QUALITY MANAGEMENT PLAN
FOR
THE STATE OF FLORIDA AMBIENT AIR QUALITY MONITORING PROGRAM

Prepared for:

U.S. EPA

REGION 4

JULY 2021

Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
www.floridadep.gov

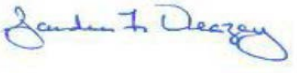
QUALITY MANAGEMENT PLAN APPROVAL

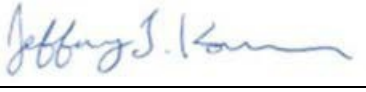
Title: *Quality Management Plan for the State of Florida Ambient Air Quality Monitoring Program.*

The attached *Quality Management Plan for the State of Florida Ambient Air Quality Monitoring Program* is hereby recommended for approval and commits the State of Florida to follow the elements described within.

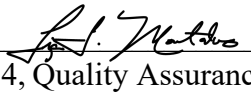
Florida Department of Environmental Protection (PQAO)

1) Signature:  Date 7/1/2021
Quality Assurance Manager, Office of Air Monitoring

2) Signature:  Date 7/1/2021
Program Administrator, Office of Air Monitoring

3) Signature:  Date 7/1/2021
Director, Division of Air Resource Management

U.S. Environmental Protection Agency

4) Signature:  Date 9/3/2021
EPA Region 4, Quality Assurance Manager

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1.0 QUALITY MANAGEMENT PLAN IDENTIFICATION FORM

Document Title:	Quality Management Plan for the State of Florida Ambient Air Monitoring Program
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Plan Coverage: This Quality Management Plan (QMP) addresses all monitoring and measurement activities mandated through the United States Environmental Protection Agency (EPA) regulations and memoranda. It is applicable to all programs managed by the Division of Air Resource Management (DARM), see Appendix A for a list of these programs. The purpose of the QMP is to assure that environmental data generated using funds from the EPA, in part or in whole, is adequate to support scientifically valid environmental decisions. It specifically applies to all Florida Department of Environmental Protection (FDEP) and local air program activities *(e.g.,* monitoring programs) whose purpose is to prevent pollutants from entering the environment or to remove pollutants from the environment. Generally, EPA funding is administered via grants, contracts, or cooperative agreements with EPA.

2.0 INTRODUCTION

It is the policy of the EPA[1] that all environmental programs conducted by, or on behalf of, the EPA, shall establish and implement effective quality systems to ensure that the environmental data produced are of sufficient quantity and quality to support the data's intended use.

40 Code of Federal Regulations (CFR) Part 58, Appendix A, states the following in Section 1.2.3:

Each PQAO is required to implement a quality system that provides sufficient information to assess the quality of the monitoring data…Failure to conduct or pass a required check or procedure, or a series of required checks or procedures, does not by itself invalidate data for regulatory decision making. Rather, PQAOs and the EPA shall use the checks and procedures required in [Part 58, Appendix A] in combination with other data quality information, reports, and similar documentation that demonstrate overall compliance with Part 58. Accordingly, the EPA and PQAOs shall use a "weight of evidence" approach when determining the suitability of data for regulatory decisions…Consensus built validation templates or validation criteria already approved in QAPPs should be used as the basis for the weight of evidence approach.

A quality system is a structured and documented management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance (QA) and quality control (QC) activities applied to environmental programs conducted by or for the EPA.

This document serves as the QMP for the FDEP's Division of Air Resource Management (DARM). The state of Florida became a single Primary Quality Assurance Organization (PQAO) on January 1, 2015. It consists of the FDEP and 9 local air monitoring programs across the state. The purpose of this plan is to document the DARM's quality systems and to support the legal defensibility of data produced by the PQAO. The Photochemical Assessment Monitoring Station (PAMS) network has its' own PQAO but is still covered under this QMP.

The DEP is Florida's lead agency for environmental management and stewardship – protecting our air, water and land. Although the Department is involved in a wide area of environmental protection and management activities, this QMP details the quality systems currently in place with those air program activities related, or of concern, to the EPA. This includes programs generating environmental data for EPA-mandated activities conducted through monitoring programs, grants, contracts and cooperative agreements.

In 1998, the DEP was granted statutory authority to "establish, by rule, appropriate quality assurance requirements for environmental data submitted to the department and the criteria by which environmental data may be rejected by the department" (*Chapter 403.0623, Florida Statutes*). The 2008 legislature modified the statute to allow the DEP to further "adopt and enforce rules to establish data quality objectives and specify requirements for training of laboratory and field staff, sample collection methodology, proficiency testing, and audits of laboratory and field sampling activities". From this statutory authority, the Department structured its Quality Assurance Program for air resource management activities. This program is codified in rules that are outlined in *Chapter 62-204 of the Florida Administrative Code* (F.A.C.).

[1] CIO 2105.0 (formerly Executive Order 5360.1 A2), Policy and Program Requirements for the Mandatory Agency-wide Quality System, U.S. Environmental Protection Agency, Washington, D.C. (May 5, 2002).

3.0 MANAGEMENT AND ORGANIZATION

3.1 General Organization

3.1.1 The Secretary of the FDEP, as the Department's senior manager, is responsible for the Department's Quality Programs. The Secretary has designated the Division of Air Resource Management (DARM) as having authority to establish policy for data quality issues and for activities involving air resource management.

3.1.2 Senior Management (Division Director and Local Air Program Directors) have the responsibility of ensuring that the programs under their purview implement a quality system that is consistent with the QMP and support such efforts with funding, staff, and training. Responsibilities include:

- Managing and reviewing budgets, contracts, grants, and proposals;
- Reviewing, overseeing, and evaluating overall air monitoring activities, and
- Acquiring resources and maintaining budgets pertinent to the collection of environmental data.

The DARM Division Director has "stop work authority" and will make final decisions regarding monitoring issues.

3.1.3 Middle Management (Program and Section Administrators, and Air Monitoring Staff Supervisors) will ensure that a quality system is implemented. Responsibilities include:

- Ensuring that monitoring staff are properly trained to perform their job functions to ensure data quality objectives are maintained;
- Assisting in the acquisition of resources and maintenance of equipment and inventories to ensure network operational readiness and avoidance of disruptions to data collection activities;
- Evaluating and implementing corrective action measures as recommended by the Quality Assurance Manager (QAM);
- Reviewing of monitoring data and supporting recommended improvements in their quality systems;
- Being familiar with relevant Department and EPA requirements; and
- Ensuring all documents pertinent to ambient air monitoring are consistent with the relevant Department and EPA requirements, rules, statutes, and applicable federal and state requirements.

3.1.4 Program Staff have the responsibility of:

- Routinely carrying out the duties involved in data collection, data evaluation, data interpretation, and the generation of ambient monitoring and quality assurance reports in a manner that ensures scientific defensibility and adherence to the appropriate regulations, rules and policies;
- Evaluating monitoring data using applicable data quality performance criteria;
- Implementing corrective actions as directed by their supervisors and the QAM;
- Providing feedback to the QAM for improving the program's quality system; and
- Understanding and implementing the requirements of the applicable quality assurance project plans (QAPPs) and standard operation procedures (SOPs).

3.1.5 Quality Assurance Oversight of the Division's air monitoring activities is handled by the QAM with the assistance of various program Quality Assurance (QA) Coordinators.

3.1.5.1 The Quality Assurance Manager has the overall responsibility for ensuring that the quality systems documented in this QMP meet statutory requirements for EPA-derived work. The

QAM also oversees the development, implementation and continued operation of the DARM's QA air monitoring policies. The QAM is responsible for:

- Providing technical advice and assistance to monitoring staff regarding data quality issues arising during routine operations;
- Preparing, distributing and providing training for the QMP;
- Ensuring the statewide air monitoring QMP, Standard Operating Procedures (SOPs) and QAPPs are created and/or revised timely and appropriately;
- Coordinating the efforts of the local program and the Office of Air Monitoring's (OAM) QA Coordinators by holding regularly scheduled meetings. The Florida Air Monitoring Advisory Committee (FAMAC) is an internal committee consisting of the FDEP and local program representatives to aid in coordinating QA and quality control QC policies and guidance. The FAMAC meets virtually or in person once every two months to address general monitoring as well as quality assurance issues;
- Providing guidance and QA-related training to the program QA Coordinators (see 3.1.5.2 below);
- Independently evaluating the effectiveness of the Division's air monitoring quality system and initiating corrective actions where warranted; and
- Making decisions on data quality that are independent of management.

