



Quality Assurance Plan

For

State of Florida
Department of Environmental Protection
Northwest District

September 2010

Table of Contents

Page

Signature Page.....	3
1.0 Introduction	4
2.0 Statement of Policy.....	4
3.0 Ethics.....	5
4.0 Organization and Responsibility.....	5-7
5.0 Training.....	7
6.0 Field Activities including Sample Collection and Field Parameter Measurement.....	7
7.0 Contracts.....	8
8.0 Audits and Corrective Actions.....	8
9.0 Report to Data Assessment Section.....	8

Double click on title pages of the following QA plans to open the documents

Appendix A	Drinking Water Division Quality Plan.....	9
Appendix B	Domestic and Industrial Wastewater Programs Quality Plan.....	10
Appendix C	Division of Watershed Monitoring Section Quality Plan.....	11
Appendix D	Division of Waste Management Quality Plan.....	12
Appendix E	Submerged Lands and Environmental Resources.....	13

Signature Page

The undersigned have read and understood the Quality Plan, and are charged with managing and improving the quality system and are responsible for ensuring that all staff properly executes the procedures discussed in the plan.

Bradley T. Hartshorn

Bradley T. Hartshorn: Environmental Manager
QA Officer

September 9, 2010

(Date)

Approval and Concurrence

Emile D. Hamilton

Emile D. Hamilton, District Director

June 29, 2011

(Date)

Vacant, Assistant District Director

(Date)

1.0 Introduction

The DEP Quality Assurance (QA) program involves the implementation of a management system (planning, review, training, and assessment) to ensure that data collection, generation, interpretation, reporting, evaluation and archiving are of sufficient quality to support the programs decisions. The effectiveness of the Northwest District's QA program is dependent upon the actions of all DEP staff, from "front line" employees to management, QA is a function distributed throughout our organization. One aspect of the program is to ensure that all District QA activities are carried out according to the commitments made to the Environmental Protection Agency as enumerated in the DEP Quality Management Plan (QMP) (Draft Revision 9/2/08).

The DEP Secretary is committed to implementation of the quality assurance requirements in the QMP and as authorized at 403.0623 F.S. and Chapter 62-160 F.A.C. (the DEP QA Rule). It is the Secretary's intent to carry out these obligations and requirements as detailed in the Department's QA Directive **(Effective September 18, 2009)**.

The FDEP Northwest District has developed this Quality Plan in order to execute the components of the DEP QA Directive. This document describes the steps the District will take to ensure the scientific and legal defensibility of environmental data generated or used by the District. It details the process of planning, training, execution, assessment and corrective actions that will be undertaken to ensure the data meets the Department's quality criteria.

2.0 Statement of Policy

The Northwest District's mission is to aid in the protection of Florida's environment by providing legally defensible and scientifically credible analytical and technical support to the Department of Environmental Protection programs and projects.

It is the District's policy to:

- Use scientifically valid and legally defensible data for decisions affecting the protection of the environment.
- Have and implement the Quality system described in this document.
- Adaptively manage the Quality System to be consistent with provisions of the DEP Quality Assurance Management Plan.
- Ensure that each individual is properly trained to execute their assigned functions.
- Implement procedures to evaluate the quality of the data used and to implement corrective actions when data do not meet the Data Quality Objectives.
- Periodically audit the performance and record-keeping practices of the data generators for which the District has responsibility.
- Implement quality assurance procedures for the management of data repositories.
- Perform yearly systematic assessment of quality assurance activities, including any corrective actions, with the findings submitted to the Standards and Assessment Section

This Quality Plan details the activities and evaluation criteria necessary to ensure that analytical data generated or reviewed by the Northwest District are of high and known quality and meet the scientific objectives of the Department. The Quality Plan also documents procedures intended to ensure that all data generated and entered into the Department's databases are subjected to sound quality assurance management practices. Unless otherwise stated in this Quality Plan or supporting documents, all field work, data review and data entry performed by the District will be conducted in accordance with Chapter 62-160, F. A. C.

3.0 Ethics

All employees of the DEP Northwest District are held to high professional ethical standards in the performance of their duties. All employees are required to read, understand and sign an 'Ethics Statement' attesting to their commitment to honesty and integrity in performance of their duties. Improper, unethical or illegal actions will be dealt with according to the provisions published in the *Florida Department of Environmental Protection Employee Handbook*.

4.0 Organization and Responsibility

FDEP Northwest District is headquartered in Pensacola, with branch offices in Tallahassee and Panama City. The District is responsible for implementing the Water and Waste programs for the District. These programs include the Industrial/Domestic Wastewater section, the Drinking Water section, the Submerged Lands and Environmental Resource Permitting section, the Watershed Management section, and the Waste Management section. The branch offices are comprised of staff working in all the above mentioned programs. Duties of the branch office staff mirror the duties performed in the Pensacola office. The discussion for the individual programs that follow, apply to both the Pensacola and branch offices.

The District's management team is responsible for ensuring that the quality system is applied in the various programs. The managers and supervisors ensure that Data Quality Objectives and Data Quality Indicators meet their programs needs, and review the effectiveness of the data quality activities, and take appropriate corrective action on deficiencies.

The District staff carries out the following duties:

4.1 Drinking Water

The District staff follows procedures detailed in the attached Drinking Water Program Quality Assurance Plan. In addition, District staff conducts inspections and perform on-site testing of pH, chlorine and other parameters as needed. The field testing and sampling are performed in accordance with DEP-SOP-001/01, Department of Environmental Protection Standard Operating Procedures for Field Activities, effective 12/03/2008 and referenced in section 6.

4.2 Industrial/Domestic Wastewater

The District staff follows procedures detailed in the attached Division of Water Resource Management Domestic and Industrial Wastewater Programs Water Quality Assurance Program

Plan. This plan outlines the Division's expectation for the District, and includes sections on data entry, data review, management responsibilities, field sampling and analyses, technical support and QA officer responsibilities.

4.3 Waste Management

The District staff follows procedures detailed in the attached Division of Waste Management Programs Plan. This plan outlines the Division's expectation for the District, and includes sections on data entry, data review, management responsibilities, technical support and QA officer responsibilities. In addition, this plan includes information concerning the automated data processing software tool, ADaPT. This software is designed to perform quality assurance checks on the correctness and completeness of data based on a broad range of quality assurance criteria.

4.4 Watershed Management

The District staff conducts sampling for Florida's surface water monitoring programs, including cooperative efforts with other state agencies and citizen groups that monitor water quality. District Staff also integrate monitoring data into a centralized statewide repository. Field sampling and testing are carried out as referenced in Section 6 of this QA plan. The District staff follows procedures detailed in the attached Watershed Monitoring Section Quality Assurance Program Plan. This plan outlines the Section's expectation for the District, and includes sections on data entry, data review, management responsibilities, field sampling and analyses, technical support and QA officer responsibilities.

4.5 Submerged Lands and Environmental Resource Permitting

The District staff performs field tests for turbidity to document possible violations. Permitting staff reviews water quality data from applicants submitted with permit applications and progress reports to determine the usability of the data for determination of compliance with permits or rules. The staff uses the concepts and criteria found in FDEP's "Process for Assessing Data Usability, DEP-EA-001/07". When the Submerged Lands and Environmental Resource Permitting Division's Quality Assurance Program Plan is finalized, District staff will follow procedures detailed therein. This plan will outline the Division's expectation for the District, and include sections on data entry, data review, management responsibilities, field sampling and analyses, technical support and QA officer responsibilities.

4.6 Quality Assurance Officer

The District Quality Assurance Officer coordinates and participates as needed with all programs in the quality evaluation of program data, and gives suggestions on how to improve the quality assurance of the data. When appropriate, the QA officer may delegate some responsibilities to qualified staff. The QA officer's duties include:

- Conducting District system and sampling audits.
- Documenting training, audits, and corrective action.

- Assisting program managers in the development of Quality Systems to include data quality objectives and data quality indicators.
- Attending meetings scheduled by the Standards and Assessment Section.
- Acting as the liaison between the District and the Standards and Assessment Section
- Ensuring the District's Quality Assurance Program conforms to the requirements of the Department's Quality Assurance Directive.
- Conducting Performance Audit Inspection for the Water Facilities Section.
- Preparation of an annual District QA audit report.
- Other duties as required.

5.0 Training

All personnel are properly trained to perform their duties. Management and the QA officer will assess staff performance periodically to ensure compliance with policies and procedures of the Department. Training includes:

- Training of staff for program specific QA functions
- Periodic ethics policy course
- Refresher courses for updated QA information and procedures
- Special training from the Data Assessment Section
- Annually evaluation of the effectiveness for each staff member

6.0 Field Activities Including Sample Collection and Field Parameter Measurement

All field activities including sample collection and field parameter measurement will be conducted in accordance with DEP-SOP-001/01, Department of Environmental Protection Standard Operating Procedures for Field Activities, effective 12/03/2008.

7.0 Contracts

The District ensures that its contracts are properly managed to assure appropriate data quality. As such, the following activities are conducted that relate to contract development and review:

- Detail QA expectations during contract creation
- If required, carry out necessary training for contracted personnel
- Review data with regard to QA adherence during contract execution
- Revise contracts as needed to ensure continuing QA performance
- Implement appropriate corrective actions as necessary

8.0 Audits and Corrective Actions

Annual audits will be conducted by the QA officer. These audits will provide information regarding the effectiveness of the Quality Assurance program, and identify areas that need improvement. Appropriate corrective actions will be recommended for each deficiency.

9.0 Report to Data Assessment Section

The QA officer will provide an annual summary of the District's Quality Assurance activities to management. This report will be included in the Data Assessment Section's annual report to the Department Secretary.



Drinking Water Data Quality Plan Drinking Water Program

Northwest District

Florida Department of Environmental Protection

[May 13, 2009]

Signature Page

The undersigned have read and understood this Quality Plan, are charged with managing and improving the quality measures, and are responsible for ensuring that all staff properly execute the procedures discussed in the plan.

[District Director] Date

[Assistant District Director] Date

[Drinking Water Admin] Date

[Drinking Water Manager] Date

 _____ 05/12/2009
Laura Lassiter, Program QAO Date

[District Drinking Water QAO] Date

Background and Introduction

The DEP Quality Assurance (QA) program involves the implementation of a management system (planning, review, training, and assessment) to ensure that data collection, generation, interpretation, reporting, evaluation and archiving are of sufficient quality to support Department decisions. The effectiveness of our QA program is dependent upon the actions of all DEP staff, from “front line” employees to management. QA is an integral function that is distributed throughout our organization. As such, the Drinking Water Program strives to ensure that Department QA activities are carried out according to commitments made to the Environmental Protection Agency as enumerated in the DEP Quality Management Plan (QMP).

The DEP Secretary is committed to the implementation of the quality assurance requirements in the QMP and as authorized in Section 403.0623, F.S., and Chapter 62-160, F.A.C. (the DEP QA Rule). It is the Secretary’s intent to carry out these obligations and requirements as described in the Department’s QA Directive.

In order to execute the components of the DEP QA Directive, the Drinking Water Program has developed a quality plan. This document describes the steps we take to ensure the scientific and legal defensibility of drinking water data we generate or use. It details the process we undertake to ensure that data meets our established quality criteria.

The Drinking Water Program enforces the Federal Safe Drinking Water Act (SDWA), State regulations, and strives to protect the public health of Floridians by providing safe drinking water.

Basic Elements of Our Quality Plan

Our Drinking Water Data Quality Plan explains the process we use to ensure the quality of data within our program. This plan is utilized as an instrument of internal communication to inform our staff of current and future quality assurance activities. It discusses how specific QA duties are assigned to responsible staff. We will revise our Drinking Water Data Quality Plan as needed, and will ensure the consistent application of procedures and criteria for the generation or use of our drinking water data. This plan will also be used as a training document for new staff and as a reference for experienced personnel. The plan and its revisions also serve as an archival record of our formal quality measures.

The elements of our plan are consistent with the Department’s Quality Management Plan, Quality Assurance Directive, and Quality Assurance Rule (Chapter 62-160, F.A.C.). Our plan addresses sample collection, laboratory certification, data review, the Potable Water System (PWS) database, documentation and record retention, audits, and our program’s objectives.

Where appropriate, we cite existing internal and external documents, including training manuals, guidance documents, SOPs, rules, tables, etc.

We expect all staff to read, understand and follow the procedures and criteria as discussed in this plan, and to carry out their assigned responsibilities for effective utilization of our quality measures.

Policy Statement

It is our program's policy to:

- Use scientifically valid and legally defensible data for our decisions affecting protection of the environment and public health.
- Have and implement the quality measures described in this document.
- Adaptively manage our quality measures to be consistent with provisions of the DEP Quality Assurance Management Plan.
- Ensure that each individual is properly trained to execute their assigned functions.
- Implement procedures to evaluate the quality of the data we use and to implement corrective actions when data do not meet our Data Quality Objectives.
- Implement quality assurance procedures for the management of our database.

Ethics

All employees of the DEP Drinking Water Program are held to high professional ethical standards in the performance of their duties. All employees are required to complete an annual ethics training class. Improper, unethical or illegal actions will be dealt with according to the published Administrative Directives of the Florida Department of Environmental Protection.

Organization and Responsibilities

Our program resides within the Bureau of Water Resource Management, Drinking Water Section.

The function of our program is to enforce the Federal and State SDWAs and the FDEP Drinking Water Regulations.

Responsibilities for existing staff are as follows:

Our Quality Assurance Officer (QAO) for the Drinking Water Program's sample data in Tallahassee is Laura Lassiter. She coordinates and participates in the quality evaluation of program data as needed, gives suggestions on how to improve the quality assurance of our data, and serves as a Tallahassee contact

for data quality questions. The Tallahassee QA Officer and the QAOs in the district offices work together to ensure reliability in our program's data. Each QAO assists program management in the development of the quality plan, its quality measures and other logistical aspects of its implementation, such as coordinating associated training needs. Also, the Tallahassee QAO coordinates with district Quality Assurance Officers to ensure consistency throughout the state.

The Quality Assurance Officer (QAO) for the Northwest District's Drinking Water Program sample data is Toni Touart-Rohlke. She will coordinate and participate in the quality evaluation of the program data as needed, give suggestions on how to improve the quality assurance of the data, and serves as a District contact for data quality questions. The District QAO and the Tallahassee QAO work together to ensure reliability of the Drinking Water's data. Each QAO assists program management in the development of the quality plan, its quality measures and other logistical aspects of its implementation, such as coordinating associated training needs. Also, the Tallahassee QAO coordinates with the district Quality Assurance Officers to ensure consistency throughout the state.

Our program staff routinely carry out the following duties: entering Drinking Water sample data into the PWS database, updating PWS inventory, and assigning violations and coordinating enforcement when necessary. All program staff work to ensure that their work products are defensible and adhere to DEP and EPA rules and policies.

Staff evaluate program data using program Data Quality Objectives (DQOs) and implement corrective actions as directed by the Quality Assurance Officer or program management. A list of our DQOs is found in Attachment A.

Staff also perform the following:

- Review work for conformance with quality criteria.
- Review and evaluate data.
- Interpret data or determine compliance with permits and rules.
- Check calculations.
- Review documents for errors and completeness.
- Enter and maintain accurate and current data in the PWS database.

Program staff provide feedback to the program Quality Assurance Officer for improving the program quality measures as necessary. The program QAO shall act as the contact person for questions on data quality, interpretation, procedures, or issues.

Our unit's management (Richard Drew, Van Hoofnagle, and Kenna Study) ensures that this quality system is fully operational within our program, designates our Quality Assurance Officer, and provides general oversight. These managers also evaluate the Data Quality Objectives to ensure they meet our

program's needs, and periodically evaluate the effectiveness of staff's data quality activities, including reviewing audit results. Our managers discuss audit results with the QA Officer, review the annual Quality Assurance Report to the Secretary, and discuss findings with the QA Officer.

Training

All personnel are properly trained to perform their duties. Supervisors periodically assess whether our staff performance conforms with the policies and procedures of our program and the Department. PWS database training is given routinely and when requested.

Sampling Criteria

While the Drinking Water Program neither collects nor receives drinking water samples, samples submitted to the certified laboratories must be collected according to FDEP standards. These samples provide much of our data and therefore must meet the following criteria:

- Sample collection must comply with sampling procedures identified in FDEP Chapter 62-160, F.A.C. (the DEP QA Rule).
- Samples are collected at locations in accordance with SDWA requirements.
- All field activities must be consistent with the requirements of the DEP SOPs (for drinking water, these include the Code of Federal Regulations, FDEP Chapter 62-550.560, FS 2300, and all supporting standard operating procedures including those for field testing, equipment preparation, decontamination and cleaning of appropriate sample containers, and preservation and holding time requirements).
- Samples collected must meet the receiving laboratories acceptance criteria.
- The chain of custody of the sample must be documented.

Laboratories

The Florida QA Rule requires laboratory certification for all data provided to the FDEP (Chapter 62-160.300, FAC). The laboratory certification must be from the Florida Department of Health Environmental Laboratory Certification Program (DOH ELCP) for the drinking water matrix for each analyte and method combination that is reported. The DOH ELCP is recognized by the National Environmental Laboratory Accreditation Program (NELAP) as a NELAP accrediting authority, and therefore requires adherence with the National Environmental Laboratory Accreditation Conference (NELAC) standards. Assessors who inspect laboratories performing analyses for compliance with the SDWA must have satisfactorily completed the training requirements in the On

site Assessment Chapter of the NELAC standards and, when available, EPA's Laboratory Certification Officer Training.

Data Review

Daily assessment of data quality is made by staff in 15 field offices throughout the state. Automated compliance routines and monthly assessments during the review and posting of violations also ensure data quality. Data quality is also routinely checked by Tallahassee via quarterly uploads to EPA, numerous annual publications, and annual and triennial data verifications conducted at the district offices.

