Public Scoping Meeting for Potential Amendments to

District Rule 4460
(Petroleum Refinery Fenceline Air Monitoring)

District Rule 3200
(Petroleum Refinery Community Air Monitoring Fees)

February 1, 2022

webcast@valleyair.org
Assembly Bill (AB) 1647

• As part of Assemblymember Al Muratsuchi’s bill package, AB 1647 approved by the Governor of California on October 8, 2017
  – Created due to safety incidents at large refineries in Bay Area and South Coast
• AB 1647 requires:
  – Petroleum refineries develop, install, operate and maintain a fenceline air monitoring system at and near refineries in accordance to guidance developed by CARB and local air district
  – Air districts design, develop, install, operate and maintain a refinery-related community air monitoring system
  – Real-time data be made accessible to the public
• District adopted Rule 4460 and Rule 3200 in December 2019 through public process to implement requirements of AB 1647
Current District Rule 4460

• Requires refineries to install, operate, and maintain fenceline air monitoring systems and make data collected by these systems publicly available
• Exempts refineries not currently engaged in refining crude oil

<table>
<thead>
<tr>
<th>Petroleum Refinery Capacity (barrels per day)</th>
<th>Equipment for Fenceline Air Monitoring System</th>
<th>Pollutants to be Considered in Monitoring Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 40,000</td>
<td>Point monitoring or open path system</td>
<td>Sulfur dioxide, hydrogen sulfide, BTEX compounds (benzene, toluene, ethylbenzene and xylene)</td>
</tr>
<tr>
<td>40,000 or greater</td>
<td>Open path system and point monitoring, as needed</td>
<td>Sulfur dioxide, nitrogen oxides, total VOCs, BTEX compounds, formaldehyde, acetaldehyde, acrolein, 1,3 butadiene, styrene, hydrogen sulfide, carbonyl sulfide, ammonia, hydrogen cyanide, hydrogen fluoride, black carbon</td>
</tr>
</tbody>
</table>
Current District Rule 3200

• As mandated by AB 1647, recovers District costs of developing and maintaining refinery-related community air monitoring system
• Community monitoring approach and fees based on establishing community air monitoring station with variety of sensors that measure range of possible pollutants and parameters
Reasons for Proposed Amendments

• Recent Fresno County Superior Court ruling (September 2021) provides additional clarification on statutory requirements under AB 1647

• Issues that need to be addressed include:
  – Removal of exemption for affected (“petroleum”) facilities not currently engaged in refining crude oil
  – Re-evaluation and additional supporting analysis with respect to monitoring provisions for petroleum refineries with a refining capacity of less than 40,000 barrels per day (currently requires monitoring for six specific pollutants)

• In response to court order, the District is beginning a public process to develop amendments and additional technical analysis for Rule 4460 and Rule 3200
Fenceline Monitoring Guidance

• In developing guidance, AB 1647 requires the District to
  – Take into account monitoring technological capabilities
  – Incorporate input from affected parties
  – To extent feasible, shall be informed by the Refinery Emergency Air Monitoring Assessment Report (REAMAR) and the Office of Environmental Health Hazard Assessment (OEHHA) report “Analysis of Refinery Chemical Emissions and Health Effects”
Refinery Emergency Air Monitoring Assessment Report

- California Air Resources Board (CARB) and California Air Pollution Control Officers Association (CAPCOA) prepared California Refinery Emergency Air Monitoring Assessment Report (REAMAR) to improve air monitoring and emergency response for refineries
- **1st Report (Objective 1: Delineation of Existing Capabilities)**
  - Provides inventory of emergency air monitoring assets and capabilities for refineries in California
- **2nd Report (Objective 2: Evaluation of Air Monitoring Capabilities, Gaps, and Potential Enhancements)**
  - Provides recommendations to improve emergency and routine air monitoring at refineries and in surrounding communities
  - Recommendations cover air monitoring technology, modeling, and coordination
As companion to REAMAR, Office of Environmental Health Hazard Assessment (OEHHA) prepared “Analysis of Refinery Chemical Emissions and Health Effects” report (September 2017)

- Presents list of chemicals emitted from California refineries, and identifies 16 top candidates for air monitoring, taking into account emissions levels and toxicity

- Acetaldehyde
- Ammonia
- Benzene
- 1,3-butadiene
- Cadmium
- Diethanolamine
- Formaldehyde
- Hydrogen Sulfide
- Manganese
- Naphthalene
- Nickel
- PAHs
- PM
- Sulfur Dioxide
- Sulfuric Acid
- Toluene
Air Monitoring Equipment Considerations

• Types of air monitoring equipment
  – Point monitoring
  – Open-path

• Varying Capabilities
  – Detection Limits
  – Single to multiple pollutants

• Some pollutants can only be measured through collecting samples and sending it to laboratory for analysis