3.1.5.2 Each ambient monitoring program, FDEP or local air program, or contractor submitting data for regulatory use in Florida has a designated QA Coordinator with the responsibility of ensuring the QMP is implemented. The QA Coordinator:

- Is the focal point for quality assurance questions that may arise in the programs for which they hold oversight responsibility, including providing input on quality and technical issues;
- Is responsible for understanding the contents of the QMP and coordinating the development of program specific QAPPs that are consistent with the requirements of the QMP;
- Has the authority to independently assess functions under their purview, and to provide recommendations to management when improvements or other actions are warranted; and
- Ensures that any information appearing in audit reports and other quality-related documents is disseminated to field technicians and other relevant staff.

3.2 Organizational Units - The following organizational units within the FDEP and/or under contract/agreement with the FDEP have quality assurance responsibilities under this QMP. The FDEP Division-related organizational charts are shown below.

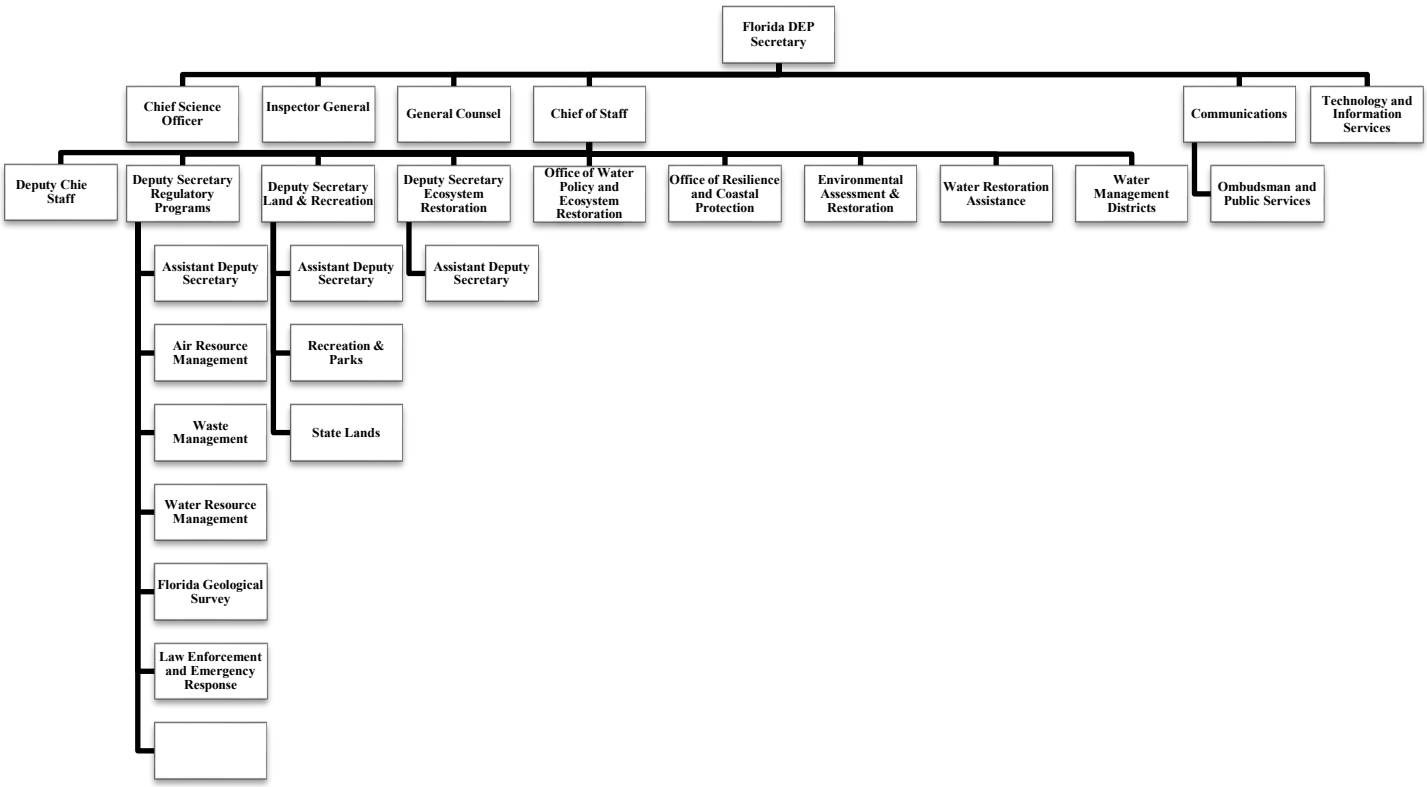


Figure 1: Florida DEP Organizational Chart

Figure 2: Florida DEP Division of Air Resource Management Organizational Chart

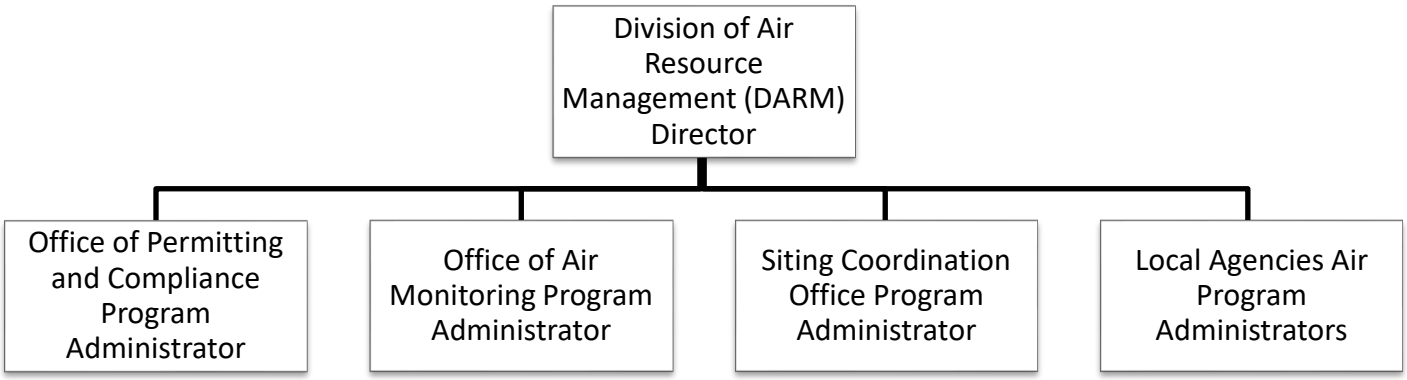
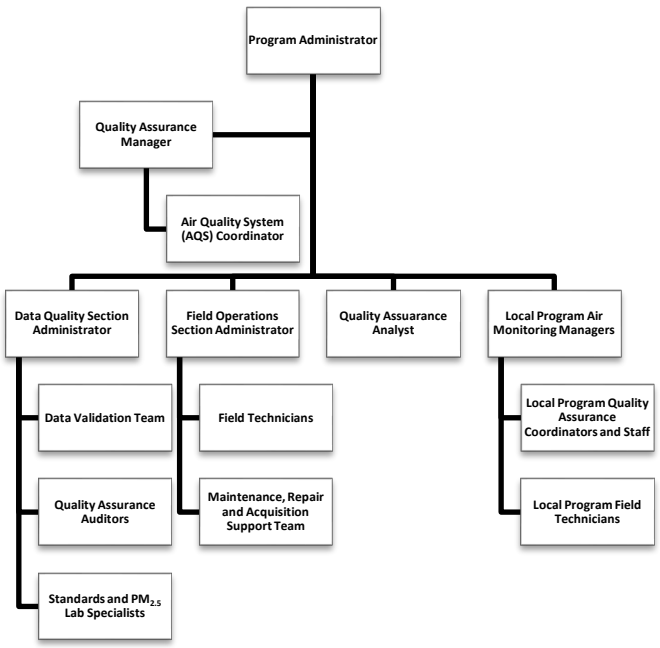


Figure 3: Florida DEP Office of Air Monitoring Organizational Chart



3.2.1 All quality data are produced with integration of staff efforts across agencies. The continuous and manual data flows are illustrated in Figures 4, 5 and 6 below.

