

Quality Management Plan



State of Alaska
Department of Environmental Conservation
Division of Air Quality

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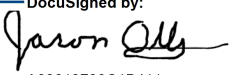
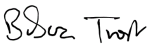
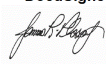
Prepared by Rochele Rodman

September 25, 2023

Quality Management Plan Approval Page

This Air Quality Management Plan is hereby recommended for approval and commits the Division of Air Quality to follow the elements described within.

ADEC Approvals

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James Plosay, ADEC Program Manager Division of Air Quality, Air Permits	Date
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Rochele Rodman, ADEC Air QA Officer Division of Air Quality, Air Monitoring & Quality Assurance	Date

EPA Approval

This Quality Management Plan satisfies the quality system documentation requirements of the EPA and conforms to the principles in the American Society for Quality (ASQ) / American National Standards Institute (ANSI) E4:2014 (R2019), *Quality management systems for environmental information and technology programs – Requirements with guidance for use*.

Cindy Fields, USEPA Regional QA Manager
Region 10

Date

Christina Miller, USEPA Grants Officer
Region 10

Date

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1.0 Introduction

The Air Quality Management Plan (Air QMP) for Air Quality contains an outline of the systematic approach to quality assurance adopted in the Division of Air Quality of Alaska's Department of Environmental Conservation (ADEC). The Air Quality System is a structured and documented management system. This system describes the policies, objectives, principles, organization authority, responsibilities, accountability, and implementation plan for ensuring quality in its work process, products (items) and services. This *Quality System* approach is based on guidance provided by the U.S. Environmental Protection Agency (EPA) in *Quality Management Plan Standard*, January 17, 2023 (<https://www.epa.gov/quality/agency-wide-quality-program-documents#standards>). All organizations conducting environmental programs funded by EPA are required to establish, implement and document a Quality System per Information Technology/Information Management (IT/IM) Directive [CIO 2105-S-01.0](#). This Quality Management Plan (QMP) is implemented statewide and assures that all data collection and measurement activities are conducted in accordance with EPA's data collection and quality assurance requirements. This includes projects funded by EPA. The purpose of this Air QMP is to establish consistency in data collection within the Division of Air Quality in the application of quality assurance and quality control procedures.

ADEC developed this Air QMP to document how Division of Air Quality staff will consistently plan, implement, and assess the effectiveness of quality assurance and control operations in air quality data collection and use, and ambient air quality monitoring. It describes the quality system's organizational structure, functional responsibilities of management and staff, lines of authority, and required interfaces for those planning, implementing, and assessing all activities conducted. Due to its broad scope, the resource, and scheduling implications of the Air QMP are significant.

2.0 Statement of Quality Assurance Policy

The Division of Air Quality Director ensures all environmental data generated by or on behalf of the Division of Air Quality are suitable for their intended use. QMP systems and practices provide a framework to assure that the quality of all environmental data generated and processed are appropriate for their intended use, valid, precise, accurate, complete, representative, comparable, and where appropriate, legally defensible. Implementation of this plan will allow Air Program Managers to make decisions based on verifiable environmental data.

The Alaska Department of Environmental Conservation is committed to quality assurance practices. This commitment compliments EPA's emphasis on comprehensive and coordinated Quality Assurance (QA) Programs. The Air Quality Division continues to revise, develop, and integrate QA practices into its data collection and measurement activities. These QA and quality control (QC) practices are designed to generate and process data of defined quality in a practical manner.

Management supports QA training. Staff training may be achieved through internal or external sources for all levels to ensure that QA requirements and responsibilities are understood and implemented at all stages of projects. EPA will provide some of the training needed to support the Air Quality System.

3.0 Organizational Chart

The Division of Air Quality has five Programs: *Air Permits, Air Compliance, Air Non-Point and Mobile Sources, Air Administrative Support, and Air Monitoring & Quality Assurance (AMQA)* (Appendix A). This QMP applies to all programs within the Division of Air Quality. Air and meteorological data collection and use may be undertaken or administered by any of these programs. Projects which generate, evaluate, use, or collect this data, must have approved Quality Assurance Project Plans (QAPPs). The Air QA Officer works with the Air Program Managers and their staff to ensure each project has an approved QAPP, and that it is followed to meet project objectives.

The Division of Air Quality adopted the QAPP requirements in *EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5* (or most recent requirements). These requirements resulted from a national consensus on how to develop and implement Quality Assurance Project Plans, (ANSI/ASQC E4), and are being followed at the federal, state, and local level.

4.0 Roles, Responsibilities and Authorities

ADEC Division of Air Quality, Director

Name: Jason Olds
or successor Phone: (907) 465-5109

Responsibilities: Provides overall policy direction, leadership, and oversight for the QMP and serves as the overall authority for directing activities in accordance with Department policies and regulations, particularly 18 AAC 50.010 Alaska Ambient Air Quality Standards (AAAQS).

ADEC Air Non-Point and Mobile Sources, Program Manager

Name: Nick Czarnecki
or successor Phone: (907) 451-2007

Responsibilities: Provides policy direction, leadership and oversight for the Non-Point and Mobile Sources Program and serves as the overall authority for directing its program activities in accordance with Department regulations and policies. With respect to quality, responsibilities include actively engaging and relying on the expertise of the Air QA Officer to ensure that the QMP is implemented and functioning properly with respect to any air quality data collection, air quality monitoring, and/or meteorological monitoring performed by the Division of Air Quality.

ADEC Air Permits, Program Manager

Name: James Plosay Phone: (907) 465-5561
or successor

Responsibilities: Provides policy direction, leadership and oversight for the Air Permits Program and serves as the overall authority for directing its activities in accordance with Department regulations and policies. With respect to quality, responsibilities include actively engaging and relying on the expertise of the Air QA Officer to ensure that the QMP is implemented and functioning properly with respect to air quality data collection, air quality monitoring, and/or meteorological monitoring required by the program via pre-construction or post-construction permit requirements.

ADEC Air Compliance, Program Manager

Name: Dylan Morrison Phone: (907) 465-5003
or successor

Responsibilities: Provides policy direction, leadership and oversight for the Air Compliance Program and serves as the overall authority for directing its activities in accordance with Department regulations and policies. With respect to quality, responsibilities include actively engaging and relying on the expertise of the Air QA Officer to ensure that the QMP is implemented and functioning properly with respect to air quality data collection, air quality monitoring, and/or meteorological monitoring required by the program via post-construction and operating permit requirements.

ADEC Air Monitoring & Quality Assurance, Program Manager

Name: Barbara Trost Phone: (907) 269-6249
or successor

Responsibilities: Provides policy direction, leadership, and oversight for the AMQA Program's Quality System and serves as the overall authority for directing its activities in accordance with Department regulations and policies. During the planning of grant, permit or other monitoring projects, the AMQA Program Manager is responsible for establishing and implementing project objectives and data quality indicators appropriate for the project purpose and regulations involved. Throughout the implementation and assessment of monitoring projects, the AMQA Program Manager is responsible for ensuring that the quality of the information generated meets the requirements in the approved QAPPs. The Program Manager serves as quality program liaison between the ADEC AMQA program and the EPA regional office.

