

**ARKANSAS DEPARTMENT OF
ENVIRONMENTAL QUALITY**

QUALITY ASSURANCE PROJECT PLAN (QAPP)

**Air Emissions Reporting Requirements for the
2017 National Emissions Inventory**

October 2, 2017

Agencies performing environmental data operations for the United States Environmental Protection Agency (EPA) are required to submit Quality Assurance Project Plans by EPA Order 5360.1, *Policy and Program Requirements to Implement the Mandatory Quality Assurance Program*. This document outlines the plans and protocol for the Arkansas Department of Environmental Quality (ADEQ) to perform data collection and management activities that support the compilation and submittal of emissions inventory data for the 2017 National Emissions Inventory (NEI). This document follows specifications outlined in the *EPA Requirements for Quality Assurance Project Plans* (EPA QA/R-5).

QAPP ELEMENTS

A. PROJECT MANAGEMENT

- A1. Title and Approval Sheet
- A2. Table of Contents
- A3. Distribution List
- A4. Project/Task Organization
- A5. Problem Definition/Background
- A6. Project/Task Description
- A7. Quality Objectives and Criteria
- A8. Special Training/Certification
- A9. Documents and Records

B. MEASUREMENT/DATA ACQUISITION

C. ASSESSMENT/OVERSIGHT

- C1. Assessments and Response Actions
- C2. Reports to Management

D. DATA VALIDATION AND USABILITY

Appendix A

Section: A

Revision No.: 1

Revision Date: 10/2/2017

Page: 3 of 15

GROUP A
PROJECT MANAGEMENT

| | |
|-----------------|-----------------------|
| Section: | _____ A _____ |
| Revision No.: | _____ 1 _____ |
| Revision Date : | _____ 10/2/2017 _____ |
| Page: | _____ 4 of 15 _____ |

A1. TITLE AND APPROVAL SHEET

EPA Region 6 QTRAK # _____

Title: ***ADEQ QAPP - Air Emissions Reporting Requirements for the 2017 National Emissions Inventory***

ORGANIZATION: Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Plan Prepared by: _____
Steve Tune, Project Officer, Environmental Program Coordinator,
Phone: (501) 682-0537, Fax: (501) 682-0753, tune@adeq.state.ar.us

APPROVING OFFICIALS:

William Montgomery
Air Policy & Planning Branch Manager
Phone: (501) 682-0885
Fax: (501) 682-0753
E-mail: montgomery@adeq.state.ar.us
Name: _____
Date: _____

Mark McCorkle
Environmental Program Coordinator
Phone: (501) 682-0736
Fax: (501) 682-0753
E-mail: mac@adeq.state.ar.us
Name: _____
Date: _____

Penny Semberski, Chemist Supervisor
ADEQ Quality Assurance Officer
Phone: (501) 682-0941
Fax: (501) 682-0936
Email: semberskip@adeq.state.ar.us
Name: _____
Date: _____

Stuart Spencer
Associate Director for the Office of Air Quality
Phone: (501) 682-0750
Fax: (501) 682-0753
E-mail: spencer@adeq.state.ar.us
Name: _____
Date: _____

Frances Verhalen, P.E.
Chief Air Monitoring/Grants Section
US Environmental Protection Agency
Phone: (214) 665-2172
Fax: (214) 665-6689
Email: Verhalen.frances@epa.gov
Name: _____
Date: _____

A2. TABLE OF CONTENTS**A. PROJECT MANAGEMENT****PAGE NUMBER**

| | | |
|------|---------------------------------|----|
| A1. | Title and Approval Sheet | 4 |
| A2. | Table of Contents | 5 |
| A3. | Distribution List | 6 |
| A4. | Project/Task Organization | 6 |
| A5. | Project Definition/Background | 7 |
| A6. | Project/Task Description | 9 |
| A6.1 | Work to be performed | 9 |
| A6.2 | Products to be produced | 11 |
| A6.3 | Schedule of work | 11 |
| A7. | Quality Objectives and Criteria | 11 |
| A8. | Special Training/Certification | 12 |
| A9. | Documents and Records | 12 |

B. MEASUREMENT/DATA ACQUISITION 13**C. ASSESSMENT/OVERSIGHT**

| | | |
|-----|----------------------------------|----|
| C1. | Assessments and Response Actions | 14 |
| C2. | Reports to Management | 14 |

D. DATA VALIDATION AND USABILITY 15**APPENDICES** 15

A3 DISTRIBUTION LIST

Arkansas Department of Environmental Quality
Stuart Spencer
William Montgomery
Mark McCorkle
Steve Tune
Dora Fisher
Scot Stinson
Penny Semberski
EPA Region 6
Frances Verhalen

