



Air Resources Board



Matthew Rodriguez
Secretary for
Environmental Protection

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Edmund G. Brown Jr.
Governor

February 24, 2015

MAILED
2.27.15

Ms. Wendy Caruso
North Coast Unified AQMD
2300 Myrtle Avenue
Eureka, California 95501-3327

Dear Ms. Caruso:

The purpose of this letter is to formalize the roles and responsibilities of both the California Air Resources Board (ARB) and local monitoring organizations (MO) that are under the auspices of ARB's Primary Quality Assurance Organization (PQAO) to ensure compliance with State and federal air monitoring requirements.

As defined in the U.S. Environmental Protection Agency's (U.S. EPA) Title 40, Code of Federal Regulations (40 CFR), Part 58, a PQAO is a monitoring organization or a coordinated aggregation of such organizations that is responsible for a set of stations that monitors the same pollutant(s) and for which data quality assessments can logically be pooled. Each criteria pollutant sampler/monitor at a monitoring station in the State and Local Air Monitoring Stations network must be associated with one, and only one, PQAO.

ARB is the governmental agency delegated under federal law with the authority and responsibility for collecting ambient air quality data as directed by the Clean Air Act. The ambient air monitoring network in California is operated by a combination of ARB and local MOs. It is critical that ARB and local MOs work together, through formalized roles and responsibilities, to collect consistent and reliable ambient air quality data.

Under ARB's PQAO, ARB and MOs should strive to collaboratively address the following common factors to the extent practical:

- a) Operation by a common team of field operators according to a common set of procedures.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

Ms. Wendy Caruso
February 24, 2015
Page 2 of 3

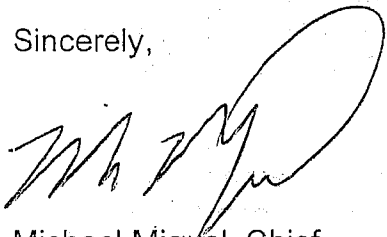
- b) Use of a common Quality Assurance Project Plan and Standard Operating Procedures for State and federally mandated air monitoring projects.
- c) Common calibration facilities and standards.
- d) Oversight by a common quality assurance organization.
- e) Support by a common management, laboratory, or headquarters.

In order to address these common factors, ARB has worked collaboratively with the North Coast Unified Air Quality Management District and U.S. EPA to define each agency's roles and responsibilities with regard to the operation of the State's ambient air monitoring network (see attached). The goal of the roles and responsibilities document is to ensure the generation of high quality, legally defensible data in a collaborative manner.

ARB appreciates the collaborative efforts of the District to define the roles and responsibilities and looks forward to working with them to ensure their effective implementation.

Please contact Mr. Patrick Rainey at (916) 327-4756 or prainey@arb.ca.gov or myself at (916) 322-0960 or mmiguel@arb.ca.gov, if you have any questions.

Sincerely,



Michael Miguel, Chief
Quality Management Branch
Monitoring and Laboratory Division

Attachment

cc: see next page

Ms. Wendy Caruso
February 24, 2015
Page 3 of 3

cc: Brian Wilson, APCO
North Coast Unified AQMD
2300 Myrtle Avenue
Eureka, California 95501-3327

Meredith Kurpius, Ph.D.
Air Quality Analysis Office, Manager
U.S. Environmental Protection Agency, Region 9
75 Hawthorne St., AIR-7
San Francisco, California 94105

Gwen Yoshimura
Air Quality Analysis Office, Air Monitoring Team Lead
U.S. Environmental Protection Agency, Region 9
75 Hawthorne St., AIR-7
San Francisco, California 94105

Dr. Michael T. Benjamin, Chief
Monitoring and Laboratory Division

Patrick Rainey, Manager
Monitoring and Laboratory Division

Maria Salomon
Monitoring and Laboratory Division

Attachment

PRIMARY QUALITY ASSURANCE ORGANIZATION ROLES AND RESPONSIBILITIES FOR THE CALIFORNIA AIR RESOURCES BOARD AND NORTH COAST UNIFIED AIR QUALITY MANAGEMENT DISTRICT