ADEC Air Quality Assurance Officer

Name: Rochele Rodman or successor Phone: (907) 465-5344

Responsibilities: Provides AMQA Program-wide focus on quality management with respect to ambient air and meteorological monitoring. The Air QA Officer reports directly to the Division of Air Quality Director on QA related issues. Assures that management and staff members recognize their respective QA responsibilities, reporting mechanisms and methods of dispute resolution. Assures that program managers, section managers and staff are knowledgeable about current quality policy, requirements, and guidance. Establishes quality policy in coordination with management. Maintains resource file of quality-related documents. Coordinates updating the QMP for the Division. Assists in the development of new ambient air and meteorological monitoring methods and recommends their approval. The Air QA officer is a full-time position.

The Air QA officer is responsible for assuring the reliability of the state-wide ambient air monitoring network through:

- Routine performance and systems audits of Alaska’s ambient air quality monitoring network;
- Approval of project-specific QAPPs;
- Data reviews (including data validation/verification) to ensure compliance with approved QAPPs.

For projects not directly under the purview of the AMQA program, the Air QA Officer provides recommendations to Air Permits and Air Non-Point and Mobile Sources Program/Project Managers regarding the development and acceptability of QAPPs, and the collected data quality governed by approved QAPPs.

ADEC Air Monitoring & Quality Assurance, Laboratory & Standards Section Manager

Name: [New Position] Phone: (907) xxx-xxxx

Responsibilities: Provides oversight of the Laboratory and Standards Section for the AMQA Program. Advises the AMQA Program on policy issues related to analytical air analysis and quality management. Supervises the Quality Assurance Officer. Reports to the AMQA Program Manager on QA/QC issues. Maintains the quality management system of the AMQA Program including the Quality Assurance standards. Assists in the development of new ambient air and meteorological monitoring methods and recommends their approval. Develops, implements, and

reviews the Division's QMP, AMQA QAPPs, SOPs, certifications, and other QA practices. This is a full-time position.

The AMQA Laboratory and Standards Section Manager is responsible for assuring the reliability of the state-wide ambient air monitoring network through:

- Routine certification, maintenance, and repair of laboratory and reference instruments.

ADEC Division of Air Quality Project Managers and Staff

Air Permits Program

Air Compliance Program

Air Monitoring & Quality Assurance Program

Air Non-Point Mobile Source Program

Air Administrative Support Program

Responsibilities:

For grants, permits, or projects that include ambient air and/or meteorological monitoring, QA project managers and staff are responsible to ensure a QAPP is developed that meets EPA QA/R-5/G-5 (or most recent) criteria. Data generated by Air Quality programs must go through a QA process. QA project managers are lead-staff assigned by the respective program manager and knowledgeable about the project's specific monitoring goals and objectives. The AMQA program is available to provide assistance and guidance for the development of acceptable QAPPs. AMQA QA staff reviews, and if acceptable, recommends approval of all QAPPs. Throughout the implementation and assessment of monitoring projects, QA project managers are responsible for ensuring that the quality of the information generated meets the requirements in the approved QAPPs.

Specifically, these individuals are responsible for assistance with the following:

- Primary responsibility for facilitating the development, renewal and implementation of QAPPs according to EPA QA/R-5 (or most recent) Air requirements, by providing technical assistance and training to permittees, grant recipients, consultants, federal, state and local government representatives, tribes and ADEC air monitoring staff.
- Review, approve and sign, if acceptable, final QAPP, along with the Air QA officer.
- Review data as they become available and provide technical assistance, as necessary, to ensure compliance with approved QAPP.
- Working with AMQA Air Quality System (AQS) database staff, assure that applicable data become part of the EPA AQS database in an acceptable manner.

- With the assistance and guidance of the Air QA officer, assess and audit projects to ensure compliance with approved QAPPs.

5.0 Technical Activities and Programs Supported by the QMP

All Programs maintain their own standard operating procedures, policies and quality project plans for the generation of environmental data. As new procedures are established, the programs will work with the Division's QA Officer to develop the appropriate QA documents. These QA documents will be available to the public and posted on the ADEC website. The sections below detail the technical activities for each Program covered by this QMP.

The AMQA Program serves as the monitoring services group within the Division of Air Quality. The AMQA Program ensures ambient air and meteorological monitoring projects supported by the Department provide data of known quality. Projects requiring approved ambient air or meteorological monitoring QAPPs include routine and special monitoring projects led by ADEC staff or its contractors; Prevention of Significant Deterioration (PSD) ambient air and/or meteorological monitoring projects required by ADEC in support of a construction permit; and PSD quality ambient air and/or meteorological monitoring projects required by ADEC in support of an operating permit condition. The AMQA Program functions as the primary quality assurance organization (PQAO) for state and local governmental air quality programs in the State of Alaska. The AMQA Program has signed Memorandums of Understanding (MOU) for air quality control with the Fairbanks North Star Borough and the Municipality of Anchorage which outlines the responsibilities of each party for air pollution control and monitoring within their respective boundaries. According to the MOUs, the ADEC shares the following common factors with the local governmental agencies:

- (a) Communication and information sharing needed to issue air quality advisories and forecasts;
- (b) Cooperation on the development or revision of State Implementation Plans (SIPs);
- (c) Cooperation on public outreach, information distribution and education activities;

The Air Permits Program is responsible for ensuring that air emissions from industrial operations in the state do not create unhealthy air. This is accomplished through permitting actions that comport with Federal regulations and standards under the delegated program. The Air Permits Program houses permit engineers and modelers. The data used in the EPA approved models need to meet the requirements in EPA's *Guideline on Air Quality Models* (Appendix W of 40 CFR 51). The Air Permits Program works closely with the AMQA Program on any permits that require air quality data for modeling inputs.

The Air Compliance Program protects air quality by performing compliance assurance and enforcement actions.

The Air Non-Point/Mobile Sources (ANPMS) Program is responsible for mobile and area sources of air contaminants. To ensure the State of Alaska meets health-based air quality standards to protect public health and the environment in a cost-effective and accountable manner, the Program works with local communities, tribes, industries, other government agencies, environmental groups, and individuals to develop and implement plans to improve air quality in Alaska. ANPMS is responsible for statewide and community level plans implementing the National Ambient Air Quality Standards, Regional Haze, Emission Inventories, and other air quality planning.

6.0 Conformance with Policies, Procedures, Standards, and Regulations

Policies, procedures, standards, and regulation used by the Division to ensure quality management include the following:

All environmental data generated will be of known quality. This quality standard will meet the needs of the intended data use as stated in the individual Quality Assurance Project Plans (QAPP). This Air QMP is the “umbrella” document under which project-specific QAPPs will be developed.

All air programs generating, using, or requiring the collection of air quality data and measurements under the State of Alaska’s jurisdiction will follow the requirements outlined in this Air Quality Management Plan.

