

# POAO UPDATES

**GWEN YOSHIMURA, U.S. EPA**

**AND**

**ANDREA MCSTOCKER, ARB**

**JANUARY 24, 2017**

# WHY ARE WE HERE?

EPA

ASTHMA AWARENESS MONTH

An estimated  
**7 million**  
children  
in the US  
suffer from  
**asthma**



[www.epa.gov/asthma](http://www.epa.gov/asthma)

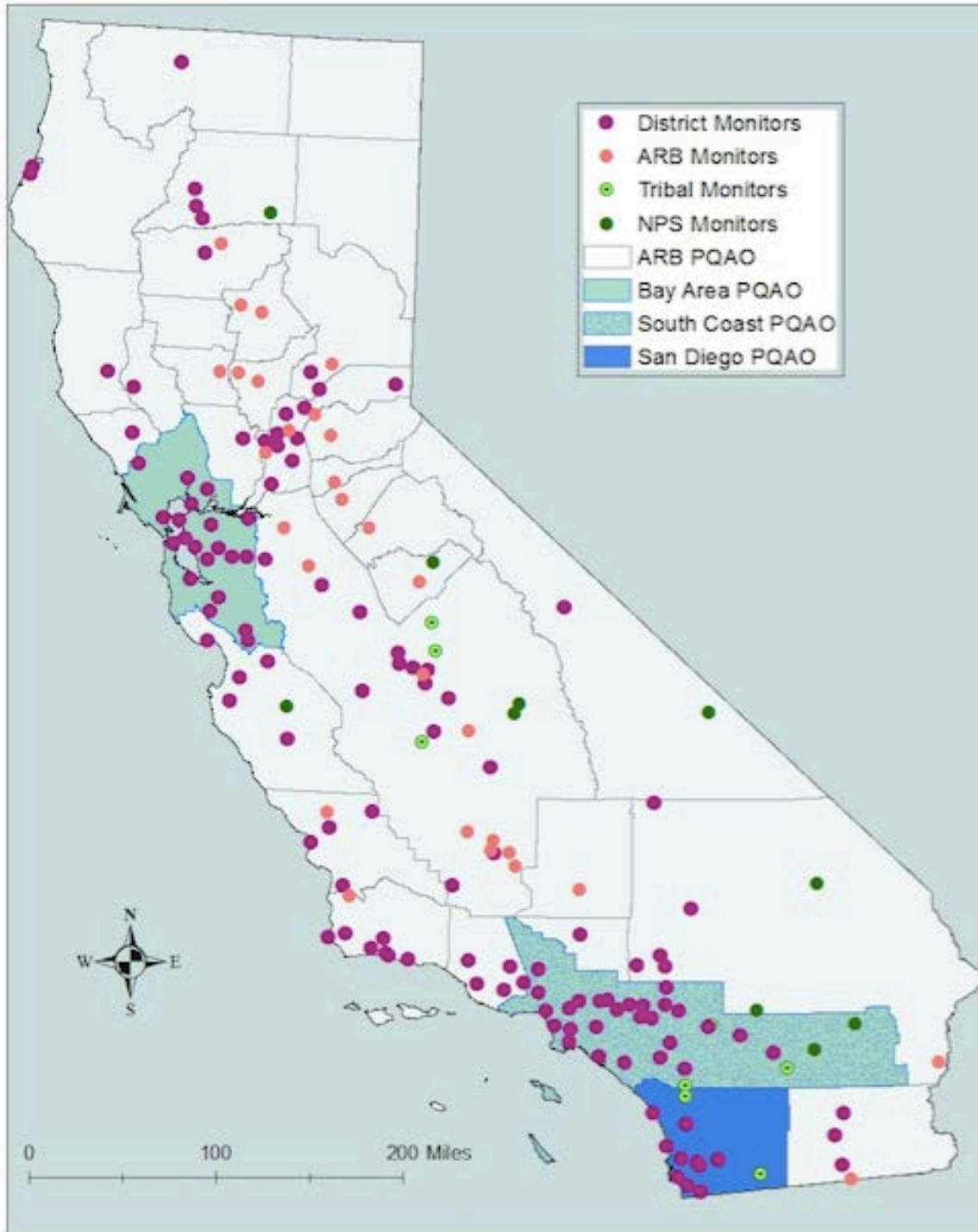


By Bobak - Own work, CC BY-SA 2.5, <https://commons.wikimedia.org/w/index.php?curid=2190112>

# WHY ARE WE HERE?

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# QUICK REVIEW

A PQAO ensures that data are

- Consistent
- Defensible
- High quality

Five common factors?

