



**Proposed Amended Rule 1173 - *Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants***

WORKING GROUP MEETING #1  
FEBRUARY 28, 2024 – 3:00 PM

**Zoom Meeting:** <https://scaqmd.zoom.us/j/95683547797>

Meeting ID: 956 8354 7797

# Agenda

Background

Facilities Regulated Under Rule 1173

Rule Development Process

Next Steps

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# Current Rule 1173 Requirements



Source: <https://www.hpc-industrial.com>

Certain facilities must implement a Leak Detection and Repair (LDAR) program

- Clearly identify components such as valves, pumps, compressors, and others in VOC service capable of leaks
- Daily audio/visual checks and quarterly leak inspections of components
- Repair leaks within specified timeframe
- Submit reports of leak inspections
- Notify South Coast AQMD of certain pressure relief device (PRD) releases

# Current Leak Standards

- Light liquid leaks
  - More than three drops per minute
- Vapor leaks for components
  - Light liquid/gas/vapor service: > 50,000 ppm
  - Heavy liquid service: > 500 ppm
- Certain leaks over a continuous 24-hour period:
  - Light liquid service: > 10,000 ppm
  - Atmospheric PRDs: > 200 ppm
  - Pumps in heavy liquid service: > 100 ppm
- Open-ended lines and end valves must have a blind flange, plug, cap, or a second closed valve



Source: <https://thermofisher.com>

# Current Repair Periods

Types of Leak	Time Period (calendar days)	Extension (calendar days)
<ul style="list-style-type: none"> <li>Light liquid/gas/vapor component leaks greater than 500 ppm but no more than 10,000 ppm</li> <li>Heavy liquid component leaks greater than 100 ppm but no more than 500 ppm</li> </ul>	7	7
<ul style="list-style-type: none"> <li>Heavy liquid leak greater than 3 drops per minute and greater than 100 ppm but no more than 500 ppm</li> </ul>	7	Not eligible
<ul style="list-style-type: none"> <li>Any leak greater than 10,000 ppm but no more than 25,000 ppm</li> <li>Atmospheric PRD leaks greater than 200 ppm but no more than 25,000 ppm</li> </ul>	2	3
<ul style="list-style-type: none"> <li>Any leak greater than 25,000 ppm</li> <li>Heavy liquid component leaks greater than 500 ppm</li> <li>Light liquid leaks greater than 3 drops per minute</li> </ul>	1	Not eligible

# Rule 1173 History

- Originally adopted in **1989**
  - Integration of existing Rules 466, 466.1 & 467
- Subsequently amended five times:
  - **1990**: Administrative changes to meet U.S. EPA criteria for inclusion with the State Implementation Plan (SIP)
  - **1994**: Additional SIP administrative changes
  - **2002**: Implementation of control measures FUG-04 and FUG-05 from the 1999 Air Quality Management Plan (AQMP), including:
    - Reduce leak threshold for light liquid/gas/vapor service from 1,000 to 500 ppm
    - Reduce allowable repair time for components with limited allowance for extra time
  - **2007**: Applicability expanded to include re-refiners and marine terminals and other changes
  - **2009**: Administrative and typographical changes

<https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1173.pdf>

# 2022 AQMP



- Adopted in 2022 to meet new 2015 U.S. EPA National Ambient Air Quality Standards (NAAQS) for ground-level ozone
- Includes control measure FUG-01 – Improved Leak Detection and Repair
  - Measure to implement the use of advanced leak detection technologies including **optical gas imaging** devices (OGI), **open path** detection devices, and **gas sensors** for earlier detection of VOC emissions from leaks
- Includes references to “contingency measures” to comply with both state and federal Clean Air Acts