Five common factors have been identified by the U.S. Environmental Protection Agency (U.S. EPA) that should be considered in defining a Primary Quality Assurance Organization (PQAO). Under the Air Resources Board (ARB) PQAO, ARB and monitoring organizations (MOs) will strive to collaboratively address the following common factors to the extent practical. ARB has defined the roles and responsibilities of ARB and MOs within its PQAO in regard to the operation of the PQAO ambient air monitoring network in order to ensure the generation of high quality, legally defensible data.

1. Operation by a common team of field operators or according to a common set of procedures

ARB recognizes the unique air monitoring challenges that face California and that field operations by a common team may not be feasible. ARB and MOs acknowledge the need to strive for uniformity of procedures, thus both parties agree to work together toward employing consistent and reliable field operations.

ARB Responsibilities:

- a) Maintain and disseminate a Quality Management Plan (QMP). ARB will regularly request input from MOs within ARB's PQAO and agrees to review and update the QMP as needed. ARB will communicate updates to MOs accordingly.
- b) Review and approve alternative QMPs prepared by MOs seeking ARB and/or U.S. EPA approval.
- c) Maintain a PQAO contact list and working webpage to disseminate information.
- d) Serve as a liaison between MOs within ARB's PQAO.
- e) Provide adequate training on key air monitoring fundamentals related to operations, maintenance, quality assurance/quality control, and data management procedures.
- f) Facilitate Ambient Monitoring Technical Advisory Committee (AMTAC) meetings and information updates. Topics may include field, laboratory, quality assurance, and data management related items.
- g) Participate in the California Air Pollution Control Officers Association (CAPCOA) air monitoring committee meetings and other informational forums.

North Coast Unified Air Quality Management District (AQMD) Responsibilities:

- a) Utilize and follow ARB's QMP. Any deviations from ARB's QMP will be specified in an addendum and submitted to ARB for review and approval.

- b) Provide a supervisory level (or designee if non-supervisory level) PQAO point-of-contact to ARB. The PQAO contact will be added to a list serve to allow for effective and timely dissemination of information.
- c) Participate in ARB and U.S. EPA sponsored ambient air monitoring training.
- d) Participate in AMTAC meetings and review information updates by teleconference or in-person, as budget funding allows, including use of grant funds when available.
- e) Participate in CAPCOA Monitoring Committee meetings and other informational forums.

2. Use of a common Quality Assurance Project Plan (QAPP) and Standard Operating Procedures (SOP) for state and federally mandated air monitoring projects.

ARB Responsibilities:

- a) Maintain and disseminate an ARB and/or U.S. EPA QAPP for state and federally mandated air monitoring projects or programs.
- b) Maintain and disseminate SOPs for monitoring and analysis. These SOPs may also include forms (i.e., check sheets, calibration forms, maintenance forms, etc.).
- c) Provide notification of updates/revisions, as they occur, to ARB's QAPPs and SOPs via the PQAO point-of-contact list.
- d) Review and approve alternative QAPPs and SOPs prepared by MOs.

North Coast Unified AQMD Responsibilities:

- a) Utilize and follow ARB's QAPPs for ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), carbon monoxide (CO), and particulate matter (PM₁₀ and PM_{2.5}) air monitoring projects. Any deviations from ARB's QAPP will be specified in an addendum and submitted to ARB for review and approval.
- b) Utilize and follow ARB or other district approved SOPs for PM₁₀ and PM_{2.5} air monitoring projects. Any deviations from ARB or other district approved SOPs will be specified in an addendum and submitted to ARB for review and approval. [Note: District is in the process of adopting or developing SOPs for gaseous and meteorological parameters and is also evaluating the use of Grimm 180 samplers. District will work with ARB to establish a schedule for the adoption, development, and implementation of all required quality management documents.]
- c) District management will review ARB's document repository at http://www.arb.ca.gov/aaqm/qa/pqao/repository/qm_docs.htm on an established schedule to ensure that all quality management documents utilized by MO are accurately represented and consistent with operating practices. MO must notify ARB of any changes as they occur.