# PQAO REQUIREMENTS



# SUCCESSSES

2015



Communication

Documentation

Consistency of processes

2011

# CONTINUING ISSUES

- So much to do, so little time
- Quality, not quantity
- Always something new!





# HIGH PRIORITY ISSUES

- PM laboratories
- QAPPs
- Zero air
- Wildfire/Smoke Impacts

# REGULATION UPDATES

- Federal ozone standard revised to 70 ppb
- Monitoring Rule Revision
  - 1 point QC check levels
  - Flow rate verifications must be reported.

→ Update QAPPs/SOPs

[https://www3.epa.gov/ttn/amtic/files/ambient/pm25/Summary\\_of\\_Appendix\\_A\\_Changes\\_%203\\_25\\_2016.pdf](https://www3.epa.gov/ttn/amtic/files/ambient/pm25/Summary_of_Appendix_A_Changes_%203_25_2016.pdf)

- Validation Template revision
- Exceptional Events Rule Revision

# HOW WILL THIS TRAINING HELP YOU DEAL WITH ALL OF THIS?!

- Network Design and Changes
- Data Management
- Station Operations & Documentation
- Filter Handling
- Certifications and Calibrations
- Databases



# ARB'S QA WEB PAGE TOUR

- Liaison Contact Information
- QA Bulletins
- Document Repository
- Roles & Responsibilities
- Checklists
- QA Reports
- Corrective Action Notifications
- Training Resources
- Webpage for Station Operators

Tuesday, December 27, 2016

# Quality Assurance

Updated November 29, 2016

The Air Resources Board (ARB) is the governmental agency delegated the authority and responsibility for collecting ambient air quality data as directed by the Clean Air Act. The U.S. Environmental Protection Agency (U.S. EPA) designated ARB as one of the four Primary Quality Assurance Organizations (PQAO) responsible for air monitoring in California. The [Quality Management Plan \(QMP\)](#) describes the quality management system used by ARB and participating local air monitoring organizations that comprise ARB's PQAO. Click on the tabs below for more quality assurance information and references. With smartphones view the [Station Operator's Page](#).

## UP LINKS

- ◊ [Air Quality \(AQ\) & Emissions](#)
  - ◊ [Ambient Air Quality Monitoring Activities in California](#)
  - ◊ [Ambient Air Quality Monitoring](#)


## PROGRAM LINKS

- ◊ [Air Monitoring](#)
- ◊ [Air Monitoring Web Manual](#)
- ◊ [Background](#)
- ◊ [Community Health](#)
- ◊ [Laboratory Standard Operating Procedures](#)
- ◊ [Meteorology](#)
- ◊ [Pollutants](#)
  - ◊ [Dioxins](#)
  - ◊ [Gaseous Criteria Pollutants](#)
  - ◊ [Hydrocarbons](#)
  - ◊ [Particulate Matter](#)
  - ◊ [Toxic Air Contaminants](#)
- ◊ [Quality Assurance \(QA\)](#)
- ◊ [QA Manuals](#)
- ◊ [Related Links](#)
  - ◊ [Air Quality Data](#)
  - ◊ [Air Quality Models](#)
  - ◊ [Emissions Inventory](#)
- ◊ [Standards Laboratory](#)

## RESOURCES

- ◊ [Contact Us](#)
- ◊ [Join Any Air Quality Email List\(s\)](#)

### What's New!


 The [2015 Data Quality Report](#) is now available. This report describes the quality of the ambient air quality data in quantifiable terms in relation to measurement quality objectives established by U.S. Environmental Protection Agency. See the [QA Bulletin](#) tab below for the latest information about the reporting requirements for PM10, PM2.5, and Pb flow rate verifications to AQS.

