anticipated to begin in 2021 and will continue until the permit expires on April 17, 2025.

3.0 Geographic Location

A2STADS is located within Broward County in the northwest section of Water Conservation Area 3A (Figure 1). Two (2) monitoring station(s) will be sampled for this project. Station locations and descriptions are listed in Table 1 with locations also depicted in Figure 1.

Table 1: A2STADS Surface Water Monitoring Stations and GPS Coordinates

Station	Latitude (ddmmss.sss)	Longitude (ddmmss.sss)	Description
CA326	261540.000	804521.600	In the marsh, approximately 2.4 km east southeast of stage gauge 3A-NW
CA327	261543.000	804810.300	In the marsh, approximately 2.35km west southwest of stage gauge 3A-NW

The standard positional goal for station coordinates is detailed in the Water Quality Monitoring Station Registration SOP (SFWMD-FIELD-SOP-031). Coordinates are relative to NAD83 HARN horizontal datum.

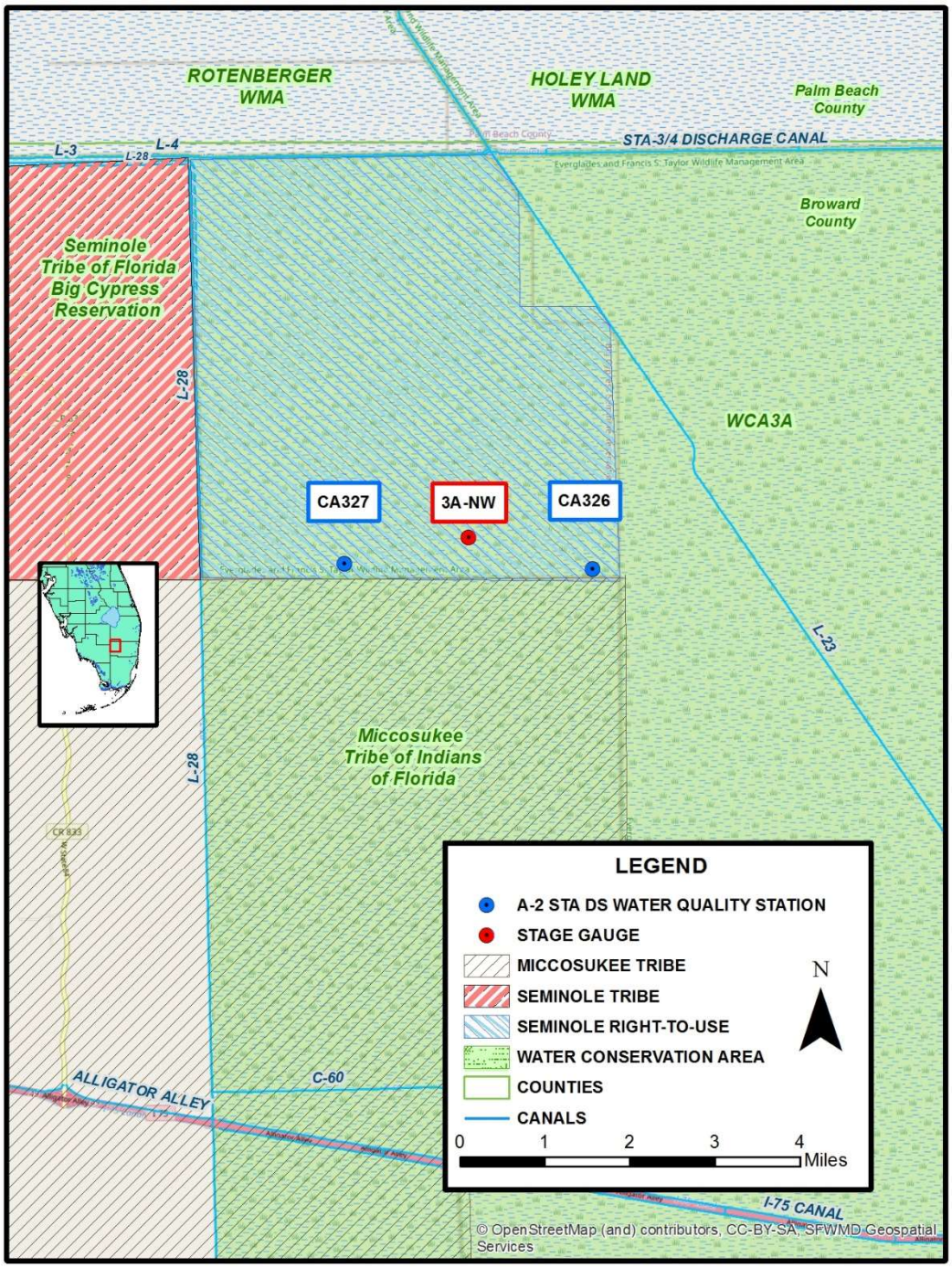

Figure 1: A2STADS Station Location Map

4.0 Sample Collection Procedures

Samples, including field testing and field quality control samples will be collected in accordance with the FDEP Quality Assurance Rule, 62-160 F.A.C. and the current version of the FSM. Applicable sections of the FSM include, but are not limited to, field sample collection procedures, decontamination procedures, field testing and quality control requirements. All samples required for collection are depicted in Table 2.