Our program understands the need to evaluate the quality and usefulness of drinking water data prior to making decisions. We understand the cost associated with the monitoring of over 100 analytes and that it is important to get the monitoring schedules correct and consistent across the state (particularly when sample results produce triggers for increased monitoring). Likewise, decisions to provide public notifications of exceedances must be fast and defensible to be of any value.

We establish the usability of data for determination of compliance with permits or rules using our established Data Quality Objectives. We also use the concepts and criteria found in DEP's "Process for Assessing Data Usability", DEP-EA001/07.

Potable Water Systems Database

The Potable Water Systems (PWS) database serves as the transfer mechanism for water quality information between the Drinking Water Program, EPA, the laboratory, and the water systems. The database provides a readily available history and maintains records on all FDEP regulated water systems. The database contains edits which prevent erroneous information from being entered thereby increasing the reliability of our data.

Compliance is determined by automated compliance scripts which are run nightly by the database. This eliminates the need for individual compliance decisions in the 15 field offices and reduces the risk of human error.

Documentation and Record Retention

Accurate documentation is an important factor for determining the success of QA activities. Our program adheres to record retention times dictated by the SDWA and the Department's Record Schedules. Additionally the PWS database maintains historical records of data entry for comparison to paper documents. The Drinking Water Program is decentralized and therefore each office is responsible for its own retention of records and documents.

Audits and Corrective Actions

Audits provide objective feedback concerning the effectiveness of our program's quality measures, and may identify areas in need of improvement. Therefore, our program performs the following activities (in addition to the data reviews covered above):

- Addresses complaints and other reports received from data users and the public concerning data quality.
- Reports exceptions to established procedures and criteria.
- Devises and implements corrective actions for problems with procedures, data reviews, etc.
- Corrects compliance scripts as necessary.
- Notifies staff statewide of new guidance or policies affecting data generation and quality.

Our program is also audited by the EPA on a triennial basis. The QAO and the program's management review findings in the EPA's follow-up report. The Drinking Water Program makes adjustments to their data quality measures and the data quality plan as proven prudent from the findings within the EPA's follow-up report.

Attachment A

Data Quality Objectives

The prime objective of the FDEP Drinking Water Program is to obtain and use data that is representative of the quality and condition of the water in the distribution lines and at each entry point to the distribution of the public water supply systems (or raw or potential potable water sources). In order to meet this objective, the following activities and requirements are needed:

- Sample collection procedures are designed so that the sample represents the characteristics of the source as it is used by the public.
- To ensure data comparability, only those methods mandated in 40 CFR Parts 141 and 142 and 143 and as reflected in FDEP Chapter 62550, FAC may be used for analysis.
- The selected methods must be sensitive enough to detect the federally mandated detection limits.
- The minimum quality controls as specified by the analytical methods, laboratory certification, or the Department shall be used to assess the quality of the data.



Quality Plan

for

**Division of Water Resource Management
Domestic and Industrial Wastewater
Programs**

**Florida Department of Environmental Protection
2600 Blair Stone Rd. Tallahassee, FL 32399-2400**

April 2009

Table of Contents

1.0 Signature Page	2
2.0 Introduction.....	4
3.0 Policy Statement	5
4.0 Organization and Responsibilities	6
4.1 Tallahassee Data Management Organization and Function.....	6
4.2 Tallahassee Data Entry Responsibilities.....	6
4.3 District Data Management Organization and Function	7
4.4 District Data Entry Responsibilities.....	7
4.4.1 District Wastewater Program Data Review Process.....	7
4.4.2 Wastewater Manager's Data Responsibilities	7
4.4.3 District QA Officers Responsibilities to the Wastewater program.....	8
5.0 District Sample Collection and Data Interpretation Activities	8
5.1 District Quality Assurance Objectives.....	10
5.2 District Technical Support Responsibilities.....	9
6.0 Tallahassee Sample Collection and Data Interpretation Activities.....	9
6.1 Chemistry Support	9
6.2 Biology Support.....	9
7.0 Data Quality Components.....	Error! Bookmark not defined.
7.1 Data Quality Objectives.....	10
7.2 Data Collection, Verification and Validation	11
7.3 Corrective Actions	12
8.0 Training.....	12
8.1 QA Training Activities and Procedures.....	12
8.2 Internal Audits	12
9.0 Report Compliance.....	13
10.0 ?????.....	

1.0 Signature Page

Plan Coverage: The Quality Plan summarizes the Domestic and Industrial Wastewater programs (Wastewater) quality systems that are used within the Department. The plan covers quality assurance policies, roles and responsibilities for environmental data collection activities, evaluation and use of environmental data produced by laboratories and regulated facilities.

The undersigned have read and understood this Quality Plan, are charged with managing and improving the quality system, and are responsible for ensuring that all staff properly execute the procedures discussed in the plan.

Richard Drew, Bureau Chief Date

Elsa Potts, P.E. Program Administrator Date

Chuck Ziegmont, Environmental Administrator Date

Michael Tanski, Environmental Manager Date

2.0 Introduction

The DEP Quality Assurance (QA) program involves the implementation of a management system (planning, review, training, and assessment) to ensure that data collection, generation, interpretation, reporting, evaluation and archiving is of sufficient quality to support the programs decisions. The effectiveness of Wastewater's QA program is dependent upon the actions of all DEP staff, from "front line" employees to management, meaning QA is a function distributed throughout our organization. One aspect of the Wastewater program is to ensure that all Wastewater QA activities are carried out according to the commitments made to the Environmental Protection Agency as enumerated in the DEP Quality Management Plan (QMP) (Draft Revision 9/2/08).

The DEP Secretary is committed to implementation of the quality assurance requirements in the QMP and as authorized at 403.0623 F.S. and Chapter 62-160 F.A.C. (the DEP QA

Rule). It is the Secretary's intent to carry out these obligations and requirements as detailed in the Department's QA Directive (Draft Revision January 2008).

Wastewater's QA Plan explains both the process and criteria by which the quality system is managed. The plan is utilized as an instrument of internal communication between Tallahassee and the districts to inform our staff of current and future quality assurance activities. It discusses how specific QA duties are assigned to Tallahassee and district staff. Wastewater will revise their Quality Plan as needed to ensure the consistent application of procedures and criteria for the generation and use of our data. The Quality Plan will also be used as a training document for new staff and as a reference for experienced personnel. The plan and its revisions also serve as an archival record of our formal quality system. Where appropriate, we cite existing internal and external documents, including training manuals, guidance documents, SOPs, Rules, etc.

The elements of Wastewater's Quality Plan are consistent with the Department's Quality Management Plan, Quality Assurance Directive and Quality Assurance Rule (62-160 F.A.C.) and Department Standard Operating Procedures (SOP's). Wastewater's Quality Plan addresses all activities associated with sampling, field testing, lab analysis and data review and interpretation of any type, including those activities associated with database management. Wastewater's plan also discusses how data decisions are made based on data quality assessments.

In order to execute the components of the DEP QA Directive, the Wastewater program has developed a quality system. This document describes the steps we've taken to ensure the scientific and legal defensibility of environmental data we generate or use. It details the process of planning, training, execution, assessment and corrective actions we undertake to ensure that environmental data meets our established quality criteria.

3.0 Policy Statement

It is the Wastewater Programs policy to be strongly committed to sound science and QA practices which will produce environmental data of appropriate quality to be used for permitting, compliance, and enforcement decision making purposes.

Therefore, it's Wastewaters' policy to;

- Use scientifically valid and legally defensible data for decisions affecting permitting, compliance, and enforcement projects that relate to compliance with ground and surface water quality criteria.
- Maintain, update and implement the QA Plan as outlined in this document.
- Manage our Quality Statement to be consistent with the provisions of the Department's Quality Assurance Management Plan.

- Ensure that each individual is properly trained to execute his or her assigned tasks and job functions.
- Implement procedures to evaluate the quality of district output such as water quality data, reports used to make permitting, compliance, and enforcement decisions and any other associated documents used to make sound environmental decisions.
- Implement procedures to assure that the Department has reasonable assurances that QA objectives and criteria specified in this manual will be met.
- Periodically audit the performance and record-keeping practices of Wastewaters' data collection, reporting and management activities.
- Perform a yearly systematic assessment of district QA activities, documenting corrective actions with the findings submitted to the districts Quality Assurance Officer and the Standards and Assessment Section.

The Wastewater Program along with its managers and staff will assure that there are sufficient QA activities conducted by the program to provide reasonable confidence that all environmental data generated are scientifically valid, representative, and legally defensible. Data quality is the responsibility of all managers and staff who are directly or indirectly involved in its collection and interpretation. Senior managers are responsible for assuring that adequate resources are available to implement Wastewaters' quality assurance plan.

All employees of the DEP are held to high professional ethical standards in the performance of their duties. All employees are required to read, understand and sign an 'Ethics Statement' attesting to their commitment to honesty and integrity in performance of their duties. In addition, all employees are required to attend an annual ethics training class. Improper, unethical or illegal actions will be dealt with according to the published Administrative Directives of the Florida Department of Environmental Protection.

4.0 Organization and Responsibilities

The Wastewater programs responsibilities reside in Tallahassee and six district offices within the Division of Water Resource Management.

4.1 Tallahassee Data Management Organization and Function

Tallahassee's data management responsibilities are to receive, document, and enter all the Federal NPDES (surface water discharge) Discharge Monitoring Reports (DMRs) into EPAs Permit Compliance System (PCS) for the domestic and industrial wastewater programs. Groundwater monitoring data that is associated with NPDES facilities is also entered into the Divisions Wastewater Facility Regulation (WAFR) Database. Tallahassee also enters Non-NPDES (land application) DMRs and groundwater monitoring data for the Central and Northwest District offices. The Northeast, Southwest, South, and Southeast

District Offices receive, document, and enter into WAFR the remainder of the states Non-NPDES (land application) and groundwater monitoring DMRs for the domestic and industrial wastewater facilities.

4.2 Tallahassee Data Entry Responsibilities

DMRs must be received in Tallahassee by the 28th day following the end of the reporting month where they are then stamped as received, entered into the DMR Log, and reviewed to determine if any of the following information is incorrect (NPDES Only) before continuing on with data entry: incorrect permit number, monitoring period, outfalls, monitoring location codes, dates, duplicate DMRs and parameters that do not match the DMR. If a DMR needs minor corrections, the Data Entry Operator (DEO) will try and correct the problem themselves prior to data entry. If the problem can't be fixed in Tallahassee the DMR is returned to the district for follow-up with the facility to make the corrections and to resubmit the DMR to Tallahassee for data entry.

Once the DMRs have been entered into PCS they go through an electronic data validation process to determine if numeric violations exist and to flag them in the data system. All violations that are flagged are then reviewed by staff for data entry mistakes and to verify that they are in fact real violations.

At the beginning of each week, a Permit Compliance System (PCS) Weekly Report is run on the previous weeks entered DMR data to review and verify whether any of the listed E-90 violations are valid violations (E-90 is a term used by the Wastewater Program to identify DMR effluent limit numeric violations). The DEO(s) then pull the DMRs with the flagged violations and route them to the Compliance Coordinator to verify whether a violation is correct, a DMR format error, or a data entry error. If the Compliance Coordinator determines that the violation is a data entry error, it is re-routed back to the DEO for correction and then sent on to the district office for filing.

DMRs that are flagged as having missing data, parameters codes, or data in the wrong columns are handled by the Data Control Specialist (DCS). DMRs determined by the DCS to have missing parameter codes are forward on to the PCS State Coordinator for review and correction. DMRs that are missing data or have data in the wrong columns are forwarded back to the districts for follow-up with the facilities for correction. Once the missing data has been retrieved or the DMR format corrected it is routed back to the DCS in Tallahassee for entry into PCS and returned back to the district for filing.

4.3 District Data Management Organization and Function

There are six district offices around the state, four of which are responsible for receiving, documenting, entering, and reviewing DMR data for Non-NPDES domestic and industrial wastewater facilities and any groundwater monitoring

data associated with them. They are the Northeast, Southwest, South, and Southeast District Offices.

4.4 District Data Entry Responsibilities

The four district offices that receive DMR data directly from the facilities is entered into the WAFR data management system. All data interpretation and validation is done manually by district staff at the time of permit renewal or during routine inspections to determine if there are DMR format problems or numeric effluent violations. DMR format problems identified by district staff will work with facilities to get it corrected and re-submitted for data entry. If numeric violations are identified, enforcement may or may not be initiated depending on the frequency and severity of the violations.

4.4.1 District Wastewater Program Data Review Process (modify as necessary)

Any and all data received in the district offices whether from their own sampling efforts, DMRs, or permit renewal applications needs to be reviewed for data quality prior to making permit and/or compliance and enforcement decisions. District review of the data is to determine its reliability and usability for determining compliance with permits, enforcement orders and/or rules. Quality Assurance Officers will periodically coordinate and participate in evaluation and interpretation of program data and provide oversight to staff to ensure that their QA objectives meet department requirements.

4.4.2 Wastewater Managers Data Responsibilities

Managers and supervisors are responsible for ensuring that data collection activities within their programs are conducted in accordance with the Department's policy and comply with the directions established by the districts QA Officers and the Standards and Assessment Section (SAS). Key responsibilities of managers are to:

- Establish planning policies to ensure that appropriate QA procedures are reflected in program and operating plans.
- With the assistance of the QA Officer, encourage the development of Data Quality Objectives (DQO's) for data collection activities and review.
- Support and reinforce local quality system implementation and assessment.
- Take corrective action on deficiencies identified by the QA Officer during local assessments and overviews.
- Ensure that all staff receive appropriate QA training by the districts QA Officer and/or SAS staff.

- Ensure that all staff follow established QA responsibilities and evaluate each staffs effectiveness during annual performance evaluations.

4.4.3 District QA Officers Responsibilities to the Wastewater Program

The district QA Officers responsibilities are to train staff in the proper review, documentation, and handling of data to ensure that follow-up activities are pursued in a manner consistent with department policy and QA objectives. Other key responsibilities of the QA Officers for the Wastewater program are to:

- Conduct routine Performance Audit Inspections (PAI) of external data generators (contract and/or permitted facility laboratories).
- Ensures that corrective actions are implemented for deficiencies identified during routine PAI inspections.
- Conduct internal audits of the Departments sample handling and collection activities.
- Assist program staff in the development of a Quality System that would benefit the programs individual data quality objective for sampling and data review and interpretation.
- Document all program QA activities including training, internal and external audits and corrective actions, and provides this information to the DEP Standards and Assessment Section on a periodic basis.
- Attend meetings scheduled by the Standards and Assessment Section to keep abreast of QA issues affecting the Department and relay the information down to the appropriate district staff.
- Work with Wastewater staff on a routine basis to develop and maintain an effective QA program.
- Respond to staffs quality assurance issues, problems, and requests for guidance and/or technical direction in an effective and timely manner.

5.0 District Sample Collection and Data Interpretation Activities

Each district office is responsible for conducting their own compliance and/or enforcement sampling activities in support of the domestic and industrial Wastewater programs. This can be as simple as collecting fecal coliform samples or collecting samples as part of a full Fifth Year Inspection (FYI5) at the time of permit renewal (FYI5 is used to evaluate whether NPDES facilities are compliant with current permit limitations and has not caused an impact to the flora and fauna in the receiving waters of the state).

District staff must be proficient in sample collection and handling techniques and in data interpretation when the results are available for review. It is the responsibility of the

district QA Officer to ensure that these requirements are met and guidelines are in place to evaluate how well staff are complying and meeting these objectives.

Each district has developed their own DQOs in order to meet individual program and technical needs as established for the programs they support. These requirements are as follows:

5.1 Each District needs to enter their individual Lab QA requirements here for Technical Support of the districts sample collection activities (CSIs, FYI3 and FYI5) as well as QA Officer responsibilities.

5.2 District Technical Support Responsibilities

Technical Support staff will support the Wastewater programs compliance needs by providing technical assistance in sample collection activities and data interpretation when needed. This will reinforce and enhance the effectiveness of the programs QA objectives in providing accurate and reliable data to support the programs data needs. Specific responsibilities of the Technical Support staff are as follows:

- Technical Support staff will provide the Wastewater program with technical assistance in areas that relate to sample handling, collection, and data interpretation.
- Identify the Wastewater programs QA needs, resolve problems, and answer requests for guidance or assistance.
- Conduct and/or participate in technical program audits.
- Report data quality problems to appropriate Wastewater program managers and supervisors.
- Routinely conduct QA performance audits of internal and external sampling projects.
- Randomly review data generated from external permitting, compliance and enforcement activities.
- Implement corrective actions as necessary and as required by the districts Quality Assurance Plan.

6.0 Tallahassee Sample Collection and Data Interpretation Activities

Tallahassee's Central Laboratory and Biology Section annually assists the districts Wastewater programs by providing chemical and biological analytical support for compliance, enforcement, and permitting purposes.

6.1 Chemistry support is as follows;

- Ship sample kits to the districts with the appropriate containers and preservatives (if requested) to support the chemistry needs of the Wastewater Programs compliance objectives.
- Analyze all samples received following appropriate analytical methods and procedures for analysis, data interpretation, and reporting.
- Provide technical support to the districts for sample collection, handling, and interpretation as needed.
- Follow all department policies, procedures, and QO's for chemical analysis as established by the Bureau of Laboratory's Standard Operating Procedures:

<http://www.floridadep.org/labs/library/progplan.htm>

6.2 Biology support is as follows;

- Ship sample kits to the districts with the appropriate containers and preservatives (if requested) to support the biological needs of the Wastewater Programs compliance objectives.
- Analyze, and interpret all biological data using all methods and procedures developed and established by the Tallahassee biology section.
- Compile, interpret, and provide a written report summarizing the results of all the chemical and biological data collected as part of the FY15 and FY13 inspection program.
- Provide technical support to the districts for sample collection, handling, and interpretation as needed.
- Follow all Department policies, procedures, and QO's for biological assessments as established by the Bureau of Laboratory's Standard Operating Procedures:

<http://www.floridadep.org/labs/library/progplan.htm>

7.0 Data Quality Components

It is the Wastewater programs objective to review and evaluating the completeness, correctness, and conformance of facility self-monitoring and internally generated data against specific Data Quality Objectives. By incorporating these concepts, our program staff can routinely carry out and generate a work product that is scientific defensibility and adheres to the Departments rules, policies, and procedures.