### Primary Quality Assurance Organization

ARB is required by federal regulations to provide quality assurance oversight to local air monitoring organizations within ARB's PQAO to ensure that consistent procedures are followed to produce data of similar quality.

<a href="#">What is a PQAO?</a>
<a href="#">ARB PQAO Contacts</a>
<a href="#">Monitoring Organizations in ARB's PQAO</a>
<a href="#">Other PQAOs in California</a>

### Quality Management Documents

 <a href="#">Quality Assurance Bulletins (Guidance for monitoring organizations in California)</a>
<a href="#">ARB Document Repository (QA documents used by monitoring organizations in California)</a>
<a href="#">ARB Quality Assurance Manual (QMP, QAPPs, SOPs)</a>
<a href="#">Requirements, Guidance, and Review Checklists (QMP, QAPP, and SOPs)</a>
<a href="#">Quality Assurance Reports (Precision and Accuracy Results [PANDA], Data Quality Reports)</a>

- Hydrocarbons
- Particulate Matter
- Toxic Air Contaminants

- Quality Assurance (QA)
- QA Manuals
- Related Links
  - Air Quality Data
  - Air Quality Models
  - Emissions Inventory

Standards Laboratory

RESOURCES

- Contact Us
- Join Any Air Quality Email List(s)
- RSS / Newsfeed

What is a PQAO?

ARB PQAO Contacts

Michael Miguel, Chief, Quality Management Branch (916) 322-0960

Patrick Rainey, Manager, Quality Management Section (916) 327-4756

The **Updated!** ARB PQAO Contact List contains the primary contact designated by each monitoring organization and who is responsible for sharing information within the respective organization.

District Liaisons:

<p><a href="#">Aman Bains</a> (916) 323-0032</p> <ul style="list-style-type: none"> <li>Mendocino</li> <li>North Coast</li> <li>Yolo/Solano</li> <li>Ventura</li> </ul>	<p><a href="#">Darsi Goto</a> (916) 324-9656</p> <ul style="list-style-type: none"> <li>Imperial</li> <li>Mojave/Antelope</li> <li>Shasta</li> <li>Siskiyou</li> <li>Tehama</li> </ul>
<p><a href="#">Andrea McStocker</a> (916) 322-3267</p> <ul style="list-style-type: none"> <li>Eastern Kern</li> <li>Lake</li> <li>San Joaquin</li> <li>Santa Barbara</li> </ul>	<p><a href="#">Patrick Rainey</a> (916) 327-4756</p> <ul style="list-style-type: none"> <li>Great Basin</li> <li>Northern Sonoma</li> <li>Placer</li> </ul>
<p><a href="#">Kyle Vagadori</a> (916) 445-9391</p> <ul style="list-style-type: none"> <li>Monterey</li> <li>Northern Sierra</li> <li>Sacramento</li> <li>San Luis Obispo</li> </ul>	

- Related Links
  - [Air Quality Data](#)
  - [Air Quality Models](#)
  - [Emissions Inventory](#)

Standards Laboratory

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### Quality Management Documents

**Updated!** Quality Assurance Bulletins (Guidance for monitoring organizations in California)

The following Quality Assurance Bulletins provide guidance and clarification for specified quality assurance and quality control procedures:

- 001: PM10 Lo-Vol Validation Criteria
- 002: Corrective Action Notification
- 003: AQS Minimum Value Reporting Limits
- 004: Temporary Closure of Monitors in AQS
- 005: Post-AQS Data Confirmation  
Example AQS Data Reports for [Continuous Instruments](#) and [Particulate Matter Filters](#)
- 006: Post-Processing of Ambient Air Quality Data
- ~~new~~ 007: Flow Rate Verification

ARB Document Repository (QA documents used by monitoring organizations in California)
ARB Quality Assurance Manual (QMP, QAPPs, SOPs)
Requirements, Guidance, and Review Checklists (QMP, QAPP, and SOPs)
Quality Assurance Reports (Precision and Accuracy Results [PANDA], Data Quality Reports)
EPA Quality Assurance Handbook
Code of Federal Regulations