<https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan>

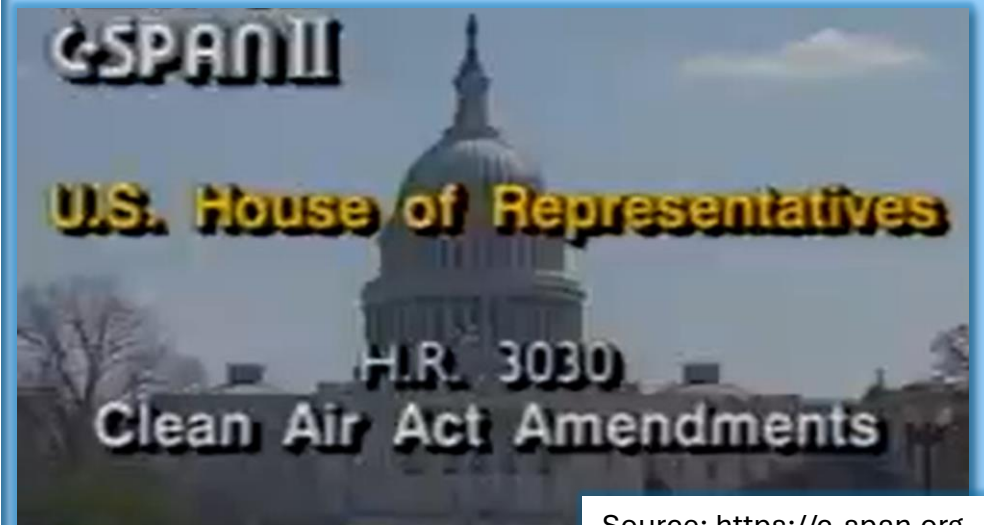


# Federal Clean Air Act

- The Clean Air Act contains “nonattainment plan provisions” in the event NAAQS are not met
- 42 USC §7502 (c)(9) requires contingency measures to be included in plans, such as the 2022 AQMP:
  - Implementation of specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national primary ambient air quality standard

<https://www.govinfo.gov/content/pkg/USCODE-2021-title42/pdf/USCODE-2021-title42-chap85-subchapl-partD-subpart1-sec7502.pdf>

- Contingency measures now included in some South Coast AQMD rulemaking



Source: <https://c-span.org>

# State Assembly Bill 617 (AB 617)

- Addresses air pollution impacts in environmental justice communities through implementation of Community Emission Reductions Plans (CERPs)
- Commits South Coast AQMD to assess technology and adopt or amend rules that apply Best Available Retrofit Control Technology (BARCT)
- CERP for Wilmington, Carson, West Long Beach (WCWLB)<sup>1</sup> lists specific PAR 1173 objectives
- CERPs for South Los Angeles (SLA)<sup>2</sup> and Southeast Los Angeles (SELA)<sup>3</sup> reference Rule 1173 (violations)

<sup>1</sup>WCWLB CERP, <https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/wilmington/cerp/final-cerp-wcwlb.pdf>

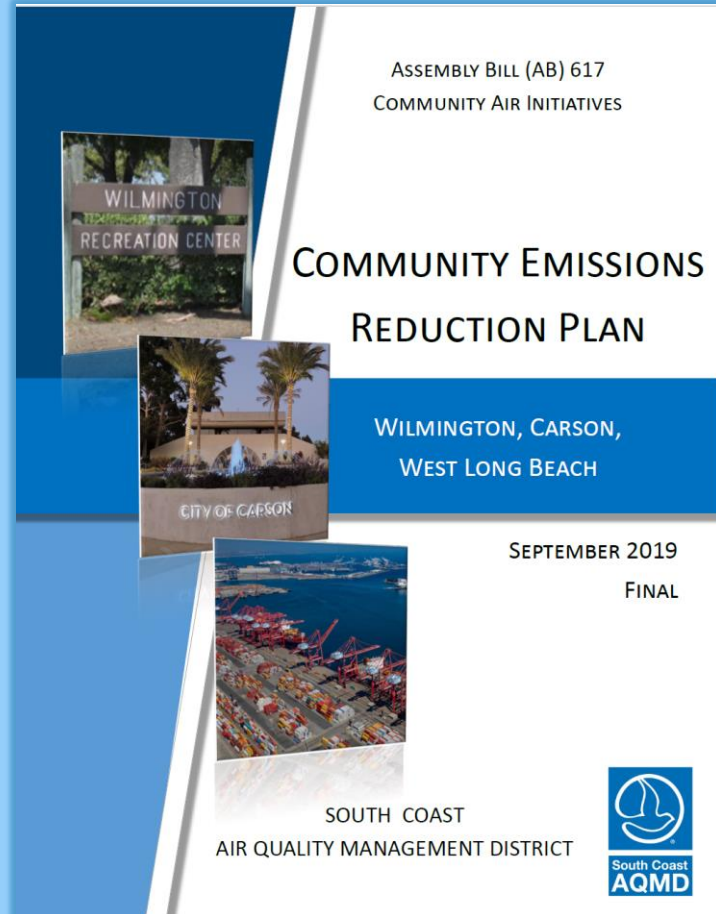
<sup>2</sup>SLA CERP, <https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/south-la/final-cerp.pdf>

<sup>3</sup>SELA CERP, <https://www.aqmd.gov/docs/default-source/ab-617-ab-134/steering-committees/southeast-los-angeles/final-cerp/final-cerp.pdf>



Source: <https://www.arb.ca.gov>

# WCWLB CERP



## Objectives:

- Evaluate feasibility to amend Rule 1173 to reduce emissions and require additional monitoring
- 50% VOC reduction at refineries achieved through amendments to rules (including Rule 1173), as well as more rapid leak detection and response enabled by advanced air measurements
- Establish Smart LDAR techniques to identify, quantify, and locate leaks in real-time allowing for faster repair of equipment
- For oil drilling and production sites, consider sensitive land use, new technology, leak thresholds, reporting, and root cause analysis