7.1 Data Quality Objectives

The DQOs of the Wastewater program are to have staff evaluate data using criteria established by the program, the district QA Officer, and the Department for consistent review and interpretation of data and to implement corrective

actions as necessary to remedy deficiencies identified during the review and evaluation process. The following Data Quality Objectives (DQOs) are designed to ensure that submitted data meets or exceeds the threshold for scientific defensibility and adherence to Department rules and policies for the Wastewater program:

- Department approved Standard Operating Procedures (SOPs) are followed by all permitted facilities and Department staff conducting field sampling and laboratory analysis.
- Laboratory analysis is performed by facilities certified by the Department of Health and accredited under the National Environmental Laboratory Accreditation Conference (NELAC).
- NPDES monitoring data is processed, verified, and validated through a WAFR data validation process.
- Non-NPDES monitoring data is manually evaluated and verified against the programs DQO's.
- Corrective actions are taken as necessary to ensure data meets DQO and established Department criteria.
- Data is stored in an electronic format that is easily retrieved for review and verification.

7.2 Data Collection, Verification, and Validation

Data processing includes collection, verification, and validation. Precautions shall be taken each time data recorded, calculated, verified, and transcribed to prevent the introduction of errors and the loss of information. Within the Wastewater Program, data collection is almost exclusively performed by the regulated entity and less so by the department. The verification process for NPDES monitoring data has been automated using an electronic validation process. Non-NPDES monitoring data must go through a manual validation process to verify and validate that the data is complete and accurate.

Data that is manually verified must go through a series of validation steps to ensure that the data was generated correctly.

- Correct and complete transcription of the DMR data.
- Methods used by the lab meet the analytical requirements of the program.
- Spike and duplicate are routinely run to verify repeatability.
- Method Detection Limits(MDL) and Practical Quantitation Limits (PQL) are met to meet established permit limitations.
- Laboratory meets established holding times.
- Laboratory certification by the Dept. of Health and NELAC.
- Blank requirements are routinely followed.
- All other established criteria and standards are met.

7.3 Corrective Actions

Procedures are in place to insure that immediate and effective corrective action are taken when a laboratory's data quality falls outside established data quality objectives, data acceptance criteria, or quality assurance requirements. This also applies to internal data generated by the districts technical support staff.

The corrective actions process keeps management informed when corrective actions are necessary for either externally or internally generated data. The corrective actions process relates to the overall QA management scheme in terms of who is responsible for taking corrective actions when corrective actions are required, and who follows-up to verify that corrective actions have been taken and that they have produced the desired results. This is usually accomplished through the routine inspection process or enforcement process if necessary for externally generated data, and through coordination with the QAO for internally generated data. If the corrective actions process initiated by the district isn't sufficient enough to warrant the expected outcome, the SES may be summoned to assist in reaching an amicable solution.

8.0 Training

All staff are properly trained to perform their duties as well as new staff as they are hired. Supervisors and QAO's will periodically assess and verify that staff performance conforms with the policies and procedures established by the Wastewater program and the Department.

8.1 QA Training Activities and Procedures

- Training for staff in specific QA functions as outlined by the program and QA Officer.
- Annual ethics policy course with QA Coordinator
- Maintain, update, and provide specific training materials to staff on routine program requirements and QA activities.
- Provide routine refresher courses to staff on updated QA information and procedures.
- Annually evaluate the effectiveness of the QA Officers training for program staff.

8.2 Internal Audits

Annual Audits by the SES section and the QA Officer will provide valuable and objective feedback concerning the effectiveness of the Wastewater Program's quality system, and may identify areas that need improvement. However, successful implementation of the Wastewater Programs QA Program relies heavily on the submission of valid data which begins with proper sampling, handling, and data analysis and interpretation.

9.0 Report Compilation

Provide the SES section with information regarding the Wastewater Programs ongoing QA efforts and to compile and present all the results to the Secretary and EPA in an annual report.



Quality Assurance Plan for DEP Waste Program

**Division of Waste
Management District Waste
Programs**

**2600 Blair Stone Rd.
Tallahassee, FL 32399**

July 2009

Table of Contents

1. Introduction.....	4
1.1. Essential Definitions	5
2. Division of Waste Management Policies.....	6
3. DWM Organization and Responsibilities	7
3.1. Bureau of Solid and Hazardous Waste.....	8
3.2. Bureau of Petroleum Storage Systems.....	9
3.3. Bureau of Waste Cleanup.....	9
3.4. District Office Waste Management Programs	11
3.5. Quality Assurance Areas of Responsibility	12
4. Data Quality System Components.....	14
4.1. Data Quality Objectives	15
4.2. Critical Documents.....	15
4.3. Data Processing.....	16
4.4. Corrective Action	18
5. Training.....	19
6. Audits.....	20
6.1. Hazardous Waste Regulation Section	20
6.2. Solid Waste Management Section.....	21
6.3. Storage Tank Regulation Section.....	21
6.4. Petroleum Cleanup Sections.....	21
6.5. Bureau of Waste Cleanup.....	22
7. Contract Management.....	22
8. Report Compilation.....	23

Plan Approval

This plan documents the quality system used by the Florida Department of Environmental Protection's (DEP) Waste Program. The plan covers quality assurance policies, roles, and responsibilities for environmental data collection activities associated with the Waste Program implemented by both the Division of Waste Management (DWM) and the DEP District Offices. This plan covers the collection, evaluation, and use of environmental data produced by laboratories, regulated entities, project managers, data generators, or partnerships between any of these groups.

Approval of the Quality Plan for the Division of Waste Management

Mary Jean Yon
Director, Division of Waste Management

Date

Approval for Implementation of the Quality Plan by Each Bureau

Mike Ashey Date
Chief, Bureau of Petroleum Storage Systems

Charles Goddard Date
Chief, Bureau of Solid and Hazardous Waste

Doug Jones Date Chief, Bureau of Waste Cleanup

1. Introduction

The DEP Quality Assurance (QA) program involves the implementation of a management system (planning, review, training, and assessment) to ensure that data collection, generation, interpretation, reporting, evaluation and archiving is of sufficient quality to support the Division and District Office decisions in all areas of the Waste Program—Solid Waste, Hazardous Waste, Petroleum Storage Systems and Cleanup, and Hazardous Waste Cleanup. The effectiveness of the QA program is dependent upon the actions of all DEP staff, from —front line employees to management, meaning QA is a function distributed throughout the entire organization. The DEP Secretary is committed to implementation of the quality assurance requirements in the Department's Quality Management Plan (QMP) (Draft Revision 9/2/08) and as authorized in Section 403.0623, Florida Statutes (F.S.) and Chapter 62-160, Florida Administrative Code (F.A.C.) also known as the DEP QA Rule. It is the Secretary's intent to carry out these obligations and requirements as detailed in the Department's QA Directive (Draft Revision January 2008).

The Waste Program's QA Plan explains both the process and criteria by which the quality system is managed. The plan is utilized as an instrument of internal communication to inform waste program staff in Tallahassee and the District Offices of current and future quality assurance activities. It discusses how specific QA duties are assigned to responsible staff. The QA Plan will be revised as needed to ensure the consistent application of procedures and criteria for the generation or use of our environmental data. The QA Plan will also be used as a training document for new staff and as a reference for experienced personnel. The QA Plan and its revisions also serve as an archival record of our formal quality system.

The elements of the QA Plan are consistent with the DEP Quality Management Plan, Quality Assurance Directive and Quality Assurance Rule, Chapter 62-160, F.A.C. The plan addresses all activities associated with sampling, field testing, laboratory analyses and data review of any type, including those activities associated with database construction and management. The QA Plan also discusses how decisions about data use are made based on data quality objectives.

In order to execute the components of the DEP QA Directive, the Waste Program has developed a quality system. This document describes the steps to be taken to ensure the scientific and legal defensibility of environmental data that is generated or used. It details the process of planning, training, execution, assessment and corrective action undertaken to ensure that environmental data meets the established quality criteria.

1.1. Essential Definitions

The following definitions are essential to understanding the roles, responsibilities, policies, and procedures outlined in this document.

1.1.1. ADaPT (Automated Data Processing Tool) – A quality control software application based in Microsoft Access used by the DWM for processing electronic data deliverables (EDD).

1.1.2. Data Collection – The process of collecting environmental samples for analysis. Field and laboratory Standard Operating Procedures (SOPs) shall address the steps which must be used to avoid errors in the sample collection process.

1.1.3. Data Quality Indicator (DQI) – A specified numerical or qualitative criterion used to evaluate data for conformance with Data Quality Objectives. Examples of DQIs include specific method numbers to be used for laboratory analyses, specified spike recovery and duplicate precision numerical targets, specified method detection limits and practical quantitation limits, numerical targets for reported non-detect and estimated sample concentrations.

1.1.4. Data Quality Objective (DQO) – A systematic planning system designed to produce qualitative and quantitative statements that clarify project objectives, define the appropriate type of environmental data, delineate the decision rules, and specify tolerable levels of decision error.

1.1.5. Data Validation – An analyte-and sample-specific process that extends the evaluation of data points beyond procedural compliance to determine the analytical quality of a specific data set. Criteria for data validation shall be specified in the applicable Data Quality Indicators (DQIs).

1.1.6. Data Verification – The process of evaluating the completeness, correctness, and conformance / compliance of a specific data set against the method, procedural, or contractual requirements. Data verification procedures will be specified in the applicable SOPs, QA Manual, critical documents, or data review SOP.

1.1.7. Department of Health (Environmental Laboratory Certification Program) – The state agency responsible for certifying environmental laboratories per the Department of Health certification rule, Chapter 64E-1, F.A.C.

1.1.8. Environmental Data – Information collected directly from measurements, produced from models, or compiled from other sources such as databases or literature, which are used for decision making purposes.

1.1.9. The National Environmental Laboratory Accreditation Conference (NELAC) Institute – The nationally recognized body responsible for developing standards for the accreditation of environmental laboratories.

1.1.10. Quality Assurance (QA) – An integrated system of activities including planning, implementation and assessment to ensure that environmental data are of known and documented quality.

1.1.11. Quality Control (QC) -The overall system of technical activities that measure the performance of a process or item against defined standards.

1.1.12. Quality System – A structured and documented management system describing the process of planning, review, training, and assessment to ensure that the collection, generation, evaluation, interpretation, and reporting of data are sufficient to support the use of the data for Department decisions.

2. Waste Program Policies

The Waste Program is strongly committed to sound science and QA practices that will produce environmental data of appropriate quality to be used for decision making. It is the policy of the Waste Program that all decisions which are made to protect human health and safeguard the environment will be based on data of sufficient known quality to support the level of decision required. The policy also includes a commitment by management that the quality system supporting the generation of data of known quality and effective environmental technology will be implemented as described in this plan. The policy is achieved by ensuring that adequate and acceptable planning, implementation, and assessment procedures are utilized through all phases of projects / studies / tasks which require the generation of environmental data.

It is the Waste Program's policy to:

- Use scientifically valid and legally defensible data for its decisions affecting protection of public health and the environment.
- Have and implement the Quality System described in this document.
- Adaptively manage its Quality System to be consistent with provisions of the DEP Quality Management Plan.
- Ensure that individuals are properly trained to execute their assigned functions.
- Implement procedures to evaluate the quality of the data used and to implement corrective actions when data do not meet its DQOs.

- Periodically audit the performance and record-keeping practices of data generators for which it has responsibility.
- Implement quality assurance procedures for the management of its data repositories.
- Perform a yearly systematic assessment of its quality assurance activities, including any corrective actions, with the findings submitted to the Department's Standards and Assessment Section.

The Waste Program managers and staff will assure that there are sufficient QA activities conducted by the programs to provide reasonable confidence that all environmental data generated are scientifically valid, of adequate statistical quantity, of known precision and bias, of acceptable completeness, representative, comparable, usable, and where appropriate, legally defensible. Environmental data quality is the responsibility of all Division and District staff who are directly or indirectly involved in the generation of data. Senior managers are responsible for assuring that adequate resources are available to implement the quality assurance system.

DEP employees are held to high professional ethical standards in the performance of their duties. All employees are required to read, understand and sign an 'Ethics Statement' attesting to their commitment to honesty and integrity in performance of their duties. In addition, all employees are required to attend an annual ethics training class. Improper, unethical or illegal actions will be dealt with according to the published DEP Administrative Directives.

3. Waste Program Organization and Responsibilities

The Division of Waste Management works closely with the Department's District Offices to implement state and federal laws relating to solid and hazardous waste management. The Division oversees the development of program policy, rulemaking, and grants management. Additionally the Division regulates and registers aboveground and underground pollutant storage systems. It also oversees and contracts for the assessment and cleanup of sites contaminated with petroleum products, drycleaning solvents, or other hazardous wastes.

The District Offices are the regulatory arm of agency that ensures statewide compliance with Department rules. Most permits are issued from the District Offices. District staff is available to answer environmental questions and assist the public and local governments.

There are three bureaus within the Division of Waste Management – the Bureau of Petroleum Storage Systems (BPSS), the Bureau of Solid and Hazardous Waste (BSHW) and the Bureau of Waste Cleanup (BWC). Each District Office has a Waste Management

Program overseen by a District Waste Program Administrator who works closely with the three bureaus.

3.1. Bureau of Solid and Hazardous Waste

The BSHW function is to implement state and federal laws relating to recycling, pollution prevention and solid and hazardous waste management. The BSHW works closely with the District Waste Management Programs to implement permitting, compliance and enforcement activities in order to protect the environment from the improper handling and disposal of solid and hazardous wastes. The BSHW includes regulatory programs for solid and hazardous waste management facilities and non-regulatory activities such as financial and technical assistance for recycling and waste reduction. There are three sections within the BSHW – the Hazardous Waste Regulation Section, the Solid Waste Management Section and the Waste Reduction Section.

3.1.1. Hazardous Waste Regulation Section

The section's function is to manage and implement the statewide Hazardous Waste program which includes interaction with EPA, District Offices and other Department programs pertaining to hazardous waste compliance, enforcement and permitting. The section is also responsible for the implementation of the federally delegated Resource Conservation and Recovery Act (RCRA) program, which issues permits for hazardous waste treatment, storage, and land disposal facilities. Technical assistance and training are provided to the District Offices and the regulated community.

3.1.2. Solid Waste Management Section

The Section is responsible for solid waste management in accordance with the requirements of Chapter 62-701, F.A.C. The core responsibilities are overseeing compliance monitoring and enforcement activities at solid waste processing, recycling and disposal facilities performed by the District Offices. The Solid Waste Management Section also reviews and approves statewide requests for beneficial use of solid waste and administers the Financial Assurance Program for solid waste facilities.

3.1.3. The Waste Reduction Section

The section is responsible for monitoring and reporting on recycling and waste reduction programs across the state, as well as providing technical assistance. It manages the Recovered Materials Dealers Certification program and the Construction and Demolition Debris Facilities Reporting program. It administers the Innovative Recycling and Waste Reduction Grants program and it assists Florida First Capital Finance Corporation in administering the Florida Recycling Loan Program. The section currently has no QA responsibilities.

3.2. Bureau of Petroleum Storage Systems

The Bureau's function is to regulate petroleum storage systems (and certain other regulated storage systems) pursuant to Chapters 62-761 and 62-762, F.A.C., and to oversee the assessment and environmental rehabilitation of petroleum-contaminated facilities and other petroleum-contaminated properties pursuant to Chapter 62-770, F.A.C. The BPSS comprises five sections--the Storage Tank Regulation Section and Petroleum Cleanup Sections 1 through 4.

3.2.1. Storage Tank Regulation Section

The section is responsible for the regulation of underground and aboveground storage tank systems, and for overseeing the installation and operation of these systems. Compliance inspections are performed by District Office staff and county personnel under contract to the BPSS.

Inspectors from District and county programs review Storage Tank Closure Assessment Reports to determine whether closure assessments were performed according to tank closure guidelines, whether the samples for laboratory analyses were collected at appropriate locations, and whether the analytical results show that a discharge to the environment did or did not occur.

3.2.2. Petroleum Cleanup Sections

These four sections are responsible for overseeing the rehabilitation of facilities contaminated with petroleum or petroleum products as defined in Section 376.301, F.S. under the Preapproval and State Cleanup programs. These include sites where the petroleum product discharges are eligible for State funding assistance and sites where one or more discharges are ineligible but the responsible party has entered into a Site Rehabilitation Funding Allocation Agreement with the DEP. In addition, the BPSS assists the District Offices with technical review of documents submitted pursuant to Chapter 62-770, F.A.C., for discharges ineligible for State funding assistance. Two environmental companies (WRscompass and Ecology & Environment) and 14 county programs have been contracted by the BPSS to assist in the cleanup of petroleum-contaminated sites.

Site managers review technical reports which usually contain documentation of sample collection and analytical results associated with the sites they manage. Usually those reports are co-reviewed by a Professional Engineer or a Professional Geologist. This process includes the review of field and laboratory procedures to evaluate the validity of the data that will be used to make decisions about the next scope of work, whether cleanup completion has been achieved, or whether the site is in compliance with other regulatory requirements.

3.3. Bureau of Waste Cleanup

3.3.1. Bureau Chief's Office

The Bureau Chief's Office is responsible for all activities relating to the cleanup of sites contaminated by pollutants and hazardous substances and for conducting investigations of ground water contamination. The Bureau Chief's Office contains the state and federal Brownfields programs and the Voluntary Cleanup Tax Credit Program. The Brownfields staff manages the state Brownfields Redevelopment Program and the EPA Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) section 128(a) Cooperative Agreement (CA) funding.

3.3.2. Hazardous Waste Cleanup Section

This section is responsible for managing state-funded investigation and cleanup of hazardous waste sites and coordinating with the EPA during cleanup of federal Superfund NPL sites. The section is also responsible for implementing the Drycleaning Solvent Cleanup Program.