### Quality Assurance Activities

Audits
<b>Updated!</b> Corrective Action Notification (CAN)
Air Quality Data Action (AQDA)
Standards Laboratory

### Resources

Training Resources
<b>Updated!</b> Other Resources



Tuesday, December 27, 2016

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- ▶ [Air Quality \(AQ\) & Emissions](#)
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    - ▶ **Ambient Air Quality Monitoring**

**PROGRAM LINKS**

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    - ▶ [Air Quality Models](#)
    - ▶ [Emissions Inventory](#)

## Quality Management Documents

Updated April 7, 2016

### Quality Management Document Repository

All monitoring organizations within ARB's PQAO are required to either utilize and follow ARB's Quality Management Plan (QMP), Quality Assurance Project Plans (QAPPs), and Standard Operating Procedures (SOPs) or submit alternatives to ARB's Quality Management Branch for review and approval.

Below are links to repository tables that contain quality management documents that are utilized by monitoring organizations within ARB's PQAO and other participating PQAOs. Monitoring organizations are responsible for notifying ARB of any changes and providing updated versions of their respective quality management documents. If a monitoring organization chooses to utilize ARB's QMP, QAPPs, or SOPs with certain exceptions or deviations, a **Quality Management Document Addendum** must be completed and submitted to ARB's Quality Management Branch for review and approval. (See [Addendum Example](#)).

Note the new additions! The new ARB SOP for Ozone (API 400E/T400) is on the Gaseous Criteria Pollutant page link. All SOP pages now contain Bay Area AQMD SOPs.

- **Updated!** SOPs for Gaseous Criteria Pollutants
- SOPs for Gaseous Trace Level
- SOPs for Particulate Matter Pollutants
- SOPs for Meteorological Parameters
- SOPs for Data Management
- QMPs & QAPPs
- R&R Documents

For further information contact: [Michael Miguel](#), Chief, Quality Management Branch at (916) 322-0960





Friday, January 6, 2017

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    - [Ambient Air Quality Monitoring](#)

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## Document Repository

Updated on August 10, 2016

### FINALIZED ROLES AND RESPONSIBILITIES

<a href="#">Antelope Valley</a>	<a href="#">Eastern Kern</a>	<a href="#">Great Basin</a>	<a href="#">Imperial</a>	<a href="#">Lake</a>
<a href="#">Mendocino</a>	<a href="#">Mojave Desert</a>	<a href="#">Monterey Bay</a>	<a href="#">North Coast</a>	<a href="#">Northern Sierra</a>
<a href="#">Northern Sonoma</a>	<a href="#">Placer</a>	<a href="#">Sacramento</a>	<a href="#">San Joaquin</a>	<a href="#">San Luis Obispo</a>
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<a href="#">Yolo-Solano</a>	<a href="#">ARB</a>			

For further information contact: [Michael Miguel](#), Chief, Quality Management Branch at (916) 322-0960

- Related Links
  - [Air Quality Data](#)
  - [Air Quality Models](#)
  - [Emissions Inventory](#)

Standards Laboratory

RESOURCES

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### Quality Management Documents

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- [ARB Quality Assurance Manual \(QMP, QAPPs, SOPs\)](#)
- [Requirements, Guidance, and Review Checklists \(QMP, QAPP, and SOPs\)](#)

The following **ARB checklists** and **U.S. EPA documents** are helpful for developing and reviewing QA documents.

- [QMP checklist](#)
- [QAPP checklist](#)
- [SOP checklist](#)
- [U.S. EPA's Quality System Documents \(Guidance documents\)](#)

- [Quality Assurance Reports \(Precision and Accuracy Results \[PANDA\], Data Quality Reports\)](#)
- [EPA Quality Assurance Handbook](#)
- [Code of Federal Regulations](#)

### Quality Assurance Activities

- [Audits](#)
- Updated!** [Corrective Action Notification \(CAN\)](#)
- [Air Quality Data Action \(AQDA\)](#)
- [Standards Laboratory](#)

### Resources

- [Training Resources](#)
- Updated!** [Other Resources](#)
- [PQAO List Serve](#)

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- Requirements, Guidance, and Review Checklists (QMP, QAPP, and SOPs)
- Quality Assurance Reports (Precision and Accuracy Results [PANDA], Data Quality Reports)

- Precision and accuracy results for individual air monitoring organizations.
- Data Quality Reports summarize quality of ambient air data in quantifiable terms and provide an overview of various quality assurance and quality control activities.