# BARCT Implementation

- Health & Safety Code section 40406 defines BARCT as:  
... an emission limitation that is based on the maximum degree of reduction achievable, taking into account environmental, energy, and economic impacts by each class and category of source.
- BARCT must adhere to Health and Safety Code section 40920.6 where:  
Cost-effectiveness and incremental cost-effectiveness must be determined for each progressively more stringent potential control option
- Staff to conduct a BARCT assessment evaluating proposed control options and to include a cost-effective and incremental cost-effective analysis where appropriate



# Concept #1 – Smart LDAR

- Smart LDAR uses technologies such as optical gas imaging (OGI), open path (OP) methods, and other advanced sensors
- South Coast AQMD Rule 1178 – *Further Reductions of VOC Emissions from Storage Tanks at Petroleum Facilities* amended in 2023 and now includes OGI inspection requirements
- OGI also being considered in South Coast AQMD Rule Proposed Amended Rule (PAR) 1148.1 – *Oil and Gas Production Wells*



Source: <https://flir.com>

# Concept #2 – Leak Thresholds

## Proposed Updates to BACT Guidelines

Board Meeting

February 2, 2024



BAY AREA AIR QUALITY  
MANAGEMENT DISTRICT

A HEALTHY BREATHING ENVIRONMENT FOR EVERY BAY AREA RESIDENT



San Joaquin Valley  
AIR POLLUTION CONTROL DISTRICT



air pollution control district  
SANTA BARBARA COUNTY

- Rule 1173 currently prohibits leaks greater than 500 ppm for heavy liquid service and greater than 50,000 ppm for light liquid/gas/vapor service
- Recently approved South Coast AQMD Best Available Control Technology (BACT) sets a 200 ppm LAER/BACT gas/vapor and light liquid service leak standard for new or modified sources, except for pumps, compressors, and drains
- Bay Area AQMD Rule 8-18-300 prohibits use of equipment that leaks VOCs in excess of 100 ppm for most equipment categories and sets a 10,000 ppm VOC leak standard for essential equipment
- San Joaquin Valley APCD Rules 4409 and 4455 classify a *minor* VOC gas leak as between 100 to 10,000 ppm depending on component type and a *major* VOC gas leak as greater than 10,000 ppm
- Santa Barbara APCD BACT Guideline 1.2 lists a 100 ppm LDAR performance standard for oil and gas components and their Rule 331 defines a *major* gas leak as more than 10,000 ppm

# Concept #3 – Contingency Measures

- The approved 2022 AQMP requires South Coast AQMD to include contingency measures in rulemaking
- In 2023, U.S. EPA released draft guidance regarding contingency measures:
  - Triggered if area fails to attain NAAQS by attainment date or fails to make reasonable further progress (RFP) towards attainment
  - Contingency measures should take effect within 60 days of being triggered
  - Emission reductions associated with contingency measures should occur within one to two years

<https://www.epa.gov/system/files/documents/2023-03/CMTF%202022%20guidance%203-17-23.pdf>

- For PAR 1173, measures under consideration may include more frequent leak inspections, lower leak thresholds, or other provisions in the event of non-attainment with NAAQS

DRAFT – 3/17/23 – PUBLIC REVIEW VERSION

DRAFT: Guidance on the Preparation of State Implementation Plan Provisions that Address the Nonattainment Area Contingency Measure Requirements for Ozone and Particulate Matter

U.S. Environmental Protection Agency  
Office of Air Quality Planning and Standards  
Air Quality Policy Division

March 16, 2023

# Concept #4 – Natural Gas Exemption



Source: <https://socalgas.com>

- Rule 1173 currently exempts from its applicability, components exclusively handling commercial natural gas, defined as > 80% methane by volume
- Methane and ethane, primary components of natural gas, considered VOC-exempt compounds per Rule 102
- Methane identified as a potent greenhouse gas (GHG)
- Fugitive methane emissions regulated under South Coast AQMD Rule 1150.1 – *Control of Gaseous Emissions from Municipal Solid Waste Landfills*
- 2022 AQMP references co-benefits for GHG programs
- PAR 1173 to consider removing exemption for some or all components in commercial natural gas service



# Concept #5 – Applicability

- Rule 1173 currently applies to seven types of facilities (to be discussed later in this presentation)
- Natural gas pipelines and storage fields are not currently within the scope of Rule 1173
  - South Coast AQMD staff have responded to multiple complaints related to natural gas pipelines and storage fields
  - Enforcement action under Rule 402 *Nuisance*
- PAR 1173 to consider including aboveground components of pipelines and storage fields that contain VOCs



Source: <https://westvirginiawatch.com/>

# Concept #6 – Language Updates

ATTACHMENT D

## Proposed Amended Rule 102: Definition of Terms

Governing Board Meeting  
January 10, 2020

### Proposed Amendment

Add "South Coast AQMD" to  
Rule 102 – Definition of Terms

Enhances the identification of the  
agency in an abbreviated form

- **Definitions:** Updates to terms designed to clarify meaning
- **Throughout:** General updates to rule language for consistency

