USEPA Superfund Program
Landfill Methane-to-Energy Pilot

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EPA

Pilot Goal:

- Evaluate and increase the number of landfills on the Superfund National Priorities List (NPL) that use the methane generated on-site.

Technical Considerations for Using Landfill Gas:

- Quality of Landfill Gas (LFG)
  - » Are there any known compounds in the gas or landfill that would preclude or greatly impact the cost of using LFG? (i.e. radioactive, infectious, explosive, or ordnance waste).
- Quantity of LFG
  - » How much gas is present?
  - » What is the methane concentration?
  - » How fast is the flow rate declining?

Technical Considerations for Using Landfill Gas (concluded):

- Accessibility of LFG
  - How expensive will it be to collect the gas?
  - Is a gas collection system already in place?
  - Are there complicating site factors such as flooded wells, very shallow waste, unexploded ordnances, or unmapped trench-and-fill cells?
- Energy demand
  - What is the energy need for landfill related activities (e.g., ground water pump and treat system)?
  - What remediation equipment is used on site?
  - Is the landfill located in an area with nearby off-site energy demands that could be met by landfill methane-to-energy projects?

Initial Observations:

- Many NPL landfills in EPA Region 1, 2, and 3 in the Northeast have received so little municipal solid wastes in the last 20 years that they are producing very little recoverable methane.
- Few NPL landfills are producing marketable quantities of methane, but might produce enough to off-set on-site electricity usage.
- The cost for recovery of small methane flows from NPL landfills is expensive, and could benefit greatly from an existing well or vent field.
- Energy demands at NPL landfills are generally in the size range of microturbines.

Developing Screening Criteria:

- The ERG-Shaw-Cornerstone team is developing draft screening criteria that can be used in conjunction with the EPA *LandGEM* and *LFGcost* models to determine the practicality of using landfill methane to produce energy for on-site use.
- These criteria will include factors that are likely to have a significant positive or negative impact on gas recovery potential.

Schedule:

- Draft Screening Tool - July 2010
- Final Screening Tool - August 2010
- EPA final report – by December 2010

Next Steps:

- Encourage EPA Regions to find suitable NPL landfill methane-to-energy projects using the screening criteria
- Encourage EPA Regions to collaborate with interested municipal authorities and Responsible Parties to implement projects