



# **Audit Program Development for a Community Air Monitoring Program: Lessons Learned**

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**South Coast Air Quality Management District**

Monitoring and Analysis Division | Quality Assurance Branch

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# New Air Monitoring Programs

California Assembly Bills and local rules

AB 617

Community Air Protection Program

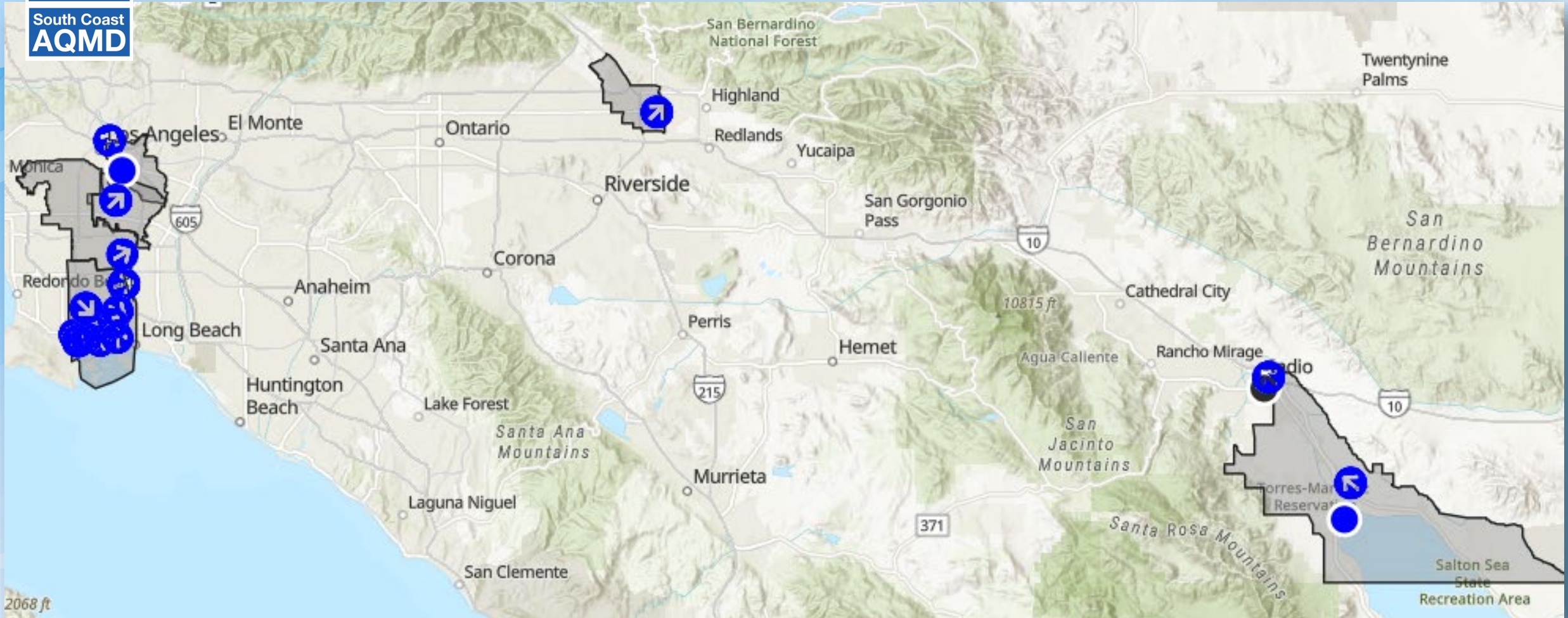
Rule 1180

Refinery Community and Fenceline Air Monitoring



South Coast  
AQMD

# AB 617 Sites Map



<https://xappprod.aqmd.gov/AB617CommunityAirMonitoring/Home/Index>



# AB 617 Pollutants Measured

Pollutant	Instruments
Ultrafine Particulates	Teledyne M651
Black Carbon	Magee AE33
Particulates (PM10, PM2.5)	Teledyne T640
NO <sub>x</sub> , NO <sub>2</sub> , NO	Teledyne T200
Ammonia	Picarro G2508
Metals	SCI Xact 640
Total Carbon	Magee TCA 08
Ozone	Teledyne T400