ADEC will maintain the competency of the Division of Air Quality by meeting the requirements of the EPA Forum on Environmental Measurement’s (FEM) Policy of Competency (<https://www.epa.gov/sites/production/files/2015-03/documents/competency-policy-aaia-new.pdf>). Management and staff will establish the intended use(s) of air quality data and thus the level of quality necessary to support the intended use prior to data collection efforts.

Acceptable and effective QAPPs and subsequent Standard Operating Procedures (SOPs) will be developed and implemented following the most recent EPA directives, currently including *EPA Requirements for Quality Assurance Project Plans, EPA QA/R5, March 2001 (Reissued May 2006)* (https://www.epa.gov/sites/production/files/2016-06/documents/r5-final_0.pdf) and its companion document, *EPA Guidance for Quality Assurance Project Plans, EPA QA/G-5, December 2002* (<https://www.epa.gov/sites/production/files/2015-06/documents/g5-final.pdf>).

Project-specific QAPP documents will be submitted to the project QA officer for approval prior to new data collection activities. Technical and administrative authority for all QA/QC resides with the Air QA Officer. In matters of QA and QC, the Air QA Officer reports directly to the Division Director (Appendix A, Figure A1). The Division of Air Quality’s Air QA Officer is the contact between EPA’s Regional QA/QC Program and ADEC’s Air Programs.

Data quality information will be documented and available.

Regular independent audits will be conducted on program sections and projects involving data collection to ensure compliance with QA/QC requirements. Deficiencies highlighted in these assessments will be addressed in a timely manner. Audits may be conducted internally or by an outside third party.

7.0 QA Field Activities

To ensure a Quality System, qualified and trained personnel must be used to perform all sampling and monitoring activities. Technical functions may include sampling, testing, shipping/transporting, evaluating, reviewing, validating and verifying data. These activities are conducted by ADEC staff, grantees, permittees, subcontractors, and others as prescribed in a Quality Assurance Project Plan (QAPP). QAPPs may either be project-specific or fall under the revised State of Alaska QAPP for State and Local Ambient Air Monitoring Networks. Project-specific QAPPs are developed by the grantee,

permittee, or ADEC Project Managers. QAPPs are signed by the Project Manager, Project Quality Assurance Officer, ADEC Project Manager, and Air QA Officer. Final approval rests with the QA Officer for all field related QAPPs statewide.

Field Monitoring and Laboratory Records

As field monitoring and laboratory analyses are completed, whichever group is performing the field monitoring or laboratory analyses must review, verify, and validate the data. The field monitoring or laboratory supervisor must review and approve the data results before submittal to the AQ Project Managers. The field monitoring or laboratory group will submit to ADEC complete QA/QC information sheets with data results and explanations for deviations from data quality objectives. When appropriate, completed chain-of-custody or transmission forms will be provided along with data results. ADEC may also require that responsible field monitoring or laboratory groups provide the following information: observations and interpretations made during sampling or analyses, records of when and how analyses were performed, and permanent records of raw analytic results.

8.0 Computer Hardware and Software

8.1 General Information

Information Technology (IT) professionals employed by the State's Office of Information Technology (OIT) are responsible for maintaining information systems. Documentation is available on the OIT website under OIT Policies and Planning (<https://oit.alaska.gov/About-Us>). These documents outline the processes for developing, installing, testing, using, maintaining, controlling, and documenting computer hardware and software. The processes for assessing and documenting the impact of changes to user software and hardware are also found in this document.

The department uses a computer architecture including multiple systems, servers, and digital storage, with Local Area and Wide Area Networks including Internet providing interconnectivity of Local, State, and Federal computing resources. Access onto the networks and systems require the use of user credentials, including (at least) username and security password. OIT professionals maintain the systems, servers, storage, and the network. Technology professionals perform back-up functions on a pre-defined periodic schedule.

OIT establishes policies and standards for the purchase of network hardware and software. Development and adoption of policies regarding data management are conducted pursuant to a policy adoption SOP.

Computer hardware and software installation, support and maintenance are provided by OIT. Staff from OIT install new computers and software and provide performance checks and verification with test data. All computers are accessed through the Department's Local Area Network, which is password protected.

Computer software for completing basic office tasks is made available and maintained by OIT staff. This software provides word processing, database, geographic information system, and internal communication function.

8.2 Quality Assurance – Data Management

Quality Assurance/Quality Control (QA/QC) of data begins with raw data and ends with a legally defensible report, preferably through the computerized storage of raw data. ADEC is moving towards improving quality assurance of the data management process to produce reports that contain secure, complete, and defensible datasets. This approach requires the elimination of data input errors which is key to generating defensible data sets. The design of the data input screen helps to minimize input errors by being intuitive and user-friendly. It must also be error checked by the staff entering the data as well as the second level reviewer.

9.0 Organization Competence

ADEC uses standardized job specifications and classifications to guarantee a base level of competency. Staff hired within ADEC generally must meet minimum qualification standards that are established prior to the time of recruitment in detailed position descriptions. These qualification standards are incorporated into position requirements to ensure that personnel have the appropriate experience, skills, and education to fulfill the necessary job functions. ADEC provides access to training, on-the-job and through course work and encourages employees to continue their education, especially in job-related fields.

10.0 Personnel Training

All personnel involved in data generation, evaluation, use and compilation will have adequate education, training, and experience in the area of their technical expertise, as well as in the quality assurance components needed to meet their designated responsibilities.

The Division of Air Quality provides training for management and staff that meets the statutory, regulatory, and professional requirements for each position. Training requirements and optional courses are spelled out in the respective QAPP for the project. On-the-job training is a common method of training. Training will be documented in the employee's personnel training file. The Air QA Officer, in coordination with the program managers, will periodically set up QA and QC training for managers and staff.

The Air QA Officer is required to maintain his/her expertise in QA and QC processes. The Air QA Officer works with the program managers to set up QA/QC training for division staff as appropriate and necessary. In addition to formal trainings, conferences and workshops, the Air QA Officer works with staff to ensure that all ambient air quality data generated and/or used by Air Quality Division staff meets the requirements of this QMP.

10.1 Training Policy

Each position is evaluated to determine the level of education, experience, and training necessary to effectively carry out the duties of the position. When a vacancy is to be filled, established criteria are used to select a qualified replacement. Employees' education level, training, work experience, public

speaking experience, publications, membership in professional organizations, and other relevant skills are documented and maintained in personnel files.

10.2 Training Processes and Documentation

The Division of Air Quality uses trained professionals to perform environmental monitoring tasks such as sampling and field and laboratory measurements.

