

GUDE LANDFILL



Landfill covered with soil and natural vegetation. Gas collection lines in background

Shady Grove Sector Plan Meeting

Montgomery County

Department of Environmental Protection

March 10, 2009

Presentation Overview

- ⦿ Why is contamination coming from Gude?
- ⦿ What Level of contamination are we finding?
- ⦿ What is being done about the contamination?
- ⦿ What are the potential future uses of the Site?
- ⦿ What are the Next Steps?

Reasons for Contamination



- 1964 - Began accepting solid waste
- 4.8m tons of waste (msw)
- 100 acres
- Closed in 1982
- 1983-'84 State and County developed Closure Plan in compliance with MD DHMH
- 1984: County began implementing closure plan

Built Before Landfill Regs

- ⦿ Gude pre-dates the Clean Water Act (1972) and the Resource Conservation and Recovery Act (1976).
- ⦿ Criteria for solid waste disposal facilities, 40 CFR Part 257, published September 13, 1979.
- ⦿ Construction requirements now include a liner and two feet of clay and cap for closure (1991).
- ⦿ Gude Landfill is currently under authority of Maryland Department of the Environment's (MDE) broad authority to protect environment.

Levels of Contamination

- Methane Gas Monitoring Results
- Groundwater Monitoring Results
- Surface Water Monitoring Results
- Summary of Monitoring Results

Landfill Gas Monitoring Plan

- 2004-06 County Contractor monitored gas near adjacent homes and on NW Slope.
- 2005 DSWS offered methane detectors in Derwood Station South homes adjacent to the NW Slope.
- 2005-08 DSWS installed 7 gas monitoring probes and 33 gas extraction wells on NW Slope.
- 2006-09 DEP monitors gas on NW Slope.

Gas Monitoring Results

- Currently, methane levels are zero at most monitoring wells.
- Peak methane concentrations were as high as 50% in 2005 before improvements.
- Old power plant had mechanical problems and was not providing consistent gas management.
- Enclosed flare system reduced methane levels substantially, but methane pockets remained, some of which were addressed by 33 new wells along NW slope.

Gude Landfill Water Quality Monitoring Program

- ⦿ Gude constructed prior to regulations requiring lining and leachate collection systems
- ⦿ Closed in compliance with State requirements defined by MD DHMH in 1983
- ⦿ Montgomery County DEP has operated a water quality monitoring program since 1984
- ⦿ Automated records exist from 2001 to present

Groundwater Monitoring Specifics

- ⦿ DEP now monitors 20 groundwater wells
 - Located on landfill perimeter
 - Permitted by State
- ⦿ Samples taken spring and fall
- ⦿ Parameters
 - Volatile organic compounds (VOCs)
 - Semi-volatile compounds (SVOCs)
 - Pesticides
 - Heavy metals
 - Miscellaneous (including pH, turbidity, conductivity.)

