



**BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT**

Proposed Amendments to Regulation 8: Organic Compounds, Rule 8: Wastewater Collection and Separation Systems

**Board of Directors Meeting
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Presentation Outcome



- Board consideration of the adoption of proposed amendments to Regulation 8: Organic Compounds, Rule 8: Wastewater Collection and Separation Systems (Rule 8-8) and adoption of California Environmental Quality Act (CEQA) Negative Declaration.

Requested Action



Consider adoption of proposed amendments to Rule 8-8 and adoption of a CEQA Negative Declaration.

Presentation Outline



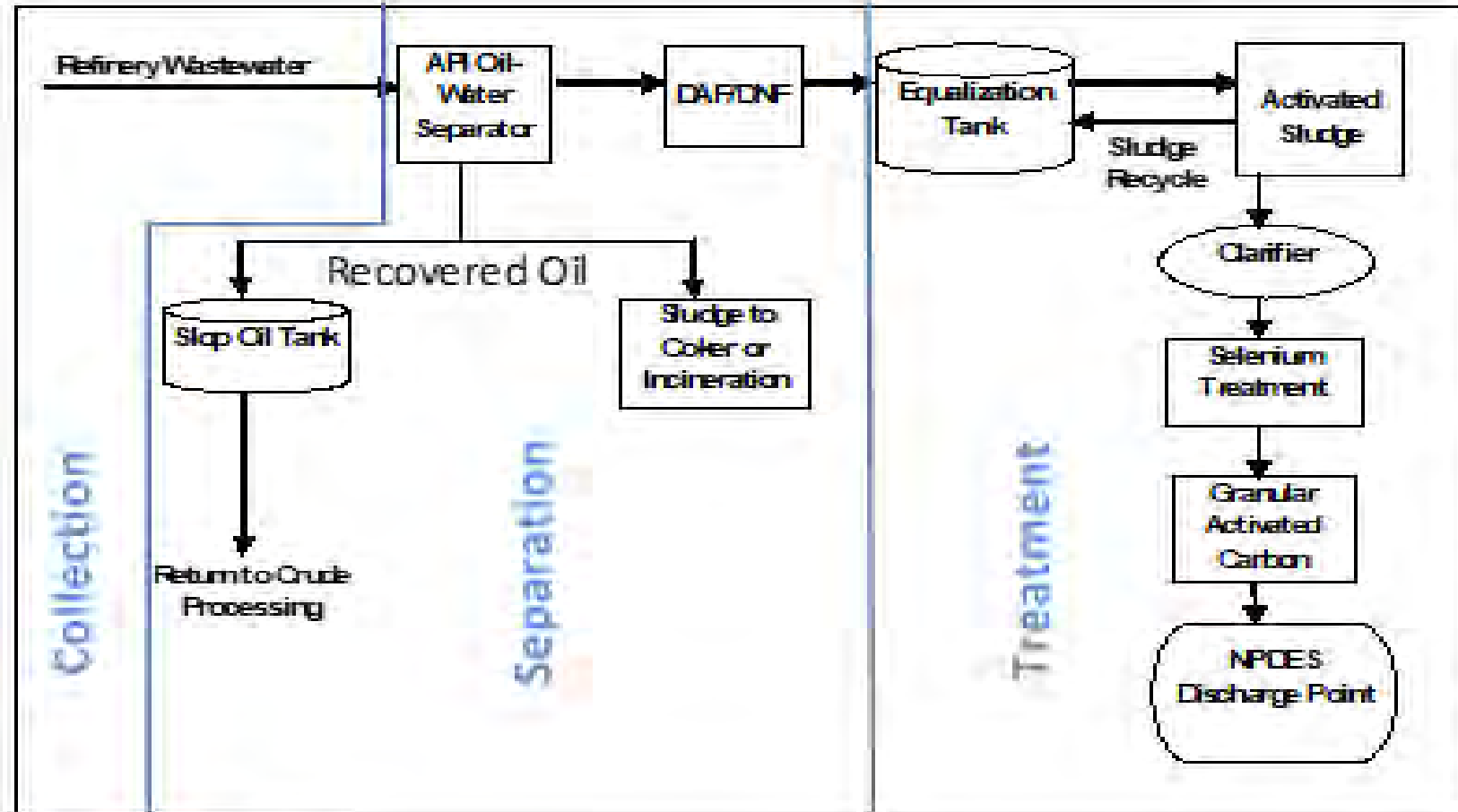
- Background
- Purpose of Amendments
- Rule Development Process
- Proposed Amendments
- Impacts of Rule Amendments
- Public Comments
- Resolution and Recommendation