The section oversees 11 contractors that are responsible for preparing work plans, information collection, site access, site assessment, reports, remedial action plans, and site remediation.

3.3.3. Site Investigation Section (SIS)

This section investigates known or suspected cases of groundwater contamination statewide. The section provides scientific and technical assistance to support recommendations used in district enforcement actions. In addition, the section provides site screening services, well replacement, phase-one environmental assessments and environmental sampling support for other Department programs. The section also oversees contractors working on the investigation and cleanup of state-owned lands.

Sites assessed by the SIS include, dry-cleaning facilities, municipal wellfields, landfills, orphan plumes, abandoned sites, state-owned lands, printing establishments, electronic manufacturing operations, automotive service stations, military installations and numerous other types of businesses. The SIS assists in the development of the DEP standard operating procedures (SOPs), ground water sampling methodologies and procedures and in sample equipment testing and selection. The SIS provides technical support and assistance to various law enforcement agencies to assist in the investigation of environmental crimes.

The SIS's personnel are grouped into three teams and administrative and support staff. The teams consist of scientists, licensed water well contractors and technicians. Two of the teams conduct field assessments. The third team manages six environmental consulting firms that are assigned overflow work.

3.3.4. Federal Programs Section

This section oversees assessment and cleanup of Department of Defense and other current and former federal facilities. Current sites include military bases, Kennedy Space Center, a former Department of Energy (DOE) plants and several formerly used defense sites (FUDs). The section is also responsible for providing oversight during the Base Closure and Realignment process which requires closing military bases to work together with the state and EPA prior to transferring property for reuse.

3.3.5. Program and Technical Support Section

This section provides program guidance and technical support to the District Waste Cleanup sections and the Division's non-petroleum cleanup programs. The section also provides toxicological support and assistance with evaluating innovative technologies. The section also contains the CERCLA Site Screening subsection, which maintains a cooperative agreement with the EPA to perform Superfund Preliminary Assessments and Site Investigations at sites throughout Florida. This activity is authorized under the Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA) of 1980 (—Superfund||), and is detailed in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR § 300.

3.4. District Office Waste Programs

The District Waste Management Programs implement state and federal laws relating to solid and hazardous waste management by issuing permits, conducting compliance inspections, and initiating enforcement actions as needed while encouraging recycling and pollution prevention. The Districts also regulate aboveground and underground pollutant storage systems and oversee responsible party funded cleanups of contaminated sites pursuant to enforcement actions or voluntary cleanups. There are six District Offices. Each District Office has sections or areas of responsibility that correspond with the Division's Bureaus. These include the Solid Waste, Hazardous Waste, Waste Cleanup and Petroleum Storage Tanks sections.

The Solid Waste Sections are charged with the responsibility to process permit applications and regulate permitted solid waste management facilities as well as respond to complaints concerning the improper management of solid waste.

The Hazardous Waste Management Sections provide compliance assistance to the public and the regulated community, and enforce the laws regulating the handling of hazardous waste.

The Waste Cleanup Sections oversee cleanup of non-RCRA/non-funded petroleum contamination of soil, groundwater and surface water. They also serve as the technical resource for review of Solid Waste permits and manage sites submitting contamination assessment reports and remedial action documents submitted to the

solid and hazardous waste and petroleum sections as well as interim remedial and remedial action plans.

Districts manage responsible party cleanups not eligible for State Program funding. Districts conduct enforcement where failure to cleanup occurs. District Site managers review technical reports which usually contain documentation of sample collection and analytical results associated with the sites they manage. Usually those reports are co-reviewed by a Professional Engineer or a Professional Geologist. This process includes the review of field and laboratory procedures to evaluate the validity of the data that will be used to make decisions about the next scope of work, whether cleanup completion has been achieved, or whether the site is in compliance with other regulatory requirements.

The Petroleum Storage Tank Sections oversee compliance assurance related to underground and aboveground storage tanks, including enforcement for noncompliant facilities that have been referred by contracted counties and contract management and auditing of compliance contracts. In some Districts, the sections also oversee the cleanup for sites not eligible for state-funded cleanup in counties without cleanup contracts.

3.5. Quality Assurance Areas of Responsibility

Implementation of the Quality Assurance Plan requires active participation throughout all levels of the Division and District Offices. The Division Director has delegated to the bureau chiefs, administrators, managers and staff the following responsibilities enumerated below as they conform to the Department's QA Directive (Draft Revision January 2008).

3.5.1. Bureau Chiefs

The Bureau Chiefs have the overall responsibility for the development, implementation, and continued operation of the QA Program requirements as they relate to the Waste Program. Key responsibilities of the Bureau Chiefs are:

- Ensure that each program area develops and carries out a Quality System, designates Quality Assurance Officers, and provides resources and staff training for implementation.
- Evaluate internal and public feedback related to DEP data and quality-related issues.
- Review the Waste Program annual Quality Assurance Report to the Secretary.

3.5.2. Program and Section Administrators

Program and section administrators are responsible for ensuring that QA activities within their program areas are conducted in accordance with Department policy. Key responsibilities of administrators are:

- Ensure that a Quality System that conforms to the DEP Quality Assurance Management Plan is fully operational in their program.
- Designate Quality Assurance Officers, and provide general oversight.
- Evaluate proposed Data Quality Objectives and Data Quality Indicators to ensure they meet program needs.
- Periodically evaluate the effectiveness of staff's data quality activities, including review of audit results.
- Evaluate corrective action policies and procedures to be implemented when data do not meet program Data Quality Objectives.
- Request Quality of Science reviews and training from the DEP Environmental Assessment Section as necessary, and review audit results with the QA Officer.
- Review annual Quality Assurance Report to the Secretary, and discuss findings with the QA Officer

3.5.3. Quality Assurance Coordinator and Officers

The Division's Quality Assurance Coordinator (QAC) generally oversees the implementation of the QA Plan and serves as the Waste Program contact with the Standards and Assessment Section. The QAC is Daniel Kuncicky.

Each Division Waste Program and each District Office Waste Management Program has identified a QA Officer that coordinates with and provides information to the Division QAC. The QA Officers are identified as follows:

Daniel Kuncicky (QAC)	Hazardous Waste	850/245-8786
Casey Taylor	Solid Waste	850/245-8738
Nick Contos	Petroleum Cleanup	850/245-8914
Teresa Booeshaghi	Hazardous Waste Cleanup	850/245-8989
Brian Dougherty	Non-Petroleum Cleanup	850/245-7503
Charlie Reyes	Northwest District	850/595-0637
	Northeast District	
	Central District	
	Southwest District	
	Southeast District	
	South District	

Key responsibilities of the QA Officers are:

- Coordinate and participate in the quality evaluation of program data, and provide oversight to ensure that staff perform their QA functions.
- Perform systems audits of internal and external data generators (lab and field) and conduct sampling performance audits.
- Ensure that corrective actions are implemented for data non-conformance incidents as determined by evaluation of the data against program Data Quality Objectives.
- Assist program managers in developing the Quality System and other logistical aspects of its implementation, such as coordinating associated training needs.
- Document all program QA activities, including training, audits and corrective actions and provide this information to the QAC who will provide the information to the DEP Environmental Assessment Section for the annual Quality Assurance Report to the Secretary.

3.5.4. Program Staff

Program staff will support the Division's QA Officers by providing technical assistance in their area of expertise. This procedure will enhance the QA capability in the Waste Program. The specific duties which will be assigned to program staff are as follows:

- Routinely carry out duties involving data collection, data usability evaluation, data interpretation, and the generation of DEP work products in a manner that ensures scientific defensibility and adherence to DEP rules and policies.
- Evaluate program data using program Data Quality Objectives and Data Quality Indicators.
- Implement corrective actions as directed by the QA Officers.
- Provide feedback to the program QA Officers for improving the program quality system.

4. Data Quality System Components

Generally data is reviewed by evaluating the completeness, correctness, conformance and compliance of specific data sets against the Waste Program's established Data Quality Objectives (DQOs), and by incorporating the concepts and criteria found in DEP's —Process for Assessing Data Usability||, DEP-EA-001/07.

4.1. Data Quality Objectives

The Data Quality Objectives (DQO) process is the Waste Program's systematic planning process which uses a step-wise system of developing the technical, programmatic and quality assurance requirements specific to a particular project. Staff evaluate program data using program DQOs and implement corrective actions as necessary to remedy deficiencies. The following program DQOs are designed to ensure that submitted data meets or exceeds the threshold for scientific defensibility and adherence to DEP rules and policies for our program:

- Department approved SOPs, and any approved variances are followed for all field sampling and laboratory analyses.
- Laboratory analyses are performed by facilities certified by the Department of Health and accredited under NELAC.
- Data is processed, verified and validated using the ADaPT software.
- Corrective action is taken as necessary to ensure data meets quality criteria.
- Data is archived in an electronic depository.
- Data are generated using appropriate methods with appropriate sensitivity to meet the needs of the program.

4.2. Critical Documents

Generally the Waste Program relies on critical documents to define the project-specific QA requirements. The programs may refer to the critical documents using different terms such as Groundwater Monitoring Plan, Sampling and Analysis Plan, General Study Plan, or even on occasion a permit may stipulate QA criteria for a particular project or site. However named, the critical document will contain the necessary elements to meet the threshold of compliance with the data review procedures described in this Quality Plan. The planning, implementation and assessment of the critical documents is overseen by the data user or project manager.

In other cases Departmental rules or standard operating procedures lay out the framework and requirements for meeting the threshold of compliance. For example, on February 15, 2007, the BPSS issued the memorandum —*BPSS Enforcement of Laboratory NELAP Certification Requirements*,|| which requires contractors to submit a written statement prior to performing the work, attesting that they have verified that the laboratories to be used are certified by the DOH ELCP for the matrix/method/analyte combinations that will be performed. On May 14, 2007, the BPSS issued the memorandum —*Quality Assurance and Related Issues*|| reminding laboratories of the Chapter 62-160, F.A.C.

reporting requirements, and listing some specific reporting requirements for contractors to summarize analytical data on the tables provided by the Bureau.

One aspect of the BSHW program is to ensure that BSHW QA activities are carried out according to commitments made to the Environmental Protection Agency (EPA) as enumerated in the Department's QMP.

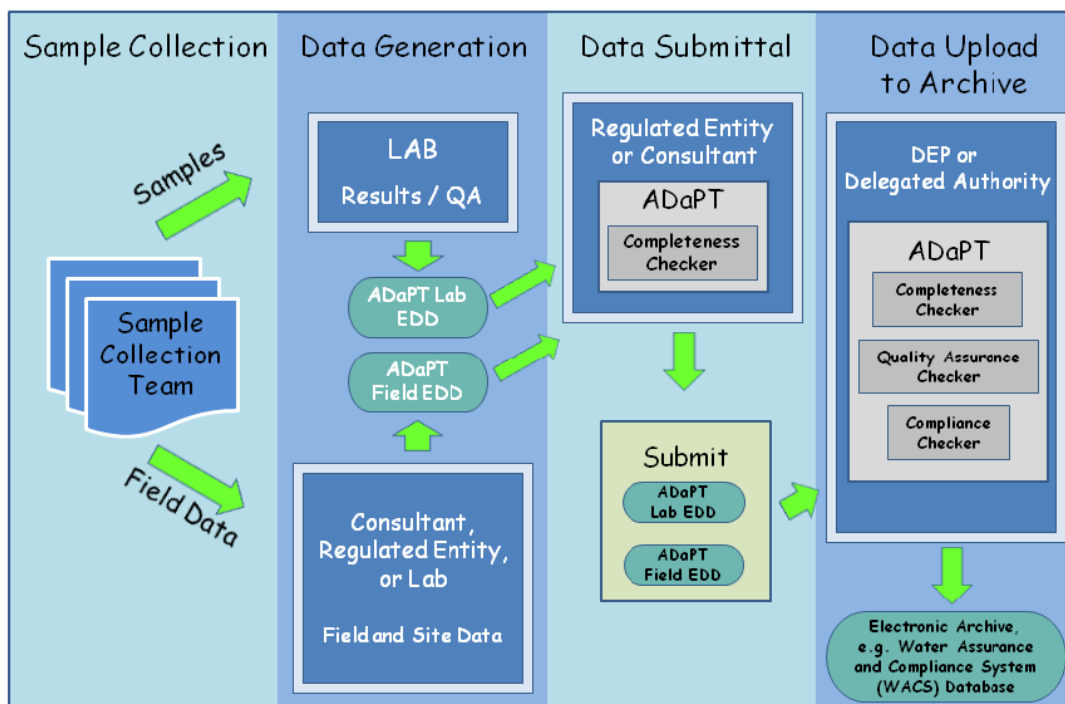
Programs which are funded by the EPA must also comply with EPA's Region 4 November 2007 Science and Ecosystem Support Division Field Branches Quality System and Technical Procedures document. Additionally, the CERCLA Site Screening Subsection will adhere to the *Superfund Site Assessment Program Quality Assurance Plan, February 2009*.

4.3. Data Processing

Data processing includes collection, verification, validation and archival. Data collection is almost exclusively performed by staff or contractors of the regulated entity. The audit procedures described in Section 6 of this QA Plan are used to ensure data collection errors are kept to a minimum. Data verification, validation and archival is the responsibility of the site managers, technical staff and contractors. Site managers, technical staff and contractors review sampling logs, calibration logs and field notes for conformance with field sampling SOPs (primarily FS 2200, —Groundwater Sampling||) referenced in Chapter 62-160, F.A.C., and analytical summary tables and figures for completeness and accuracy. Site managers and technical staff are also responsible for processing electronic deliverables.

4.3.1. Automated Data Processing

Much of the data processing steps have been automated using a software tool that the Department has developed called the Automated Data Processing Tool (ADaPT). ADaPT is designed to perform quality assurance checks on the correctness and completeness of the data based on a broad range of relevant quality assurance criteria



such as method numbers used for laboratory analyses, spike recovery and duplicate precision numerical targets, detection limits, laboratory quality control holding times, laboratory certification and blank contamination rules. ADaPT is also used to check for compliance with numerous other user selectable criteria and standards. Detailed information on the use of ADaPT is available in the DEP's ADaPT User's Guide. The ADaPT user process is shown schematically in Figure 1.

Figure 1. Process flow diagram showing the ADaPT user process.

The ADaPT software has the capability to create customized project libraries set up by the user (i.e., laboratory, project manager, data generator, governing entity, or partnership between any of these groups) to validate the data using their own specific requirements. The program areas have created a master library based on Rule 62-777 and 62-160, F.A.C. requirements. The ADaPT libraries establish analytical methods, target analytes and quality control and data review requirements for any project.

4.3.2. Data Transfer and Reduction

Precautions are taken each time the data are reduced, recorded, calculated, and transcribed to prevent the introduction of errors and the loss of information. Data transfer and reduction steps are kept to a minimum and when such steps are implemented, the data transfer is conducted using an automated and consistent process. These automated procedures ensure the correctness of data reduction processes to include all processes that change either the form of expression or quantity of data items. A typical workflow scheme used to minimize transfer and reduction errors involves the following steps:

- The Division and appropriate District Office will receive the electronic data deliverable (EDD) submittal on compact disc or flash drive media.
- The technical staff will review the data submittal including any field sampling sheets or logs for potential problems in the sample collection protocol.
- The technical staff will notify the permittee or consultant for explanations, corrections, or changes as needed.
- The technical staff will process the EDD using ADaPT.
- Finally, the data is uploaded directly from ADaPT to an archival database. A check is made to ensure that no information is lost in the transfer.

4.3.3. Data Archival

The Waste Program will store data processed through ADaPT in a repository chosen by each section. The ADaPT software is designed to upload processed data to an electronic archival database. A final data set will be maintained with the project file in

the Division's electronic document management system (OCULUS™). A description of procedures for inserting documents to OCULUS™ are describe in the OCULUS™ user guide available for download at <http://dwmedms.dep.state.fl.us/Oculus/>.

Additionally, the Division has developed business processes whereby documents created and received by the Division or District Office are entered into OCULUS™ in the same manner each time, and indexed in accordance with a Standard Indexing Taxonomy using established quality control (QC) steps throughout the defined business process. This ensures that information on documents is captured in a consistent manner. These clearly defined QC steps combine to provide the quality assurance that all information entered into OCULUS™, whether in the Tallahassee office or in any of the District Offices is accurate. The OCULUS™ QA Plan may be found at: http://depnet/dwm/it/documents/DWM_Disposition_Final.pdf

The BSHW will use ADaPT to upload the quality checked data to the Water Assurance and Compliance System (WACS) database that is available to the general public. To ensure the data upload process is accurate and maintains the quality of the data, WACS runs auditing checks upon upload. The Department also has security checks and requires password access before a file can be uploaded by file transfer protocol to WACS. Once upload is initiated, the upload process matches the WACS ID to a specific sampling location, makes sure the WACS ID is valid, checks the matrix, analyte, reporting units and STORET codes and checks for duplicate records.

4.3.4. Documentation

Since accurate documentation is an important factor for determining the success of QA activities, record-keeping procedures are followed to ensure appropriate documentation is kept. The ADaPT electronic deliverable files, error logs, compliance checking reports and other groundwater monitoring report related documents for each facility will be maintained in OCULUS™. The responsible technical staff will insert the data submittal into OCULUS™ upon receipt. Copies of notification letters for corrective actions and responses will also be archived in OCULUS™.