Training courses available to staff include QA, QC, Ambient AQ Standards and Monitoring, Meteorological Monitoring, Computer Modeling, Grant Writing, Computer Technology, Safety, Supervision, Hazardous Materials Training, and more. Some training classes are provided through:

- U.S. EPA's Air Knowledge
- U.S. EPA's Office of Air Quality Planning and Standards (OAQPS)
- U.S. EPA Quality System
- American Society for Quality (ASQ)
- Air & Waste Management Association (AWMA)
- Western States Air Resources Council (WESTAR)

The mechanism for identifying training needs, training opportunities, and associated documentation through the following process:

- Each fiscal year, staff prepare individual work plans which include travel and training plans, along with estimated budgets.
- The program managers build their annual budgets using information provided by staff.
- Each employee receives periodic performance evaluations where employee qualifications and training needs are discussed.

The Air QA Officer is required to maintain his/her expertise in QA and QC processes. The Air QA Officer works with the division's program managers to set up QA/QC training for division staff and others as appropriate and necessary. In addition to formal trainings, conferences and workshops, the Air QA Officer works with staff to ensure that all ambient air quality data generated and/or used by Division staff meet the requirements of this QMP.

11.0 Procurement of Items and Services

11.1 Non-Professional Items and Services – Review & Approval

Procurement items include general supplies, computer hardware and software, field and laboratory analytical equipment, field and laboratory parts and supplies, calibration standards, and chemical reagents, etc. Requisition forms are available to all staff for procuring these items. These forms require specific information for procurement to occur, such as financial coding, item description, recommended vendor, costs, delivery date and signatory approval by the individual granted spending approval authority. Information regarding procurement can be found on the Alaska Department of Administration's Office of Procurement and Property Management website ([Home, Office of Procurement and Property Management, State of Alaska](#)).

The Alaska Department of Administration's Office of Information Technology (OIT) provides hardware and software computer services for ADEC. Purchases of computer hardware and software must have the signed approval of OIT staff. Information regarding hardware and software services can be found on the OIT website ([Home, Office of Information Technology, State of Alaska](#)).

11.2 Professional Services and Contacts

Whenever a Professional Services Contract is required, ADEC uses documents found on the State of Alaska's Department of Administration General Services Division web page and on the Department's Division of Administrative Services intranet site. All forms and procedures are consistent with the State of Alaska's Division of Administrative Services contractual criteria and are periodically updated by the responsible Division. ADEC Air Quality staff work within the current departmental procurement processes to obtain professional services.

12.0 Document and Record Processes

ADEC is moving away from hard copy and paper files. All non-confidential documents are either stored on our website, Division network drives, or stored in the Division's AirTools database and the AMQA Program's Agilaire AirVision data acquisition system.

Validated State and Local Air Monitoring Stations (SLAMS), NCore and most Special Purpose Monitoring (SPM) ambient air quality monitoring data are reported to the AMQA AQS database manager. The database manager verifies submitted data and electronically reports quarterly results to EPA's national Air Quality System (AQS) database. All data are also stored in the State's data acquisition system.

The Division of Air Quality follows the retention schedule spelled out in AS: Alaska Statute, Management & Preservation of Public Records, which may be found at:

<https://archives.alaska.gov/documents/rims/schedules/dec/183200.pdf>.

Records management and preservation is defined in AS: Alaska Statute, Management & Preservation of Public Records (<http://www.legis.state.ak.us/basis/statutes.asp#40.21>).

The disposition of state records must be in accordance with 4 AAC 59 and records management policies and procedures. These regulations, policies/procedures, applicable forms, etc. may be found at:

http://archives.alaska.gov/records_management/records_management.html?panel=1.

13.0 Plan, Do, Check, Act (PDCA) Quality Model

13.1 Quality System Description and Implementation

The Quality System provides a framework for planning, implementing, documenting, and assessing work conducted within the Air Quality Division. Through this system, the Division generates the type and quality of information required to fulfill its duties under state law and regulations.

Management's commitment to quality is the foundation of this Quality System. The ADEC Air Quality Policy reflects management's philosophy. The Quality Policy states that all personnel have responsibility for quality, and will strive to build quality into work processes, products and services related to ambient air and meteorological data collection. Management provides support, policy definition, leadership, and oversight for its Quality System. Management is responsible for allocating resources, so that the Quality Policy can be implemented.

13.2 Quality Assurance Project Plans (QAPPs)

Each quality assurance project plan (QAPP) contains four major elements for managing (*Plan*), planning (*Do*), implementing (*Check*), and administering (*Act*) continual improvement for environmental data collection. Published QAPPs and guidance documents can be found on ADEC's Quality Assurance Documents website ([Quality Assurance Documents \(alaska.gov\)](http://alaska.gov)). Detailed information regarding QAPPs can be found on the ADEC QA website. Some of the major QAPP elements are listed below:

Plan

This element covers project management. This includes information regarding:

- Project objectives
- Identification of Project Managers and personnel
- Roles and responsibilities of Project Managers and personnel
- Project goals
- Description of processes for the development of performance criteria such as DQOs
- Description of data analysis (review, validation, verification)
- QA/QC activities used for data quality assessment
- Projected schedule, timeline, and milestones
- Resources needed to complete the project
- Regulatory and contractual obligations

Do

This element describes the processes for how produced data will be high quality, scientifically valid, legally defensible, and appropriate for meeting the project goals. This includes information regarding:

- Procedure documentation such as SOPs and reference methods
- Performance and acceptance criteria
- Processes for use of measurement equipment
- Processes for ensuring sample integrity

Check

This element describes Quality Program assessments. These assessments will be performed at least once per year to ensure that the project is being executed effectively. This includes information regarding:

- Assessment tools
 - Performance evaluations
 - Technical system audits
 - Data quality assessments
- Assessment frequency
- How assessments are conducted, evaluated, and documented
- Who is conducting Quality Program assessments
- Training and experience required for Quality Program assessors
- Actions to be taken following assessment findings

Act

This element describes the corrective actions process following data collection. This includes information regarding:

- How management and staff respond to corrective action recommendations
- Documentation procedures for the corrective action process
- Processes for identifying and correcting Quality Program non-conformance

13.2.1 Ambient Air Monitoring

Air Program Managers and their staffs are responsible for implementing project-specific Ambient Air and Meteorological Monitoring QAPPs in the field and laboratory. Through the approval of this QMP, USEPA Region 10 QA Manager gives the ADEC Air QA Officer and Project Manager the delegated authority to approve the ADEC Air Program's site specific QAPPs.

Project Managers lead the development and implementation of ambient air quality and meteorological monitoring projects in their respective programs. As such, these managers are, in consultation with the Air QA Officer, responsible to ensure that each QAPP follows EPA QA/R-5, or most recent requirements adopted by the AMQA Program. The QA section of AMQA provides essential QA direction, reviews, and recommends approval of all acceptable QAPPs. For monitoring projects outside AMQA direct authority, ultimate project compliance with EPA R-5/G-5, or most recent criteria lies with the Program Manager in the AQ Division who initiates or authorizes the field monitoring project.