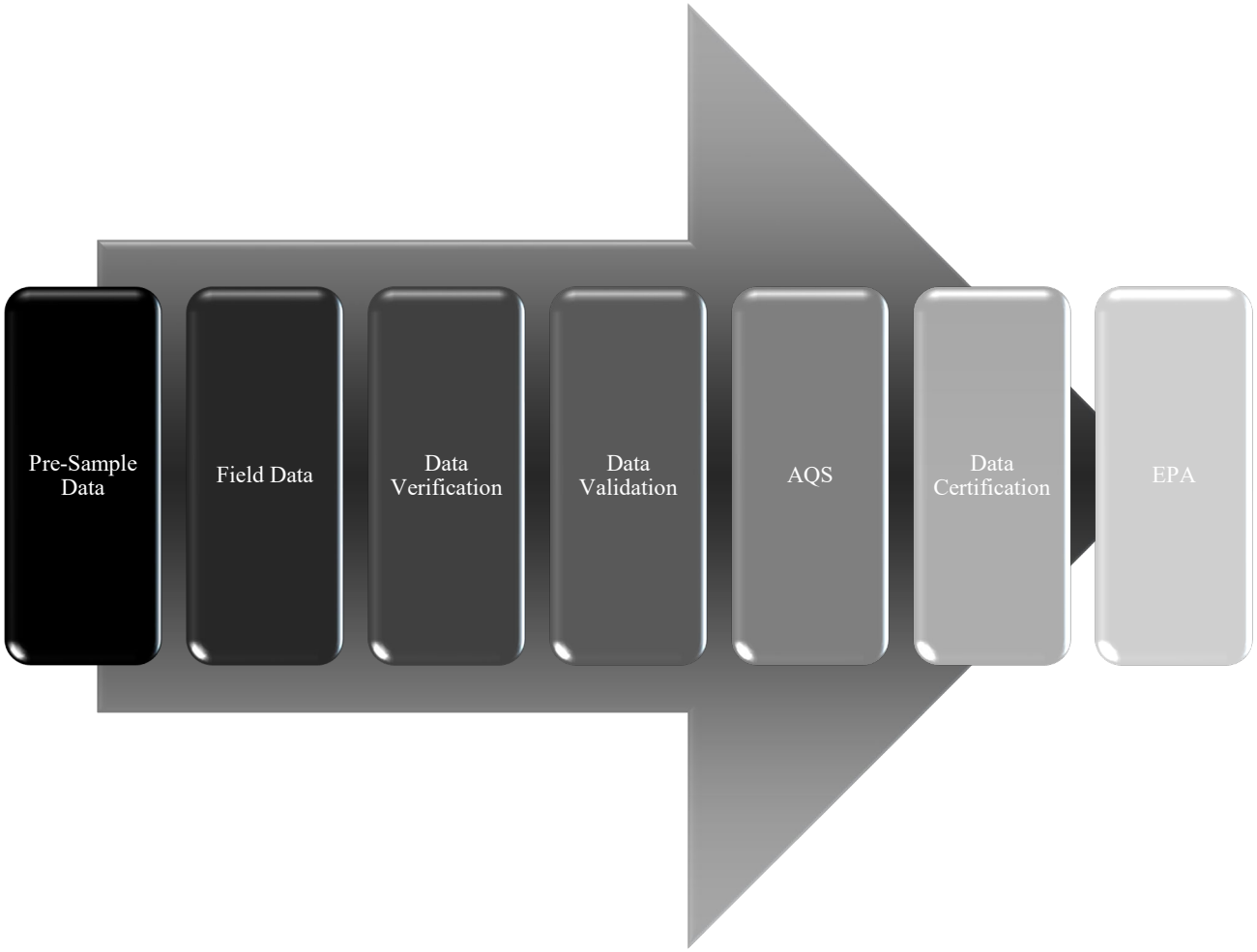


Figure 4: Florida Statewide Data Flow (Continuous Air Monitoring)

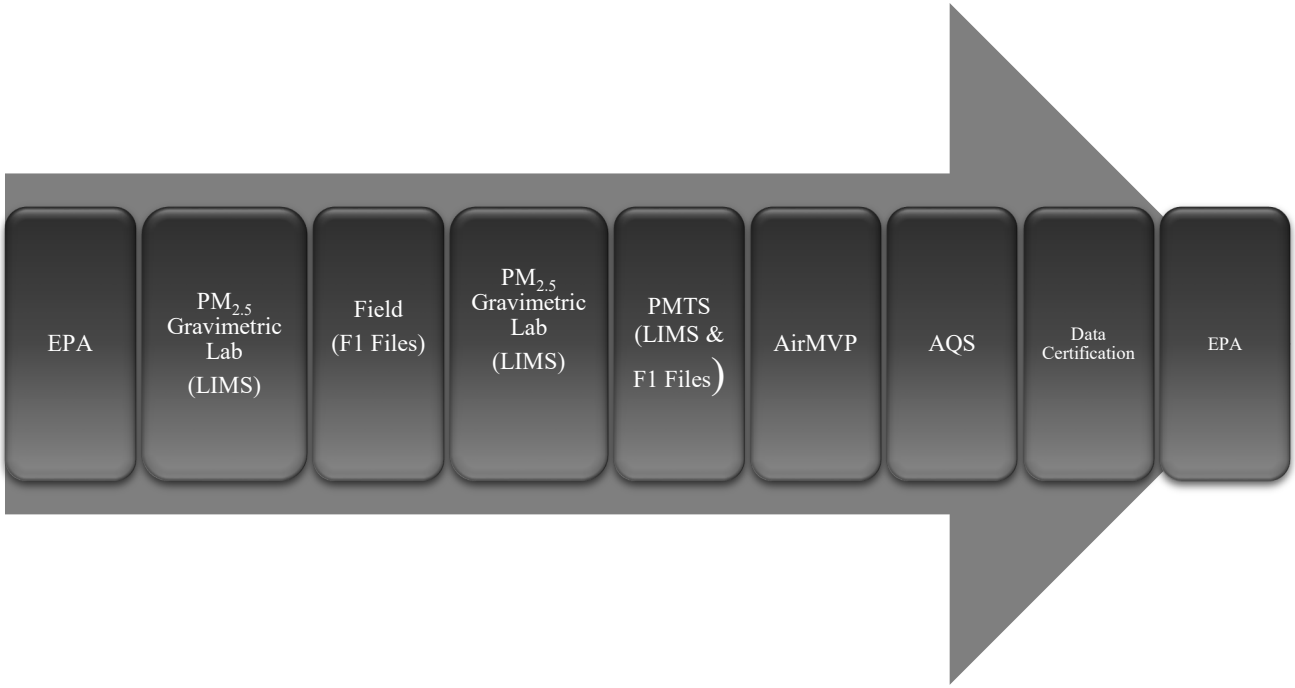


Figure 5: Florida Statewide $PM_{2.5}$ Data Flow

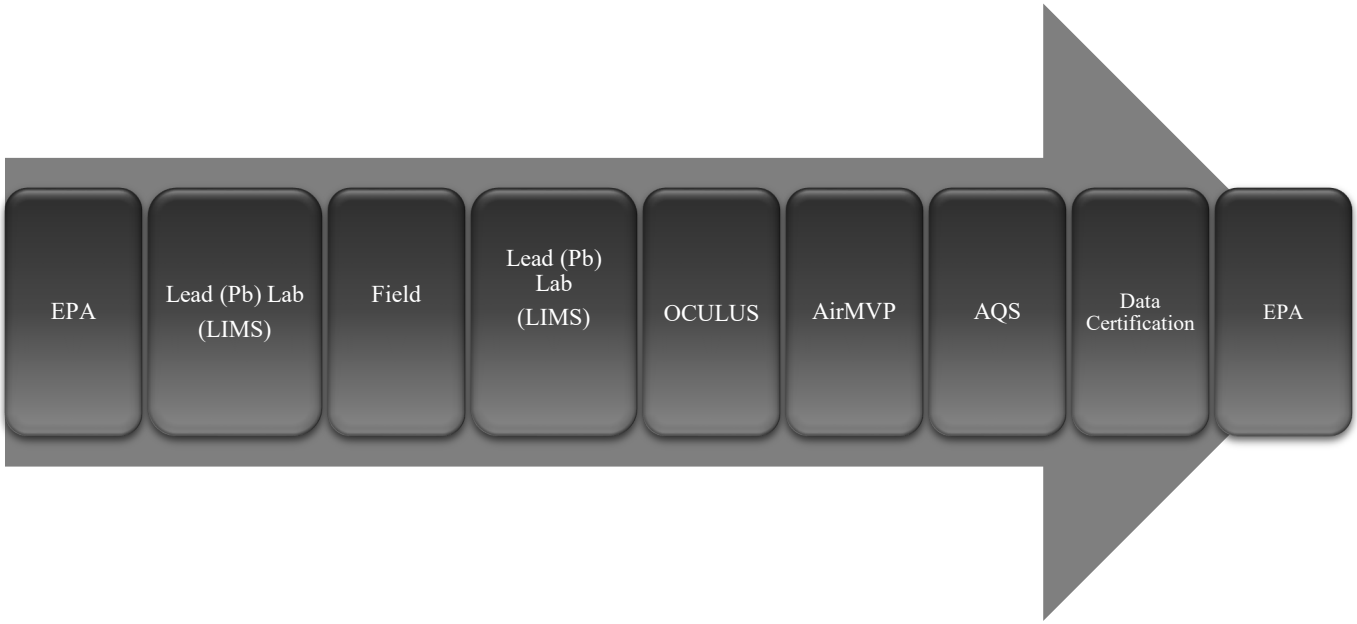


Figure 6: Hillsborough County Pb Data Flow

3.2.2 All laboratories providing data to the FDEP, either directly or through the agencies listed in Figure 2 are required to meet the general requirements as specified in the most recently approved Quality Assurance Project Plan(s) for the FDEP. The Florida PQAO has a single $PM_{2.5}$ Gravimetric Laboratory operated by FDEP, and a single Pb Laboratory operated by the Environmental Protection Commission of Hillsborough County.