4.4. Corrective Action

Procedures are implemented to assure early and effective corrective action is taken when data quality falls outside established DQOs, data acceptance criteria or quality assurance requirements. In all cases, problems are listed in deliverable review letters, with request for the consultant, or the other data collection entity, to notify the laboratory. Depending on the severity of the problem, data may be rejected. When requested, the QAC or the appropriate QA Officer provides feedback and suggestions for corrective actions. The corrective action process keeps management informed when corrective actions are necessary. The Corrective Action Plan relates to the overall QA management scheme in terms of who is responsible for taking corrective actions when corrective actions are

required, and who follows-up to verify that corrective actions have been taken and that they have produced the desired results. A typical workflow scheme used by the Waste Program to identify the need for and implement corrective action involves the following steps:

- The Division and appropriate District Office technical staff will evaluate whether environmental data samples were collected properly by verifying that samples were collected in accordance with the appropriate SOP, samples were free from tampering or adulteration and samples have a verifiable chain of custody. In certain cases it may be necessary to collect a new sample or reanalyze an existing sample.
- The Division and appropriate District Office technical staff will review EDD submittals for certification, process through ADaPT, and ensure no critical errors exist and non-critical errors are justified. If any non-critical errors exist that need additional explanation, the technical staff, QAC or appropriate QA Officer will communicate directly with the laboratory and copy the other stakeholders.
- The technical staff will follow-up with the laboratory on corrections and explanations, if needed, in order to finalize the EDD. If the laboratory is nonresponsive after two attempts, appropriate enforcement action will be taken.
- When the EDD submittal is finalized and the data archived, the final data file will be inserted into OCULUS™. The technical staff will process the finalized EDD through ADaPT using the appropriate regulatory criteria in order to generate the regulatory comparison report and, if out of compliance precede with the appropriate enforcement actions.

5. Training

All staff are properly trained to perform their duties. Supervisors periodically assess that staff performance conforms to the established Waste Program policies and procedures. The training procedures include the following:

- Training for specific QA functions.
- Annual ethics policy course with QAC or appropriate QA Officer.
- Specific training materials for routine functions and designated QA activities.
- Refresher trainings or delivery of updated information.
- Evaluation of effectiveness of training for each QA staff member (cf. Section 3.5).

6. Audits

Audits provide objective feedback concerning the effectiveness of the Waste Program's quality system, and may identify areas in need of improvement. In addition, successful implementation of the QA Program relies on valid data which begins with proper sampling and ends with proper laboratory analysis. Therefore, the Waste Program performs the following audit activities concerning sampling and analysis of environment data:

6.1. Hazardous Waste Regulation Section

6.1.1. Compliance Sampling Inspection

Occasionally it is necessary to inspect a facility in order to collect samples for laboratory analysis. These sampling inspections are very resource-intensive because they require advanced planning for the sampling scheme and laboratory analysis. A sampling inspection may be conducted in conjunction with any other inspection.

6.1.2. Compliance Groundwater Monitoring Evaluation

During the comprehensive groundwater monitoring evaluation (CME), enforcement officials evaluate the adequacy of the design and operation of a facility's groundwater monitoring system. This evaluation should be completed by a hydrogeologist.

The CME includes an audit of the following:

- The owner and operator's characterization of the hydrogeology underlying the hazardous waste management units.
- Monitoring well placement, depth, and spacing.
- Well design and construction.
- Compliance with Department SOPs.
- Compliance with permit and enforcement activities.

The CME is used to determine whether a facility implementing detection monitoring should instead be using compliance or assessment monitoring. CMEs at compliance or assessment monitoring facilities include a detailed examination of the assessment monitoring plan and implementation of the plan.

6.1.3. Operation and Maintenance Inspection

The operation and maintenance inspection (OMI) occurs periodically, evaluating whether a groundwater monitoring system is continuing to function as designed. The

OMI focuses on the condition of the wells and their associated sampling devices. The findings from an OMI will indicate whether case development is warranted or will serve to focus future CMEs.

6.2. Solid Waste Management Section

Inspections and groundwater monitoring report reviews are conducted by the District Office. These monitoring network evaluations are conducted in the following two phases with the frequency based on facility type and the level of service.

- During compliance inspections the inspector observes the conditions of the wells and sampling devices.
- During the review of the GMR, the inspector determines if the network is functioning as designed.

6.2.1. Compliance Inspection

Inspections and sampling performance audits (field audits) are conducted by the District solid waste staff. District staff conducts targeted field audits based on the quality of data submitted. If there are questionable practices or protocol identified during review of the data when compared to the Field SOPs, then a field audit may be needed. The QAC or appropriate QA Officer is available to assist in field audits, when reasonable notice is provided.

6.2.2. Groundwater Monitoring Report Review

Designated personnel in the District Offices review the water quality data for compliance. The designated person to review this data may be from the solid waste section or the waste cleanup section, depending on the District. The groundwater monitoring review will evaluate the same criteria as the Hazardous Waste Regulation Sections CME (See Section 6.1.2). If any abnormalities are flagged during the groundwater monitoring report review, the inspector can address or investigate possible causes during the site inspection. If questions are not answered during the inspection, a field audit may be needed.

6.3. Storage Tank Regulation Section

6.3.1. Sampling Inspection

Inspectors from District Offices and county programs on contract to the BPSS inspect facilities during the removal or installation of a storage tank system to make sure that soil and groundwater samples are collected properly for the applicable analytes.

6.4. Petroleum Cleanup Sections

6.4.1. Sampling Inspection

The BPSS has implemented an inspection program that is carried out by site managers in Tallahassee and in the contracted local programs, by counties not covered by the contracted local programs, and by full-time inspectors of the environmental companies on contract to the BPSS. Inspectors contact site managers from the field if they observe improper field procedures, and the inspection reports are sent electronically to the site managers shortly thereafter.

6.4.2. Operation and Maintenance Inspection and Evaluation

The operation and maintenance inspection occurs periodically to determine whether a groundwater treatment system is continuing to function as designed. In the counties not covered by local programs, the inspections are performed almost exclusively by full-time inspectors of the two contracted companies. In the counties covered by local programs, they are performed by local program inspectors. The OMI focuses on the condition of the different parts and system runtimes. The findings from an OMI will indicate whether the system is operating as designed in order to achieve the desired cleanup progress. Inspection reports are submitted electronically to the site managers and reviewed by the site managers and Remedial Action Specialists. In the case of remedial systems operated as part of the Remedial Action Initiative (RAI), the review includes a determination of whether RAI requirements are being met.

6.5. Bureau of Waste Cleanup

The BWC takes a holistic approach to evaluating the various aspects of its programs. Project managers and Department contractors (when appropriate) are responsible for ensuring that all activities are performed following appropriate protocols. Department staff often participates in development of DQOs and conduct reviews of critical documents prior to field work to eliminate potential errors. Staff also periodically observes contractors in the field to identify deficiencies. In some cases formal field audits are conducted by EPA's Science and Ecosystem Support Division (SESD). If deficiencies are identified, the contractor is notified and corrected while the audit is being performed. The Department may also provide the contractor a written evaluation of the findings.

7. **Contract Management**

The BSHW does not normally manage any contracts or grants that require environmental monitoring. If environmental monitoring is required by a contract or grant, the water quality data will be processed through ADaPT by a contractor prior to submittal to DEP.

The BPSS has contracts with a number of environmental companies that are selected through a review process. Additionally, there are contracts with two consulting companies and 14 county programs as mentioned above. These companies are assigned to perform state-administered cleanups and also to perform verification sampling for discharges rehabilitated under Performance-Based Cleanup Agreements. Other special projects may be assigned where preapproval contractors are not applicable.

The BWC maintains contracts with multiple environmental firms for services ranging from assessment to remediation. All contractors are competitively selected based on statements of qualifications. Each contractor is required to conform to Department quality assurance rules and procedures.

8. Report Compilation

To provide the Secretary with information regarding ongoing QA efforts within the Department's Waste Program, the QAC coordinates with the QA Officers to describe and compile the results of all appropriate QA activities and relay them to the Standards and Assessment Section for an annual report.

Quality Manual

for

State of Florida Department of
Environmental Protection Watershed
Monitoring Section

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Prepared by FDEP Watershed
Monitoring Section March 2009

Gail Sloane, Environmental Administrator (Date)

Shannon Gerardi, QA Officer (Date)

Table of Contents

Section Description	Page # Revision Date
1.0 Title Page	1 March 2009 2 March 2009 4
2.0 Table of Contents	February 2006 4 February
3.0 Statement of Policy	2006 5 March 2009
4.0 Ethics Statement	
5.0 Organization and Responsibility	
5.1 Responsibilities of Key Personnel	5
5.2 Job Descriptions	15
5.3 Approved Signatories	15
5.4 Employee Training	15
6.0 Documentation	16 March 2009
6.1 Generation, Retainment and Storage of Records	16
6.2 Documentation Control and Maintenance	17
6.3 Types of Documentation/Reports Generated	17
6.4 Sample Identification and Data Integrity	18
6.5 Confidentiality	18
7.0 Capabilities	19 March 2009
7.1 Sampling Capabilities	19
7.2 Sampling Procedures	19
7.3 Test Methods	20
7.4 Equipment	21
7.5 Sample Handling	23
8.0 Equipment and Instruments	23 March 2009
8.1 Calibration and Standards	23
8.2 Equipment Maintenance and Documentation	23
9.0 Review and Assessment	24 March 2009
9.1 Quality Control Measures	24
9.1.1 Field Quality Control (blanks, etc.)	24
9.1.2 Laboratory Quality Control (blind samples)	25
9.1.3 Quality Control Criteria	25
9.2 Raw Data	26
9.2.1 Data Reduction	26
9.2.2 Data Verification	26
9.2.3 Data Validation	27
9.3 Corrective Actions	27
9.4 Deviations	28
9.5 Audits	28
10.0 Consumer Relations	29 February 2006
10.1 Review of Proposed Work	29
10.2 Complaints	29
11.0 Appendix	30
11.1 Status and Temporal Variability Monitoring	
Networks Sampling Manual (WMS)	N/A January 2009 N/A May
11.2 Project Manager Manual	2007

Table of Contents (continued)

Section	Description	Page #	Revision Date
11.3	Data Management Standard Operating Procedures	N/A	February 2009
11.4	Oracle Generalized Water Information System (OGWIS) Users Manual	N/A	April 2007
11.5	Organization Chart	N/A	March 2009

3.0 Statement of Policy

This Quality Manual for the Florida Department of Environmental Protection's (FDEP) Watershed Monitoring Section (WMS) in Tallahassee, Florida, states the procedures that will be used to ensure that data generated by WMS is of verifiable quality and meets the scientific objectives of the FDEP required by federal and state law, including: sections 104, 106, 305(b), 303(d), 314 and 604 of the Clean Water Act, as amended; 40 CFR Part 31,35, and 131 (EPA); Florida Statute Chapter 403 Environmental Control; Florida Administrative Code Rules 62-160, 62-302, 62-520, and 62-522. The WMS is committed to following good quality assurance (QA) and quality control (QC) management practices to produce all data.

4.0 Ethics Statement

All employees of the FDEP WMS are held to high professional ethical standards in the performance of their duties. All employees are required to read and understand an 'Ethics Statement' attesting to their commitment to honesty and integrity in performance of their duties. Improper, unethical or illegal actions will be dealt with according to the published Administrative Directives of the FDEP.

5.0 Organization and Responsibilities

The WMS encompasses two networks. The Status Monitoring Network (Status Network) is a probability-based network designed to randomly sample and characterize Florida's fresh water resources and to determine how these conditions change over time at both a basin level and statewide over the long term. The Temporal Variability Monitoring Network (Trend Network) is a fixed-station-monitoring network designed to detect both short-term variability and long-term trends. Section 11.1 on pages 6-9 provides further details regarding the structure and intent of both networks.

The WMS data is collected and generated by in-house FDEP sampling personnel, district office FDEP sampling personnel (Tampa, Port St. Lucie and Ft. Myers), two contracted Water Management Districts (Northwest Water Management District and St. John's Water Management District) and one contracted county (Alachua County). Each entity participates in data collection for one or both WMS networks. All WMS FDEP sampling personnel (in-house and district offices) are included participants of this Quality Manual, while each contracted agency is held responsible for producing and managing individual Quality Manuals which address all internal QA/QC activities not bound to them by their WMS contracts. Furthermore, all sections of this Quality Manual will apply directly to FDEP WMS personnel and will not include non-FDEP (contracted) personnel.

The WMS is part of the Bureau of Assessment and Restoration Support in the Division of Environmental Assessment and Restoration.

The WMS is headed by the Environmental Administrator, who is responsible for both the technical and administrative direction of the Section and is committed to the QA program described in this plan.

The Quality Assurance Officer is responsible for the production and timely revision of the Quality Manual and Section Sampling Manual, scheduling all analyses, and for ensuring that regular audits are conducted to demonstrate that the objectives of the Quality Manual and Sampling Manual are being met.

Each sampling entity (FDEP personnel and contracted personnel) is headed by a Project Manager, who manages required contracts (as applicable), oversees direct human resource matters, handles numerous data review issues and assists the QA Officer with training and audits. Refer to Section 11.2, pages 1-61 for full project manager duties.

Data management and review is conducted by the Data Manager and staff, who are responsible for collection and processing of fresh water quality monitoring data for both the Status and Temporal Variability Networks. They also assist with data management for the Springs Initiative and other special projects. Refer to Section 11.3, pages 1-16 and Section 11.4, pages 135 for full data management duties.

The data analysis staff compiles the sampling results for federal and state reporting requirements and public distribution.

An organizational chart describing the relationships of all FDEP WMS staff is provided in Section 11.5.

The FDEP Central Laboratory (Chemistry and Biology Sections) have been selected to perform all analyses for both the Status and Temporal Variability Networks until further notice. Refer to the Quality Manuals submitted by these sections for details on QA/QC, organization and responsibilities that are internal to the Central Laboratory.

5.1 Responsibilities of Key Personnel

FDEP WMS firmly believes that all personnel within the Section are vital to the overall quality of data being produced. Therefore, all FDEP WMS employees listed below are “Key Personnel” with a brief description of respective responsibilities. Roles and responsibilities of all personnel are consistent with FA 3200 and 3300 of the FDEP SOPs.

a. Gail Sloane, Environmental Administrator

Supervises the ongoing development and implementation of the statewide Status and Trends monitoring networks. Responsible for developing and directing ground and surface water monitoring programs, providing

technical assistance to other monitoring programs in the Bureau or Division, and providing assistance with the development of water quality standards. Responsibilities also include oversight of in-house staff and contractual relationships with Water Management and FDEP district offices, federal, state, and local government agencies and private firms to implement and maintain network operations. Oversees the establishment of specific tasks to analyze data, develop long-term water quality trend information, and ensures that the data is made available to federal, state and to the public. Ensures data is reported to meet requirements in the federal Clean Water Act, state requirements and to the public to assist in making land and water related planning decisions. Assists with technical issues pertaining to the Network. Acts as Agency liaison for Florida Water Resources Monitoring Council. Serves as the financial administrator for a section utilizing differing funding sources, including federal grants (604, and 106), state trust funds (Water Quality Assurance Trust Fund for Ambient Monitoring, and USGS Cooperative) all relating to water quality monitoring programs. Works with division and bureau budget personnel regularly to track section budget throughout the fiscal year, authorizes all section expenditures, ensures that funds are spent appropriately and plans future budget needs and activities in a timely manner. Included in these responsibilities are: Coordinating administrative aspects of the Water Quality Trust Fund Ambient Monitoring Network, Supervising staff responsible for developing contracts related to the Network, as well as staff with oversight of field personnel.

b. Shannon Gerardi, Environmental Specialist III (QA Officer)

Provides quality assurance for state-wide surface and ground water Status and Trends monitoring networks. Coordinates sampler training workshop and revises program sampling manual. Conducts on-site audits of sampling agencies and field technicians. Schedules laboratory analysis of samples. Reviews results of quality assurance procedures (quarterly reports, field reference samples, equipment and field blanks, and laboratory reference samples).

c. Tom Biernacki, Environmental Manager

Supervises staff working on all aspects of network field sampling operations within the Suwannee and groundwater operations in St. Johns regions of the State, including: site reconnaissance, sample collection, data uploading and review, sample results notification to landowners and other designated data users, logistical support, and other related duties as required. Oversees the editing of data generated by the Monitoring Subsection, and assists in updating the subsection's databases. Assist in coordinating sampling, ensures sampled stations are consistent with Program needs and act as a contact to help integrate FDEP's Watershed Monitoring Program with other Departmental efforts. Tom oversees the

development and implementation of GPS standards for the Division of Environmental Assessment and Restoration (DEAR). In addition to Status and Trend program responsibilities, Tom coordinates and assists with TMDL sampling as required, and as staff are available. Tom's section also participates with special projects investigations with other groups within the agency.

d. Kimberly Jackson, Environmental Supervisor II

Coordinates all aspects of network sampling operations within South Florida (Ft Myers and Port St. Lucie), including data review, sample results notification to landowners and other designated data users, and other related duties as required. Edits data generated by the Monitoring Subsection, and assists in updating the subsection's databases. Conducts GIS analysis for the South Florida region and performs annual updates on the resource list frame prior to Status Network random site selection. Supervises and maintains communication with FDEP employees, assists in the operation and maintenance of the networks, assists in coordinating sampling, ensures sampled stations are consistent with Program needs and acts as a contact for FDEP staff to help integrate FDEP's Watershed Monitoring Program with other Departmental efforts. Coordinates supervision and oversight associated with 5 monitoring staff co-located in Ft Myers and Port St. Lucie, Florida.

e. Tom Seal, Environmental Specialist III

Coordinates all aspects of network sampling operations within the northwest and northeast regions of Florida with three government agencies: Northwest Florida Water Management District, St. Johns River Water Management District, and the Alachua County Environmental Protection Division. Tasks include contract management, financial management of invoices, data analysis and review, sample results notification to landowners, and other related duties as required. Additional tasks include updating the section's databases, interpreting sediment data produced by the Status Network sampling teams, and working with these teams to collect sediment samples for the Department's Me-Hg TMDL project.