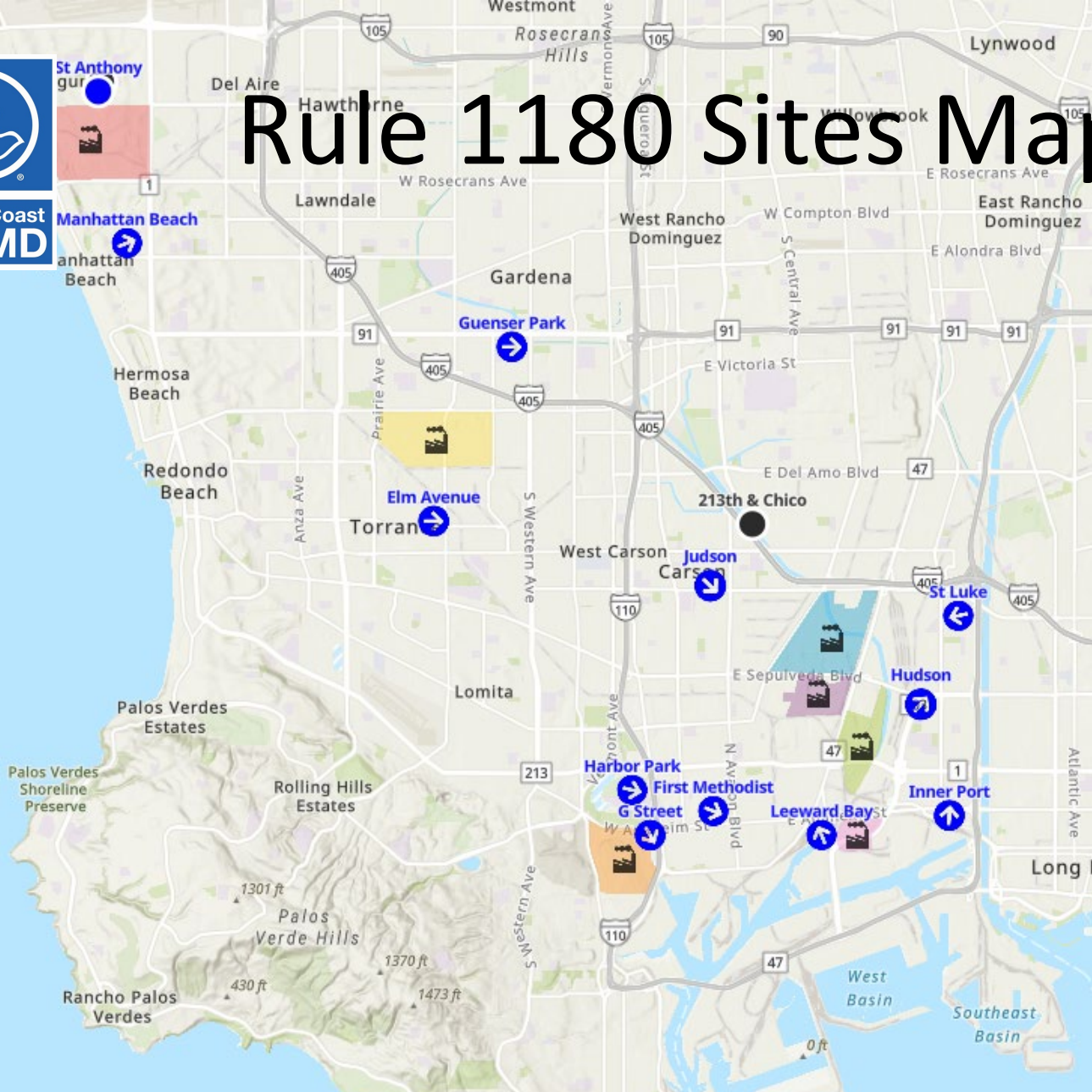


## EPA Criteria Pollutant Overlap



South Coast AQMD

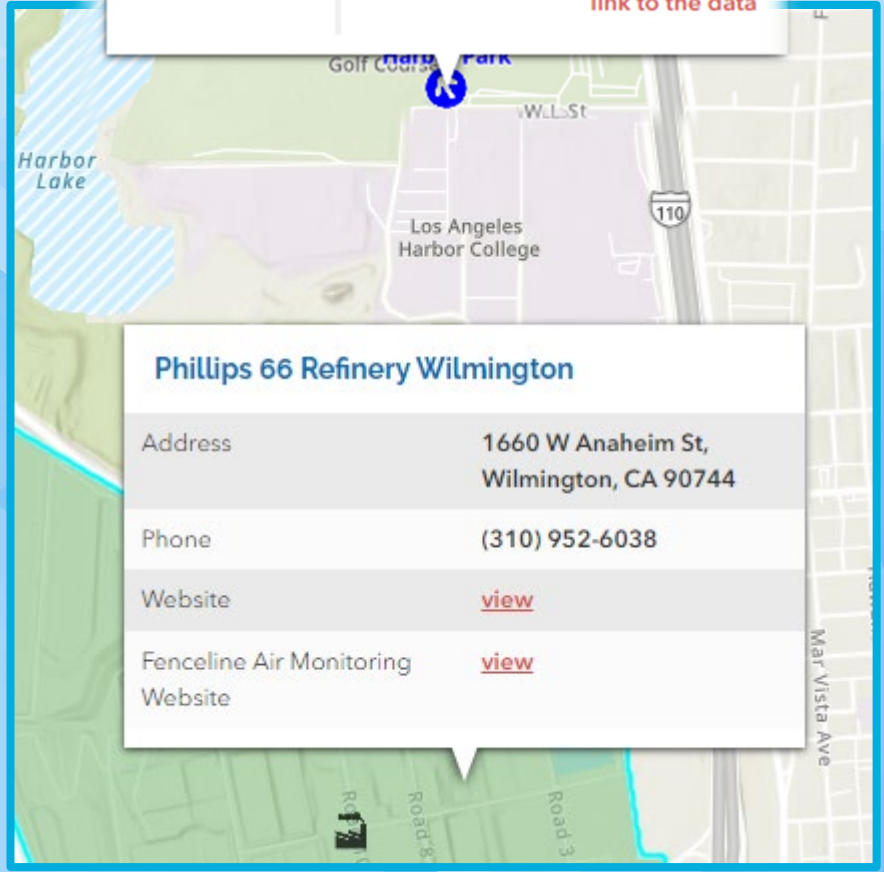
# Rule 1180 Sites Map



## HARBOR PARK AIR MONITORING STATION

Description	Community of Wilmington
Current Highest	Hydrogen Sulfide 0.9 ppb (threshold 30 ppb)
Wind Speed/Dir	4.4 mph/ 148° (SSE)

[link to the data](#)



## Phillips 66 Refinery Wilmington

Address	1660 W Anaheim St, Wilmington, CA 90744
Phone	(310) 952-6038
Website	<a href="#">view</a>
Fenceline Air Monitoring Website	<a href="#">view</a>

<https://xappprod.aqmd.gov/Rule1180CommunityAirMonitoring/>



# Rule 1180 Pollutants Measured

Pollutant	Instrument
Hydrogen Sulfide	Teledyne T101
Black Carbon	Magee AE33
VOC, BTEX	Tricorntech MiTAP Auto-GC
VOC	Fluxsense MeFTIR
BTEX (Aromatics)	Fluxsense MeDOAS
Hydrogen Fluoride	Los Gatos Research H2SF-927