Gude Landfill and Monitoring Sites



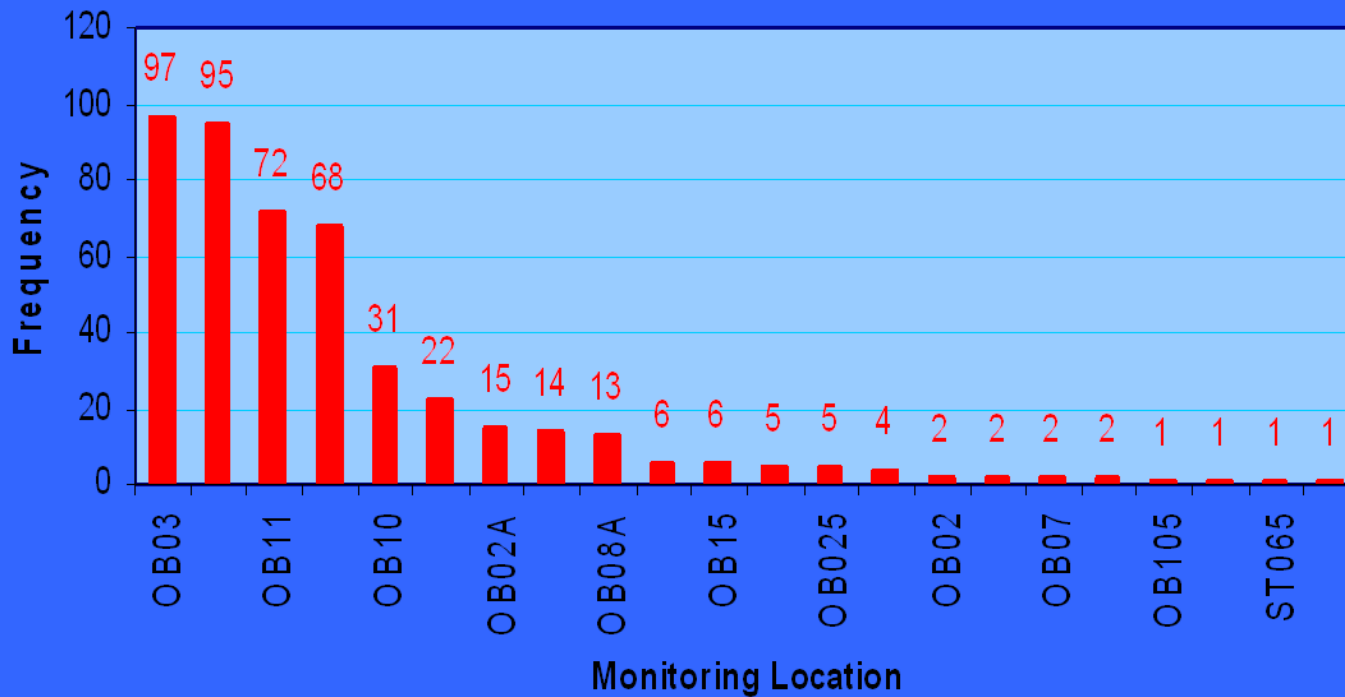
Groundwater Monitoring Results

- 52,000 data points since 2001
- < 1% (500+) exceed Maximum Contaminant Level (MCL) established for drinking water
- 70% of samples exceeding MCLs were from wells OB03 and OB11 (see map)

Sites Exceeding MCLs

Frequency Distribution of Locations Exceeding MCLs

Gude Landfill - April 2001 Through March 2008



Surface Water (stream) Monitoring

- 5 Surface water locations sampled (most outside landfill - see map)
- Sampling is on Crabbs Branch and Southlawn Branch of Rock Creek
- 6800 data points since 2001
- Total of 7 data points (0.1%) have exceeded the MCL for all parameters; of these 5 were for organic compounds

Current Leachate Controls

- Leachate seeps are caused by water in contact with waste and breaking out on a hillside
- Control by promoting drainage from surface to reduce infiltration.
- Uneven settling requires filling and regrading.



Corrective Action



Leachate Seep Repair

⦿ Concern

- Oil-like sheen on stormwater in manhole and iron staining on stormwater manhole and discharge pipe at Outfall 006 (SE Landfill)
- Noted in MDE site inspection on 1-23-09

⦿ Corrective Measures:

- Cut and cap upgradient discharge pipe into stormwater manhole (no in-flow)
- Construct infiltration trench for flow from upgradient discharge pipe
- Stormwater Sampling Results from Manhole and Outfall 006 indicate no exceedences of MCLs
- Final report to be submitted to MDE by 3-13-09

Short Term Schedule

- ⦿ Correction plan for potential noncompliant storm water discharge February 5, 2009
- ⦿ Formal gas monitoring plan by February 10, 2009
- ⦿ Formalizing ground water and surface water monitoring plan by March 31, 2009
- ⦿ Remediation Plan by April 30, 2009
- ⦿ DEP staff met with MDE February 26, 2009 to discuss remediation at Gude Landfill

Remediation Goals

- Ultimate remediation goal is no MCL exceedences for any parameter at property line and no methane gas levels above 25 percent of the Lower Explosive Limit (LEL).
- Next step is to conduct a study to better define the problem areas and prioritize areas for remediation.
- Continue maintenance including seep repairs and grading and drainage adjustments to minimize infiltration of rain water into the landfill.

Remediation Plan Approach

- ① Establish short-term and long-term objectives for the remediation
- ② Work with the community and public agencies to establish a long-term plan for future use of the site
- ③ Integrate current and planned future uses into the development of the plan so site grading, gas collection and other systems are consistent with future uses
- ④ Coordinate this work with the Maryland-National Capital Park and Planning Commission

Current and Future Uses at Gude Landfill

- Job training and social service facilities for men's shelter near completion at entrance at 600 E. Gude Drive
- Landfill gas-to-energy facility under construction also at entrance off Gude Dr. due to be complete this summer to complement existing flare system
- Potential Yard trim and bulky wood waste receiving and processing area on 7-8 acres off Southlawn Lane
- Opportunity to propose and plan uses for the remaining 80 plus acres

New Landfill Gas to Energy Project

(Will be Operational June 2009)



- Greenhouse gases/carbon dioxide emissions reduced by 4,557 tons.

Equal to:

- Supplying energy to 509 homes
 - Planting 9,506 acres of trees; or
 - Taking 6,671 passenger vehicles off the roads
- Particulate matter slightly increased
 - Automated monitoring adds further redundancy and better oversight of gas management at Gude Landfill.

Potential Area for relocating yard trim operations from Transfer Station



Next Steps

- ⦿ Initiate study to finish assessing the nature and extent of contamination
- ⦿ Develop project schedule integrating public input, assessment of remedial technologies, design requirements, cost estimate and budget processes and construction schedule
- ⦿ Submit overall approach and schedule to MDE by April 30, 2009

Questions?