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# Applicability

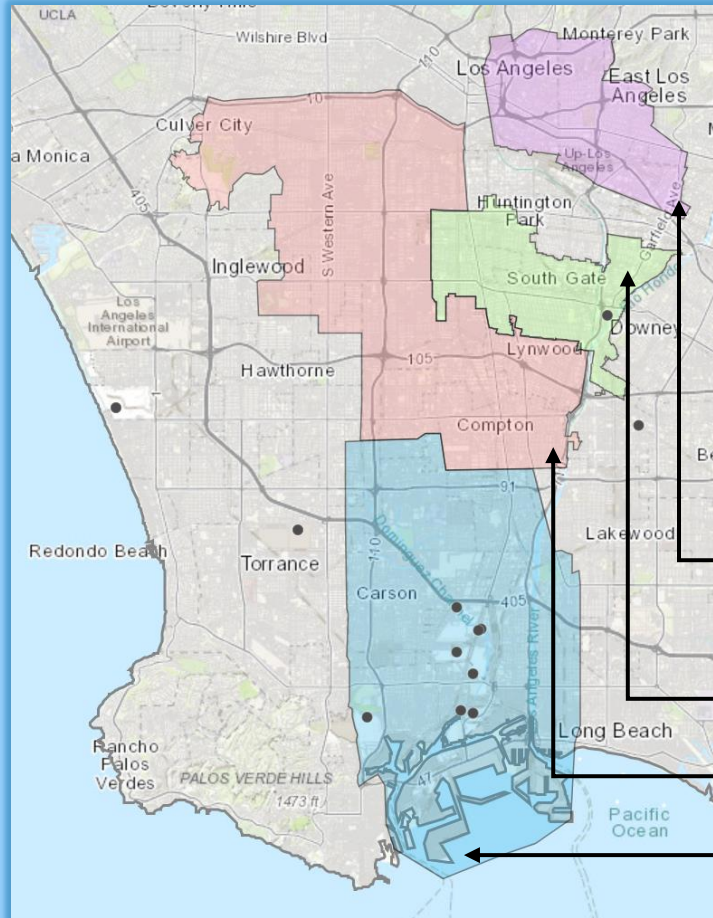
Rule 1173 applies to:

1. Refineries
2. Chemical Plants
3. Lubricating Oil and Grease Re-refiners
4. Marine Terminals
5. Oil and Gas Production Fields
6. Natural Gas Processing Plants
7. Pipeline Transfer Stations



Sources: <https://dailybreeze.com>, <https://evonik.com>  
<https://facebook.com>, <https://ocimf.org>  
<https://northescambia.com>, <https://capitalandmain.com>