# Rule 1180 Program DQO Examples

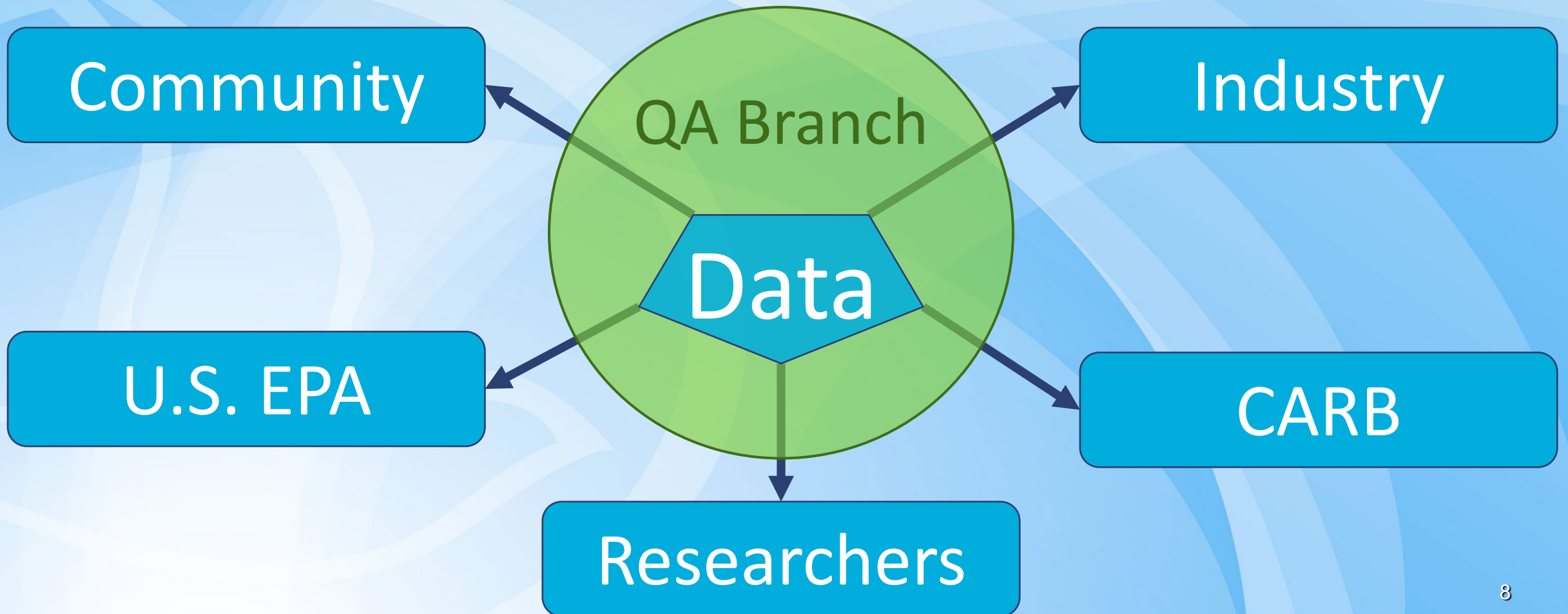
## Hydrogen Sulfide (H<sub>2</sub>S) Analyzer

Measurement Method	Operating Range	Collection Frequency	MDL	Completeness 5-Min, Hourly, Quarterly	Temperature Range
UV Fluorescence	0-500 ppb	1 minute	0.4 ppb	>90%	5-40 Degree C

QC Check	Level (ppb)	Frequency	Warning Criteria	Acceptance Criteria
Zero	0	Weekly	<+/-1.0 ppb	<+/-1.0 ppb
1-point Precision	10	Weekly	>+/-7.0%	<+/-10.1 %
Mid-Point	30	Weekly	>+/-7.0 %	<+/-10.1 %