The Air QA Officer is available to provide training and technical assistance to Project Managers and ADEC Air staff during QAPP development and review. The Air QA Officer provides technical assistance in development of the QAPP, such as project objectives, data quality indicators, appropriate sampling, and analytical methods, etc. Once a final draft QAPP is available, the Air QA Officer and respective project manager(s) review the document. If acceptable, the Air QA Officer or her/his designee, and project manager(s) sign the approval page, along with any grantee or permittee project manager and project quality assurance officer. The ADEC Air Meteorologist will review, approve, and sign the approval page of any QAPP solely related to a meteorological monitoring project. By signing, all parties agree the QAPP will be followed during the life of the project.

Project Managers are the principal points of contact as data are delivered to the Air Programs. Whenever problems occur with monitoring protocols or elements of the approved QAPP, Project Managers will discuss and resolve these problems in coordination with the Air QA Officer as needed. Major modifications to an approved QAPP requires that all signatories reapprove/resign the modified QAPP.

It is the goal of the Air Monitoring & Quality Assurance Program to make data verification and validation a major component of each Quality Assurance Project Plan. Data review, verification and validation are the responsibility of the party gathering the data.

ADEC Project Managers and the Air QA Officer will review ongoing monitoring projects with approved QAPPs as needed to ensure these projects are following QAPP requirements. ADEC Air Program Project Managers will routinely provide the Air QA Officer with copies of QA data and audit summary reports.

Alaska's air monitoring network includes State and Local Air Monitoring Stations (SLAMS), NCore and Special Purpose Monitoring (SPM) networks. The Air QA Officer (or her/his designee) will audit all the SLAMS/SPM particulate matter monitors at least once every six months. Each SLAMS/SPM/NCore network gaseous monitor will be audited at least once per year. At least every 3 years, if resources allow, a Technical Systems Audit (TSA) of Alaska's SLAMS/SPM/NCore air monitoring network will be conducted by EPA Region 10 and reported to AQS.

13.2.2 Other Generated Environmental Data

The Air Compliance program uses several instruments to collect environmental data for monitoring purposes. The usefulness of these instruments for program purposes is still being evaluated and the quality management plan is pending. SOPs are currently being drafted and will be posted to the ADEC website once finalized.

Forward-looking infrared (FLIR) cameras are used to survey oil, gas, and landfill equipment. Flame ionization detectors (FID) and photo ionization detectors (PID) are used to detect emissions of organic and inorganic compounds. Exhaust gas analyzers are used for carrying out industrial emission measurements. Drones are used to conduct aerial surveying for compliance monitoring. These instruments generate data in the form of alphanumeric values, images, and videos. The following instruments may need a quality assurance project plan (QAPP) written in the future:

1. Combustion Analyzer Testo 350 to measure multiple pollutant concentrations concurrently using chemical cell technology. This instrument generates measured air pollutant emissions in the form of spreadsheets.
2. FID TVA2020 to detect fugitive emissions of organic and inorganic compounds for Method 21 compliance, LDAR applications and site remediation. This instrument generates meta-data corresponding to the measurements conducted.
3. FLIR GF320 to monitor fugitive hydrocarbon emissions during compliance inspections. This instrument generates still pictures, video and metadata corresponding to the observed emissions. The Department is in the process of obtaining procurement approval to obtain 2 additional OGI cameras.
4. FLIR E6 thermal imaging cameras to detect air emissions through temperature differences around a flue gas stack. This instrument generates still pictures and video.

ANPMS collects data for the National Emission Inventory. Data is collected from point sources (annual) and nonpoint sources (triennial), such as mobile sources (on-road/off road vehicles and non-road engines), fire, marine, aviation, agriculture, rail, etc.; and are reported on a triennial basis by county, borough, and census area. Point source emission data is collected via the terms of the permit for the source. Nonpoint source emission data is collected using a variety of methods, such as community surveys, modelling, EPA databases, and data submission from nonpoint sectors.

13.3 Types of Environmental Data Generated

Quality management controls are required wherever data generation or collection occurs. To assure the collection of quality data, the Division of Air Quality requires oversight of ADEC and permit-related air quality and meteorological monitoring projects. For effective quality management to occur, coordination must be maintained between the ADEC Air QA Officer and project managers responsible for the development and oversight of project-specific QAPPs.

Types of air quality and meteorological monitoring data include:

- Monitoring data required by PSD permits.
- Baseline data collected by prospective permittees.
- Data collected by ADEC monitoring staff as baseline, inspection, compliance, or complaint response data.
- Data collected by ADEC or its contractors to answer environmental questions to assist ADEC in making sound policy decisions.
- Compliance with NAAQS.

AMQA Program staff are trained to perform air quality monitoring activities. The current statewide *“Quality Assurance Project Plan for the State of Alaska”* is posted on the AMQA Program website. The statewide QAPP includes or references Standard Operating Procedures (SOPs) based on Alaska’s Ambient Air Quality Standards (AAAQS) 18 AAC 50.010 and the National Primary and Secondary National Ambient Air Quality Standards (NAAQS) found in 40 CFR Part 50.

13.4 Technical Functions – Environmental Monitoring, Sampling, and Measurements

To ensure a Quality System, qualified and trained personnel must be used to perform all sampling, monitoring, and laboratory activities. Technical functions may include sampling, testing, shipping/transporting, evaluating, reviewing, validating, and verifying data. These activities are conducted by ADEC staff, grantees, permittees, subcontractors, and others as prescribed in a Quality Assurance Project Plan (QAPP). QAPPs may either be project-specific or fall under the revised State of Alaska QAPP for State and Local Ambient Air Monitoring Networks. Project-specific QAPPs are developed by the grantee, permittee, or ADEC Project Managers with technical assistance from AMQA staff, if necessary. QAPPs are signed by the Project Manager, Project Quality Assurance Officer, ADEC Project Manager, and Air QA Officer.

QAPP implementation can include the following:

Field Monitoring and Laboratory Equipment

Field monitoring and laboratory equipment will be kept calibrated and in working order. Calibration standards will be kept in-certification and traceable to known standards of accuracy.

Custody Documents

Examples of custody documents include chain-of-custody forms, receipts for sample forms, and sample tags.

Field Logbooks and Field Notes

Logbooks are bound page-numbered books, or electronic logbooks, whereas field notes can be individual event sheets. Logbooks and field data sheets contain detailed records of when, where (including site maps), how, and who took each sample. The results of associated field measurements, field calibration results, and background readings are recorded. Other factors that might affect sample quality or interpretation of results, such as ambient temperature and climatic conditions, may also be recorded in the logbook or on the field data sheet. Site activities such as instrument maintenance, troubleshooting, repairs, or replacements should also be documented. In addition, a photographic log may be maintained.

Maps and Photographs

A visual and graphical record of sampling site location(s), site exposures, environmental conditions, processes, sample source, etc. is documented by appropriate personnel.

Climatological Charts

A graphical record of climatic conditions prepared from either existing on-site meteorological data or collected data is prepared by project personnel as required by the QAPP.

Standard Operating Procedures (SOPs) for Sampling, Field Analytical and Laboratory Measurements

These are procedures used for conducting routine ambient air monitoring activities. SOPs may be incorporated into, or referenced in, the QAPP. AQ Project Managers are responsible for ensuring procedures are understood and followed in the field and laboratory. Deviations from these procedures must be documented. All program SOPs, QAPPs, and guidance documents can be found on the ADEC website and are available to the public.