A4 PROJECT/TASK ORGANIZATION

Incumbent, ADEQ Associate Director for the Office of Air Quality
Final Air Division approval of project
Incumbent, ADEQ Air Policy & Planning Branch Manager
Project team senior management
Incumbent, Environmental Program Coordinator, Air Quality Planning
Direct project oversight
Incumbent, Environmental Program Coordinator, Emissions Inventories
Emissions Inventory project manager
QAPP approval and project manager
QA/QC of emissions data
Incumbent (1), Administrative Specialist III, Emissions Inventories
Emissions Inventory data management
Incumbent (1), Air Compliance Monitor, Air Quality Planning
Emissions Inventory data management
Incumbent, Chemist Supervisor – Technical Services Division
QA/QC activities
Incumbent, Environmental Program Coordinator, Administration
Fiscal support

See Appendix A for ADEQ organizational chart that identifies Branches, Divisions, Sections, etc. and includes incumbent names and their positions in the Air Division.

A5 PROBLEM DEFINITION/BACKGROUND

ADEQ will compile 2017 emissions inventory data for all Type A and Type B facilities in Arkansas. The data will be submitted to the EPA as required by the Air Emissions Reporting Requirements.

The Clean Air Act Amendments (CAAA) of 1990 established nonattainment classifications and emissions inventory requirements for areas based on their deviation from National Ambient Air Quality Standards (NAAQS). A base year inventory of criteria air pollutants (CAPs) was established in 1990 with the requirement that future emissions be tracked to gauge the efficacy of control strategies for reducing emissions and moving areas toward attainment. Section 172, Part C, of the CAAA, which addresses State Implementation Plan (SIP) requirements, states that “such plan provisions shall include a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants in such area, including such periodic revisions as the Administrator may determine necessary to assure that the requirements of this part are met.”

In 2002, the Consolidated Emissions Reporting Rule (CERR) was promulgated to consolidate the emissions inventory (EI) requirements of various sections of the CAAA. CERR mandated that states submit annual and triennial emissions inventories for CAPs and their precursors to the EPA, within 17 months of year end, for inclusion in the National Emissions Inventory (NEI). For annual inventories, states were required to report emissions only from large point sources within their jurisdiction with different reporting thresholds of actual emissions for attainment and nonattainment areas. For triennial inventories, states were required to report emissions from all point sources plus area, onroad mobile, nonroad mobile, and biogenic sources within their jurisdiction. Effective for the 2009 NEI, CERR was replaced by the Air Emissions Reporting Requirements (AERR). The main differences between AERR and CERR are a decrease in reporting time from 17 to 12 months, redefinition of reporting thresholds from actual emissions to “potential to omit”, and elimination of the requirement for states to report biogenic emissions. A revision to the AERR in 2015 lowered the threshold for reporting lead (Pb) emissions sources as point sources and created a lead threshold limit based on actual emissions rather than potential emissions. Additional information about the final published AERR rule can be found at <https://www.epa.gov/air-emissions-inventories/air-emissions-reporting-requirements-aerr>.

The 2017 EI is a triennial reporting year as defined by AERR so emissions inventory data will be collected from facilities classified as both Type A and Type B major sources by AERR. The emission thresholds for both Type A and Type B sources (as defined by AERR) are listed in Table 1. Facilities’ potential to emit CAPs will be assumed to equal the highest permitted emission limits from any air permits that were active in 2017.

Table 1. Emissions thresholds of criteria air pollutants for Type A (annual reporting) and Type B (triennial reporting) major sources as defined by the Air Emissions Reporting Requirements.

| Pollutant | Annual Cycle Type A (tons per year) | Triennial Cycle Type B (tons per year) |
|-------------------|---|--|
| SO _x | ≥2500 | ≥100 |
| VOC | ≥250 | ≥100 |
| NO _x | ≥ 2500 | ≥ 100 |
| CO | ≥ 2500 | ≥1000 |
| PM ₁₀ | ≥ 250 | ≥ 100 |
| PM _{2.5} | ≥ 250 | ≥ 100 |
| NH ₃ | ≥ 250 | ≥ 100 |
| Pb | ≥ 0.5 (Actual Emissions) | ≥ 0.5 (Actual Emissions) |

For the 2017 NEI, states will submit data as a Consolidated Emissions Reporting Schema Extensible Markup Language (CERS XML) file through Exchange Network nodes via the Emission Inventory System (EIS) Gateway. The 2017 EI must be submitted to the EPA by December 31, 2018. Access to the EIS Gateway including instructions for data reporting and submittal can be found at <https://www.epa.gov/air-emissions-inventories/emission-inventory-system-eis-gateway>.

