Working Group Meeting #2: Proposed Rule 1188 – Vacuum Truck Operations

South Coast Air Quality Management District
Kennard Ellis
June 12, 2014

Agenda

§ Introductions
§ BAAQMD Test Results
§ BAAQMD VOC Inventory Methodology
§ SCAQMD Proposed Draft Rule (Discussion)
§ Preliminary Sample of Survey Items
§ Preliminary Rule Development Schedule
BAAQMD Test Results

- 32 Source Tests Completed
- Tests Conducted at Refineries, Terminals, Bulk Plants and Pipeline Facilities
- Summary of Test Results
  - Pages 2 & 3 of Appendix A of February 2012 Staff Report
- Test Conditions
  - Some Cases: VOC Control Equipment In Place
  - Other Cases: No VOC Control Equipment In Place

BAAQMD VOC Inventory Methodology

- Typical Regulated Materials
  - Gasoline, Naphtha, Transmix
  - Waterborne Crude, Cutter Diesel, Recovered Oil, Skimmed Oil, Waste Oil
- Uncontrolled Vacuum Truck (V.T.) Emissions
  - “Regulated” Material Throughput x Emission Factor (E.F.)
- Emission Factors Based on 32 Tests Conducted
  - 2.41 lb/bbl: Gasoline and Light Products
  - 0.082 lb/bbl: Wastewater and Waste Oil Products
BAAQMD VOC Inventory

§ Refinery Findings
– Material Quantities and Types Not Closely Tracked (Prior to Rule Adoption)
– Best Recordkeeping: Chevron, Richmond (Chosen as Baseline)
– Based on 1 Mil. BBL of All Products Loaded to Vacuum Trucks at Chevron, Richmond
– Other Refineries Regulated Material Throughput Estimate Based on Refining Capacity Factor
– Average Daily Vacuum Truck Usage: 22 (For All Refineries, Except for Turnarounds)

§ Terminals, Bulk Plants and Pipeline Facilities Findings
– Based on Estimated 10,000 BBL/Year of All Products Loaded to Vacuum Trucks
– Average Daily Vacuum Truck Usage: 2 (Combined)
– Predominantly Refined Products Loaded
– Extremely Small Amount of Waste Water and Waste Oil Loaded
– Minimal Control Technology Usage Information Available

§ Passive Emissions (Excluded)
– From Vacuum Truck Barrel When Loaded And Driven to Other Locations
– During Unloading of Vacuum Trucks
BAAQMD Calculation Assumptions

§ Refineries
- 13.5% of All Products Loaded on Vac. Trucks is Light Products
- 86.5% (Remainder) Consists of Wastewater and Waste Oil
- Positive Displacement (PD) Pump Usage: 15% of Transfers
- Control Equipment Usage: 5% of Transfers
- No Control Equipment Usage: 80% of Transfers
- Control Efficiency: PD Pumps (75%); Control Equipment (95%)

§ Terminals, Bulk Plants and Pipeline Facilities
- 75% of Products Loaded to Vacuum Trucks is Light Products
- 25% (Remainder) Consists of Wastewater and Waste Oil
- PD Pump Usage: 17% of Transfers
- Control Equipment Usage: 3% of Transfers

SCAQMD Preliminary Draft Rule
Applicability and Purpose

§ Applicability
- Petroleum Refineries
- Bulk and Marine Terminals
- Gasoline Terminals
- Oil and Gas Production Operations
- Pipelines
- Other Facilities Pending Feasibility Determination

§ Purpose
- Reduce Emissions Associated with the Transfer of Materials Using Vacuum trucks
SCAQMD Preliminary Draft Rule
VOC Control and Leak Standards

$ Emission Control Requirements
  – 500 ppm Max. Allowable Exhaust Concentration:
    • Vacuum Truck Operation or Control Device Exhaust
  – 95 Percent Minimum Control Equipment Efficiency

$ Liquid Leak Standards
  – Three (3) Drops Per Min. for Vacuum Truck Unless
    • Operator Discovers and Eliminates within 3 Min. of Discovery Or
    • Loading Event is Shut Down within 3 Min. After Operator Discovery