# QA Oversight and Data Users







# Program Checklist

1. Program and Audit Info

2. Organizational Structure

3. Documentation and Training

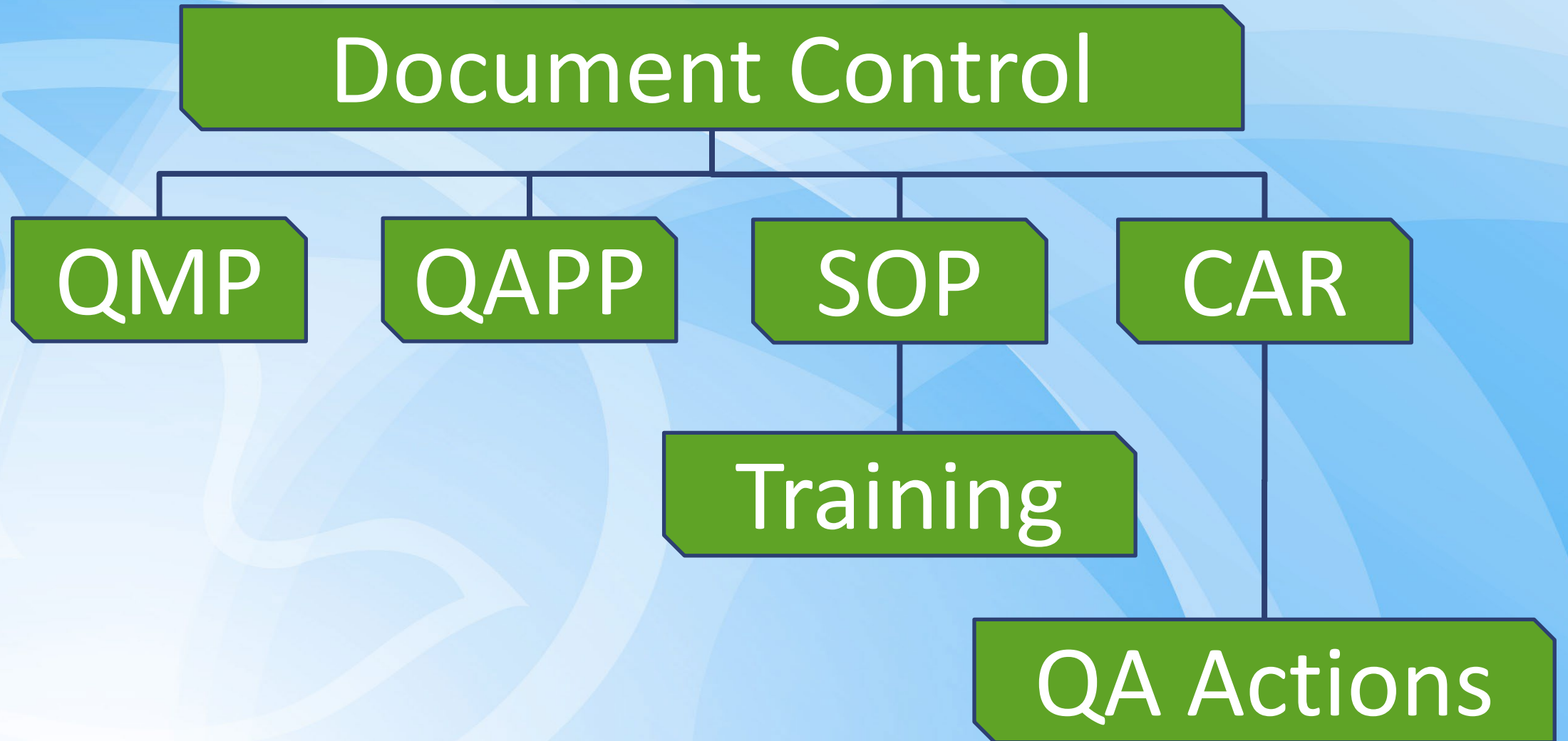
4. Records and Data

5. Data Validation

**Are the DQOs Being Satisfied?**



# Program Checklist





# Program Checklist

## Data Validation

Personnel and Responsibilities

Training

Activities

Frequency

Review

Verify

Validate



# Site Audit Checklist

1. Site Maintenance

2. Safety

3. Record Keeping

4. Instrument Operations

5. Siting Criteria

6. Findings and Observations



# Site Audit Checklist : Instrument Checks

SOP #:	SOP00142	
<u>Are flow checks performed monthly?</u> Last Flow Check Date & by whom:	Yes. 11/07/2023 J.C.	
<u>Frequency of calibration? (per SOP00142 every 6 months or as needed).</u> Record date of last calibration & by whom:	Every 6 months confirmed. 4/14/2023 R.P.	
Changed by-pass cartridge filter? (per SOP00142 annually or as needed)	<u>Yes. Annually on 12/06/2022</u>	
Other tests performed and date (i.e., Leakage Test, Optical Chamber Cleaning, ND Optical Filter Test, Inlet Leakage Test, Clean Air Test, Stability Test, Date/Time check, etc.):	4/14/2023 <ul style="list-style-type: none"> <li>Leak test</li> <li>Cleaned optical head</li> <li>Cleaned cyclone</li> </ul>	10/26/22 <ul style="list-style-type: none"> <li>Leak test</li> <li>Cleaned optical head</li> <li>Cleaned cyclone</li> <li>ND optical filter test</li> </ul>

# Creating the Site Audit Checklist

## Special Considerations

- New instruments
- New or unfinished SOPs
- Safety i.e. x-ray training



SCI Xact® 625i  
Ambient Continuous Multi-Metals Monitor

# Checklist Guidance

- Federal Programs
- Other Checklists
- Manuals and SOPs
- Operator Feedback
- Audit Experience

## 2 Site Audit

### 2.1 Site and Audit Information

AB 617 Community	East Los Angeles/Boyle Heights/
Site Name	Resurrection Church (RSCH)
Address	3324 Opal St, Los Angeles, CA 90011
Lat / Lon	34.022278, -118.205956
Elevation	223 feet MSL
QA Auditor (Name)	Matthew Prather, Raul Dominguez
Audit Date	11/29/2023