4.0 QUALITY SYSTEM COMPONENTS

The Florida DEP quality system components consist of the following:

4.1 Planning - Each FDEP program and program manager is ultimately responsible for ensuring that data generated by, or submitted to, the FDEP are appropriate for their intended use. This responsibility includes scientific study design, appropriate QA planning, development of data quality objectives (DQOs), identification of QC measures, preparation of QA planning documents where appropriate, and the coordination of technical and data quality issues among field, laboratory, and data assessment staff involved in the activity. Details of the planning process are delineated in Section 9 of this QMP.

4.2 Implementation - Once approved, the procedures or processes outlined in the QAPPs will be followed. Important elements in the implementation include SOPs, certification and training, and information management. These specific items are discussed in detail in Section 10 of this QMP.

4.3 Assessment - Different types of assessment activities are used to verify that measurement systems are operating appropriately, and that the data generated by these systems are appropriate for their intended use. Assessment activities include data quality audits, performance audits, systems audits, the EPA's National Performance Audit Program and the Particulate Matter (PM) - specific Performance Evaluation Program, along with corrective actions, and may be used alone, or in conjunction with others, to evaluate the targeted process. These items are discussed in detail in Section 11 of this QMP.

4.4 Documentation - An important component of any quality system is the ability to document all the associated activities. The FDEP and DARM archives the records associated with the previously discussed QA System components. Documentation is addressed in detail in Section 7 of this QMP.

4.4.1 The Quality Management Plan for the FDEP governs all of the agencies within the PQAO that produce air monitoring data reported and used in regulatory activities. There is another Quality Management Plan for the activities of other environmental activities of the FDEP.

4.4.2 Quality Assurance Project Plans are required for each air monitoring project that is federally funded, however QAPPs or an equivalent quality assurance document may also be developed for projects that are not federally funded. A QAPP must comply with all applicable requirements, including the U.S. EPA's *Requirements for Quality Assurance Project Plans* (EPA QA/R-5), and must be consistent with the objectives and requirements of the FDEP's QMP. The FDEP's QAPPS are written using the *Guide to Writing Quality Assurance Project Plans for Ambient Air Monitoring Networks*; EPA-454/B-18-006, August 2018. A QAPP document includes the following elements:

- Mission, objectives, and policies;
- Purpose and background;
- Distribution and approval signatures;
- Roles and responsibilities;
- Resource requirements;
- Measurement, sampling, analysis, and chain of custody specifics;
- Instrument requirements;
- Data acquisition and management specifics;
- QA/QC activities;
- Assessment activities and responsibilities;

- Reports produced for management; and
- Data validation and DQO reconciliation specifics.

4.4.3 Standard Operating Procedures Pursuant to *40 CFR, Part 58, Appendix A, Section 1.2.1*, all monitoring organizations within the FDEP's PQAO are required to adopt and follow the OAM's SOPs for each air monitoring instrument they operate and for which ambient air quality data are reported. Air monitoring organizations may adopt and follow alternative SOPs that have been reviewed and approved by the OAM.

SOPs are an integral part of a quality system. They provide staff with the information necessary to perform a specified task properly and facilitate consistency which helps ensure the quality and integrity of results. SOPs utilized by the OAM and monitoring organizations within its PQAO describe the detailed procedures for air monitoring activities, including sample collection, instrument operation and maintenance, and preparation and analysis of samples. New or revised SOPs are developed by experienced staff and are reviewed by the appropriate management and staff. They are forwarded for review by the OAM quality assurance staff. After the OAM comments are addressed by the submitting agency, they are forwarded to EPA for approval. The OAM uses EPA's Guidance for Preparing Standard Operating Procedures (EPA QA/G-6), which identifies the elements of an effective SOP.

4.4.4 Quality Assurance and Technical Training are addressed by each organization involved in the ambient monitoring program. Local programs, the OAM, and EPA each provide and receive quality assurance and technical training. The OAM strives to provide annual statewide hands-on technical training. It also provides quality assurance training, most often through FAMAC and quarterly/monthly statewide teleconferences attended by all regulatory agencies in the state.

4.4.5 Data Validation should be completed by the submitting agency. Many of the data validation steps will be repeated by the OAM staff prior to submitting the data to the Air Quality System (AQS) quarterly and again on an annual basis before certifying the data to assure proper usability and defensibility of the data.

4.4.6 Data Assessments include the review, verification, validation, and assessment of data generated or utilized for regulatory purposes. The data assessment process includes both internal and external quality control assessments of the accuracy, precision, data completeness, and criteria identified in associated QMP, QAPPs, and SOPs. Internal assessments are conducted by the producers of the data on a continuous basis to identify issues in real-time.

4.4.7 Quality Assurance Audits are an integral component to the quality system and are discussed in section 11.0 Assessment and Oversight.

5.0 PERSONNEL QUALIFICATIONS AND TRAINING

5.1 The Florida DEP's Policy is that all staff be fully qualified, per the knowledge, skills and abilities (KSAs) and the licensure/registration/certification requirements specified in the Position Description for each designated monitoring position. Each staff member is to be provided the training necessary, whether on-the-job, on-line, or formal classroom, to enable the staff member to remain fully qualified and current on all aspects of his/her position. This training includes those areas considered general in nature, i.e., ethics, diversity, harassment, and public records; general to the staff's operational area, such as increasing levels of management training for supervisors and managers, and general computer training courses; and specific to the job function, such as the FDEP supplied hands-on instrument training courses for field operators and specific EPA-supplied air monitoring training courses. All levels shall obtain quality assurance related training as necessary to perform their designated functions, including reading and understanding the sections of the *EPA Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II* (QA Handbook) that clearly address duties they perform for the PQAO. In addition, all staff in the FDEP air monitoring program should attend the APTI 470 Quality Assurance for Air Pollution Measurement Systems course, including completing the necessary prerequisites for this course.

5.2 Management's Responsibility at all levels is to ensure that their staffs receive the training necessary, as stipulated in the **Policy** above, to be and remain fully qualified for their positions as indicated below:

5.2.1 Senior Management (Division Director and Local Air Program Directors) has the responsibility to develop and review the general training plans for its respective agencies, provide the funding and necessary staff time to allow the overall training objectives to be realized.

5.2.2 Middle Management (Program and Section Administrators and Air Monitoring Staff Supervisors) has the responsibility to ensure that each member of its staff have the time and the wherewithal to obtain the training necessary to maintain currency in their job functions. Middle management must also ensure that the Senior Managers are aware of the training requirements, affiliated costs and staff time requirements. Middle managers should also be involved in designing the training programs, with the assistance of their staff supervisors, and individual staff members.

5.2.3 Program Staff has the responsibility of ensuring they participate in the training that is offered and required. Individual supervisors will maintain the written training records, review them on a frequent basis to ensure that all staff members are current on their training, and assist the Middle Managers in the design and development of the individual training programs.

5.2.3.1 The Office of Air Monitoring works with local air monitoring program staff to identify the training needs of field and laboratory staff, data users, and program managers. Based on the training needs, the OAM assists the other program areas in the development of presentations and educational materials and conducts air monitoring and quality assurance training workshops and meetings. The presentations developed for these training sessions are generally placed on the Department's network drive for access by anyone in the monitoring community who wants to use the presentations.