• Certain pollutants may not have monitoring methodology established

• Varying maintenance requirements

• Broad range of cost
Air Monitoring Technology

Point Monitoring Technology

Open Path Monitoring Technology
Crude Oil Refining Capacity by Air District (CEC 2021)

Crude Oil Processing Capacity (barrels per day)

- South Coast
- Bay Area
- San Joaquin Valley

California Air District
## San Joaquin Valley Petroleum Refining Operations

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Location</th>
<th>Processing Capacity (barrels/day)</th>
<th>Status of Refining (2021 CEC Report)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bakersfield Renewable Fuels (Alon)</td>
<td>Rosedale Highway, Bakersfield, CA</td>
<td>66,000</td>
<td>Non-Refining</td>
</tr>
<tr>
<td>San Joaquin Refining Company</td>
<td>Shell Street, Bakersfield, CA</td>
<td>15,000</td>
<td>Operational</td>
</tr>
<tr>
<td>Kern Oil &amp; Refining Co.</td>
<td>Panama Lane, Bakersfield, CA</td>
<td>26,000</td>
<td>Operational</td>
</tr>
<tr>
<td>Tricor Refining, LLC</td>
<td>Manor Street, Bakersfield, CA</td>
<td>12,500</td>
<td>Non-Refining</td>
</tr>
</tbody>
</table>
San Joaquin Refining Co.

- Independent oil refining company located in Bakersfield, CA
- One of smallest refineries in state
- Distribution network ships products for a variety of industries through the Port of Los Angeles
- Majority of product used in asphalt production
- Also serves industries with applications for diesel fuel, drilling fluids, fuel additives, hydraulic fluids, lubricants, tires, etc.
Kern Oil & Refining Co.

- Independent oil refining company located in Bakersfield, CA
- Produces gasoline and diesel (key supplier for Southern San Joaquin Valley)
- Co-processes and blends various biofuels with fossil fuel production process
Bakersfield Renewable Fuels (Alon)

- Currently not refining petroleum
- Facility currently being modified into renewable fuel production
  - Feedstocks will include vegetable oil and animal fats
  - Currently conducting fenceline monitoring of weather conditions, NH3, and H2S
Tricor Refining LLC

• Currently not refining petroleum
• Only receiving, storing, and shipping of various petroleum products, and production of air-blown asphalt
Air Quality Regulations – Petroleum Refineries

• Valley petroleum refineries subject to multiple District rules, shown to be most stringent rules feasible for implementation
• Refineries subject to variety of performance standards under local, state, and federal regulations to reduce emissions of air pollutants
  – Refineries required to continuously monitor for leaks
  – Ongoing reporting required
  – Regular District inspections to ensure compliance
• Various federal New Source Performance Standards apply to new and modified equipment at refineries
  – Subparts J and Ja Standards of Performance for Petroleum Refineries
  – Subparts K, Ka, Kb Volatile Organic Liquid Storage Vessels
  – Subpart XX Bulk Gasoline Terminals
  – Subpart GGG and GGGa Equipment Leaks of VOC at Petroleum refineries
  – Subpart QQQ VOC Emissions from Refinery Wastewater Systems
Air Quality Regulations – Petroleum Refineries (cont’d)

• Valley petroleum refineries subject to stringent District regulations, including:
  – Rule 2201 – New and Modified Stationary Source Review Rule
  – Rule 4101 – Visible Emissions
  – Rule 4012 – Nuisance
  – Rule 4311 – Flares
  – Rules 4305 – 4307, 4320, 4351 – Boilers, Steam Generators, and Process Heaters
  – Rule 4453 – Refinery Vacuum Producing Devices or Systems
  – Rule 4454 – Refinery Process Unit Turnaround
  – Rule 4454 – Components at Refineries, Gas Liquids Processing Facilities, and Chemical Plants
  – Rule 4623 – Storage of Organic Liquids
  – Rule 4624 – Transfer of Organic Liquid
  – Rule 4651 – Soil Decontamination Operations
  – Rules 4701 and 4702 – Internal Combustion Engines
  – Rule 4703 – Stationary Gas Turbines
Key Issues for Consideration

• What approach and type of equipment should be used for refinery fenceline air monitoring?
• What pollutants should be monitored?
• Other questions or input?
Next Steps: Public Engagement Process for Refinery Fenceline and Community Air Monitoring Rule Development

- **Public Scoping Meeting**
  - February 1, 2022

- **Public Workshop(s)**
  - TBD 2022

- **Publication of Proposed Rule**
  - TBD 2022

- **Governing Board Public Hearing**
  - TBD 2022

Public Participation and Comment Invited throughout Process
Contact

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Visit https://ww2.valleyair.org/about/sign-up/ to sign up for the District’s Petroleum Refineries Listserv for updates
Comments/Questions

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