- EPA Quality Assurance Handbook
- Code of Federal Regulations

### Quality Assurance Activities

- Audits
- Updated!** Corrective Action Notification (CAN)
- Air Quality Data Action (AQDA)
- Standards Laboratory

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- Training Resources
- Updated!** Other Resources
- PQAO List Serve



Tuesday, December 27, 2016

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- ▶ [Standards Laboratory](#)

## Corrective Action Notification

Updated March 16, 2016

The implementation of a comprehensive corrective action system throughout ARB's PQAO has been identified by ARB and U.S. EPA as an essential component for improving the quality of air monitoring data and facilitating continuous process improvement. To meet this need, ARB's Quality Management Branch (QMB) developed the Corrective Action Notification (CAN) process. The objective of the CAN process is to document, investigate, correct, and reduce the recurrence of air monitoring issues that impact or potentially impact data quality, completeness, storage or reporting. The goal of the CAN process is to improve data quality and ensure compliance with State, federal, and local requirements.

The CAN process may be initiated by any person in ARB's PQAO who identifies an air monitoring issue that impacts or may impact the quality of air monitoring data. Examples of issues include site monitoring conditions outside of specifications or requirements, out of date calibration gas standards, incomplete chain-of-custody forms, laboratory parameters outside of specifications, late AQS upload, etc. The responsible organization is expected to investigate the issue and implement appropriate corrective action to resolve the issue and prevent recurrence. A copy of the completed CAN form including the corresponding corrective action is submitted to the QMB for review. Once the QMB and responsible organization have worked together to implement appropriate corrective action, a CAN closure letter will be sent by the QMB to the responsible organization.

The QMB will maintain a database that tracks the CAN process and helps identify process related issues. The QMB will ensure that all issues have been resolved and that appropriate action was taken. The ARB will summarize all data quality issues identified through the CAN process in an annual data report.

The CAN process will help ensure the data collected within ARB's PQAO is scientifically and legally valid and meets the requirements for which it is intended. Monitoring organizations within ARB's PQAO are encouraged to adopt this process. If a monitoring organization chooses to use an alternative process, the monitoring organization must submit the process to ARB for review and approval.

- > [CAN SOP](#)
- > [CAN Form](#)
- > [2013 CAN Summary](#)
- > [2014 CAN Summary](#)
- > **new** [2015 CAN Summary](#)

For further information contact: [Michael Miguel](#), Chief, Quality Management Branch

### RESOURCES

California Environmental Protection Agency



Corrective Action Notification

This form is used to document issues that may impact or potentially impact data quality, completeness, storage, or reporting.

Section I: (to be completed by Initiator)

Initiator: \_\_\_\_\_ Date: \_\_\_\_\_

Subject: \_\_\_\_\_ Agency: \_\_\_\_\_

Reason for Corrective Action Notification (continue on an attachment if needed):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Start Date & Time: \_\_\_\_\_ End Date & Time: \_\_\_\_\_  Estimated?