### 2.2 Site Maintenance and Housekeeping

Does the operator(s) keep the site neat and clean?	Yes
Is there adequate space to perform the needed operations?	Yes
Does the monitoring equipment appear to be well-maintained and free of dirt and debris, bird/animal/insect nests, excessive rust, and corrosion, etc.?	Yes
Are the walkways to the station and equipment kept free of tall grass, weeds, and debris?	Yes
Is/are the shelter(s) clean and in good repair?	Yes
Additional comments	None

### 2.3 Safety

Are personnel provided with safety equipment (e.g., first aid kits, fire extinguishers, hearing protection, carbon monoxide detectors)?	Yes.
Briefly describe safety equipment and its suitability and condition:	Extinguishers located in the back of the trailer. Certification date: 06/07/23. New first aid kit is in drawer. Ear protection (plugs) is available.
Is the station secure and locked? How is it secured?	Trailer is secured with a padlock on the door. Site is the Resurrection Church parking lot located up a steep slope from a street on the south. There is no security guard on site.
If an Xact Metal Monitor is at a site, is a radiation/X-ray safety sign affixed to the door of the shelter or somewhere else with high visibility?	Deficiency: No high-vis signage present.

#### Instrument Siting Criteria

Site Map: Sketch the site layout, label the various pollutant probe inlets, meteorological instrument probes/sensors, obstructions, shelters, nearby roadways, and other noteworthy site features. Note the compass orientation of the site. (North is up on satellite image below.)





# Site Audit: Resurrection Church Station

## Beta Testing the Checklist:

- Follow Checklist
  - Interview Operator
- Findings versus Observations
- Checklist Examination
- Repeat







# Ongoing Considerations

Checklist Development

Instrument PE Audits

SOP Development

QAPP Review

# Conclusion

- **Draft** Audit Checklist
  - New Program Documentation
  - Existing Program Resources
- **Test** Checklist
- **Follow** Corrective Action Process
- **Verify** QA Documentation





# Acknowledgement

## South Coast AQMD QA Group

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