



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

Air Monitoring at Refinery Fencelines

NACAA Spring Membership Meeting

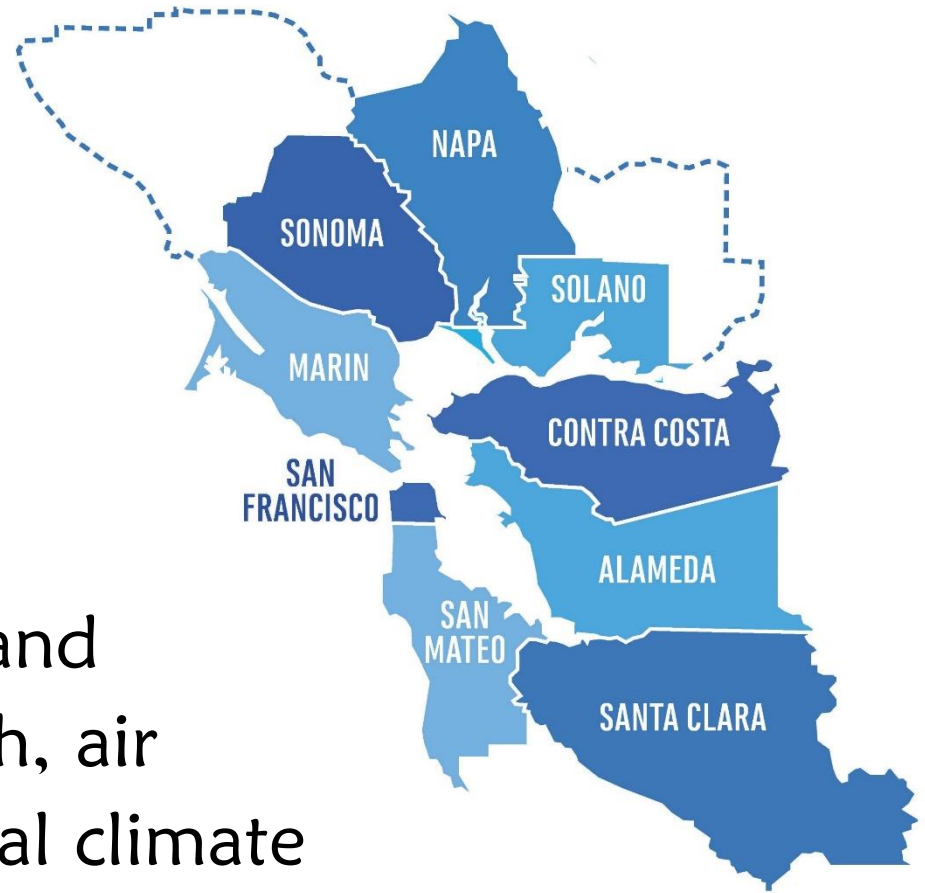
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- Bay Area Air Quality Management District
- Bay Area Refinery background
- Development of Refinery Strategy
- Goals of the Refinery Strategy
- Elements of fenceline monitoring rule that was developed
- Need and requirements for fenceline monitoring
- Tie-ins for future rulemaking

Bay Area Air Quality Management District (Air District)

- Established in 1955
60th anniversary in 2015
- 100+ cities
- 7 million people
- 5 million vehicles
- **Mission:** To protect and improve public health, air quality, and the global climate



Refinery Background

- Five refineries in the Bay Area
- Total capacity of 790,670 barrels/day as of Feb. 2016 ¹
- Two refineries currently operate open path fenceline systems
- Population continues to encroach upon refinery fencelines



¹ California Energy Commissions Fuels Office Staff - http://www.energy.ca.gov/almanac/petroleum_data/refineries.html



Development of the Overall Refinery Strategy

- Regulatory Concept paper (2012)
- Industrial Facility Accidental Releases Work Plan (2012)
- Reg. 12, Rule 15 development (2013 to adoption on April 20, 2016)
- Resolution Addressing Emissions from Bay Area Refineries (Oct. 2014)
- Refinery Emission Reduction Strategy (Dec. 2014 to present)
- Changes to permitting requirements (mid 2017)



Goals of the Refinery Strategy

- Reduce harmful emissions both regionally and within nearby communities
- Perform monitoring to measure impacts and identify potential opportunities to reduce emissions
- Limit emissions and protect health
- Ensure refinery operation changes will not increase health burden and ensure best practices over time