- d) Make available to ARB a record or list of quality management documents (QMP, QAPP, SOP, training plan, etc.) utilized by North Coast Unified AQMD's ambient air monitoring network.

If North Coast Unified AQMD conducts a special purpose monitoring (SPM) program funded by U.S. EPA, the MO will seek quality assurance assistance from U.S. EPA or ARB's Quality Management Branch. Such monitoring is required to be covered by quality assurance documents prior to sample collection.

If North Coast Unified AQMD conducts a special purpose monitoring (SPM) program not funded by U.S. EPA, the MO may seek quality assurance assistance from U.S. EPA or ARB's Quality Management Branch.

3. Common calibration facilities and standards

MOs within ARB's PQAO are encouraged to utilize the services provided by ARB's Standards Laboratory for certifications, calibrations, and verifications. Organizations choosing to utilize external calibration facilities or vendor produced standard materials will provide documentation of traceability upon request by ARB or U.S. EPA.

ARB Responsibilities:

- a) Provide timely certification, calibration, and verification services that meet or exceed Title 40, Code of Federal Regulations (40 CFR) Part 58 requirements via ARB's Standards Laboratory, upon request (information on available services at <http://www.arb.ca.gov/aaqm/qa/stdslab/stdslab.htm#services>).

North Coast Unified AQMD Responsibilities:

- a) Utilize ARB's certification, calibration, and verification services for O3 transfer standards, low volume flow standards, compressed gas cylinders, relative humidity sensors, temperature sensors, and barometric pressure sensors (if an outside vendor is utilized, MO will document and make records available to ARB or U.S. EPA upon request).
- b) Maintain a schedule and record of certification dates, and a record of traceability to NIST that are available to ARB or U.S. EPA upon request.
- c) Grimm instrumentation must be sent to manufacturer for annual calibration, if utilized.

Additionally, ARB may provide equipment acceptance testing, repair, and field calibration services to North Coast Unified AQMD upon prior or mutual agreement, which may depend upon budget feasibility and staff availability.

4. Oversight by a common quality assurance organization

ARB Responsibilities:

- a) Ensure that ARB's PQAO includes all pollutants required by U.S. EPA for its ambient air monitoring network.
- b) Conduct annual Performance Evaluation (PE) audits for O₃, SO₂, NO₂, CO, and meteorological parameters and semi-annual flow rate audits for PM₁₀ and PM_{2.5}, as required in 40 CFR Part 58, Appendix A, including Sections 3.2.2 and 3.2.4.
- c) Conduct annual siting evaluations at each air monitoring station to determine compliance with 40 CFR Part 58, Appendix E, and consistency with current Air Quality System (AQS) pollutants.
- d) If an instrument or analyzer is found to be outside acceptable limits, ARB will initiate an Air Quality Data Action (AQDA). The AQDA will request the MO to correct the identified deficiencies and ensure associated ambient air data are verified to be good quality data. To ensure compliance, ARB will conduct a re-audit as soon as possible to verify the problem has been resolved. ARB will review data in AQS to ensure any recommended data action has been taken (i.e., flagging, invalidation, etc.).
- e) Conduct technical systems audits (TSA) of all MOs within ARB's PQAO on a schedule of every 3-5 years.
- f) Maintain a Corrective Action Notification (CAN) database utilized by monitoring agencies to report operational problems, instrument malfunctions, and/or any items needing corrective action or investigation. ARB will follow-up to verify that appropriate action was taken to close the CAN and perform an annual review of the CAN database for systematic issues (annual review results available at <http://arb.ca.gov/aaqm/qa/pqao/can/can-letter.pdf>).
- g) Provide procedures and criteria for data acceptability and corrective action determination.
- h) Provide procedures and criteria for data verification and validation performed prior to upload to AQS.
- i) Provide training on data verification and validation procedures as part of the PQAO Air Monitoring Training.
- j) Upload validated data (PM₁₀, PM_{2.5}, and gaseous parameters) to AQS within 90 days following the end of each quarter.
- k) Perform post-AQS screening of submitted data to identify any issues.
- l) Perform annual certification of data for which ARB has AQS submittal authority by May 1st of each year.