In addition to being submitted to the EPA for inclusion in the NEI, emissions inventory data is used by ADEQ for developing an air quality control and maintenance strategy for the state of Arkansas. Specific uses of this data include:

- Preparation of the ADEQ Office of Air Quality “State of the Air” Report
- Development of State Implementation Plans
- Establishment of baselines for future planning activities
- State oversight of point sources
- Response to public requests for information
- Emission factor development
- Documenting regulatory impact assessments
- Air quality assessments
- Human exposure modeling

A6 PROJECT/TASK DESCRIPTION

A6.1 Work to be performed

Point Sources: ADEQ utilizes a web-based emissions inventory reporting and database management system to collect emission information from reporting facilities. The system, which is called SLEIS (State & Local Emissions Inventory System), was funded by an Exchange Network grant and has been deployed at ADEQ as well as multiple other state and local environmental agencies located throughout the United States. SLEIS is designed to be fully compliant with the Cross-Media Electronic Reporting Regulation (CROMERR) and EPA has approved the system's CROMERR application. As a result of EPA's CROMERR approval, the Responsible Official for each reporting facility may use SLEIS to electronically submit their 2017 EI reports and attached certifying statements to ADEQ.

The 2017 EI is a triennial EI year so emission data will be collected from facilities that have the classification of Type A or Type B major sources as defined by Air Emissions Reporting Requirements. The ADEQ database of air permits will be used to determine which Arkansas facilities meet the reporting threshold for criteria air pollutants and their precursors. For Type classification purposes, each permitted facility's potential to emit individual CAPs and their precursors will be assumed to be equal to the permitted emissions limits listed in that facility's ADEQ issued air permit. If a facility's permit was changed during 2017, the highest emissions limit listed in any permit active during 2017 will be used as the potential to emit. As required by AERR, only CAP and Ammonia emissions will be used to determine the eligibility of facilities to report EI data. Facilities with lead emissions will be classified according to actual lead emissions. Eligible facilities will be required to report emissions data for all pollutants specified in the AERR that were included in the permit or permits active during the reporting period.

For 2017 EI reporting purposes, facilities will be able to register for SLEIS using a secure method. The specific security requirements will include a combination of a password and challenge questions. Once a facility has registered, they will have the option to add authorized users to their SLEIS account (including environmental consultants) that will be permitted to use SLEIS for reporting of facility EI data. Upon completion of data entry, editing, and review of the report, the Responsible Official for each reporting facility will be able to electronically submit their completed EI to ADEQ through SLEIS.

For facilities that have previously submitted an EI, SLEIS will prepopulate 2017 EI reports with some data from the most recently submitted EI including facility addresses, emission units, emission processes, release points, and reported pollutants. SLEIS features a user-friendly, web-based system that allows facilities to navigate through menus in order to view and edit EI data in a format similar to the EPA's Emissions Inventory System (EIS). After a facility has completed their EI, they will use SLEIS to submit it to ADEQ for agency review. Once ADEQ finds the EI acceptable, SLEIS will be used to accept the report and move the data into the SLEIS database. After all reporting facilities have completed their EIs, ADEQ staff will use SLEIS to convert the 2017 point source EI data to CERS XML format and will submit information to EIS using the Exchange Network node.

There will be several levels of QA built into SLEIS. The first level of QA will be automatic parameter checks in the data entry screens that will prevent facility users from saving data of the wrong data type or data that is outside acceptable ranges. These parameter checks can be edited by ADEQ staff so that they are identical to those set by EPA for the CERS XML format requirements. The second level of QA will be a validation utility that prevents facility users from submitting an incomplete EI. Once an EI is successfully validated, it will be sent to ADEQ staff for the third level of QA. ADEQ staff will compare 2017 emissions to previously reported EIs to determine if any reported emissions appear unreasonably low or high. If ADEQ staff finds questionable data in a particular facility's EI, they will contact that facility to determine if the data is incorrect or needs to be edited. For the final level of QA, ADEQ staff will compare state and county-level emissions by pollutant across multiple years. After ADEQ staff determines that the point source data has passed all levels of QA, SLEIS will be used to submit the data to EPA.

On-Road Mobile Sources: On-road mobile emissions are prepared with EPA's Mobile Vehicle Emissions Simulator (MOVES) to produce emissions data for each county. For the 2017 NEI, ADEQ plans to accept the EPA's mobile source emissions data.

Nonpoint Sources: For the 2017 NEI, EPA will likely prepare their own emission estimates for most nonpoint source categories. ADEQ plans to accept the EPA's nonpoint source emissions data. If ADEQ determines that some of EPA's emissions data are inaccurate, then the state will prepare its own estimates for some categories. ADEQ may also estimate emissions from nonpoint categories not included by EPA. Estimates will be made using EPA accepted emission factors and base data including county-level population and employment data.