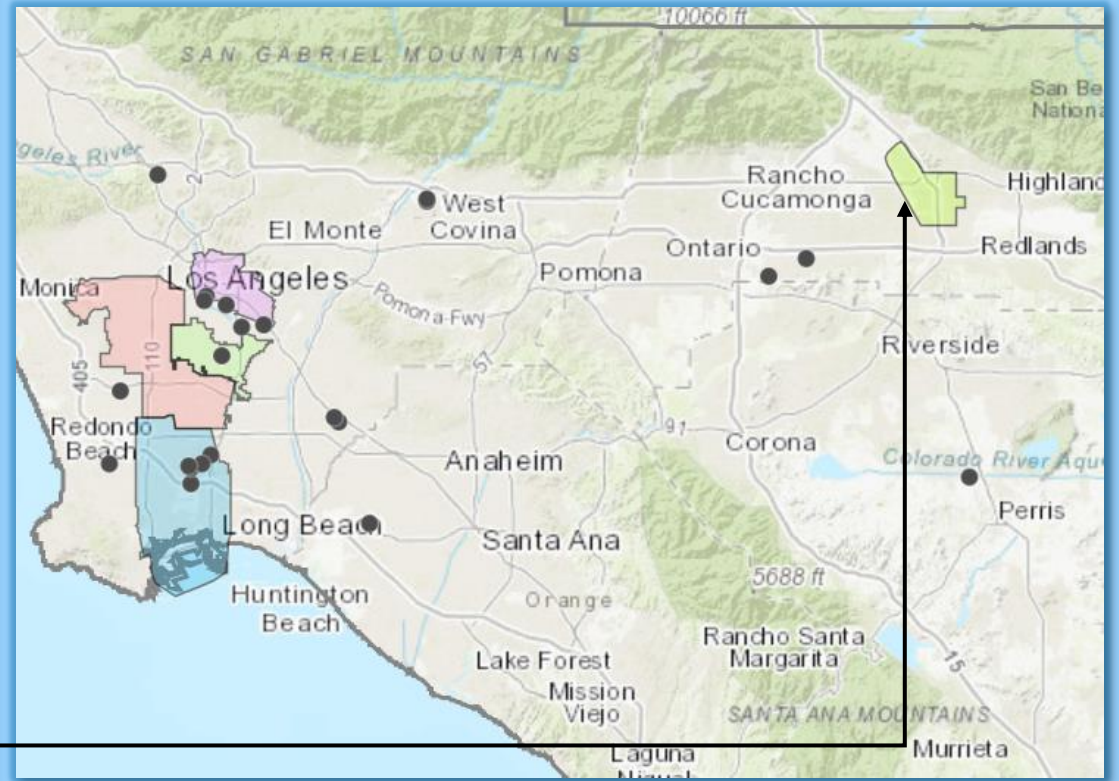
# Refineries



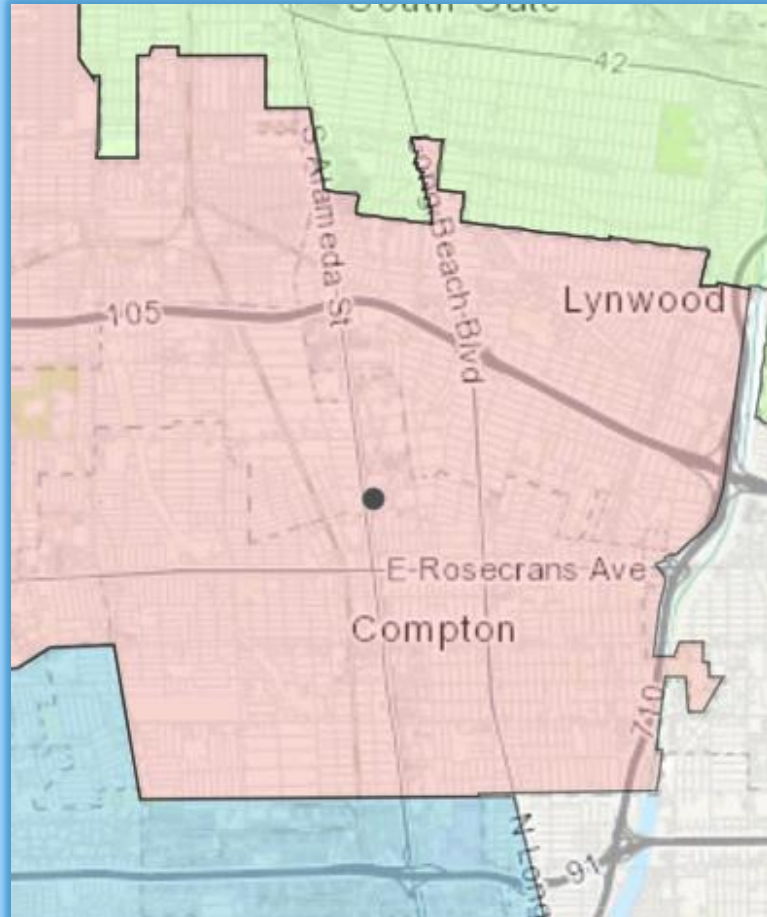
- Definition (abridged):
  - REFINERY is a facility that processes petroleum
- Includes facilities that produce gasoline, diesel, other fuels, asphalt, or hydrogen as well as sulfur recovery plants
- Within some AB617 communities:
  - East Los Angeles, Boyle Heights, West Commerce (ELABHWC)
  - Southeast Los Angeles (SELA)
  - South Los Angeles (SLA)
  - Wilmington, Carson, West Long Beach (WCWLB)

# Chemical Plants

- Definition (abridged):
  - CHEMICAL PLANT is any facility engaged in producing chemicals, and/or manufacturing products by chemical processes
- In the South Coast AQMD Annual Emissions Reporting (AER) database, at least 22 facilities identify as “Chemical Plants”
  - Three in AB 617 communities
  - Identification of applicable chemical plants is ongoing and the number may change
- AB617 community of San Bernardino & Muscoy (SBM)