f. Kate Muldoon, Environmental Supervisor II

Coordinates all aspects of network sampling operations within Southwest Florida (Tampa), including data analysis and review, sampling results notification to landowners and other designated data users, and other related duties as required. Edits data generated by the Monitoring Section, and assists in updating the section's databases. Coordinates supervision and oversight associated with 4 monitoring staff co-located in Tampa at the SWFWMD. Supervises and maintains communication with FDEP employees, assists in the operation and maintenance of the networks, assists in coordinating sampling, ensures sampled stations are consistent

with Program needs, and acts as a contact for FDEP staff to help integrate FDEP's Watershed Monitoring Program with other Departmental efforts. Participates with GPS Standards Committee in development of Divisions' GPS standards. Provides managerial oversight for special studies in the southwest area, such as the FGS Arsenic Study. Acts as alternate for agency involvement with Florida Water Resources Monitoring Council.

g. Jay Silvanima, Environmental Manager

Development of the WMS data management plan including water quality, biological, chemical, sediment and physical data from the Status and Trend Monitoring Networks. Ensures the maintenance of an Oracle database and interactive applications which incorporate field generated data and allow the review and distribution of field and analytical data. Ensures all data collected by the WMS are loaded into the database. Currently there are nearly 2 million rows of water quality results in the database collected from 1981 to present. Coordinates the data analysis and reporting of WMS data for the annual statewide Status report, the biennial US EPA 305(b) Report, the triennial Status zone reports, and other periodic reports as necessary. Ensures the smooth and timely flow of data from WMS field sampling and laboratory sources to the Florida STORET database. Ensures that sites collected for the Springs and WMS monitoring networks are geo-referenced in accordance with the Department's and Division's Locational Data Standards. Supervises five OPS employees: Frances Ijeoma, Kunle Olumide, Shel McGuire, Chris Sedlacek, and Justin Berke.

h. Frances Ijeoma, OPS Environmental Consultant

Responsible for the maintenance of an Oracle database used as the repository for biological, water quality and sediment data collected by the Watershed Monitoring Section, and the Springs Initiative, and the applications which access this database. Loads all data collected by the WMS into the database. Ensures the above data meet the standards established by the Impaired Waters Rule, Chapter 62-303, F.A.C, where applicable. Fulfills data requests to other Federal, State, and Local government agencies and the general public.

i. Kunle Olumide, OPS Environmental Consultant

Evaluates WMS needs and works with staff to develop appropriate statistical applications. Responsible for the statistical analysis, and visual display of the watershed monitoring and springs initiative data in support of chapter 305(b) of the Clean Water Act, and for the analysis of these data for the Division of Environmental Assessment and Restoration (DEAR). Prepares reports and graphics in support of these analyses. Prepares and delivers presentations of water quality data; assists section in the analysis of information technologies to collect, analyze, and evaluate environmental data.

j. Shel McGuire, OPS Environmental Consultant

Serves as technical writer and primary editor for all reports generated by the WMS. Reviews and compiles data on excluded sites in sampling program for incorporation into probabilistic sampling network calculations. Assists in preparing and analyzing data for 305b report; Comprehensive State Monitoring Strategy (106 report to EPA); Annual Statewide Assessment report and other publications. Organizes biennial meeting of all WMS staff statewide.

k. Chris Sedlacek, OPS Environmental Consultant

Serves as primary environmental scientist for the WMS. Responsible for the statistical analyses of the Status Monitoring and Trend Monitoring Networks, and for the random site selection for the Status Monitoring Network, both in support of chapter 305(b) of the Clean Water Act. Prepares reports and graphics in support of these analyses. Assists section in the analysis of information technologies to collect, analyze, and evaluate environmental data.

l. Justin Berke, OPS Environmental Consultant

Serves as the coordinator for Geographic Information Systems (GIS) support to the WMS. Responsible for GIS data analysis, and reporting, including the preparation of each of the Status Monitoring Network's water resources coverages for random site selection via Chris Sedlacek with guidance from Dr. Tony Olsen, US EPA, Corvallis Oregon. Prepares maps for the WMS.

m. Janelle Madden, OPS Environmental Specialist II

Reviews and edits data generated by the Watershed Monitoring Subsection Field sampling operations group. Reviews and releases provisional data. Generates and mails result notification owners letters and data reports. Updates the Oracle Generalized Water Information System (OGWIS) database including communicating with the Suwannee River Water Management District to add District well site information to the database. Assimilates data for and write quarterly quality assurance reports for field sampling operations group.

n. Pam Novak, OPS Environmental Specialist II

Responsible for assisting in performance of sampling site reconnaissance for Status Network sampling locations for all resources. This duty includes office reconnaissance using GIS software, making phone calls, visiting water management district offices and FDEP district offices, reviewing in-house documentation, traveling to county courthouse to gain owner's addresses, mailing out sampling permission letters, and any other related tasks. Includes performing field reconnaissance of future sites by

traveling to sites and documenting the location using cameras, GPS, and sketch maps. Also includes duties of backup sampler.

o. Keith Davie, OPS Environmental Specialist III

Instruct Departmental and contractor field staff using differentially corrected Global Positioning System hardware, field computers, field sampling equipment, and related software. Provide technical support for using and trouble-shooting differentially corrected Global Positioning System hardware field computers, field sampling equipment, and related software. Create GIS files of sampled stations. Review and approve all purchases of recreation-grade and resource grade GPS equipment. Create a data dictionary or modify an existing one to comply with LDS. This position will continue to take the lead in annual revisions of the GPS Standard. The GPS Coordinator ensures that every effort is made to use the Department's GPS equipment to its fullest capability. Perform maintenance or facilitate maintenance on sampling equipment and facilities. This also includes cleaning and maintaining laboratory and storage facilities, vehicles, and equipment. Maintain equipment logbooks, organize work areas, maintain vehicle inventories, and perform other related tasks as need.

p. Lori Balinsky, OPS Environmental Specialist I

Reconnaissance Coordinator for Suwannee and St. Johns projects samplers. Reconnaissance of future sample sites including: mailing permission letters, making phone calls, visiting sites, visiting water management district offices and FDEP district offices and courthouses, and reviewing in-house documentation. Collects surface water samples for the State's Status and TV Networks following strict protocols and QA procedures.

q. Peter Folland, OPS Environmental Specialist III

Responsible as lead sampler in collecting Ground Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects Surface Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

r. Chris Green, OPS Environmental Specialist II

Collects Ground Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Collection of samples

involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects Surface Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

s. Mike Eckles, OPS Environmental Specialist II

Collects Ground Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects Surface Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

t. Paul Blair, OPS Environmental Specialist II

Collects Ground Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects Surface Water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

u. Brett Ursin, OPS Environmental Specialist III

Responsible as lead sampler in collecting water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs crew leader tasks that include providing support in training new employees, responsibility for sample documentation, and leading crew during sampling trips. In addition, the lead sampler sets goals, develops schedules, and assigns tasks as needed to sampling team members. Also provides crew leadership for special projects sampling, such as the methyl mercury sediments study and the Arsenic study. Communicates effectively

with the program manager regarding any issues or questions that may arise.

v. Chris Pratt, OPS Environmental Specialist II

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

w. Rose Taylor, OPS Environmental Specialist II (shared position with DEP Southwest District Restoration section)

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects Surface Water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

x. David Byers, OPS Environmental Specialist I

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the State's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

y. VACANT, OPS Environmental Specialist III

Responsible as lead sampler in collecting water samples for the state's Status and TV Networks following strict protocols and QA procedures.

Performs crew leader tasks that include providing support in training new employees, responsibility for sample documentation, and leading crew during sampling trips. In addition, the lead sampler sets goals, develops schedules, and assigns tasks as needed to sampling team members. Communicates effectively with the program manager regarding any issues or questions that may arise.

z. Ben Faria OPS Environmental Specialist I

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

aa. Sara Mechtensimer, OPS Environmental Specialist I

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

bb. Dawn Miller, OPS Environmental Specialist III

Collects surface and groundwater water samples for the state's Status and TV Networks following strict protocols and QA procedures. Responsible for sample documentation, quarterly and annual reports, reviewing provisional data and maintaining equipment inventories. Provides site reconnaissance in the office and the field through research and stakeholder interactions. Prepares documentation for annual sampling audits.

cc. Abner Gamboa, OPS Environmental Specialist I

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment.

Collects surface water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

dd. Bill Karlavige, OPS Environmental Specialist II

Collects ground water samples for the state's Status and TV Networks following strict protocols and QA procedures. Collection of samples involves comprehensive knowledge of pumps, filters, and working with ground water monitoring pumps, generators and other related equipment. Collects surface water samples for the state's Status and TV Networks following strict protocols and QA procedures. Performs maintenance or facilitates maintenance on sampling equipment and facilities. This also includes cleaning of laboratory, vehicles, and equipment and keeping all related aspects organized. Conducts reviews of provisional data. This includes maintaining field sheets and other related documentation for each project.

ee. Cristina Mazza, OPS Administrative Clerk

Responsible for ensuring the daily task of physical operations are completed and supports the Statewide Watershed Monitoring Program. Ensures laboratory areas are clean and organized. Cleans office space, trucks, boats, and other types of equipment and facilities. Delivers sample coolers from lab to storage room. Delivers filled sample coolers from Greyhound package express to the Central FDEP lab. Assists Section and Division Office with offices moves, deliveries, and in coordinating sampling operations including, sample collection, data analysis and review, sample results notification to landowners and other designated data users, and other related duties as required.

ff. Dana Jones, Administrative Assistant I

This position provides administrative duties that are primarily financial in nature in support of the Environmental Administrator (EA) of the Watershed Monitoring Section (WMS). Serves as section representative responsible for preparing and tracking section budget spreadsheet; adhering to Bureau Chief's office procedures for managing the spreadsheet, and responding to section administrator's requests for budget reports and periodic updates. Works with bureau budget coordinator on section spreadsheet reconciliations with SAMAS/FLAIR reports. Responsible for preparing and processing purchase requisitions and processing purchasing card transactions for the section in a timely manner and in accordance with established agency procedures. Works to solve problems associated with vendor invoices and payments. Responsible for

processing all section travel authorizations, vouchers and travel check distributions. Responsible for tracking contract balances and assists contract managers in getting contracts invoiced before state and federal year-end deadlines. Assists section administrator in managing official grant files and tracking expenditures, including OPS salaries. Responsible for managing section's OPS timesheet processing and OPS payroll distribution.

5.2 Job Descriptions

The WMS consists of several employees (all who are listed above in Section 5.1); please refer to this list in Section 5.1 above for each job description.

5.3 Approved Signatories

Approved signatories within the FDEP WMS are stated as:

Shannon Gerardi, QA Officer Gail Sloane,
Environmental Administrator Daryll
Joyner, Bureau Chief Jerry Brooks,
Division Director

5.4 Employee Training

All WMS employees are required to review the Sampling Manual (and/or provide technical assistance in editing and updating the Sampling Manual) on an approximate annual basis. All employees directly related to sample collection are required to attend at least one Sampling Training Workshop every five years (or as needed, before then). These workshops are conducted at least once a year, and training is based on specific FDEP Standard Operating Procedures (SOP) as applied to the Status and Trend Network sampling programs.

Furthermore, all samplers performing Habitat Assessments (HA) and Stream Condition Index (SCI) sampling are required to have specific training and demonstrate competency due to the expert judgment exercised during field sampling. Individuals conducting a HA must train with qualified FDEP staff (via workshops and/or participating in field sampling) and remain in "pass" status for field performance tests. Training should be conducted using the Habitat Assessment Training Checklist (FT3000 found in FA1000). Habitat Assessment testing will be conducted at select streams/rivers located throughout the state, and sites will change annually or as needed. All field samplers are required to participate in at least one testing event throughout the year. At all times, a minimum of one sampler from each sampling team must be in pass status in order to perform a Habitat Assessment. WMS field samplers conducting SCI sampling must train with qualified FDEP staff (via workshops and/or participating in field sampling) and pass a field performance test (audit) to demonstrate competence. Training should be conducted using the SCI Training Checklist (FS7420 found in FA1000). SCI audits are administered by

the Standards and Assessment Section. At all times, a minimum of one sampler from each sampling team must have successfully completed and passed a SCI audit in order to collect a SCI sample. Furthermore, after passing the initial performance audit, annual “check-up” audits will be attempted by the WMS QA Officer throughout the year to ensure that proper techniques are followed.

FDEP WMS sampling personnel are also required to obtain training on Global Positioning System (GPS), Class I Watercraft and Trailing Operation, and safety training.

A list of all sampling personnel and their respective training is maintained internally within the Section, and their training is consistent with FA 2100. Furthermore, training records are maintained on each employee who is trained in skills commensurate with their responsibilities.

6.0 Documentation

Sample documentation is of critical importance to the objectives of the Status and Trend Monitoring Networks. Data gathered on these projects is entered into an existing statewide water quality database, and must be properly linked to historical data. The database is also a source of public information and is used for a variety of purposes. The data must be accurate to avoid incorrect evaluations and decisions on the State’s water resources. All FDEP WMS documentation requirements are based on the FDEP SOPs.

6.1 Generation, Retainment and Storage of Records

Record keeping practices are consistent with 62-160.240(1) and 62-160.340(1), F.A.C. and FD 1000 of the FDEP SOPs. All records shall be retained for at least 5 years after the completion of the project

Sample documentation begins in the FDEP Central Chemistry and Biology Laboratories. A label is placed on each container with the request (RQ) number, the major analyte group, a notation if filtration is required, and the preservation method. See Section 11.1, page 121, Figure 28.

FDEP WMS provides the sampling agencies with station identification labels (see Section 11.1, page 97, Figure 5) that are bar coded to uniquely identify a sample station. The field technicians place these labels vertically on the sample containers and also on the custody sheet. This links the station to the containers and to the custody sheet.

All field documentation is recorded on appropriate field sheets which are supplied by FDEP WMS. Samplers are required to ensure that the most current versions are used by observing the date printed on the forms.

All paper documentation records must be recorded in waterproof ink (except the Habitat Assessment sketch map, which may be drawn in pencil). Erasing or obliteration of records is not permitted. Corrections are made by marking a single line through the error so that it is still legible, and the initials of the individual performing the correction are included. All documentation records are required to be legible.

All documentation requirements regarding initial activities performed by the Central Laboratory (container preparation, supplying sampling kits, RQ information, etc.) are generated, retained and stored internally by appropriate lab personnel.

All documentation regarding sampling procedures (Sampling Manual) are generated, retained and stored electronically (and by hard-copy) by the FDEP WMS QA Officer.

All documentation requirements produced by field sampling personnel are retained and stored by the respective Project Manager.

All documentation regarding data management and review is generated, retained and stored by the Data Manager and the appropriate database software programs (see Section 11.3, pages 1-16 and Section 11.4, pages 1-35).

6.2 Documentation Control and Maintenance

All documentation generated by WMS is controlled and maintained in essentially two manners. All documentation includes a revision date or version number to indicate date(s) of use and to ensure the most current version of the documentation form is being used or referenced. Ensuring the use of current procedures is consistent with FA 3210, 3240 and 3250 of the FDEP Field SOPs and 62-160.210 F.A.C. Furthermore, all documentation contains documentation control blocks such as page numbers and section headings used to identify completeness.

6.3 Types of Documentation/Reports Generated

WMS generates several types of documentation and reports that are listed below. Reports to management are consistent with the procedures outlined in FA 3250 of the FDEP Field SOPs.

Documentation:

- Sampling Manual, including paperwork as described below:
 - o field sheets (ground water, surface water, biology)
 - o custody sheets
 - o labels
 - o micro land use forms
 - o permission forms
 - o log books (calibration, standards and buffers, equipment maintenance and equipment cleaning)
 - o inventory sheets

- o FRS reporting forms
- o field audit forms
- Quality Manual
- Data Management SOPs
- Project Manager procedures Manual
- Data dictionaries for field data and GPS location collection based on programmatic standards

Reports:

- Quality Assurance Reports
- Data analysis summary reports from annual ground and surface water monitoring.
- Integrated report to EPA for satisfaction of Section 305(b) Clean Water Act requirements.
- Report on the Integrated Florida Monitoring Strategy to satisfy section 106 reporting requirements to EPA.
- Quality Assurance Project Plan in support of Florida Department of Environmental Protection monitoring activities conducted under sections 104(b)(3), 303(d), 305(b), and 604 of the Clean water Act as amended.

6.4 Sample Identification and Data Integrity

Procedures involving accurate sample identification begin with proper sample nomenclature. Refer to Section 11.3, page 3 for details on how samples are named (based on sampling agency, project codes and collection timeframe).

Once samples are properly named, accurate sample identification continues with the scheduling of samples in the Laboratory Information Management System (LIMS).

Refer to Section 11.1, page 10 and the FDEP Central Laboratory Chemistry Section Quality Manual for specific details regarding scheduling.

The sample identification process continues with additional documentation procedures involving the field sheets and custody sheets by including site labels on each form. See Section 11.1, page 97, Figure 5 for details. Sample custody is consistent with and follows FD 5000 and FD 7000 of the FDEP SOPs.

Furthermore, accurate sample identification and data integrity remains intact throughout the data review and data analysis process. See Section 11.3, pages 1-16 and Section 11.4, pages 1-35 for details.

6.5 Confidentiality

All records and documents generated by FDEP WMS (except those associated with private property land owners who do not wish to have their personal information disclosed) are public records and may be subject to disclosure according to the guidelines

and exceptions published in Chapter 119 of Florida Statutes. The procedures used for release of all data/documentation are detailed in Section 11.3, page 12-13.

7.0 Capabilities

The WMS has proven it is capable of staffing and administration of two statistically sound monitoring networks (Status and Temporal Variability). Within these networks, staff is capable of planning, scheduling and collecting high-quality samples for Florida's water resources, and managing all aspects of the associated data review and reporting. The FDEP Central Laboratory in Tallahassee is responsible for all lab analyses performed on the submitted samples.