Nonroad Mobile Sources: For the 2017 NEI, EPA will likely use the Mobile Vehicle Emissions Simulator (MOVES) model to estimate nonroad mobile emissions data for the states. ADEQ plans to accept the EPA's nonroad emissions data.

Event Emissions: For the 2017 NEI, EPA will likely estimate emissions from prescribed fires and wildfires using methods similar to those used in previous NEI projects. ADEQ plans to accept the EPA's event emissions data.

Biogenic Emissions: Until further notice, EPA is not requiring states to submit biogenic emission inventories. ADEQ plans to accept EPA's biogenic emissions data.

A6.2 Products to be produced

The end result of this project will be CERS XML files submitted to EPA's EIS database. The point source file will include all required data elements for both Type A and Type B major sources in Arkansas for the 2017 NEI, which covers emissions from January 1, 2017 to December 31, 2017.

A6.3 Schedule of work

- 9/01/17 to 12/31/17: Determination of eligible facilities and prepopulation of SLEIS with facility data
- 1/1/18: Eligible facilities notified that SLEIS is open for editing 2017 EIs
- 1/1/18 to 6/1/18: Review EIs submitted through SLEIS
- 6/1/18 to 9/1/18: Submission of point source CERS XML files to EPA

A7 QUALITY OBJECTIVES AND CRITERIA

The quality objective of the 2017 NEI is to submit CERS XML files to the EIS that include emissions data accurately describing the 2017 emissions of permitted pollutants as outlined in the AERR for all Type A and Type B major sources in the state of Arkansas. To achieve this goal, data will be checked at multiple stages using the QA procedures set in section A6.

A8 SPECIAL TRAINING/CERTIFICATION

Some agency staff associated with this project have participated in workshops and completed various educational opportunities in emissions inventory preparation work.

ADEQ has specialized training for staff involved with ADEQ Emissions Inventory operations that includes instruction in the following topics:

- ADEQ Emissions Inventory QA/QC Operations
- Emissions Inventory Software Operations
- Minimum Required QA/QC Actions
- Other ADEQ Emissions Inventory Performance Requirements
- ADEQ National Emissions Inventory Quality Assurance Project Plan Review

ADEQ Emission Inventory training resources and guidance documents are kept on file with the EI Environmental Program Coordinator and include but are not limited to:

- ADEQ Emissions Inventory Minimum Audit Checklist and Supplemental Information
- Flowchart Depicting the ADEQ Process for Completing Emissions Inventory
- ADEQ SLEIS Editor's Guide
- ADEQ Emissions Inventory QA/QC Operations Guide
- ADEQ National Emissions Inventory Quality Assurance Project Plan

Staff involved with ADEQ Emissions Inventory operations will record any emissions inventory related training that they participate in. A log documenting all emissions inventory related training activity will be kept on file with the EI Environmental Program Coordinator.

A9 DOCUMENTS AND RECORDS

SLEIS will archive 2017 emissions inventory data including a copy of record for each reporting facility's submitted EI. SLEIS will also electronically store a record of changes made by ADEQ staff. All data and forms used to calculate nonpoint, mobile, and event data will be archived electronically on ADEQ's network.

The current and future versions of this QAPP will be made available to the public including stakeholders and will be saved in both paper and electronic form. The EI Environmental Program Coordinator will be able to provide a copy of the QAPP on request.

Section: B

Revision No.: 1

Revision Date : 10/2/2017

Page: 13 of 15

GROUP B
DATA GENERATION AND ACQUISITION

Group B is not applicable to this QAPP since the 2017 EI is not an experimental project with analytical sampling and methods. All information about data collection and QA can be found in section A6.

Section: C

Revision No.: 1

Revision Date : 10/2/2017

Page: 14 of 15

GROUP C

ASSESSMENT AND OVERSIGHT

C1 ASSESSMENTS AND RESPONSE ACTIONS

As described in section A6, the EI Environmental Program Coordinator and other staff will review all EIs for accuracy using both SLEIS QA checks and reports that compare the 2017 EIs to EIs from previous years. The 2017 NEI will not be submitted to the EIS Production Environment until it passes all QA checks in the EIS Test Environment.

C2 REPORTS TO MANAGEMENT

If EI staff discover QA problems while working on the project, they will inform the EI Environmental Program Coordinator, who will attempt to resolve the issue. Following successful submittal of the 2017 NEI, a notice will be submitted to the ADEQ Associate Director for the Office of Air Quality and all agency staff involved in the project.

GROUP D
DATA VALIDATION and USABILITY

All information relevant to Group D can be found in Section A6 and Section C1.

APPENDICES

Appendix A ADEQ Air Division Organizational Chart (from Section A4)

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

Personnel Chart for the Office of Air Quality