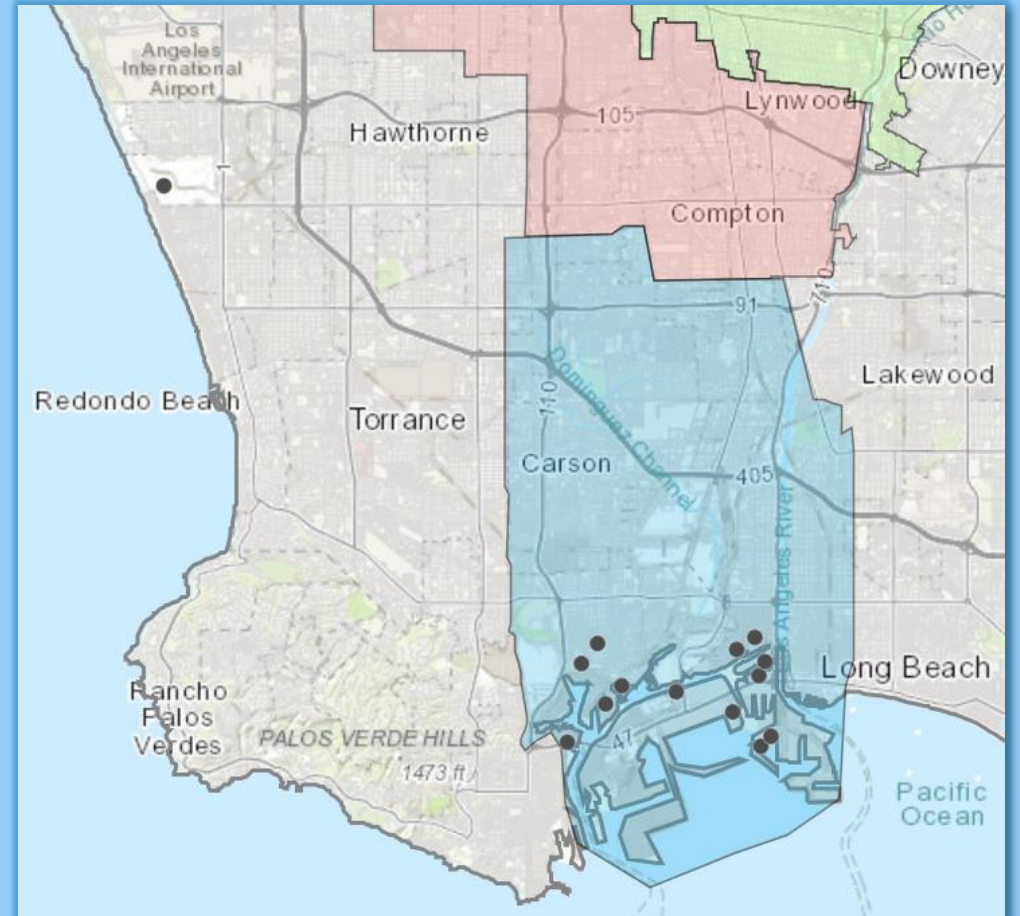
# Lubricating Oil and Grease Re-refiners



- Definition (abridged):
  - LUBRICATING OIL AND GREASE RE-REFINER is a facility engaged in the blending, compounding, and re-refining of lubricating oils and greases from purchased mineral, animal, and vegetable materials
- Staff identified one facility located within SLA community

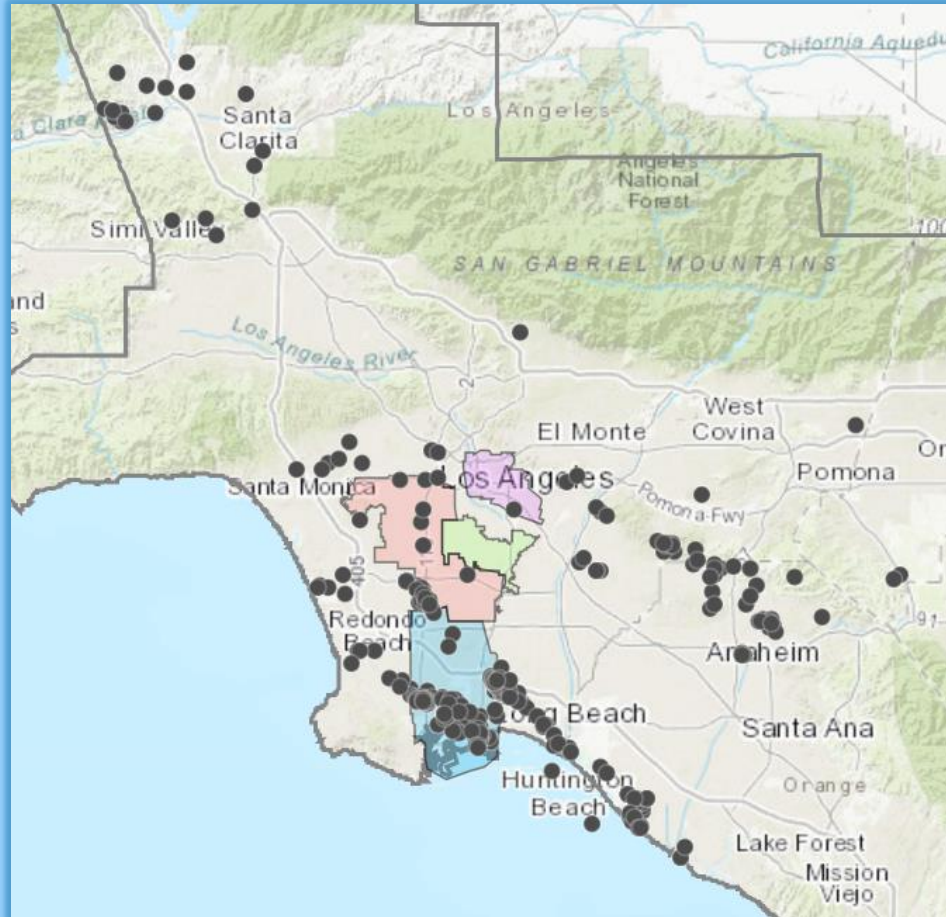
# Marine Terminals

- Definition (abridged):
  - MARINE TERMINAL is a facility, equipment or structure constructed to handle the loading or unloading of organic liquid into or out of marine tank vessels
- Staff identified 15 active marine terminals
  - 14 facilities located within the WCWLB community