Background



- Rule 8-8 limits organic compound emissions from wastewater collection and separation systems from refinery and other non-refinery industrial processes.
- The San Francisco Bay Area does not currently attain all Federal and State ambient air quality standards for ozone, and reductions of precursor organic compound emissions are needed for attainment.
- Adopted in 1979, amended several times but no significant amendments in almost 20 years.
- Assembly Bill (AB) 617 Expedited Best Available Retrofit Control Technology (BARCT) Implementation Schedule – Identified refinery wastewater treatment systems for potential rule development.

Simplified Wastewater Treatment System



Source: U.S. EPA

Emissions from Wastewater Collection and Treatment Systems



- Wastewater treatment sources result in organic compound emissions
 - Volatile organic compounds that contribute to ozone formation
 - May also include methane, toxic air contaminants, and odorous compounds
- Current Rule 8-8 regulates organic compounds, but not methane
- Two primary mechanisms of generating emissions:
 - Volatilization: When wastewater is exposed to the atmosphere it allows compounds to biodegrade and volatilize into the air
 - Air Entrainment: When liquid containing volatile organic compounds is transmitted in the presence of air, that air can be entrained in the liquid, which can be emitted later in the process

Emissions from Wastewater Collection and Treatment Systems (cont.)



- Collection and Separation:
 - Organic compounds are volatilized during transport
 - Wastewater can be exposed to high temperatures and turbulence in the transport structures (pipes, manholes, junction boxes, sumps, and lift stations)
 - Vapors can be emitted to the atmosphere through uncontrolled system openings
- Secondary Treatment:
 - Organics on surface of ponds and aeration of basins
 - Emissions can fluctuate and are highly episodic
 - Accurate measurement and characterization is highly challenging
 - Increased understanding of the potential for emissions is needed

Purpose of Proposed Amendments



- Improve enforceability
- Strengthen leak inspection and repair requirements
 - Effective implementation of leak inspection programs
 - Ensure previously anticipated emission reductions are fully achieved
- Require sampling and testing needed to better understand the potential for emissions from secondary treatment
- Update methods and standards to include methane
 - Methane is a potent and short-lived greenhouse gas that represents the second largest component of greenhouse gas emissions in the region

Rule Development Process



- **Q2&Q3 2022** – Refinery data requests to solicit information on the best available source information and emissions estimates
- **Q4 2022** – Update to Stationary Source and Climate Impacts Committee
- **Q2 2023** – Publish draft amendments and Preliminary Staff Report for public comments and engage with stakeholders
- **Q3 2023** – Update to Stationary Source and Climate Impacts Committee
- **Q4 2023** – Publish proposed amendments, Staff Report, Socioeconomic Impact Analysis, CEQA Initial Study and Negative Declaration for public comments and bring the amendments to Board for adoption

Proposed Amendments



Improve Leak Detection and Repair Requirements

- Revise leak standard from wastewater collection and separation systems to include methane along with other organic compounds (total organic compounds)
- Vapor tight emissions standard of 500 parts per million by volume
- Increase leak inspection frequency
- Strengthen protocol for minimizing, repairing, and monitoring leak excesses

Proposed Amendments (cont.)



