Public Workshop on the Draft Landfill Methane Control Measure

California Air Resources Board
December 18, 2008 – Cal/EPA Headquarters

Presentation Overview

- Background
- Major Revisions
- Scope of the Measure
- Discussion Items
- Next Steps
- Questions
Background

**ARB Proposed Control Measure**
- Discrete early action under AB 32
- Enhanced control of methane emissions
- Require new collection systems at uncontrolled landfills
- Improve capture efficiencies

**Emissions**
- Landfills represent 1 to 2 percent of statewide GHG emissions
  - 1990: 6.26 MMTCO$_2$E
  - 2006: 5.80 MMTCO$_2$E
  - 2020: 7.64 MMTCO$_2$E (forecast)
- 20 uncontrolled landfills with 450,000 tons WIP or more by 2020
- Estimated emission reduction in 2020: 0.8 MMTCO$_2$E
ARB Proposed Control Measure

**Major Revisions**

- **Applicability**
  - Accepted Waste After January 1, 1977
  - 400,000 tons WIP to 450,000 tons WIP

- **Exemption Conditions**
  - Based on Landfill Gas Heat Input Capacity

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ARB Proposed Control Measure

**Major Revisions (Cont.)**

- **Surface Emissions Monitoring Requirements**
  - 500 ppm - Instantaneous Surface Methane Emission Limit
  - 25 ppm – Integrated Surface Methane Emission Limit
  - Monthly to Quarterly Surface Monitoring
ARB Proposed Control Measure

Major Revisions (Cont.)

- Calculations to Determine Landfill Gas Heat Input Capacity
- Time Requirement for Installing GCCS at Closed or Inactive MSW Landfills
  - Revised from 18 months to 30 months
- Cover Integrity Monitoring
  - Deleted, part of instantaneous monitoring

ARB Proposed Control Measure

Major Revisions (Cont.)

- Component Leak Testing Standard
  - Revised from 200 ppm to 500 ppm
- Methane Outlet Concentration for Lean Burn Engines
  - Proposed at 3,000 ppm, dry basis, corrected to 15 percent
ARB Proposed Control Measure

Scope of the Measure

- Affects all MSW landfills that received waste after January 1, 1977
- ≥450,000 tons of WIP
  - Install a gas collection and control system, unless exemption requirements are met
  - Comply with statewide standards
- <450,000 tons of WIP
  - Must comply with specified reporting requirements

Scope of the Measure (Cont.)

- Exemption allowed if owner or operator can demonstrate:
  - Landfill gas heat input capacity of < 3.0 MMBtu/hr; and
  - Meets specified reporting requirements
ARB Proposed Control Measure

Scope of the Measure (Cont.)

- Prepare a Design Plan subject to approval (12 months)
- Install and operate GCCS 18 months after approval of Design Plan; 30 months for closed or inactive MSW landfills
- Flexible control options including enclosed flares and landfill gas-to-energy facilities
- Open flares allowed only under temporary conditions

ARB Proposed Control Measure

Scope of the Measure (Cont.)

- Performance Based Standards
  - 500 ppm instantaneous surface methane emission limit
  - 25 ppm integrated surface methane emission limit
  - 500 ppm component leak limit
  - Higher destruction efficiencies for gas control devices
ARB Proposed Control Measure

Scope of the Measure (Cont.)

Surface Monitoring
- Quarterly surface emission measurements for active landfills
- Quarterly surface emission measurements reduced to annual (if in compliance) for inactive or closed landfills, or areas of active landfills that are closed or inactive
- 25-foot walking pattern spacing increased to 100-foot spacing (if in compliance)

Recordkeeping
- Records to be kept for 5 years
- Records to be kept for life of the control device

Reporting
- Initial Performance Test and Annual Report
- Closure Report
- Equipment Removal Report
ARB Proposed Control Measure

Scope of the Measure (Cont.)

- Test Methods and Procedures
  - Hydrocarbon Detector Instrument Specifications - U.S. EPA Method 21
  - Control System Efficiency – U.S. EPA Reference Method 18 or 25

Discussion Items

- Implementation and Enforcement of the Draft Control Measure
- Economic Analysis
  - Examine Incremental Cost of Compliance
  - Monitoring, Recordkeeping, and Reporting Costs
  - Control Cost Scenarios
  - Other Costs
Next Steps

- Continue to work with stakeholders
- March 6, 2009 – Staff Report available for a 45-day formal public review and comment period
- April 23, 2009 – Air Resources Board hearing to consider control measure adoption
- December 2009 – Anticipated effective date of the control measure

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Landfill Methane Control Measure Website:
http://www.arb.ca.gov/cc/landfills/landfills.htm
Questions about the Draft Landfill Methane Control Measure?