7.1 Sampling Capabilities

The WMS collects all samples based on procedures outlined in the FDEP SOPs applicable to ground water (FDEP-SOP-001/01 FS 1000, FS 2000, and FS 2200), surface water (FDEP-SOP-001/01 FS 1000, FS 2000, and FS 2100), sediment (FDEP-SOP001/01 FS 1000 and FS 4000), and biological communities (FDEP-SOP-001/01 FS 7120, FS 7130, FS 7320 and FT 3000). Sampling for these matrixes includes all applicable FDEP SOP field testing procedures (FDEP-SOP-001/01 FT 1000, FT 1100, FT 1200, FT 1400, FT 1500, FT 1600, and FT 1700). Furthermore, all containers, volumes, preservation, holding times and preservation procedures are consistent with FS 2000, FS 1006, Table FS 1000-2 and Tables FS 1000-4 through FS 1000-9 of the FDEP Field SOPs. Currently, WMS is not utilizing any non-standard field procedures. If conditions warrant, any non-standard field procedures will be approved per FA 2100 and FA 2200 of the FDEP SOPs.

7.2 Sampling Procedures

Specific sampling procedures employed by WMS for ground water are detailed in Section 11.1, pages 19-30.

Specific sampling procedures employed by WMS for surface water are detailed in Section 11.1, pages 31-36.

Specific sampling procedures employed by WMS for sediment collection are detailed in Section 11.1, pages 37-41.

Specific sampling procedures employed by WMS for biological communities are detailed in Section 11.1, pages 42-63.

7.3 Test Methods

Table A. lists analytical test methods used for field data and laboratory analyses. All methods, unless otherwise stated are based on EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, revised March 1983.

Table A. -Analytical Test Methods

	INDICATOR	ANALYSIS METHOD
Field Measurements	pH Temperature Specific Conductance Dissolved Oxygen Turbidity Secchi Depth Total Depth Sample Depth Micro Land Use Depth to Water	Method 150.1 Method 170.1 Method 120.1 Method 360.1 SOP FT 1600 Welch (1948); EPA 620/R-97/001 Steel tape/electronic measuring devise Steel tape and chalk/electronic measuring devise WMS Sampling Manual (01/09), section 4 Steel tape and/or chalk
Biology	Chlorophyll-a Qualitative Periphyton Rapid Periphyton Survey Biological Community (SCI) Habitat Assessment Lake Vegetation Index	SM 10200 H (modified) SOP AB03.1, SOP AB03 SOP FS 7130 SM 10500 C (modified) SOP FT 3000 SOP FS 7220
Microbiology	Total Coliform Fecal Coliform Enterococci	SM 9222B SM 9222D EPA 1600
Organics	Total Organic Carbon	SM 5310 B
Nutrients	Nitrate + Nitrite Ammonia Total Kjeldahl Nitrogen Phosphorous Orthophosphate	Method 353.2 Method 350.1 Method 351.2 Method 365.1 Method 365.1
Inorganic Ions	Chloride Sulfate Fluoride	Method 300 Method 300 SM 4500 F-C
Metals	Calcium Magnesium Sodium Potassium Aluminum, Arsenic, Calcium, Cadmium, Chromium, Copper, Iron, Lead, Magnesium, Manganese,	Method 200.7/200.8 Method 200.7/200.8 Method 200.7/200.8 Method 200.7/200.8 Method 200.7/200.8

Table A. Continued

Physical Properties	Alkalinity Turbidity (Lab) Specific Conductance (Lab) Color Total Suspended Solids Total Dissolved Solids	SM 2320 B Method 180.1 Method 120.1 SM 2120 B SM 2540 D SM 2540 C
Sediments Organics Nutrients Metals Ions	Total Organic Carbon Total Phosphorus Total Kjeldahl Nitrogen Aluminum, Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Nickel, Silver, Zinc Mercury Methyl Mercury Sulfate	In house (based on 415.1) Method 365.4 Method 351.2 Method 6010B/6020 SOP Hg-008-3 (based on EPA 7471) SOP Hg-003-2 (based on EPA 1630) Method 300 (modified)

All WMS sampling equipment is consistent with FS 1001 and Tables FS 1000-1 through FS 1000-3 of the FDEP Field SOPs.

For ground water sample collection, any combination (or all) of the equipment/instruments listed below may be used:

- pumps (peristaltic, submersible, centrifugal)
- power converters
- gas or electric generators
- tubing
- water level tape/potentiometer (or chalk tape)
- YSI multiprobe (or similar) and all associated standards and buffers
- portable turbidimeter
- GPS equipment (Trimble, data logger)
- measuring tape
- additional non-equipment supplies (cleaning materials, buckets, gloves, filters, syringes, preservatives, brushes, camera, etc.)

For surface water sample collection, any combination (or all) of the equipment listed below may be used:

- Van Dorn sampler (or similar)
- secchi disk
- measuring tape
- YSI multiprobe (or similar) and all associated standards and buffers
- GPS equipment (Trimble, data logger)
- additional non-equipment supplies (cleaning materials, buckets, gloves, filters, syringes, preservatives, brushes, camera, etc.)

For sediment sample collection, any combination (or all) of the equipment listed below may be used:

- stainless steel corer
- stainless steel petite ponar
- stainless steel Ekman dredge
- scoops or spoons
- secchi disk
- measuring tape
- YSI multiprobe (or similar) and all associated standards and buffers
- GPS equipment (Trimble, data logger)
- additional non-equipment supplies (cleaning materials, buckets, gloves, filters, syringes, preservatives, brushes, camera, etc.)

For stream condition index sample collection and habitat assessment performance, any combination (or all) of the equipment listed below may be used:

- D-frame dipnet with No. 30 mesh
- collection brush
- 100 meter measuring tape
- flagging tape (or similar)
- YSI multiprobe (or similar) and all associated standards and buffers
- GPS equipment (Trimble, data logger)
- additional non-equipment supplies (cleaning materials, buckets, gloves, preservatives, camera, etc.)

For qualitative periphyton sample (QPS) collection and rapid periphyton survey (RPS), any combination (or all) of the equipment listed below may be used:

- disposable pipettes (2 mL)
- plastic agitation container with 8-cm inner diameter
- scissors or knife
- ruler
- 100 meter measuring tape
- flagging tape (or similar)
- YSI multiprobe (or similar) and all associated standards and buffers
- GPS equipment (Trimble, data logger)
- additional non-equipment supplies (cleaning materials, buckets, gloves, preservatives, camera, etc.)

For additional details regarding supplies used for sample collection for the above mentioned matrixes, see Section 11.1, pages 19-30 and page 119, Figure 26 for ground water; see Section 11.1, pages 31-36 and page 120, Figure 26 for surface water; see Section 11.1, pages 37-41 for sediments; and see Section 11.1, pages 42-61 for SCI, HA, QPS and RPS.

7.5 Sample Handling

All activities regarding WMS sample custody, shipment and submittal to the FDEP Central Laboratory is detailed in Section 11.1, pages 69-73. Sample handling is consistent with and follows FD 5000 and FD 7000 of the FDEP SOPs.

8.0 Equipment and Instruments

All equipment (and associated standards/buffers) used by WMS for calibration procedures are based on procedures outlined in the FDEP SOPs (FDEP-SOP-001/01 FT 1000, FT 1100, FT 1200, FT 1400, FT 1500, FT 1600, and FT 1720) and meet all FDEP SOP specifications for accuracy, reproducibility and design.

8.1 Calibration and Standards

Specific calibration procedures used by WMS for pH, specific conductance, dissolved oxygen, temperature, and turbidity are detailed in Section 11.1, pages 13-18.

All standards and buffers used in calibration procedures are documented in a log book. An example of a completed page from the log book is included in Section 11.1, page 114, Figure 22.

All calibration procedures are documented as described in Section 11.1, pages 115-116, Figure 23. Furthermore, all records are maintained per FT 1000, the FT Series and FD 1000 of the FDEP SOPs. Per FT 1000 and FD 1000, calibration standards and the calibration procedure are traceable to each instrument.

8.2 Equipment Maintenance and Documentation

All instruments and equipment used for sample collection and calibration procedures are maintained and cleaned on an as-needed basis, and all associated documentation regarding maintenance and cleaning is recorded in log books. Furthermore, all decontamination/cleaning and preservation derived wastes are disposed of in accordance with FS 1011 of the FDEP SOPs.

All equipment cleaning is based on FDEP SOPs (FDEP-SOP-001/01 FC 1000). Specific procedures are detailed in Section 11.1, pages 80-84, and page 92, Table 6. Furthermore, an example of a completed page from the cleaning log book is included in Section 11.1, page 118, Figure 25.

All instrument and equipment maintenance is based on recommendations made in FS 1007, Table FS 1000-12, and the individual FT series of the FDEP SOPs, and

manufacturer recommendations. An example of a completed page from the equipment maintenance log book is included in Section 11.1, page 117, Figure 24.

9.0 Review and Assessment

WMS reviews and assesses the quality of the data being generated by employing quality control measures for both field and laboratory parameters.

9.1 Quality Control Measures

WMS uses several quality control measures to ensure high-quality data is being collected and analyzed for. Quality control samples assess the accuracy and precision of sampling and analytical techniques. The quality control procedures are consistent with FQ 1000 (blanks and other QC samples) and FT 1000 (calibration requirements and acceptance) of the FDEP SOPs.

9.1.1 Field Quality Control

Sampling personnel collect and submit three types of blanks to the FDEP Central Laboratory based on the type of equipment used to collect the actual water chemistry samples. All blanks are collected at a 20% frequency based on the number of samples collected for a specific project over a specific period of time. All blanks are collected using analyte-free (de-ionized) water and are collected in the same manner as actual samples.

Pre-cleaned equipment blanks are collected and submitted as discussed in Section 11.1, pages 74-77.

Field-cleaned equipment blanks are collected and submitted as discussed in Section 11.1, pages 74-77.

Field blanks are collected and submitted as discussed in Section 11.1, pages 74-77.

Duplicates and split samples are not included in the WMS quality control measures.

However, an additional quality control measure WMS uses to ensure field meters (YSI multiprobes or similar) remain in calibration mode throughout a sampling day is Field Reference Samples/Standards (FRS). These blind water samples are prepared by the FDEP Central Laboratory and supplied to sampling personnel for measurements of pH and specific conductance. FRS samples are collected and analyzed at a 10% frequency based on the number of samples collected per quarter, regardless of project. See Section 11.1, page 76 for further details.

9.1.2 Laboratory Quality Control

In addition to the extensive quality control measures the FDEP Central Laboratory uses internally, the WMS also participates in evaluating the quality of the data being generated by the laboratory. Analytical Reference Samples (also referred to as Standard Reference Samples, SRS, or Lab Spikes) are prepared by the United States Geological Society (USGS) and supplied to selected WMS sampling personnel. Currently, WMS agencies collecting and submitting analytical reference samples include Northwest Florida Water Management District (NFWFMD), FDEP personnel located in Tampa and in-house personnel collecting samples for St. John's River Water Management District (SJRWMD) and Suwannee River Water Management District (SRWMD). These blind water samples are submitted to the laboratory as actual samples on a quarterly basis and are analyzed for the same parameters (analytes) as the ground water Trend Network. See Section 11.1, page 76 for more details.

9.1.3 Quality Control Criteria

The results for each quality control measure are assessed using specific acceptance criteria.

For all blank samples submitted to the lab, results must meet the following specifications. The WMS qualifies data which are detected at values less than or equal to those found in the associated blanks. During the data loading process, an Oracle procedure determines if there are any blank detections for the project. If there are blank detections, the highest detected value per analyte is stored. These stored values are then compared with each individual sample value for the analyte. Sample values detected at or less than the value stored for the blank detection are qualified with a 'V' and a comment is inserted for the result stating 'ANALYTE DETECTED IN BLANK AT SIMILAR CONCENTRATIONS'. Additionally the lab may assign a 'V' to data which are found to be associated with lab blank detections. The definition of the 'V' data qualifier is "Indicates that the analyte was detected in both the sample and any of the associated blanks, at similar concentrations". Furthermore, the WMS QA officer reviews the blank results to determine if significant or reoccurring detections are taking place. The WMS QA officer submits a monthly blank detection report to each sampling entity listing any detection greater than the MDL (minimum detection limit). Any significant or reoccurring detection requires the sampling personnel to investigate possible contamination sources and initiate corrective actions accordingly.

All calibration and calibration verification results must meet the acceptance criteria stated in Section 11.1, page 13. The accuracy of field test measurements is reflected in the acceptance criteria for continuing calibrations as specified in the FT series of the FDEP SOPs.

FRS results must meet the acceptance criteria stated in Section 11.1, page 76.

Results for Analytical Reference Samples must meet the acceptance criteria established by USGS. Results are compared to the USGS most probable values and standard deviations. Furthermore, the results are calculated as a percentage of the USGS results (should be between 80-120%).

9.2 Raw Data

These policies and procedures are used to review and assess raw data, laboratory data and project data. All data management is consistent with FD 1200 of the FDEP SOPs.

9.2.1 Data Reduction

Values for conductivity, dissolved oxygen, pH, temperature, secchi depth, depth to water, and sample depth are transferred directly from the sampling instrument to the sampler's field log sheet. These values are then entered directly into a computer file by the sampling agency data manager or lead sampler. This raw data is reviewed by the lead sampler, the sampling agency's data manager and the program manager for each entity. For calibration criteria and information, see Section 11.1, pages 13-18. Refer to the FDEP Central Laboratory Chemistry Section Quality Manual for specific details regarding formulas for calculating final sample results.

9.2.2 Data Verification

Raw field data are reviewed by the sampling agency data manager, lead sampler and the program manager. Field logs and previously collected field data are reviewed for obvious problems or errors.

Each sampling agency data manager, lead sampler and the program manager is responsible for determining that the results of each analytical determination have all associated QC measurements and that the acceptance criteria are met and documented according to protocol. The sampling agency data manager, lead sampler and the program manager is responsible for checking calculations, completing sample preparation, calibration, analysis and instrument logs, and completing all internal custody documentation. Each supervisor is responsible for reviewing this work for completion and correctness prior to authorizing the individual results for release.

The data verification procedures consist of all the QC validations and calculations checks discussed in the FDEP Central Laboratory Chemistry Section Quality Manual. In addition, soundness of all data is evaluated by the nature of the sample, the inter-relationship among the parameters and the historical values, etc. Any discrepancy or inconsistency will initiate a recheck of data or reanalysis of the sample(s). If no reason can be found to invalidate these data, they will be entered into the OGWIS database.

9.2.3 Data Validation

Once the reconnaissance, field, and lab data are received by WMS, the data are loaded into the WMS Oracle database (OGWIS). The data are then considered provisional and must be reviewed by the data generators prior to release to the general public. The provisional data are exported out of the Oracle database and a documentation file is created to enable efficient data review. These files are returned to the data generators for their review. The files include the documentation file, and various exports of the results file. The FDEP Project Manager reviews the station data for all projects in the provisional status for accuracy.

The documentation file contains information on the completeness or lack thereof of the project data, and on the quality of these data. Problems with the project data may be listed in the comments section of the documentation file. All of the sample and blank data are exported to review the data for accuracy.

Specific data correction requests are submitted to the FDEP Project Manager on the form provided in the Data Management Standard Operating Procedures (DM SOP), see Section 11.3, page 16. Once the requested corrections are made by FDEP staff, the data generators are notified and asked to look over the corrections one final time. Additionally, any problems identified with the data are documented in the project comments dialog box by the FDEP Project Manager at this time. If no errors are found the data are 'released'.

9.3 Corrective Actions

Network personnel responsible for assessing each quality control measure and initiating corrective action if needed are the designated quality assurance officers for the WMS, the FDEP, the Central Chemistry and Biology Laboratories, and the sampling agency. Specific QC measures that initiate corrective action and the types of action that will be taken are listed in Table B., listed below. Corrective action procedures are consistent with FA 3200 of the FDEP SOPs.

Notification of network personnel of problems and corrective action can be on several levels. Generally, oral communication among QA officers initiates corrective action. In the event a problem fails to be remedied, written communication among the QA officers will serve as official notice of the need for corrective action. Official memoranda between project managers, who are also the contract managers, may occur in the event that corrective action is not being implemented.

Reviews and audits of sampling operations by FDEP personnel are welcomed. Corrective action recommended by FDEP personnel, depending on its nature, may be implemented immediately or at the beginning of a new contract year.

Please refer to the FDEP Central Chemistry Laboratory QA Manual and the Biology Section QA Manual for laboratory guidelines concerning corrective action.

Table B. – Corrective Action

QA/QC MEASURE	CRITERIA FOR CONCERN	CORRECTIVE ACTION
Field Blank	Any value > Method Detection Limit	Analyte-free water source and storage Equipment storage Equipment construction Sample custody
Equipment Blank	Any value > Method Detection Limit	Cleaning procedure Analyte-free water source and storage Equipment storage Equipment construction Sample custody
Field Audit	Deviations from WMS QA Manual	See section 9.3 above
Performance (laboratory)	Results exceed targets for accuracy in Lab QA Manual	Lab notification

9.4 Deviations

Significant deviations from standard policies or practices of the WMS are reported to the data generators, data managers and Project Managers and documented with the review reports. Any samples that are prepared or analyzed beyond accepted holding times have a comment and a lab qualifier associated with that sample. Similarly, the failures of any quality control checks are commented with the data. All other significant observations that do not conform to accepted practices or policies are documented and reported along with analytical results. Those documents may be as letters, interoffice memorandum, appendices to reports or as comments in the WMS database.

9.5 Audits

The WMS conducts both internal and external audits that have been designed to evaluate field sampling protocols and all associated documentation.

External audits are performed by the WMS QA Officer for each sampling entity, including in-house FDEP WMS staff, FDEP district staff (Tampa, Port St. Lucie and Ft. Myers), and contracted agencies (NFWMD, SJRWMD and Alachua County).

On a yearly basis, external audits will be scheduled as stated: at least one audit for the ground water Status Network, at least one audit for surface water Status Network, at least one audit for the ground water Temporal Variability Network and at least one audit for

the surface water Temporal Variability Network. Project Managers may choose to perform more audits at their own discretion each year, which will also be considered external audits.