Parameter(s) affected: \_\_\_\_\_ Expected Completion Date: \_\_\_\_\_  
\*Up to 45 days from Initiation Date

Supervisor: \_\_\_\_\_ Date: \_\_\_\_\_

Section II: (to be completed by responsible section or organization)

Corrective Action Taken (continue on an attachment if needed):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Action taken by: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution (continue on an attachment if needed): \*Include changes to prevent recurrence, and any effect on data.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Resolved by: \_\_\_\_\_ Date: \_\_\_\_\_

Forward to: Michael Miguel, PQAO Point of Contact; PO BOX 2815, Sacramento, California 95812; michael.miguel@arb.ca.gov

For questions regarding the CAN process, contact PQAO@arb.ca.gov CAN # assigned: \_\_\_\_\_

## Quality Assurance Activities

Audits

**Updated!** [Corrective Action Notification \(CAN\)](#)

[Air Quality Data Action \(AQDA\)](#)

[Standards Laboratory](#)

## Resources

[Training Resources](#)

### In Person Training

ARB, U.S. EPA, and local air districts are collaboratively developing [PQAO Training Modules](#) for air monitoring staff and management at all levels. The modules are designed to emphasize the fundamentals in key areas of ambient air monitoring.

### Online Training

- [Air Quality Systems \(AQS\) Training](#) on U.S. EPA's Technology Transfer Network (TTN)
- [ARB's "Air Academy Online Training"](#)
- [ARB's "Air Quality Training Program"](#)
- [ARB's "How to Survive a Technical System Audit Presentation"](#)
- **new** [Heat Illness Prevention Program - training video](#)
- [PQAO Training presentations and videos](#)
- [Infographic - Data's Journey to AQS and Beyond: The Data Management Process \(12-foot long\)](#)
- [Training and conferences](#) on U.S. EPA's Ambient Monitoring Technology Information Center (AMTIC)

**Updated!** [Other Resources](#)

[PQAO List Serve](#)

### Quality Assurance Activities

Audits
<b>Updated!</b> Corrective Action Notification (CAN)
Air Quality Data Action (AQDA)
Standards Laboratory

### Resources

Training Resources
<b>Updated!</b> Other Resources

- [PQAO Reference Guide](#)
- [QA Definitions](#)
- [Summaries of Laws, Regulations and Key QA Documents](#)
- [QA Mobile Webpage for Station Operators](#)
- [ARB's iADAM -- Air Quality Data Statistics](#)
- [U.S. EPA's AMTIC site](#)
- [U.S. EPA's AQS](#)
- [Residence time calculations](#)
- **Updated!** [Data Certification Process for AQS](#)
- **Updated!** [NASA's Air Quality from space with links for state and local Air Quality Managers](#)

### PQAO List Serve

# Station Operator's Page

## Standard Operating Procedures

- [ARB SOPs, Technical Bulletins, Maintenance, Calibration Sheets \(ARB Air Monitoring Web Manual\)](#)
- [ARB, District and Other PQAQ SOPs \(Document Repository\)](#)

## EPA QA Handbooks & Code of Federal Regulations

Note: These versions are indexed for convenience

- [Volume II \(PDF, Ambient Air Quality Monitoring Program\)](#)
- [Volume IV \(PDF, Meteorological Measurements\)](#)
- [Part 58 \(Ambient Air Quality Surveillance -- QA, operations, siting, network requirements, etc.\)](#)

## Services

- [ARB's Standards Laboratory](#)

## Resources

- [ARB's Quality Assurance Webpage](#)
- [new ARB's Quality Assurance Bulletins \(Clarification memos\)](#)
- [ARB's AQMIS \(Air quality and meteorological information system\)](#)
- [Air Quality Now](#)



Click for QR code.



➤ [EPA Policy Memos and Technical Guidance](#) (Clarification memos)

➤ [Logbook and Other Documentation](#) (AQSB Technical Bulletin)

### Tools

➤ [Checklist -- General Operator's Tools & Supplies](#)

➤ [EPA PM Sampling Schedule Calendars](#)

➤ [Conversion Calculators](#)

➤ [Metric Conversion Chart](#)

➤ [Declination Calculator](#)

➤ [NIST Clock](#)

### Safety

➤ [Heat Illness Prevention Program Training Video](#)

➤ [Weather Underground-- Heat Index Map](#)