5.2.3.2 The QA Coordinators in the various air monitoring programs are encouraged to attend all related training courses, since these individuals are expected to be able to assist their program staff in implementing any quality assurance related activities covered during the training sessions. In addition, they will need to have a firm understanding of *40 CFR Parts 50, 53, 58*, this QMP, the QAPPs, and all relevant SOPs. The Air Pollution Training Institute (APTI) has provided an expansive list of courses that can be found at

https://www3.epa.gov/ttn/apti/Curriculalist.html. The following list of courses constitute a good basis for understanding quality assurance and ambient air monitoring and are just a few of the courses available:

- APTI 470 Quality Assurance for Air Pollution Measurement Systems
- APTI SI 303: Chain-of-Custody
- APTI OS 411A Series 411 - Computational Atmospheric Sciences: Essential Sciences for Air Quality Modeling
- APTI OS:411B Series 411 - Computational Atmospheric Sciences: Essential Atmospheric Sciences
- APTI OS:411C Series 411 - Computational Atmospheric Sciences: Meteorology for Air Quality Monitoring
- APTI-RE-100: Basic Concepts in Environmental Sciences - Modules 1 - 7
- APTI SI 100: Mathematics Review for Air Pollution Control
- APTI SI 400: Introduction to Hazardous Air Pollutants
- APTI SI 409: Basic Air Pollution Meteorology
- APTI SI 433: Network Design and Site Selection for Monitoring PM 2.5 and PM10 in Ambient Air
- APTI SI 434: Introduction to Ambient Air Monitoring
- APTI SI 436: Site Selection for Monitoring of SO2 and PM10 in Ambient Air
- APTI 435: Atmospheric Sampling
- APTI SI 471: General Quality Assurance Considerations for Ambient Air Monitoring
- APTI SI 473: Beginning Environmental Statistical Techniques
- APTI SI 474: Introduction to Environmental Statistics
- APTI 485: Statistics for QA of Ambient Monitoring Data
- NACT 222: Principles of Ambient Air Monitoring

5.2.3.3 Specific Audit Training is available for individuals involved in conducting Technical Systems Audits (TSAs) of the ambient monitoring program and are expected to:

- Understand the DARM's audit process;
- Have training and/or prior experience in the technical aspects of the ambient monitoring program;
  - A specific 6 month on the job training protocol has been developed for audit staff;
- Have a working knowledge of the applicable quality documents;
- Understand and be able to apply relevant quality principles;
- Be objective; and
- Where possible, have no direct involvement with the audited agency.

5.2.3.4 Continuous Training is needed to maintain proficiency for monitoring staff. Hands-on training is provided to staff on an annual basis. QA training is also provided, as a minimum, once every 2 years. A proficiency training program has been developed by OAM for evaluation of all monitoring personnel in the PQAO.

6.0 PROCUREMENT OF ITEMS AND SERVICES

6.1 The FDEP's Policy, created and maintained by the Bureau of General Services, can be found in *FDEP Directive 300* which establishes the DEP's policies and procedures for the acquisition of commodities and services (contractual, professional and construction); for contract, purchase order and grant development and management; and for contract and grant administration. Policies contained therein are designed to comply with applicable federal, state and DEP laws, rules and regulations and minimize risk to the DEP, yet derive the maximum economy and effectiveness from funds to be expended. Contracts involving air sampling activities (sample collection and analyses) shall be routed through the OAM for review and approval prior to contract execution.

6.2 Management's Responsibility at all levels is to ensure that the established policies and procedures regarding the procurement of commodities and services are adhered to and to assist in the formalization of those procedures within each division, office, and section. Specifically:

6.2.1 Senior Management (Division Director and Local Program Directors) have the responsibility of overseeing the procurement programs to ensure the policies and procedures are being followed, through delegation of responsibility to the lowest appropriate managerial level. The directors also have the responsibility of ensuring sufficient funding is available to complete the procurement activities needed to meet the established program goals and priorities. The FDEP senior staff representative for procurement is the Chief, Bureau of General Services, who acts as the department's liaison with the State of Florida Department of General Services' State Purchasing Office, which is responsible for the development of the overall statewide procurement program.

6.2.2 Middle Management (Program and Section Administrators and Air Monitoring Staff Supervisors) have the responsibility of assuring the procurement activities entrusted to them, usually the actual procurement of supplies and the development of contractual services, meet all of the mandated requirements. The funding for the quality system within the Division is determined by the Program Administrator of the OAM in conjunction with the Division Financial Officer. The allocated funds are tracked by use of specific QA modules. Audits conducted by the QA staff for the OAM and local air programs are funded by the Division.

6.2.2.1 The procurement process for commodities is handled through a multi-level review process which includes the Section Administrator's immediate supervisor (Program Administrator), a procurement review specialist within the Division, and a liaison specialist at the Division level that ensures the purchase requisitions are accurate, complete, and clearly describe the item needed and any technical requirements. There should also be requirements of the supplier to provide documentation as to the quality of the item (NIST traceability, warranty specifications, etc.) where applicable. The Program Administrator is also responsible for the final approval for all commodities based on after-receipt reporting from the staff for which the commodity was acquired.

6.2.2.2 The procurement process for contracts of services is also handled through a multi-level review process. In this case, the Section/Program Administrator serves as the Contract Manager who is responsible for enforcing performance of the contract terms and conditions, serves as the liaison with the contractor, and approves all invoices prior to payment. The department's Contract Administrator, who is part of the Bureau of General Services, is responsible for maintaining the contract files and contractual services for DEP as directed by *Chapter 287 of the Florida Statutes* while also maintaining the policy for procurement and contracting per the *FDEP Directive 300*. The Contracts Administrator is responsible, along with the Office of General Council's staff, for developing the standard language utilized in all of the department's contracts. Specifics of the requirements,

specified in the Grant Work Plan, for each contract is developed by the Contract Manager, in coordination with the contracted agency and the Contracts Administrator. See below:

> "All work performed under this Agreement by the Grantee shall be consistent with the Department's Division of Air Resource Management's Quality Assurance Project Plans for the State of Florida Ambient Monitoring Program; *40 CFR, Part 58*; EPA's *Quality Assurance Handbook for Air Pollution Measurement Systems*, EPA-600/R-94/038a, *Volume I: A Field Guide to Environmental Quality Assurance*, dated April 1994; EPA's *Quality Assurance Handbook for Air Pollution Measurement Systems*, EPA-454/B-17-001, *Volume II: Ambient Air Quality Monitoring Program*, dated January 2017; EPA's *Quality Assurance Handbook for Air Pollution Measurement Systems*, EPA-454/B-08-002, *Volume IV: Meteorological Measurements*, dated March 2008; and the Department/EPA approved Standard Operating Procedures which address all instrumentation utilized in the Grantee's ambient air monitoring program."

6.2.3 Program Staff have the responsibility, in coordination with the Section/Program Administrator, of determining the commodity requirements and researching the availability of the commodities and possible vendors. Staff may use any or all known vendors but are encouraged to use “certified minority/veteran/woman-owned businesses”. The program staff then documents all of the following information, including the required specifications for the commodity, to include any traceability requirements. The Program Administrator reviews the package to ensure that the commodity will satisfy all technical and quality requirements, and once satisfied, forwards the package to the Division's procurement review specialist who then prepares the necessary purchase requisition for review and signature by the Program Administrator. The procurement specialist prepares the final documents for either a direct purchase by the requestor utilizing a State Purchase Card (credit card) or they are sent to the department's purchasing section. The order is placed through the My Florida Market Place (MFMP) system. All payments, once the commodity has been received and accepted, is handled through the State's Comptroller’s Office. The Program Staff also has the responsibility of receiving the commodities, verifying they meet all specified quality requirements, and ensuring the commodities are functioning for their intended purpose. Once that has been ascertained, the Program Administrator will formally approve the payment, through the Division's procurement specialist.

7.0 DOCUMENTS AND RECORDS

7.1 Sufficient documented quality assurance is the FDEP's policy to assure that the ambient air quality data and other related activities are legally defensible in a court of law to meet and support the regulatory actions based upon those data and activities. Data cannot be admitted as evidence unless it can be shown they are representative of the conditions that existed at the time the data (or sample) was collected. Therefore, each step in the sampling and analysis procedure must be carefully monitored and documented. Records created in Florida are subject to broad public records access so there would be no confidentiality unless the records were specifically exempted by *Chapter 286 of the Florida Statutes*. The FDEP's quality assurance program consists of the four elements below:

1. Data collection - includes measurement preparation and identification of the sample, sample location, and sample time. It also includes the conditions during the measurements in the form of data sheets, logbooks, strip charts, and raw data.
2. Sample and/or measurement result handling - includes evidence that the sample and data were protected from contamination and tampering during transfer between people and from the sampling site to the laboratory and during analysis, transmittal, and storage. This process is documented in chain of custody forms.
3. Analysis - includes evidence that samples and data were properly stored prior to and after analysis, interpretation, and reporting.
4. Preparation and filing of measurement report(s) - includes evidentiary requirements and retention of records.

For ambient air samples to provide useful information or evidence, laboratory analyses must meet the following four basic requirements:

1. Equipment must be frequently and properly calibrated and maintained.
2. Personnel must be qualified to make the analysis.
3. Analyses must be in accordance with the SOP, be properly documented, and have received peer and management review.
4. Complete and accurate records must be kept.

7.2 Management and Staff's Responsibility at all levels is to assure that all required documentation is identified, prepared, reviewed for conformance with technical and quality system requirements, authenticated and approved by the proper level of authority, revised as necessary according to existing policies and procedures, maintained in a secure manner with proper codes being utilized, and archived as necessary to maintain the integrity of the records and documentation.

7.2.1 Field and Laboratory Records *Chapter 1B-26.003 of the Florida Administrative Code* requires that all primary records associated with field activities (including sample collection) and laboratory analyses be retained by the generating entity for at least 10 years after the end of the project or activity. This Chapter also addresses the disposition of records that have exceeded their useful life.