$ Vapor Leak Standards
  – 500 ppm for Vacuum Truck or Associated Equipment Unless
    • Operator Discovers and Reduces to <500 ppm within 3 Min. of Discovery Or
    • Loading Event is Shut Down within 3 Mins. After Operator Discovery

SCAQMD Preliminary Draft Rule
VOC Monitoring Requirements

$ Non Carbon Adsorber Control Equipment Exhaust
  (Concentration) Monitoring
  – If Vacuum Truck < 20 % Full Prior to Loading
    • One Measurement Before Vacuum Truck is 20 % Full
    • Another Measurement Before Vacuum Truck is 60% Full
  – If Vacuum Truck Already > 20 % Full Prior to Loading
    • One Measurement After Start of Loading
    • Another Measurement Before Vacuum Truck is 60% Full
  – If Vacuum Truck ≥ 60 % Full Prior to Loading
    • One Measurement Immediately After Start of Loading
SCAQMD Preliminary Draft Rule
VOC Monitoring Requirements

§ Carbon Adsorber Exhaust Monitoring
  – Measurement Within 2 Minutes After the Start of Each Loading Event
  – Additional Measurements Every 10 Minutes thereafter
  – When Replacement or Back-Up Carbon Vessel is Used
    • Measurement Within 2 Minutes After Replacement

§ Control Equipment Efficiency
  – Source Test to Verify Efficiency of Control Equipment, Or
  – Documentation to Indicate Testing Conducted Within 12 Months Prior to Vacuum Truck Operation

SCAQMD Preliminary Draft Rule
Recordkeeping

§ Effective 12 Months Following Rule Adoption
  – Monitoring and Source Test Data
  – Date, Time and Loading Duration
  – Type and Volume of Regulated Material Transferred To Vacuum Trucks During Each Loading Event
  – Daily Volume of Crude Oil Loaded Onto Vacuum Trucks
  – Volume of Oil Recovered From Centrifuging Loaded Onto Vacuum Trucks
  – Make, Model and Serial No. of Pump or Control Equipment Used
  – Make, Model and Serial No. of VOC Measuring Device Used
  – Any Analyses Performed to Determine Whether a Material is “Regulated”
SCAQMD Preliminary Draft Rule Reporting

§ Scheduled Loading Events
- Upon SCAQMD Request
  - Submit List of Loading Events To Be Conducted Within 30 Days
  - Submit Scheduled List of Loading Events Within 3 Working Days of Start of Activities
  - Submit Notice of Any Changes to Schedule 24 Hours Prior To A Loading Event

§ Other Data
- Start Date and Time of Loading Event
- Facility Info. Including Name, Plant No., Tank, Equipment or Pipeline Location
- Control Equipment Company Name, Equipment Type Operator’s Information
- Estimated Volume and Material Type to Be Loaded

Preliminary Sample of Survey Items

§ Regulated Materials
- List of Materials Transferred from Each Source
- Volume of Material Loaded by Vacuum Truck
- Percentage of Material Discharged Off-Site vs. Percentage Transferred On-Site
- Locations from which Material is Transferred
- Locations to which Material is Transferred to Onsite

§ Vacuum Truck Equipment
- List of Vacuum Truck Companies Utilized
- Frequency of Vacuum Truck Usage
- Frequency of Usage and Types of Control Equipment
- Frequency of On-Site Vacuum Truck Cleaning

§ Survey Period (Discussion)
## Preliminary Rule Development Schedule

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<tr>
<th>Item</th>
<th>Action</th>
<th>Target</th>
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<tr>
<td>Vacuum Truck Activities at Affected Facilities</td>
<td>Form Working Group to: § Study Vacuum Truck Activities; § Conduct Source Testing; and § Collect Data and Use to Estimate VOC Emissions</td>
<td>May 2014 thru July 2014</td>
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<td>Control Technology Application</td>
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<td>Field Visits</td>
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<td><strong>Milestones</strong></td>
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<tr>
<td>Working Group Mtg. #2</td>
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<td>Working Group Mtg. #3; Survey Distribution</td>
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<td>Public Workshop</td>
<td>Sept. 2014</td>
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<td>Final Hearing</td>
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