- m) Perform an annual evaluation of the statistical summaries of quality assurance and quality control data for all MOs in ARB's PQAO and distribute results.

North Coast Unified AQMD Responsibilities:

- a) Review and verify pollutants on an annual basis that are included in ARB's PQAO.
- b) Participate in gaseous criteria pollutant and particulate PE audits (O₃, SO₂, NO₂, CO, PM₁₀, and PM_{2.5}) conducted by ARB.
- c) Participate in U.S. EPA required technical system audits conducted either by ARB or U.S. EPA.
- d) Utilize and follow ARB's procedures for validating O₃, SO₂, NO₂, CO, PM₁₀, and PM_{2.5} monitoring data prior to submission to ARB for upload to AQS. [Note: PM_{2.5} filters are weighed by the Bay Area Air Quality Management District, but associated data is uploaded to AQS by ARB. MO will validate that field collection procedures were performed in accordance with required procedures]. Any deviation to ARB's procedures will be specified in an Addendum and submitted to ARB for review and approval.
- e) Submit validated O₃, SO₂, NO₂, CO, PM₁₀, and PM_{2.5} air monitoring data to ARB in an AQS compatible format (see Addendum 1) within 75 days following the end of each quarter. Provide a letter stating validation was performed (see Addendum 2). Participate in data verification and validation training (in addition to the required PQAO training) provided by ARB and/or U.S. EPA, as budget funding allows, including use of grant funds when available.
- f) Review data in AQS on a quarterly basis to verify accuracy and completeness (AMP 256 and 430 reports).
- g) Review data in AQS (AMP 600 and 450 NC reports) on an annual basis to verify accuracy and completeness of data for certification purposes. Provide a letter to ARB verifying data quality by April 15th of each year (see Addendum 3).
- h) Utilize ARB's CAN process to report instrument malfunctions, operational problems, data quality issues, and/or any items needing corrective action or investigation within 45 days of determination of the issue. Management will use appropriate discretion to determine issues deemed to be anomalous verses routine occurrences.
- i) Resolve or develop a corrective action plan for AQDAs, CANs, and TSA findings, within 45 days of issuance.
- j) Utilize ARB's CAN process to communicate to ARB when data is altered or modified after submittal so that ARB can review justification and adjust data in AQS accordingly.

Data Collected from SPM sites using federal reference methods, federal equivalent methods, or approved regional methods will be evaluated against the requirements in 40 CFR Part 58.11, 58.12, and Appendix A. and submitted to AQS according to 40 CFR Part 58.16, as applicable.

5. Support by a common management, laboratory or headquarters

Operating California's complex ambient air monitoring network requires ARB to work collaboratively with each MO. In order to accurately assess the MO's monitoring network, both parties will document and evaluate potential or scheduled modifications to the air monitoring network.

ARB Responsibilities:

- a) Participate in annual meeting/teleconference during the network review period to discuss ARB's PQAQO monitoring network status.
- b) ARB will provide feedback and information regarding planned network modifications communicated by the MO for proposed inclusion in the Annual Network Plan.
- c) Provide laboratory analytical support as required (i.e., PM2.5 and PM10 mass analysis, toxics analysis, speciation, etc.) upon prior or mutual agreement.
- d) In the event that problematic or unacceptable equipment is identified in the air monitoring network, ARB will endeavor to support MOs in efforts to resolve issues.