7.2.2 Quality Assurance Project Plans, required by the EPA for activities conducted for or funded by the EPA, will be prepared in accordance with *Requirements for QA Project Plans* (EPA QA/R-5*,* March 2001). As one PQAO, QAPP revisions must be submitted to FDEP for approval prior to use and be sufficiently document controlled. These QAPPs will be reviewed and approved by the appropriate EPA office. This QMP and the related QAPPs are used to document the Division's quality system as it relates to the ambient monitoring program. DQOs and QC measures will be incorporated into these QAPPs. The DQOs were developed as described in *Guidance on Systematic Planning Using the Data Quality*

Objectives Process (EPA QA/G-4, February 2006).

7.2.3 Documentation requirements are addressed in detail in Section 7 of each of the formally approved QAPPs and in various SOPs as those requirements affect the various on-going field and laboratory operations. The specific areas addressed include:

- Statewide Policy and Procedure Documentation
- Data Collection Records and Logbooks
- QA/QC Records
- Reference Materials
- Archiving and Retrieval

7.2.4 Quality documents such as this QMP, QAPPs, and SOPs are reviewed periodically (at least annually for QAPPs and SOPs) for effectiveness, content, and consistency with State and Federal requirements. They are updated at least every 5 years. Changes to the QA documents must be handled as if the changes were original documents. Additionally, SOPs must not conflict with any part of the applicable QAPPs or with any other relevant local, state, or federal regulation.

7.2.5 Internal Records for the FDEP follow the general policies for archiving or retaining records. The implementation of the policies and the period of time such records are retained are dependent on the nature of the records and the anticipated future need.

7.2.5.1 Records/Documents are classified according to their intended use, future applicability, and regulatory requirement for retention. They are retained for a minimum of ten complete calendar years from the date of collection. Additionally, if any litigation, claim, designation, audit, or other action involving the records has been started before the expiration of the ten-year period, the records will be retained until completion of the action and resolution of all issues which arise from it, or until the end of the regular (ten-year) period, whichever is later. All hard copy records are scanned and stored on a shared network drive or other data management system.

7.2.5.2 Originator Responsibility includes ensuring that the final version is dated and that all subsequent revisions are noted as revisions of the original document. There is no department or division-wide policy for assigning a document control identifier to department publications, however, all external quality documents originated by the DARM are assigned a control number identifying the type of document (i.e., QAPP, SOP, etc.) and the sequence in which it appeared for like documents.

7.5.2.3 The general policies for managing records within the department are outlined in the FDEP Directive 335.

7.5.2.4 Electronic Records must be retained for a minimum of ten years and must be easily retrievable. They are stored within the data management systems of each local agency within the PQAO, and on the FDEP network server for the FDEP-portion of the network. Data stored in the statewide data management system as well as records on the network server are backed up nightly by the Office of Technology and Information Services (OTIS) and stored off-site. This usually entails updating the file formats on a routine basis to ensure the current software is capable of reading the stored data.

8.0 COMPUTER HARDWARE AND SOFTWARE

8.1 The OTIS section of FDEP is responsible for managing the hardware, software, servers, and communications components that form the foundation of the department's information technology. OTIS has established hardware and software standards with which the department must conform. Information Technology Resource Management and Information Technology Security Policies and Standards are detailed in *FDEP Directives 370 and 390*, respectively. Information security, risk management, and coordination of Information Technology disaster recovery supporting FDEP's Continuity of Operations Plan are all covered in these directives.

8.2 Application Support is provided for by OTIS. They are the authority on standards, guidelines and approvals of Information Technology (IT) service contracts and purchases. OTIS provides support for the department's databases, including the Air Monitoring Validation Program (AirMVP), the Particulate Matter Tracking System (PMTS), and the Laboratory Information Management System (LIMS), as well as any subsequent system, and data reporting to the Air Quality System (AQS) database.

8.2.1 Software support The OAM staff, through the maintenance contract, requests program design, redesign, and development to obtain the hardware and software essential to the operation and maintenance of the ambient monitoring data, its storage, analysis, and transmission.

8.2.2 Software implementation The OAM staff works with the contractors hired by OTIS to develop, test, and bring to production those programs necessary to meet the aforementioned criteria. Proposed improvements, testing and troubleshooting of and for these programs to ensure the continued support necessary to meet the federal and state goals of data production is on-going.

8.3 Hardware Support is the primary responsibility of OTIS. They are responsible for specifying, procuring, installing, and maintaining computer hardware for the OAM staff. Requests for assistance are handled through the OTIS Help Desk.

8.4 Data Accuracy - The OAM staff is responsible for ensuring a complete and accurate database for the FDEP ambient air monitoring program. This is achieved by following the three stages of data handling detailed below:

8.4.1 The first stage depends on the submitting agency using properly calibrated and maintained instruments according to approved SOPs and in compliance with the applicable QAPP and the CFR. The data are then submitted to the state's regulatory database, AirMVP. Continuous data are polled directly with error checking for many agencies and they complete their data quality handling in AirMVP. The rest complete data quality handling locally on Agilaire's AirVision system and submit all but their manual $PM_{2.5}$ data electronically. Local programs complete a file comparison between their AirVision database and AirMVP to ensure correct transmission. The $PM_{2.5}$ data are created in the PMTS database storing the laboratory data and the F files from the monitors.

8.4.2 The second stage requires all agencies to use a verification utility in AirMVP which reviews their data. It provides information on unusual data and requires that all scheduled monitoring be complete or accounted for with null codes before the data are submitted to AQS. New data in AirMVP are backed-up nightly and the whole data base is backed-up weekly. A permanent record of the original data is maintained. Password security limits each agency to editing only its own data, though they can view and run reports on all data.

8.4.3 The third stage occurs after the data has been validated and verified. The data will then be packed and transmitted to the EPA's AQS database by the AQS Coordinator. The FDEP's OAM is responsible for ensuring that the data is certified annually, per the 40 CFR Part 58 requirement, after running specific AQS reports to check for outliers or other issues and addressing them accordingly.

9.0 PLANNING

9.1 **The primary function** of the FDEP air monitoring program is to verify compliance with the National Ambient Air Quality Standards (NAAQS). Other purposes include determining trends over time, determining effects on air quality from adjustments to source emissions, developing algorithms based on historical air quality and other conditions which will allow the verifying air quality modeling programs, providing real-time pollutant data to the public, and correlating health effects to air quality levels. As specified in Section 4.1 of this QMP, each FDEP program and program manager is ultimately responsible for ensuring that data generated by or submitted to the FDEP are appropriate for their intended use. This responsibility includes scientific study design, appropriate QA planning, development of DQOs, identification of quality control measures, preparation of QA planning documents where appropriate, and the coordination of technical and data quality issues among field, laboratory, and data assessment staff involved in the activity. Overall, the success in planning is shown by producing data of sufficient quality to be certified for all uses in AQS as well as the approval of plans and quality documents by EPA.

9.1.1 Agency Agreements - with the exception of permits or compliance monitoring, the ambient air quality data the Department uses are the result of directed monitoring activities. Some of these monitoring activities are accomplished through agreements between the FDEP and local air pollution control agencies.

9.1.2 Project Planning During the early planning phase of any investigation or data collection activity, the program manager shall clearly establish the intended use of the data, the time and resource constraints, and the required data quality. This planning process identifies and solicits input from all affected parties. If special areas of expertise are required, the program manager is expected to involve the applicable technical experts in the planning process. The overall planning process requires effective communication among the program manager, field, laboratory and QA technical staff, and the secondary data users, as appropriate.

9.1.2.1 Sampling Network Design - The selection of sampling sites is predicated on the objectives of a given activity. Sampling locations are selected to provide samples that represent the activity objectives. Compliance with the appropriate portions of *40 CFR, Part 58* regarding network design, sampler selection, and probe placement (Appendices A, D and E) is mandatory.

9.1.2.2 The expected data quality is further characterized through the development of DQOs that are specific to a project or activity. In identifying these objectives, the managers will consult with other DEP and local program technical staff on data quality issues outside of their areas of technical expertise.

- Data Quality Objectives - DQOs are the direct outcome of the process outlined in the *Guidance on Systematic Planning using the Data Objectives Process* (EPA/240/B-06/001, EPA/G-4, February 2006) and is one way of approaching the systematic planning process: DQOs are qualitative and quantitative statements of a study's technical and data quality objectives that define the appropriate types of data and specify tolerable levels of potential decision errors. DQOs are established and documented prior to data collection and/or assessment activities. The DQOs are identified in the project specific QAPP.

