PHASE 14 LANDFILL AIR QUALITY: DUST AND ODOR CONTROL PROCEDURES

Jeff McGown, Senior District Manager Lisa Wilkinson, P.E., Vice President, SCS Engineers





Presentation Overview

- Dust Management
 - Control Procedures
- Odor Management
 - Disposal Operations
 - Landfill Gas
 Management System
 - Control Procedures



Dust Control Procedures

The following activities are the primary sources of dust at the Crossroads Facility:

- Landfill Cell and Final Closure Projects
- Landfill Operations
 - Waste Placement and Compaction
 - Cover and Stockpile Materials
- Roadway Travel

Natural Facility Buffer - trees and shrubs create windbreak serving as a natural dust control measure.







Odor Management

There are two primary sources of odor at the Crossroads Facility:

- Disposal Operations
- Landfill Gas

WMDSM employs a comprehensive set of strategies and policies to control, reduce or eliminate odors, to the extent possible, from both sources.





Odor Control Procedures: Disposal Operations

WMDSM odor control measures include the following:

- Crossroads Personnel
- Odorous Waste Handling Procedures
- Landfill Cover Procedures
- Additional Measures
 - Transportation Management Plan
 - Community Feedback



Odor Control Procedures: Landfill Gas Management System

- Purpose: Control odors, reduce potential migration
- Existing Systems
 - Installed in Phase 8, 9, 10, 11 and 12
- Comply with Part 70 Air Emission License
- Phase 14 License Requirements
 - New Source Review License Amendment
- Federal Regulations
 - New Source Performance Standard for Landfills (Subpart XXX)



Gas Management System Design Criteria

- Characterize major waste types
- Estimate maximum recoverable gas quantities
 - 2,250 scfm in 2042 from Phase 14
 - 2,400 scfm in 2042 from all areas
- Locate and design network of collection devices in waste mass
- Evaluate existing control system capacity

Gas Management System Features

Collection Devices

- Vertical Extraction Wells
- Horizontal Collectors
- Other devices (leachate cleanouts, surface collectors)
- Headers/Laterals (i.e. piping)



Gas System Operations and Monitoring

- Wellhead installed on each collector
- Vacuum applied to each collector
- Lateral pipe convey gas to main header pipe
- Main header pipe convey gas to Renewable Energy Facility
- Valves for isolation
- Frequent monitoring and adjustments



Incremental Installation

Gas collection system installed incrementally in each PH 14E cell Gas extraction wells extended vertically as waste is placed until landfill is closed PH 14D PH 14C PH 14B PH 14A 11



Renewable Energy Facility - Control System

Control Device	Maximum Capacity (scfm)
Renewable Energy Facility (Primary)	1,200
Flare #3	2,000
Flare #1	2,500
Future Engine	350
Total Capacity	6,050



- Operational since 2009
- Collected and combusted over 490 million standard cubic feet of gas in 2019
- ► Two, 20-cylinder Caterpillar engines (2,380 hp each)
- Two flares serve as backup for the system
- Generated over 24 million kilowatt hours of electricity in 2019