Surface water sample collection will follow the procedures in the latest version of the Standard Operating Procedures (SOP) for Surface Water Quality Sampling in Marshes (SFWMD-FIELD-SOP-004). This includes the procedures for measuring water depth, modifying sampling based on decreasing water depths, and suspending marsh sampling during low water events. Sediment sample collection will follow the procedures in the latest version of the District's SOP for sediment coring (SFWMD-Field-SOP-017).

The District has developed water depth relationships between monitoring stations and nearby stage gauges. If such a relationship has been developed for water quality stations CA326 and CA327 with nearby stage gauge 3A-NW, a procedure to temporarily suspend sampling based on remotely transmitted stage data may be implemented.

4.1 Field Testing Procedures

Field testing procedures follow the procedures and requirements found in the FSM. Table 2 below describes the field parameters collected for this project.

Table 2: A2STADS Station, Matrix/Collection Method, Frequency and Parameter TESTS

Station	Matrix/ Collection Method	Frequency	Parameter TESTS
CA326 CA327	Surface Water/ Grab	Monthly	Calcium (CA), Chloride (CL), Nitrate-Nitrite (NOX), Total Nitrogen (TN), Total Phosphorus (TP), Sulfate (SO4)
	Surface Water/ In Situ Grab	Monthly	Dissolved Oxygen, Specific Conductance, pH, Temperature
	Soil/ Core	Biennial (Every two years, during odd years)	Total Phosphorus, Total Nitrogen, Total Carbon, Percent Ash Content, Bulk Density, Total Calcium

4.2 Field Quality Control and Sample Submission Requirements

Field quality control requirements shall follow the procedures found in the Field Quality Control Measurements and Requirements Section of the FSM.

Samples are submitted to the laboratory on the same day as collection or via courier the following day. Samples are submitted according to the requirements outlined in the FSM. If samples are submitted to a laboratory other than the District Lab, it must be approved by the District Lab.

5.0 Data Quality Objectives (DQOs)

5.1 Data Usage

The data from this project are compiled and reported in accordance with the conditions outlined in the permit or mandate.

5.2 Data Quality

All monitoring described herein shall meet the requirements conveyed in the FDEP's Quality Assurance Rule, 62-160 F.A.C. The District has adopted a uniform set of DQOs following criteria detailed within the "Analytical Methods and Default QA/QC Targets" table of the Chemistry Laboratory Quality Manual (CLQM).

Samples are analyzed according to the provisions within the FDEP Rule 62-160 F.A.C. and the District's CLQM. This manual is updated regularly, and therefore, the most recent version of the District's CLQM details DQOs for this project at the time of sample collection for each specific laboratory analysis. Data are qualified in accordance with the FSM, CLQM and applicable data validation SOPs.

5.3 Completeness Target

The completeness target (i.e., the number of samples successfully collected and analyzed) shall be set at 95% annually for this project. Sampling attempts shall be included in the completeness target. At times samples will not be able to be collected because of no flow or low water conditions, unsafe station conditions, equipment malfunction, site maintenance, tropical storms/hurricanes or other unforeseen problems that might affect sample collection and/or quality. If samples cannot be collected on an attempt, collectors shall document "no bottle" (NOB) to indicate and attempt was made and/or the sample could not be collected for the documented reasons.

6.0 Data and Records Management

The District evaluates data in accordance with the data quality objectives stated in the District's FSM and CLQM. All data submittals shall conform to existing District guidelines.

6.1 Contract Deliverables

There are no contract deliverables.

6.2 Data and Record Storage

After the data validation process, all data and records are maintained so that end users can retrieve and review information relative to a sampling event. Field records are maintained in accordance with the *Archive Records Storage and Retention* SOP (SFWMD-

FIELD-SOP-022). All analytical data and specified metadata are sent to the DBHYDRO database for long-term storage and retrieval.

The District maintains both records of current and historical methodologies, and SOPs so that at any given time the conditions that were applied to a sampling event can be evaluated.

Records are maintained following the WQM SOP for Archive Records Storage and Retention (SFWMD-FIELD-SOP-022). Corrections of data and/or records follow applicable WQB SOPs, CLQM, and/or FSM.

7.0 References

Florida Department of Environmental Protection. Quality Assurance Rule, 62-160 Florida Administrative Code (F.A.C.)

Florida Department of Environmental Protection. Florida Department of Environmental Protection Table as Required By Rule 62-4.246(4) Testing Methods for Discharges to Surface Water. April 25, 2006.

South Florida Water Management District. Chemistry Laboratory Quality Manual (CLQM), SFWMD-LAB-QM-2020 or most current effective version. Analytical Services Section, West Palm Beach, FL.

South Florida Water Management District. Field Sampling Manual (FSM), SFWMD-FIELD-FSM-001. Water Quality Monitoring Section. West Palm Beach, FL.

South Florida Water Management District. Field Quality Manual (QM), SFWMD-FIELD-QM-001. Water Quality Monitoring Section. West Palm Beach, FL.

South Florida Water Management District. Standard Operating Procedure for Sediment Coring, SFWMD-Field-SOP-017. Water Quality Monitoring Section. West Palm Beach, FL.

South Florida Water Management District. Standard Operating Procedure for Surface Water Quality Sampling in Marshes, SFWMD-Field-SOP-004. Water Quality Monitoring Section. West Palm Beach, FL.

South Florida Water Management District. Quality Management Plan, SFWMD-QA-QM-001. Water Quality Bureau, West Palm Beach, FL.