- QC Measures - are a series of indicators that collectively define the quality of the submitted data. There is a baseline level of quality control requirements that are expected of any organization that provides services in support of the Department's programs. These measures include the essential quality control requirements as outlined in the various QAPPs and their related EPA approved SOPs. When properly executed, they provide data that meet or exceed the minimally acceptable

quality criteria established to assist management in making confident decisions.

- FDEP has implemented a QA program to assure that data of known and acceptable precision, bias, completeness, comparability, and representativeness are collected within the Ambient Air Quality Monitoring Program. These parameters, known collectively as data quality indicators (DQIs), provide qualitative and quantitative descriptions to interpret the degree of acceptability of data.
- The regulatory programs make determinations of attainment or nonattainment with the NAAQS based on the validated, verified, and certified ambient monitoring data submitted following the applicable QA and QC specifications.

9.1.3 QAPPs are reviewed on an annual basis and when modifications are made. Adherence to the requirements set forth in the QAPPs will ensure consistent, repeatable results, and improve the reliability and comparability of all data collected. FDEP QAPPs are used by all staff within the PQAO as a reference document, providing the framework for the monitoring network's QA program.

9.1.3.1 Statewide QAPP Development starts by OAM quality assurance staff preparing a draft with input from members throughout the PQAO. It is reviewed by FAMAC for comments and corrections. After those comments are incorporated, they are reviewed and approved by the quality assurance manager, program administrator, and director of DARM (or designee), and is then submitted to EPA for approval.

9.1.3.2 Limited Use QAPPs are developed by the agency or agencies who will be involved in their use. The National Air Toxics Trends Stations and Air Toxics (NATTS/AT) QAPP is an example of such a QAPP. The FAMAC structure provides the interaction for agencies to work together to develop plans. After the draft is complete, it is submitted to OAM for review. After comments are incorporated, the QAPP is reviewed by the quality assurance manager, program administrator, and director of DARM (or designee), and is then submitted to EPA for approval.

9.1.3.3 Contractor's QAPPs have not been used, but rather contractors are expected to use state approved QAPPs where applicable. Any other QAPPs needed would be developed and submitted to OAM for comments. After those comments are incorporated, it would be approved by OAM for use.

10.0 IMPLEMENTATION OF WORK PROCESSES

10.1 Work Processes outlined in the quality plans will be followed once they are approved. All approved QAPPs are posted on AirMVP, which is used by all monitoring agencies submitting regulatory data for FDEP. FDEP SOPs are also posted on AirMVP as well as residing on all site computers. Local program SOPs are required to be resident at all monitoring sites. Revisions to QAPPs are communicated through the FAMAC and quarterly and monthly statewide teleconferences. Implementation is verified through the technical systems audit (TSA). Important elements in the implementation are:

10.1.1 QAPPs are documents that describe the Division's quality system as it relates to the ambient monitoring program and includes the documentation requirements regarding data collection operations, routine data handling, i.e. data verification, review and validation, reports to management, document control, archiving and retrieval. The QAPPs are reviewed by the QAM and staff on a recurring basis (at least annually) to assure effectiveness, content and consistency with the applicable State and Federal requirements. The documents are revised at least every 5 years. Changes are generally handled as if the revised documents were original publications. That process involves review and written approval by the Program Administrator and Division Director before the revised document is forwarded to the EPA for review and approval. The revisions are always delineated to assist in the review and approval process.

10.1.2 SOPs are documents that describe the officially approved procedures for performing certain routine or repetitive tasks. SOPs are useful when it is necessary to ensure comparability among activities performed on different occasions, locations, or by different individuals. The DARM and the other operating local programs are required to develop and utilize SOPs for all routine monitoring and other operational activities.

10.1.2.1 SOPs for laboratory activities are mandatory for any laboratory conducting air quality assessment and will be included as part of the related QAPP. Laboratory SOPs are written and follow the same rules and regulations as those mentioned in Section 4.4.3.

10.1.3 Certification and Training

10.1.3.1 Laboratory Accreditation - All laboratory data that the FDEP receives from laboratories, (local program and FDEP), within the PQAO shall be produced by a laboratory having accreditation for each reported test result by matrix, method (or analytical technology), and analyte. If initially reporting data without accreditation, the laboratory would be required to request specific analyte accreditation during their next accreditation cycle. DARM will maintain copies of those certifications.

10.1.3.2 Training - Monitoring organizations operating within the PQAO are required to maintain records of employee training. Such training must be designed to be commensurate with the employee's responsibilities. Each agency providing regulatory data for ambient air monitoring is required to maintain current training plans for all employees.

10.1.4 Information Management

10.1.4.1 The OTIS section of FDEP is responsible for managing the hardware, software, and communications components that form the foundation of the agency's information technology. OTIS has established hardware and software standards with which the Department must conform.

11.0 ASSESSMENT AND OVERSIGHT

As noted in Section 4.3 of this QMP, there are several types of assessment activities used to verify that measurement systems are operating appropriately, and that the data generated in support of a program are appropriate for their intended use. All ambient monitoring data producers participate in all forms of assessment. OAM audit staff, who are independent of ambient data production, conduct performance audits and TSAs.

11.1 Audits Each of the following activities may be used alone, or in conjunction with others, to evaluate the targeted process:

11.1.1 Data Quality Audits (Data Verification/Validation) involve evaluating the data generated in support of a program or activity with respect to appropriate quality criteria. These criteria may be established by rule, contract, or some other written agreement (e.g. a QAPP). This evaluation process is a shared responsibility among all levels of data consumers at FDEP. This evaluation may be applied to ambient data as well as quality control support data, including those produced from laboratories.

11.1.2 Performance Audits are quantitative evaluations of the ability of a system to produce appropriate, accurate, and reliable data. Performance audits involve two distinct approaches. The first approach involves injection of a test atmosphere containing a known concentration of a National Institute of Standards and Technology (NIST) traceable pollutant gas (ozone, sulfur dioxide, carbon monoxide, or nitrogen oxide) to an analyzer through as much of the sample intake system as practicable. The second approach, which is used for particulate and metals samplers (either manual or continuous) involves determining the operational flow rates utilizing a NIST certified flow measurement device different from the one utilized for the routine calibration and operational checks on a sampler. The specific requirements for the various performance audits are specified in *40 CFR, Part 58, Appendix A*. Performance audits are planned annually to assure that all monitors are audited at the required frequency. At the completion of each audit, the audited agency is provided with a copy of the performance evaluation. Corrective action reports are required for failed evaluations to document the actions taken by the agency to return the monitor to within the required specifications.

11.1.3 Technical Systems Audits requirements are defined in 40 CFR, Part 58, Appendix A, 2.5, and detailed example questionnaires are included in the EPA's Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Ambient Air Quality Monitoring Program, dated January 2017. The systems audits are reviews and inspections of a monitoring organizations ambient air monitoring program to assess its compliance with established regulations, QAPPs, policies, and SOPs governing the collection, analysis, validation, and reporting of ambient air quality data. The Department has established a Systems Audit Protocol which follows the EPA's lead. It includes a detailed systems audit checklist, similar to, but more specific to the FDEP operations, which is normally completed by the audited agency prior to the audit and is then used as a guide for the auditors during the ensuing audit. All aspects of the monitoring program are examined, including laboratories which support ambient monitoring. Each monitoring program receives a systems audit within a three to five-year cycle, unless significant problems are noted. In that instance, a more frequent audit schedule, (generally annually), may be adopted until the significant issues have been resolved. TSAs are scheduled for the calendar year to assure that audit staff are available and have adequate time to prepare for the systems audits. Each systems audit generates a Systems Audit Report which is provided to the audited agency. The agency has 30 days to respond to the final audit findings. When all of the audit report issues have been satisfactorily addressed, an audit closure letter is submitted to the audited agency by the OAM Administrator.

11.1.4 National Performance Audit Program (NPAP) and PM Performance Evaluation Program (PEP) participation is required by *40 CFR, Part 58, Appendix A, 2.4*. Each state is given the option of either participating in the EPA operated programs, with the costs being covered by monies taken from the state's 105 grant, or establishing their own audit program, with proper certification of their auditors, standards and equipment. FDEP will participate in the NPAP and PEP audits conducted by the EPA's contractor and may conduct NPAP audits for PSD programs operated in the state. The EPA requires certain comparability between the EPA-operated test results and those of the operating state program. FDEP has been certified to perform NPAP audits for PSD monitoring.

11.1.5 Corrective Action may be required as a result of the audits identified above if the audit report has findings. These reports may identify deficiencies and corrective actions required of the audited parties. Audited parties are required to submit a corrective action plan for the noted deficiencies. Audit reports and corrective action plans are available for review by data consumers. Subsequent audits of the same organization include assessing the effectiveness of the corrective action plan. Final approval of adequacy rests with the Data Quality Section Administrator.