Internal audits are performed by internal staff for each respective sampling entity. Those agencies under contract with WMS are entitled to create individual internal audit schedules and may perform them at their own desired frequencies. Internal audits are not performed on staff that is not contracted (WMS in-house staff, Tampa staff, Port St. Lucie staff and Ft. Myers staff). Instead, the audits are conducted as external audits by the respective Project Manager and/or WMS QA Officer at the same frequency as other external audits.

All audits (internal and external) are concluded with an audit report that summarizes the overall performance. Deficiencies are noted, and corrective actions are established for each deficiency. In response, sampling personnel are required to submit a plan of corrective action report addressing each deficiency and how they intend to prevent future occurrences. All audit reports are distributed as stated: the original is given to the Project Manager or Contract Manager (for those agencies under contract); copies are provided to each sampling personnel, and the WMS QA Officer. Additional copies are provided as requested by interested parties (internal QA Officers, team leaders, etc.).

Refer to Section 11.1, pages 123-128 for the WMS Audit Form that is used for both internal and external audits. All audits are conducted according to the requirements of FA 4200 and 4300 of the FDEP SOPs.

10.0 Consumer Relations

10.1 Review of Proposed Work

Review of work products includes internal agency review for reports written to satisfy requirements not limited to but including Sections 305(b), 106, and section 604 of the Clean Water Act. Further review of reports is provided by regional program administrators at EPA region 4 in Atlanta, Georgia.

Other reports, posters and presentations generated for public distribution are reviewed by immediate supervisors, internal program staff, and Administrators with responsibility for section, bureau and Division programs as specified in section 5.3

10.2 Complaints

The WMS is committed to resolving complaints and implementing suggestions for improvement. All informal complaints, suggestions or requests for information are directed to the appropriate supervisor for resolution. If immediate resolution cannot be attained, the matter is passed to the section administrator who may investigate and direct

the resolution. Formal written complaints are logged with the section and, after the investigation and resolution, are responded to in writing. Copies of responses are kept for reference.

11.0 Appendix

Items listed in this appendix have been provided for reference.

11.1 Status and Temporal Variability Monitoring Networks Sampling Manual (WMS Sampling Manual)

11.2 Project Manager Manual

11.3 Data Management Standard Operating Procedures

11.4 Oracle Generalized Water Information System (OGWIS) Users Manual

11.5 Organization Chart

11.1 Status and Temporal Variability Monitoring Networks Sampling Manual (WMS Sampling Manual)

11.2 Project Manager Manual

11.3 Data Management Standard Operating Procedures

11.4 Oracle Generalized Water Information System (OGWIS) Users Manual

11.5 Organization Chart



Quality Plan for Submerged Lands and Environmental Resources

Florida Department of Environmental

Protection [Date]

Signature Page

The undersigned have read and understood this Quality Plan, are charged with managing and improving the quality system and are responsible for ensuring that appropriate staff properly execute the procedures discussed in the plan.

[Administrator] Date

[Administrator] Date

[Administrator] Date

Introduction

The DEP Quality Assurance (QA) program involves the implementation of a management system (planning, review, training, and assessment) to ensure that data collection, generation, interpretation, reporting, evaluation and archiving is of sufficient quality to support Department decisions. The effectiveness of our QA program is dependent upon the actions of all DEP staff, from “front line” employees to management, meaning QA is a function distributed throughout our organization. One aspect of our program is to ensure that Department QA activities are carried out according to commitments made to the United States Environmental Protection Agency (EPA) as enumerated in the DEP Quality Management Plan (QMP) (Draft Revision 9/2/08).

The DEP Secretary is committed to implementation of the quality assurance requirements in the QMP and as authorized in S. 403.0623 F.S. and Chapter 62-160 F.A.C. (the DEP QA Rule). It is the Secretary’s intent to carry out these obligations and requirements as detailed in the Department’s QA Directive (Draft Revision January 2008).

The Department’s Quality Assurance (QA) Rule, Chapter 62-160, F.A.C., was written to ensure adequate quality management of the environmental data used by the Department for its water and waste programs. This rule specifies the obligations of data generators and data users to adopt appropriate procedures for the collection of samples, for laboratory analysis, and for data review, and constitutes part of the Department’s agreement with the EPA to implement its Quality Assurance Management Plan. In order to provide for standardized procedures within the program and to execute the components of the DEP QA Rule

The SLER Program has developed an Operations and Procedures Manual available at http://depnet/wrm/sler/erp/docs/SLERP_Online/LeadPage.pdf, listing and describing all of the procedures required to implement the SLER program. This document, which is an addendum to our program’s Operations and Procedures Manual, describes the steps we take to ensure the scientific and legal defensibility of specific environmental data we obtain from applicants during the review of applications and from permittees’ monitoring for dredging projects. It details the process of training, execution, assessment, and corrective action we undertake to ensure that environmental data meets established quality criteria.

We will revise our Quality Plan as needed, and pledge to ensure the consistent application of procedures and criteria for the assessment of submitted environmental data. The Quality Plan will be used as a reference for experienced personnel since it will reflect issues and discoveries associated with our program’s water quality data collection, which, while just a minor part of our program’s assessment effort is an important component of our program’s responsibility.

We are fortunate in having duplication of this responsibility in two other programs in that as one learns how to improve our efforts, that information can and will be shared with or by our 'sister' programs in the Office of Beaches and Coastal Systems (OBCS) and the Bureau of Mining and Minerals Regulation (BMMR) .

The elements of our plan are consistent with the Department's Quality Management Plan, Quality Assurance Directive and Quality Assurance Rule (62-160 F.A.C.). [In addition, we ensure that our plan for all sampling activities, is consistent with DEP SOP FA 3300 <http://www.dep.state.fl.us/labs/qa/sops.htm>] Our plan addresses all activities associated with sampling, field testing, lab analyses and data review of any type, including those activities associated with data base construction and management. Our plan also discusses how decisions about data use are made based on the data quality assessments.

Where appropriate, we cite existing internal and external documents, including training manuals, guidance documents, SOPs, Rules, tables, etc.

We expect all staff to understand and follow the procedures and criteria as discussed in this plan, and to carry out their assigned responsibilities for effective utilization of our quality system.

Policy Statement

It is SLER's policy to:

- Use scientifically valid and legally defensible data for our decisions affecting protection of the environment.
- Have and implement the Quality System described in this document.
- Adaptively manage our Quality System to be consistent with provisions of the DEP Quality Assurance Management Plan.
- Ensure that each individual is properly trained to execute their assigned functions.
- Implement procedures to evaluate the quality of the data we use and to implement corrective actions when data do not meet our Data Quality Objectives.
- Periodically audit the performance and record-keeping practices of data generators we have responsibility for.
- Implement quality assurance procedures for the management of our data repositories.
- Perform a yearly systematic assessment of our quality assurance activities, including any corrective actions, with the findings submitted to the Standards and Assessment Section.

Ethics

All employees of the DEP Submerged Lands and Environmental Resources are held to high professional ethical standards in the performance of their duties. All employees are

required to read, understand and sign an 'Ethics Statement' attesting to their commitment to honesty and integrity in performance of their duties. In addition, all employees are required to attend an annual ethics training class. Improper, unethical or illegal actions will be dealt with according to the published Administrative Directives of the Florida Department of Environmental Protection.

Organization and Responsibilities

SLER-resides within the Division of Water Management, represented by the Office of Submerged Lands and Environmental Resources in Tallahassee, and by the Submerged Lands and Environmental Resource Permitting Offices in each DEP District Office, some of which also have branch offices in Marathon, Port St. Lucie, Sebring, Bartow, Live Oak, Panama City and Tallahassee.

The function of SLER is to ensure that activities in uplands, wetlands, and other surface waters do not degrade water resources, including water quality, water quantity, and the habitat for aquatic or wetland-dependent wildlife. The ERP Program regulates the construction, alteration, maintenance, removal, modification, and operation of all activities in uplands, wetlands and other surface waters that will alter, divert, impede, or otherwise change the flow of surface waters. The program also addresses dredging, filling, and construction in wetlands and other surface water, as well as stormwater and surface water management systems in uplands. The SLER program is a combination of two programs, the Environmental Resource Permitting (ERP) Program and the Sovereign Submerged Lands Authorization (SSL) Program. The SSL rules are to implement the administrative and management responsibilities of the Florida Board of Trustees and Department regarding sovereign submerged lands. The ERP and SSL rules are considered cumulative and water quality for both is addressed in the ERP authorization. Florida's five (5) Water Management District offices and six (6) FDEP Districts share responsibility for implementing the ERP program.

Responsibilities for existing staff: SLER staff are responsible for the review and final action on all applications and notices for permits, petitions for variances, and verification of exemptions (including those under s. 403.813(1) F.S.), under Part IV of Chapter 373, F.S. and Ss. 403.9321-9333, F.S.

Our Quality Assurance Officer (QAO) coordinates and participates in the quality evaluation of program data, and provides oversight to ensure that our staff perform their QA functions. The QA Officer may delegate some responsibilities to properly trained and qualified staff in the district program offices, when appropriate. The QAO conducts performance audits. The QAO also ensures that corrective actions are implemented for data non-conformance incidents as determined by evaluation of the data against our program's Data Quality Objectives. Additionally, the QAO assists program managers in the development of the Quality System and other logistical aspects of its implementation, such as coordinating associated training needs.

Our QAO documents all program QA activities, including training, audits and corrective actions and provides this information to the DEP Standards and Assessment Section on a periodic basis.

Our program staff routinely carry out the following duties involving data usability evaluation, data interpretation, and the generation of DEP authorizations in a manner that ensures scientific defensibility and adherence to DEP rules and policies. Data subject to this review includes turbidity sampling and occasional sediment sampling when sediments are suspected of having elevated concentrations of chemical constituents that have been identified as problematic in Florida waters.

Staff evaluate data obtained from outside environmental consultants using program Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs) and implement corrective actions as directed by the Quality Assurance Officer. A list of our DQOs and DQIs is found in **[Figure 2]**.

Staff also perform the following according to the procedures discussed below:

- Review proposed work for conformance with quality criteria
 - Review and evaluate data
 - Interpret data or determine compliance with permits and rules
- Check calculations
- Review consulting documents for errors and completeness

Program staff provide feedback to the program Quality Assurance Officer for improving the program quality system.

- **[Name]** acts as liaison with other units, data providers, data consumers or other external parties concerning QA matters.
- **[Name]** answers public or external technical inquiries about data interpretation, approved procedures, suspected QA problems, site-specific issues, etc.

SLER's management ensure that this quality system is fully operational within our program, designates our Quality Assurance Officer, and provides general oversight. These managers also evaluate the above Data Quality Objectives and Data Quality Indicators to ensure they meet our program's needs, and periodically evaluate the effectiveness of staff's data quality activities, including reviewing audit results. These managers evaluate corrective action policies and procedures to be implemented when data do not meet program Data Quality Objectives Our managers discuss audit results with the QA Officer, review the annual Quality Assurance Report to the Secretary, and discuss findings with the QA Officer.

Training

All personnel are properly trained to perform their duties. In addition to holding a programmatic conference every two years, which allows staff from our 6 district offices to compare experiences and solutions, our program has a monthly programmatic teleconference to discuss the various issues that arise and training events scheduled throughout the year either by teleconference or located at one of our district offices or an office of one of the five water management districts that share our programmatic responsibilities. Supervisors continually passess that our staff performance conforms with the policies and procedures of the program.

Our training procedures consist of:

- Training for specific QA functions
- Review of ethics policy with QA Officer
- Specific training materials for routine functions and designated QA activities
- Refresher trainings or delivery of updated information
- Evaluation of effectiveness of training for each staff member

Sampling Design and Procedures

Successful implementation of our program relies on valid data, which begins with proper sampling. SLER 1500, together with SLER 1501, SLER 1502, SLER 1503, and SLER 1504, comprise a summary of DEP quality assurance procedures for water quality sampling and analyses that are applicable to Environmental Resource Permit (ERP) projects. Topics include sampling project design, sample collection, laboratory analysis, and the validation and review of data for determination of compliance with water quality standards. The title of each of the major sections and associated tables or figures is listed below:

SLER 1500 Water Quality Sampling and Analysis Methods for ERP/WRP Activities
SLER 1501 Water Quality Data Reporting, Validation and Review for Determination of Compliance
SLER 1502 Water Quality Sampling for Docking Facilities

SLER 1503 Benthic Habitat Assessment, Sediment Sampling, Elutriate Testing (reserved)
SLER 1504 Sampling and Analysis for Flocculation Polymers (reserved)

List of Tables

Table 1500-1 Field Testing, Sample Preparation and Laboratory Analytical Methods
Table 1500-2 Sample Preservation and Holding Times for Specific Analytes
Table 1500-3 Fresh Water Analytical Method MDL and PQL List for Metals
Table 1500-4 Saline Water Analytical Method MDL and PQL List for Metals
Table 1501-1 DEP Data Qualifier Codes
Table 1501-2 Parts and Whole Comparisons for Reported Sample Results
Table 1501-3 Fresh Water Quality Criteria for Metals as a Function of Hardness
Table 1502-1 Suggested Analytes and Parameters for Docking Facility RAIs

Table 1502-2 Docking Facility Sampling, Analysis, Reporting and Records Checklist (RAI)

Table 1502-3 Quality Control Reporting Requirements for Saline Copper Analyses (RAI):

[Name] designs sampling plans.

- **[Name] prepares QA plans and SOPs**
- **[Name] reviews procedures and methods for compliance with QA plans and requirements**
- **[Name] handles requests for use of alternative, new or modified sampling procedures or lab methods**
- **[Name] manages or conducts sampling, field-testing and associated support operations**
- **[Name] coordinates data reviews, sampling activities or other QA tasks for timely completion**

Data Review

Our program understands the need to evaluate the quality and usefulness of environmental data prior to making decisions. We conduct the following review procedures to determine the usability of data for determination of compliance with permits or rules, etc. These procedures are based on our established Data Quality Objectives and Data Quality Indicators, and incorporate the concepts and criteria found in DEP's "Process for Assessing Data Usability", DEPEA-001/07.

Supplementing the QA rule, the Environmental Assessment Section has published three documents which are incorporated by reference and adopted by Chapter 62-160, F.A.C. These items are listed below and are incorporated into the SLER 1500 series by reference: *"DEP Standard Operating Procedures for Field Activities", DEP-SOP-001/01 (January 1, 2002)* This collection of DEP SOPs discusses procedures for the collection of samples, field measurement of certain analytes, documentation of field activities, field quality control procedures and related matters.

"DEP Standard Operating Procedures for Laboratory Activities", DEP-SOP-002/01 (January 1, 2002)

These SOPs currently only discuss biological procedures for laboratory taxonomic identification and quality control to be used in calculating the Stream Condition Index, BioRecon score or Lake Condition Index. The calculation of these indices is used to assess the ecological health of aquatic systems. DEP only publishes laboratory procedures for activities that are not covered by NELAC certification (see below).

"Requirements for Field and Analytical Work Performed for the DEP Under Contract", DEP-QA-002/02 (April 15, 2002)

These guidelines must be used when sampling or analytical services are directly contracted by the Department. Copies of the above publications are available at the Bureau of Laboratories Webpage at <http://www.dep.state.fl.us/labs>. Additionally, the Environmental Assessment section has prepared guidance entitled *"DEP Data Validation Guidelines, Tier 1 Data Reportables"*, Draft revision, June 2002. This draft

document, proposed to be incorporated into a future revision of the DEP SOPs, provides the user with recommendations on how to evaluate certain types of reported laboratory and field data. It is based on a list of minimum reportable data elements contained in the lowest category of proposed reporting “tiers” to be incorporated into the DEP SOPs. These guidelines are currently in draft form for internal circulation only and are subject to revision. Contact the Environmental Assessment section about current and future editions.

An example table of data acceptability criteria is available upon request.

Elaborate.

Requirement for submittal of a ‘Sampling Plan’ to include:

- Parties responsible for implementing the Sampling Plan
- Field procedures and schedule for conducting the water quality monitoring program
- Responses to address contingency measures that might be used if there are exceedances of water quality criteria
- Field procedures and schedule for conducting the sediment sampling program (Section
- Laboratory preparation and analysis procedures
- Description of final Sampling Results Report documenting findings from implementation of the Sampling Plan
- Post-dredge bathymetry survey

When requiring a QA project plan, only modifications to the standard SOPs or details of nonstandard procedures need to be described in the plan submittal

http://www.ecy.wa.gov/programs/tcp/sites/budd_inlet/dredgeAndWQ/FINAL_Water_Quality_Management_and_Sediment_Sampling_Plan.pdf

Documentation

Since accurate documentation is an important factor for determining the success of QA activities, SLER-carries out the following record-keeping procedures for the indicated activities to ensure appropriate documentation:

- Sampling,
- field-testing,
- data review,
- calculation checks,
- data archiving,
- checks of database entries
- Document control and maintenance
- Record generation, retention, and storage procedures

Contract Management

Our program ensures that the DEP contracts that we administer are properly managed to assure appropriate data quality. As such, we conduct the following activities related to contract development and review:

- **Description of process for review of contracts, work plans, and QA plans for sampling and analysis tasks, etc. [Elaborate]**

Audits and Corrective Actions

Audits provide objective feedback concerning the effectiveness of our program's quality system, and may identify areas in need of improvement. Therefore, SLER performs the following activities as discussed below:

- Conducts [X] audits per year and compiles audit reports
- Handles complaints and other reports received from data users and the public concerning data quality
- Reports exceptions to established procedures and criteria
- Devises and implements corrective actions for problems with procedures, data reviews, etc

Report Compilation

To provide the Secretary with information regarding DEP's ongoing QA efforts, SLER describes and compiles the results of all appropriate QA activities, and relays it to the Standards and Assessment Section for an annual report

Future adaptive management concerning our QA program will be based on findings from audits and data reviews conducted by the various programs within the DEP, which have corollary responsibilities, including the Office of Beaches and Coastal Systems, the Bureau of Mining and Minerals-Regulation and the Office of Coastal and Aquatic Managed Systems.