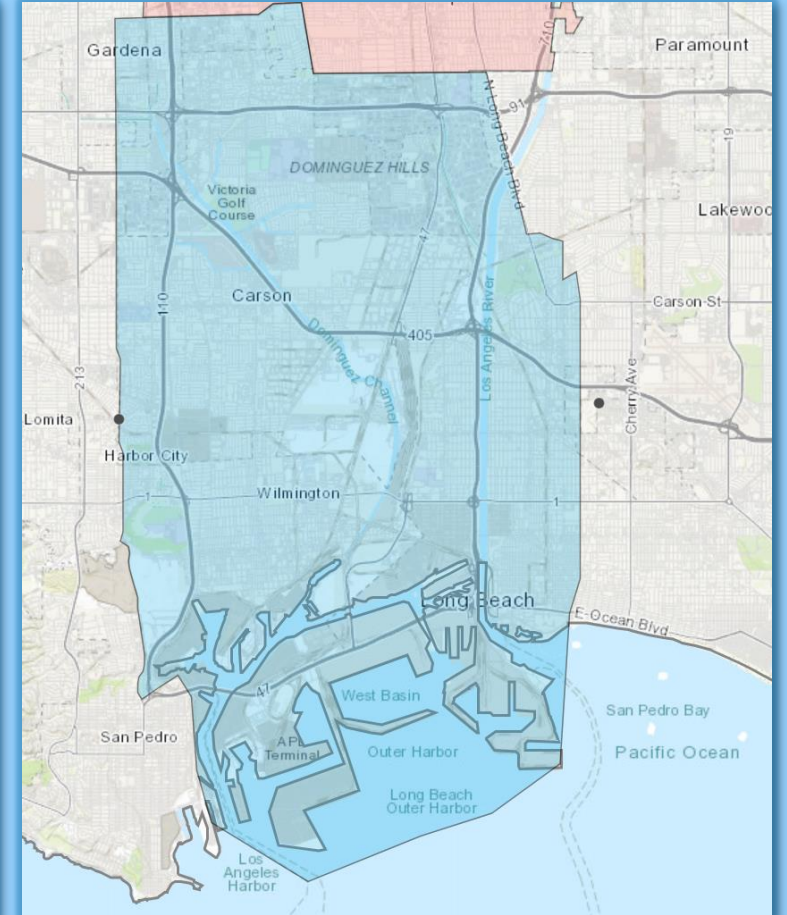
# Oil and Gas Production Fields



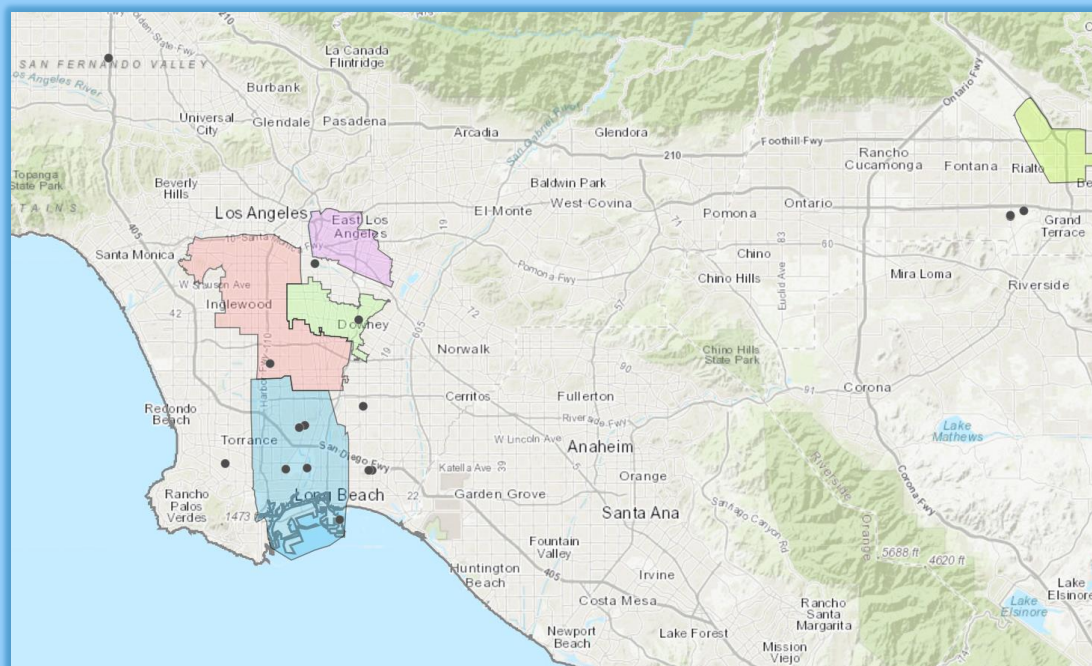
- Definition (abridged):
  - OIL AND GAS PRODUCTION FIELD is a facility on which crude petroleum and natural gas production and handling are conducted
- Approximately 323 oil and gas production fields operate within South Coast AQMD and are located in Los Angeles, Orange, and San Bernardino counties