ADEC's AMQA Program regularly reviews, revises, and updates existing SOPs for field monitoring and laboratory analysis as well as adding new ambient air quality monitoring methods and SOPs to its QAPP, at a minimum of once every 5 years. These methods/SOPs follow Federal Reference or Equivalent Methods where applicable.

All monitoring projects, implemented by AQ staff, grantees, or permittees, will follow methods found in AAAQS regulations, including 18 AAC 50.010, 40 CFR Part 53 Ambient Air Quality Reference and Equivalent Methods, and 40 CFR Part 58 Ambient Air Quality Surveillance. Exceptions must be specifically addressed and approved in a specific QAPP.

Each field monitoring or laboratory contractor may have their own SOP documents. When using a contracted field monitoring operator or laboratory, the Air QA officer will keep their QAPPs on file. The field monitoring operator or lab contractor must provide and maintain up-to-date QAPPs and SOPs with ADEC's Air QA officer.

SOP document(s) will either be referenced or included in project specific QAPPs. If referenced, a complete set of SOPs are to be maintained on file with the Air QA officer. It is the responsibility of the respective permittee, ADEC grantee and/or field monitoring/lab contractor to provide and maintain up-to-date SOPs. ADEC Project Managers will ensure that data quality indicators required to meet the project-specific objectives are clearly stated in the QAPP. The indicators include detection levels, data completeness, accuracy, precision, etc. The Air QA Officer ensures that the most current field monitoring and laboratory analytical procedures are available for use, and that outdated and/or revised procedures are removed from use.

The Air Permits, ANPMS, and Compliance programs maintain their guidance documents online. These procedures and requirements are embedded into State regulations and policies.

Permits:

[Air Permit Program \(alaska.gov\)](https://dec.alaska.gov/air/air-permit/policies/)

<https://dec.alaska.gov/air/air-permit/policies/>

<https://dec.alaska.gov/air/air-permit/standard-conditions/>

ANPMS:

<https://dec.alaska.gov/air/anpms/projects-reports/emission-inventory-regulations-tools-resources/>

<https://dec.alaska.gov/air/anpms/projects-reports/emission-inventory/>

<https://dec.alaska.gov/air/anpms/regional-haze/>

<https://dec.alaska.gov/air/anpms/communities/fbks-pm2-5-nonattainment-air-quality-plan/>

Compliance:

[Air Compliance Program \(alaska.gov\)](https://dec.alaska.gov/air/air-compliance/)

Data Quality Objectives and Sample Analytical Strategies

The type, quality and number of data measurements which support the project purpose must be defined for monitoring, sampling, and analyses. The type and number of samples collected must be appropriate to achieve the level of data completeness and reliability required by the project. AQ Project Managers will select the analytical test methods and appropriate detection and reporting levels with assistance from the Air QA Officer when necessary. Acceptable methods include: federal reference methods (FRM), federal equivalent methods (FEM), and/or State of Alaska approved ambient air monitoring methods. The selected methods must be based on the purpose for the sample(s) as stated in the QAPP.

Data Quality Indicators

These can include blanks, standard reference materials, QC check samples, replicates, duplicates, spikes, and alternative methods. QAPPs will define acceptable criteria for precision, accuracy, completeness, representativeness, and comparability for each sampling parameter.

Analytical Results

AQ Project Managers are responsible for ensuring that analytical results are consistent with each other and that they meet the project objectives as specified in the QAPP. The Project Manager communicates data requirements to personnel collecting the data. The Project Manager is responsible for ensuring that data results are received in a manner consistent with EPA's Air Quality System (AQS) database or other data format as specified in a project specific QAPP.

Field Monitoring and Laboratory Records

As field monitoring and laboratory analyses are completed, whichever group is performing the field monitoring or laboratory analyses must review, verify, and validate the data. The field monitoring or laboratory supervisor must review and approve the data results before submittal to the AQ Project Managers. The field monitoring or laboratory group will submit to DEC complete QA/QC information sheets with data results and explanations for deviations from data quality objectives. When appropriate, completed chain-of-custody or transmission forms will be provided along with data results. DEC may also require that responsible field monitoring or laboratory groups provide the following information: observations and interpretations made during sampling or analyses, records of analyses performed (who, what, where, when, why), and permanent records of raw analytic results.

14.0 Dispute Resolution Process

When technical issues regarding Quality Assurance (such as the applicability of the Quality System requirements, the application of quality assurance and quality control procedures, assessments and corrective action) are in dispute, resolution should occur at the lowest management level practicable. All parties should resolve disputes through discussion and negotiation. If unsuccessful, final resolution will rest with the Director of Air Quality.

When technical issues regarding Quality Assurance (such as the applicability of the Quality System requirements, the application of quality assurance and quality control procedures, assessments, and corrective action) are in dispute, resolution should occur at the lowest management level practicable. All parties should resolve disputes through discussion and negotiation. If unsuccessful, final resolution will rest with the Director of Air Quality.

15.0 Continual Improvement

Continual improvement can occur if division staff become aware of quality problems and discuss these problems and their resolutions with appropriate management staff. Management should resolve identified quality issues and take appropriate steps to improve data quality. The Air QA Officer will be consulted or informed of actions taken to improve quality.

The process of continuous assessment and review at the project-specific QAPP level by the Air QA Officer and project managers begins the Continual Improvement process. At the project level, ADEC project managers coordinate with the grantees, permittees and AQ monitoring staff to assure that the QAPP has all the required elements and is signed by all parties. This document sets the standard that the project must meet. During projects, AQ project managers interact with grantees, permittees, and monitoring staff to ensure that quality assurance and quality control problems are identified and solved. This happens as data are reviewed, validated, and verified, and also occurs during field and laboratory inspections and audits.

The AMQA Program Manager, with support from the Air QA Officer, reports on QA/QC progress in the ADEC-EPA Performance Partnership Grant (PPG) and/or single source funded grant reports as required. These reports include the products and processes of the previous fiscal year, QA progress, problems, and recommended improvements.

EPA requires Quality Management Plans be reviewed and updated at least every 5 years. The Air QA Officer and the AMQA Program Manager will annually perform a documented review of the QMP, assess Alaska's ambient air quality monitoring Quality System and make recommendations for improvements. If acceptable, these recommendations will be incorporated into an updated Air QMP. Outside audits of Division of Air Quality programs will also allow ADEC to determine how well the Air QMP quality assurance policies are being implemented.

16.0 Data Review, Validation and Verification, and Data Usability Reporting

Data review, verification, and validation are assessment techniques used to accept, reject, or qualify data in an objective and consistent manner.

Data review – data review is the process that evaluates the overall data package to ensure procedures were followed and that reported data is reasonable and consistent with associated QA/QC results.

Data verification – data verification is the process of evaluating the completeness, correctness, and conformance/compliance of a specific data set against the method, procedural, or contractual requirements.