11.1.6 Dispute Resolution may be required in the event that a quality assurance related dispute arises. The QAM will review and discuss the identified issue with appropriate staff and management and then recommend corrective action after collaborative discussion with appropriate management from the impacted division or monitoring organization. Within the PQAO, FAMAC has set and agreed to minimum levels of quality activity and provide the framework for the course of decisions. The goal is to ensure that data generated within FDEP's PQAO is legally and scientifically defensible. DARM has the authority to address work being done by or on behalf of DARM as a designated program of EPA.

12.0 QUALITY IMPROVEMENT

12.1 The Quality Assurance Manager has the primary responsibility for ensuring quality improvements are continually introduced into the DARM's quality program. The QAM has been delegated the authority to oversee all aspects of the quality management program for ambient monitoring. The QAM, with the support of the quality assurance audit and monitoring staff, reviews the EPA publications (federal registers, guidance documents, policy papers, etc.) to discern the latest EPA quality assurance requirements. DARM is committed to ensuring that air monitoring data collected by and on behalf of its PQAO is scientifically and legally valid and of sufficient quality and quantity to meet or exceed all applicable requirements. It is the responsibility of the QAM to ensure that DARM's mission and policies as specified in this document are followed. This is accomplished by implementation and management of a system that emphasizes and promotes continuous quality improvement, utilizes a consistent process of assessing the quality system, encouraging recommendations, identifying and implementing improvements to the quality system, and promoting ongoing training of all staff, as appropriate. Open and timely communication of quality assurance topics are encouraged at all levels within DARM's PQAO through daily review of the ambient data, routine conference calls, and virtual meetings. Timely identification and prevention of data errors that potentially affect data quality is achieved through quality control activities prescribed in appropriate quality management documents (QAPPs, SOPs, and technical documents).

12.1.1 Document Review In addition to the above, all quality assurance documents, this QMP, the various QAPPs, and related SOPs undergo routine review, at least annually, but in-fact, continuously, to assure that those documents provide the direction necessary to produce the legally defensible ambient monitoring data necessary to support the decisions based on those data.

12.1.2 Issues may also be discovered during the routine performance audits, conducted quarterly by the FDEP audit staff at each of the approved local programs and FDEP operations, or the triennial management systems audits. The latter may be conducted by the EPA Region 4 Laboratory Services and Applied Science Division (LSASD) staff as well as by the FDEP audit staff. Those audit results are also reviewed for issues which may be relevant to the entire statewide monitoring program, in addition to the audited agency.

12.2 Addressing Issues - When specific issues arise through any of the preceding reviews or audits, those issues are then reviewed, and if necessary, are addressed as changes which are promulgated into state-wide policies and procedures through the FAMAC subcommittee system. The FAMAC subcommittee system involves the assignment for the development of specific policies and procedures to a subset of the FAMAC. The subcommittee must be chaired by a full member of the FAMAC (i.e., one of the agency QA Coordinators) but may be made up of any interested monitoring staff (such as field operators). Once the subcommittee develops a policy or procedure, it is brought before the full FAMAC for a vote. If the policy or procedure is approved by the FAMAC, it is then prepared for submission to the EPA Region 4 LSASD staff for review and approval. Once EPA approval is received, the policy or procedure is formally published as part of the appropriate QAPP for use by all agencies within the Florida PQAO.

12.2.1 Standard Operating Agreements All approved monitoring programs within the state are required, through various Standard Operating Agreements, to adopt and adhere to the EPA-approved state-wide QAPPs and participate in the FAMAC and its subcommittees.

12.3 Documented Corrective Actions are required, as specified in section 11.1.5 of this QMP, for all issues found during audits. Unresolved of conflicting issues revolving around corrective actions will be resolved by the QAM, with direct support of the DARM Director, if required. The results of the resolution will be documented in the division's response to the corrective action plan submittal.

13.0 REFERENCES

- 40 CFR Parts 50 (National Primary and Secondary Ambient Air Quality Standards), 53 (Ambient Air Monitoring Reference and Equivalent Methods), and 58 (Ambient Air Quality Surveillance)
- EPA Requirements for Quality Management Plans (EPA QA/R-2, EPA/240/B-01/002), U. S. Environmental Protection Agency, Office of Environmental Information, Washington, DC, March 2001, Quality Document Reissue Notice May 2006.
- EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5, EPA/240/B-01/003), U. S. Environmental Protection Agency, Office of Environmental Information, Washington, DC, March 2001, Quality Document Reissue Notice May 2006.
- Florida Administrative Code, Chapters 1B-26.003 and 62-204, Florida Department of State.
- Florida Statues, Chapters 286, 287, and 403.0623, Florida Legislature.
- Guidance for Developing a Training Program for Quality Systems (EPA QA/G-10), U. S. Environmental Protection Agency, Office of Environmental Information, Washington, DC, December 2000, Quality Document Reissue Notice May 2006.
- Guidance for Preparing Standard Operating Procedures (EPA QA/G-6, EPA/600/B-07/001), U. S. Environmental Protection Agency, Office of Environmental Information, Washington, DC, April 2007.
- Guidance on Assessing Quality Systems (EPA QA/G-3), U.S. Environmental Protection Agency, Office of Environmental Information, Washington, DC, March 2003.
- Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4), U. S. Environmental Protection Agency, Office of Environmental Information, Washington, DC, February 2006.
- Guide to Writing Quality Assurance Project Plans for Ambient Air Monitoring Networks (EPA-454/B-18-006), U. S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Assessment Division, Research Triangle Park, NC, August 2018.
- Information Technology Resource Management Directive, DEP 370, State of Florida, Department of Environmental Protection, Tallahassee, FL, August 2015.
- Information Technology Security Policies and Standards Directive, DEP 390, State of Florida, Department of Environmental Protection, Tallahassee, FL, September 2013.
- Purchasing and Procurement of Commodities and Services/Contract and Grant Administration Policy, ADM 300, State of Florida, Department of Environmental Protection, Tallahassee, FL, October 2020.
- Quality Assurance Handbook for Air Pollution Measurement Systems Volume I: A Field Guide to Environmental Quality Assurance (EPA-600/R-94/038a), U. S. Environmental Protection Agency, Office of Research and Development, Washington DC, April 1994.
- Quality Assurance Handbook for Air Pollution Measurement Systems Volume II: Ambient Air Quality Monitoring Program (EPA-454/B-17-001), U. S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Assessment Division, Research Triangle Park, NC, January 2017.
- Quality Assurance Handbook for Air Pollution Measurement Systems Volume IV: Meteorological Measurements Version 2.0 (Final) (EPA-454/B-08-002), U. S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Assessment Division, Research Triangle Park, NC, March 2008.

- Quality Assurance Guidance Document 2.12, Monitoring PM2.5 in Ambient Air Using Designated Reference or Class I Equivalent Methods (EPA-454/B-16-001), U. S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Assessment Division, Research Triangle Park, NC, January 2016.
- Records Management, Directive 335, State of Florida, Department of Environmental Protection, Tallahassee, FL, January 2021.

APPENDIX A - ORGANIZATIONS COVERED BY THE FLORIDA DEP QMP

The following agencies' ambient air monitoring data is covered by this Quality Management Plan:

- Florida Department of Environmental Protection
- Broward County Engineering and Permitting Division – Air Quality Program
- City of Jacksonville Environmental Quality Division
- Environmental Protection Commission of Hillsborough County – Air Division
- Manatee County Parks and Natural Resources Department, Air & Watershed Management
- Miami-Dade County, Permitting, Environment and Regulatory Affairs, Air Quality Management Division
- Orange County Environmental Protection Department
- Palm Beach County Health Department Division of Environmental Public Health, Florida Health
- Pinellas County Air Quality Division
- Sarasota County Air & Water Control

GLOSSARY OF AIR MONITORING TERMS

AirMVP	Air Monitoring Validation Program
APTI	Air Pollution Training Institute
AQS	Air Quality System
CFR	Code of Federal Regulations
DARM	Division of Air Resource Management
DQI	Data Quality Indicator
DQO	Data Quality Objective
EPA	US Environmental Protection Agency
FAMAC	Florida Air Monitoring Advisory Committee
FDEP	Florida Department of Environmental Protection
LIMS	Laboratory Information Management System
LSASD	Laboratory Services and Applied Science Division
NAAQS	National Ambient Air Quality Standards
NIST	National Institute of Standards and Technology
NPAP	National Performance Audit Program
OAM	Office of Air Monitoring
OTIS	Office of Technology and Information Services
PAMS	Photochemical Assessment Monitoring Station
PEP	Performance Evaluation Program
PQAO	Primary Quality Assurance Organization
PM	Particulate Matter
PMTS	Particulate Matter Tracking System
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
QMP	Quality Management Plan
SOP	Standard Operating Procedure