Improve Enforceability

- Strengthen identification coding requirements for wastewater collection and separation components

Limit Discharges into System

- Prohibit discharge of non-aqueous phase hydrocarbon streams into collection system
- Prohibit discharge of free phase organic liquid streams into secondary treatment system

Proposed Amendments (cont.)



Update Testing and Detection Methods

- Update requirements to reflect most updated technology and methods for detecting total organic compounds

Expand Sampling and Monitoring Requirements

- Require sampling and monitoring to better understand the potential for emissions related to secondary treatment system

Emissions Reductions



- Quantifying emission reductions from proposed amendments is speculative and uncertain to predict
- For context:
 - 2004 amendments set initial requirements for installation of controls and inspection and repair programs
 - Estimated 65% reduction (2.1 tons of volatile organic compounds per day) in emissions
 - Proposed amendments help ensure these emission reductions are fully realized
- Added co-benefit of potential methane reductions

Compliance Costs



- Potential compliance costs from additional tagging of components, component leak inspection, repair of leaking components, and wastewater sampling and testing.

Estimated Compliance Costs

Facility	Identification Costs (amortized) ^a	Annual Inspection and Repair Costs	Annual Sampling Costs	Total Annual Cost
Chevron Richmond	\$3,740	\$131,711	\$18,000	\$153,450
Martinez Refining	\$2,385	\$83,987	\$18,000	\$104,372
Marathon Martinez	\$2,618	\$92,217	\$18,000	\$112,836
Valero Benicia	\$1,859	\$65,469	\$18,000	\$85,328
Philips 66 Rodeo	\$1,833	\$64,548	\$18,000	\$84,380

^a Includes one-time costs for identification and tagging of components amortized over 10 years.

Cost Effectiveness and Incremental Cost Effectiveness



Cost Effectiveness:

- Potential emissions reductions cannot be accurately quantified, therefore cost effectiveness cannot be accurately developed

Incremental Cost Effectiveness:

- Hard-piping identified as a more stringent alternative control strategy
- Can achieve up to 100 percent control
- May not be feasible due to safety challenges
- No further incremental cost effectiveness needed since there is no new feasible control option

Socioeconomic Impact Analysis



- The proposed amendments would be anticipated to result in compliance costs for the five Bay Area refineries
- Annualized compliance costs are well below the 10 percent burden threshold for all affected entities
- Small businesses are not disproportionately affected by the proposed amendments

CEQA Impact Analysis



- CEQA Initial Study was prepared on potential environmental impacts of the proposed amendments
- The proposed amendments will not have significant negative impacts on the environment and therefore a Negative Declaration was prepared

Statutory Findings



Before adopting, amending, or repealing a rule, the Board of Directors must make the following findings:

- **Necessity** - H&SC Section 40727(b)(1)
- **Authority** - H&SC Section 40727(b)(2)
- **Clarity** - H&SC Section 40727(b)(3)
- **Consistency** - H&SC Section 40727(b)(4)
- **Non-Duplication** - H&SC Section 40727(b)(5)
- **Reference** - H&SC Section 40727(b)(6)

Air District Impact



- Additional work for staff to review additional records and reporting submitted
- Expected to be included within existing operations and workload
- Not be expected to require additional FTEs, but additional Compliance & Enforcement and/or Legal resources may be needed depending on initial level of compliance

Comments Received



- One written comment letter was received on the proposed amendments during the comment period
 - Compliance with H&SC requirements
 - Questions and clarifications on enforcement of drain requirements and discharge prohibitions
 - Inclusion of methane in leak detection measurements
 - Test methods and sampling requirements
 - Compliance timelines
 - Other pollution and spill laws
- Response to Comments and updated materials included in final proposal materials in Board agenda package

Resolution and Recommendation



Staff recommends that the Board:

- Adopt the Proposed Amendments to Rule 8-8
- Adopt the CEQA Negative Declaration for the Proposed Amendments to Rule 8-8