# Natural Gas Processing Plants

- Definition (abridged):
  - NATURAL GAS PROCESSING PLANT is a facility engaged in the separation of natural gas liquids from field gas and/or fractionation of the liquids into natural gas products, such as ethane, propane, butane, and natural gasoline
- Staff identified two facilities within South Coast AQMD as potential natural gas processing plants



# Pipeline Transfer Stations



- Definition:
  - PIPELINE TRANSFER STATION is a facility which handles the transfer and storage of petroleum products or crude petroleum in pipelines
- Staff identified 16 facilities within South Coast AQMD as potential pipeline transfer stations

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# Overview of Rule Development Process

Working Group Meetings and stakeholder meetings throughout process

Information  
Gathering and  
Analysis

Initial Rule  
Concepts

Public  
Workshop

- Preliminary Draft Rule Language and Staff Report

Draft Rule  
Language and  
Staff Report

Public Hearing

Note: Staff is available throughout rule development to meet with stakeholders via telephone, email, virtually, or face-to-face

# Information Gathering

- Information gathering and analysis occurs throughout rulemaking
  - Initial data gathering is already underway to identify potential affected facilities and equipment
  - Additional information to be gathered from stakeholders, facilities, and vendors
- Data collected and analysis will be presented at subsequent Working Group Meetings



Source: <https://contentsnare.com/>

# Working Group Meetings

- Working Group meetings are open to the public and held throughout the rulemaking process

## **Objectives:**

- 1) Increase understanding of complex terms, work practices, and technology
- 2) Build consensus and work through challenges with robust discussion
- 3) Provide input regarding concerns and solutions



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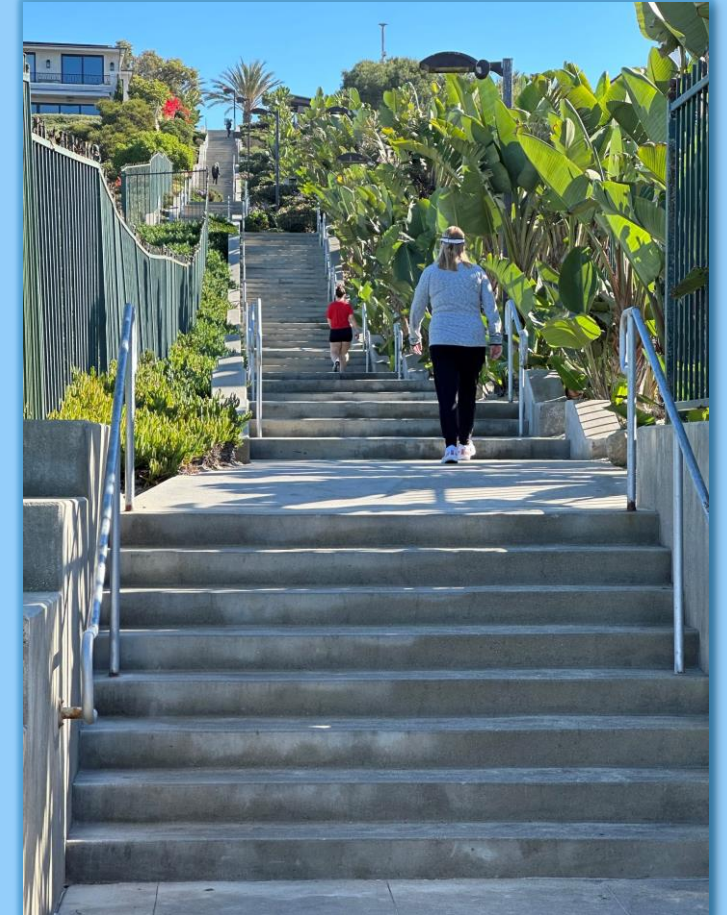
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# Next Steps

Milestone	Projected Date
Working Group Meeting #2	March 2024
Public Workshop	Summer 2024
Set Hearing	Summer/Fall 2024
Public Hearing	Fall 2024



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