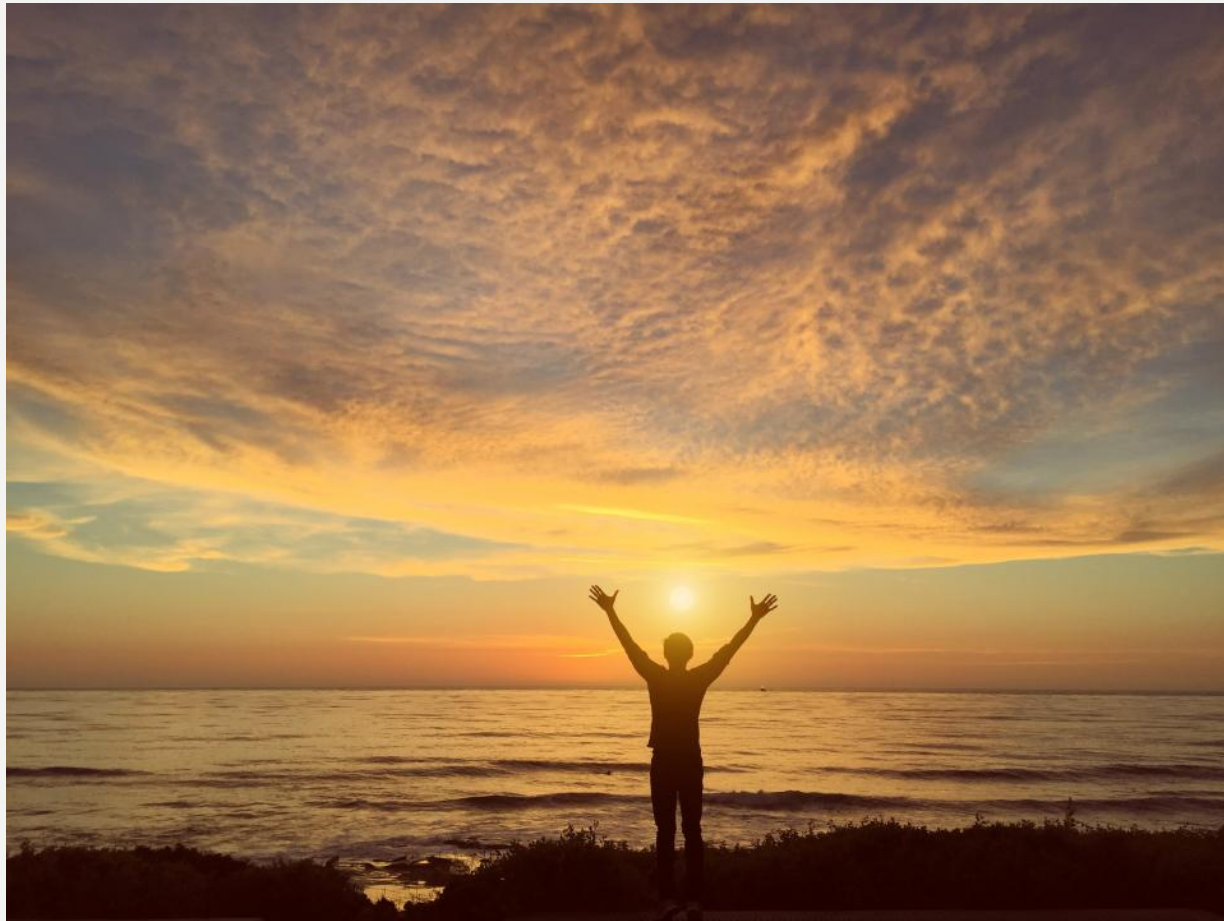
➤ [NOAA -- Heat Index Calculator](#)

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### Air Monitoring Station Computer Resources

These following forms and calculators do not work on smart phones. The links are useful for monitoring station computers:

# CONCLUSION: TEAMWORK MAKES THE DREAM WORK!



# CONTACT INFORMATION

Gwen M. Yoshimura

Air Quality Analysis Office

U.S. EPA, Region 9

Phone: 415-947-4134

Email: [yoshimura.gwen@epa.gov](mailto:yoshimura.gwen@epa.gov)

Andrea McStocker

Quality Management Section

California Air Resources Board

Phone: 916-322-3267

Email: [andrea.mcstocker@arb.ca.gov](mailto:andrea.mcstocker@arb.ca.gov)