Rule 12-15 Elements

- **Annual emissions inventories** of all regulated air pollutants based on upgraded methods, including emissions from cargo carriers
- **Crude oil composition characteristics** with annual emissions inventories (e.g. volume, vapor pressure, sulfur, API gravity, BTEX, metals)
- **Enhance fence line monitoring systems** (community air quality monitoring systems to be established and operated by the Air District and paid for by refineries through fees)



Need for Fenceline Monitoring

- Monitoring focusing on sources
 - SO_2
 - Refinery MACT
- Communities raised concerns about near-field health impacts
- Bay Area and Southern California studies indicate emissions inventory and measurements don't agree
- Studies indicate fugitive emissions higher than previously estimated

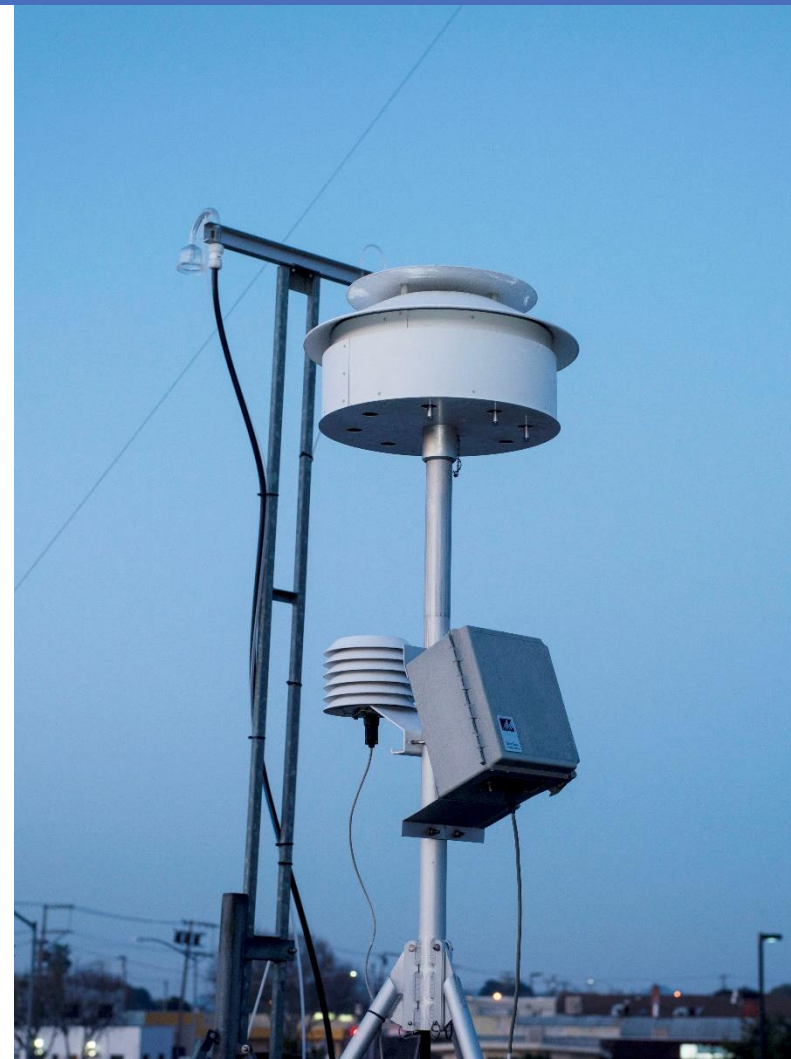
Rule 12-15: Fenceline Monitoring

- Enhance fenceline monitoring systems
- Requires refineries to establish fenceline monitoring in accordance with guidance provide by the Air District
- Defines compounds measured, time frames for installation and allows for public input
- Requires website display of data



Specific Requirements

- Requires open path technologies to measure potential impacts on nearby populations
- Plan requires refineries to justify use of technologies and compounds measured/not measured
- Requires specific amount “up time”
- Requires development of a Quality Assurance Project Plan
- Website must provide “context” and provide access to historical data



Regulation 12, Rule 15 Tie-ins to Future Actions

- Additional crude oil composition characteristics ties into permitting actions
- Continue to improve inventories, achieve additional reductions and reduce risk