Data validation – data validation is an analyte- and sample-specific process that extends the evaluation of data beyond method, procedural, or contractual compliance (i.e., data verification) to determine the analytical quality of a specific data set to ensure that the reported data values meet the quality goals of the environmental data operations (method specific data validation criteria).

These assessment techniques are performed by persons implementing the environmental data operations as well as by personnel “independent” of the operation, such as the respective organization's QA personnel and at some specified frequency. These activities occur prior to official use of the environmental data generated, for example submitting data to AQS, or as in the PSD program, reporting data to ADEC Air Permits.

Procedures for data review, validation and verification are program specific and specified in the Program's SOPs and QAPPs.

Figure A2. ADEC Air Monitoring & Quality Assurance Program Organizational Chart

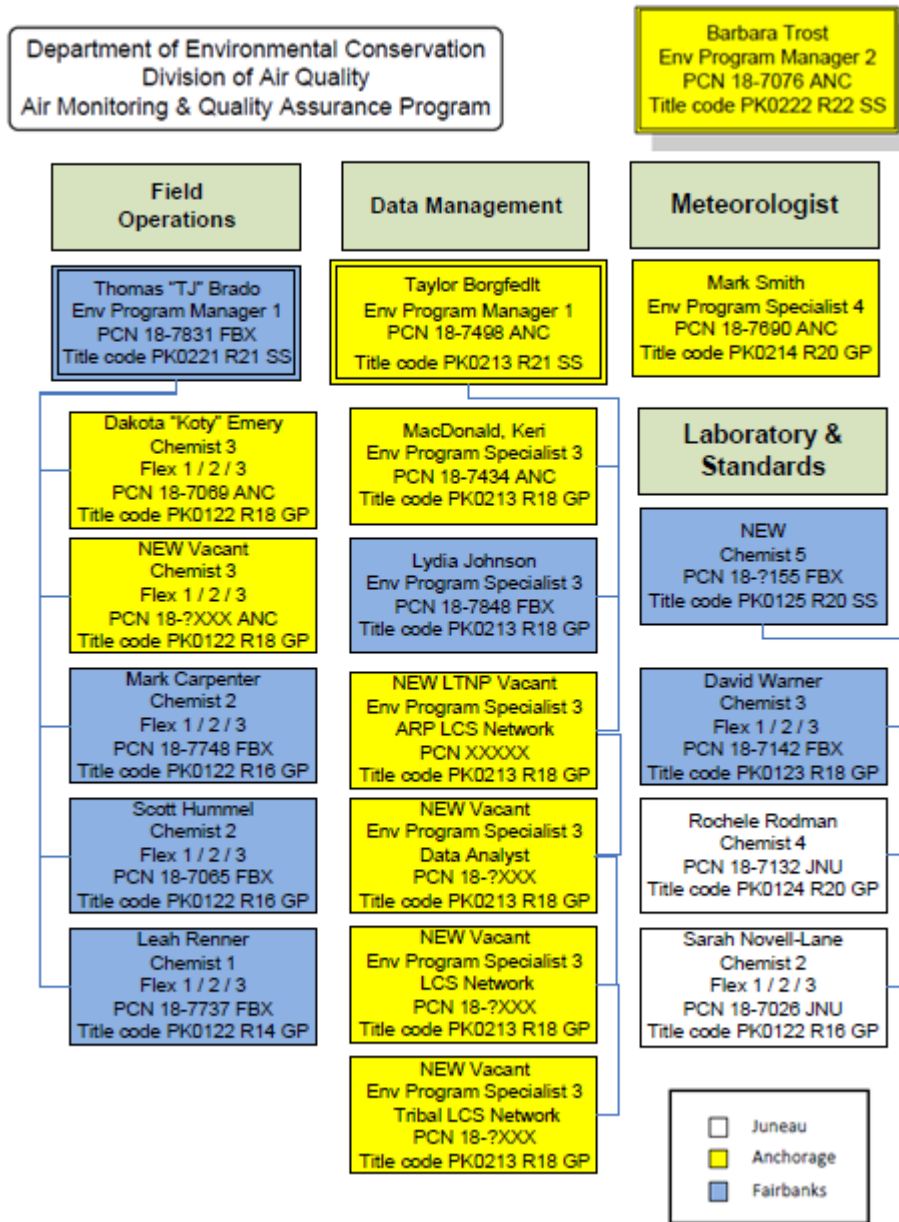


Figure A3. ADEC Air Permits Program Organizational Chart

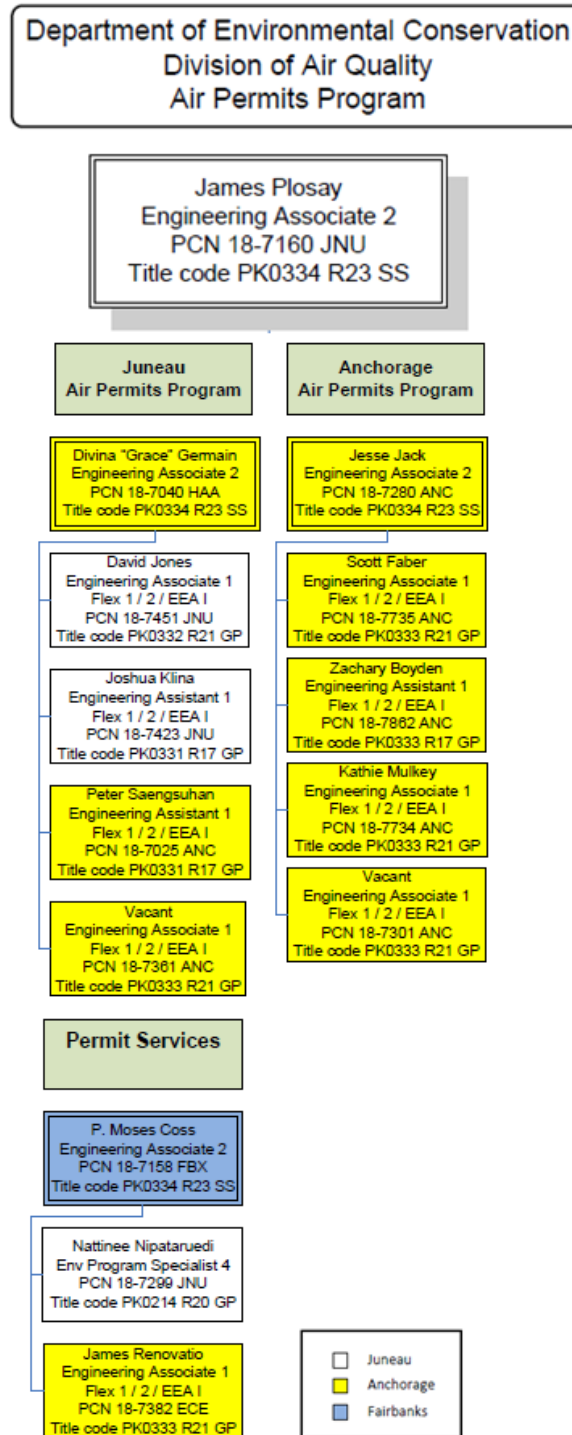


Figure A4. ADEC Air Non-Point & Mobile Sources Program Organizational Chart

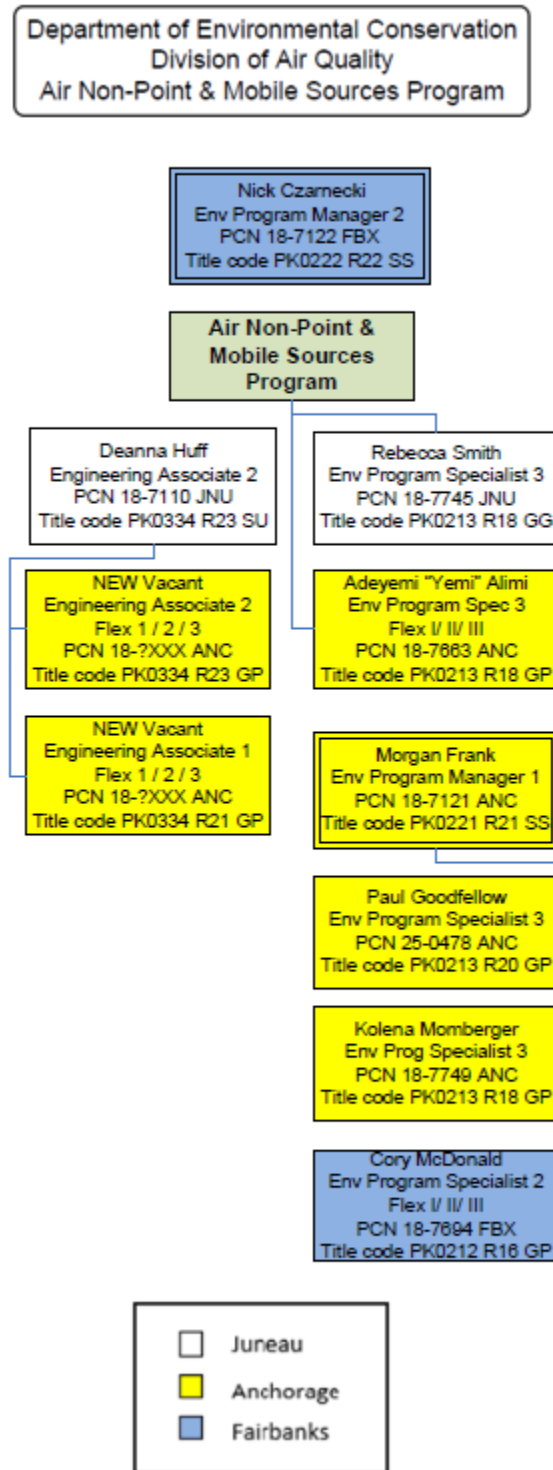


Figure A5. ADEC Air Compliance Program Organizational Chart

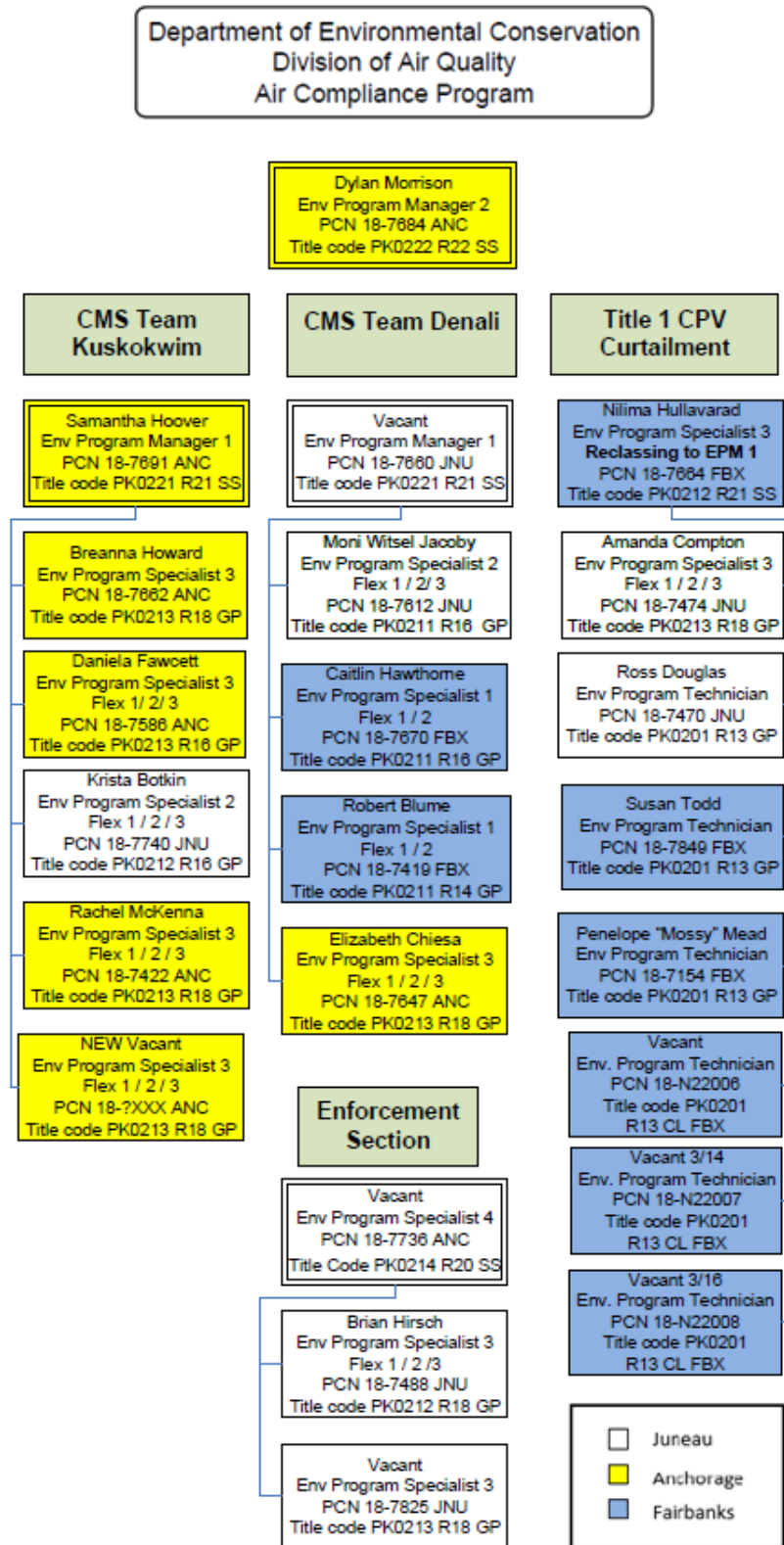


Figure A6. ADEC Air Administrative Support Program Organizational Chart