North Coast Unified AQMD Responsibilities:

- a) Coordinate all site changes (i.e., openings, closures, relocations), not mentioned in the Annual Network Plan to U.S. EPA and ARB, in a timely manner. Notify ARB of anticipated changes before they occur and obtain prior approval of change before executing it, barring exceptional circumstances.
- b) Participate in ARB's PQAQO monitoring network status meetings/teleconferences, as budget funding allows, including use of grant funds when available.
- c) Provide sample return and proper documentation of field sample collection activities (i.e., chain-of-custody, sample collection dates and times, etc.), within established timeframes.

If MO submits Annual Network Plans directly to U.S. EPA, a copy will also be provided to ARB's Air Quality Planning and Science Division for statewide network assessment purposes. MO will also notify ARB when draft ANP is released for public comment.

If circumstances should arise that prevent either ARB and/or North Coast Unified AQMD from meeting the above mentioned responsibilities, the agencies will work collaboratively to ensure that the common goal of generating legally and scientifically defensible data throughout ARB's PQAO monitoring network is met. As needed, the agencies will work with U.S. EPA Region 9 to assist in meeting the PQAO requirements.

Appendix 1

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Appendix 2



Air Resources Board



Matthew Rodriguez
Secretary for
Environmental Protection

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Edmund G. Brown Jr.
Governor

(Insert Date)

Ms. Gayle Sweigert
California Air Resources Board
1001 I Street
Sacramento, California 95812

Dear Ms. Sweigert:

I have reviewed the appropriate quality control documents used by *(specify monitoring organization)* and attest that the air monitoring data for the time period of *(provide applicable date)* for *(specify applicable sites)* have been validated in accordance with the criteria established in the ARB procedures *(or specify district approved procedures if applicable)* for data validation and are acceptable for upload to AQS.

(This letter does not validate the following data as noted below)

Examples:

Jerseydale

The 8800 data logger at Jerseydale was replaced with an 8832 on June 2, 2013. There were some initial setup problems with regard to configuring the ozone channels on the 8832 causing a loss of ozone data. This resulted in a loss of the ozone data for the period June 2, 2013 hour 1700 through June 7, 2013 hour 1500 *(include total hours impacted)*.

(Data exceptions may include, but are not limited to, instrument downtime, missing or invalid data, calibration/audit events, maintenance, and other events impacting data capture or quality. Documentation should include notation of required flags and justification for data flagging)

Sincerely,

(District monitoring manager or APCO)

cc: *(District monitoring staff or management)*

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

Appendix 3



Air Resources Board



Matthew Rodriguez
Secretary for
Environmental Protection

Mary D. Nichols, Chairman
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Sacramento, California 95812 • www.arb.ca.gov

Edmund G. Brown Jr.
Governor

(Insert Date)

Ms. Gayle Sweigert
California Air Resources Board
1001 I Street
Sacramento, California 95812

Dear Ms. Sweigert:

The *(specify district)* is responsible for submitting air quality and precision data to the Air Resources Board (ARB) for submittal to the Air Quality System (AQS) for those monitors that are under the control of the District. In support of the requirements in Title 40, Code of Federal Regulation (40 CFR), Part 58, this letter certifies that the District has reviewed the ambient concentration data and the quality assurance data for the *(specify year)* and attests that the ambient data are accurate and complete to the best of our knowledge taking into consideration the quality assurance findings. We recommend the data for certification.

At this time the District is not recommending certification of the following data: (specify pollutants, site name, AQS #, and reason for not recommending certification)

Specify any other data that the District has partial/shared responsibility for generating (filter-based PM₁₀, PM_{2.5}, toxics, etc.) and identify the agency responsible for generating and submitting the data to AQS.

Copies of the AQS data certification report (AMP 600) and the AQS Quick Look Report (AMP 450NC, if applicable) are attached.

Sincerely,

(Authorized District monitoring manager or APCO)

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency