

US EPA ARCHIVE DOCUMENT

ORD's Landfill Research Priorities

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Landfill Research

- ◆ Alternative cover techniques for landfills
- ◆ Protocol for design of alternative covers
- ◆ Field evaluations of liner performance
www.epa.gov/ORD/NRMRL/Pubs
- ◆ Innovative construction quality assurance
- ◆ Long term performance of containment systems

Landfill Research (cont)

Superfund and Brownfields

- ◆ Hydraulic control – covers, permeable reactive barriers
- ◆ Ground water/indoor air pathway
- ◆ Land use options for reuse of landfill sites

Landfill Research (cont)

- ◆ Assessment of fugitive gaseous emissions from waste containment facilities
- ◆ Guidance on evaluating landfill gas emissions to determine need for gas collection and control
- ◆ Update and/or develop LFG emission factors

What is a landfill bioreactor?

- ◆ Liquid additions to a landfill, designed and operated in a controlled manner with the express purpose of accelerating the degradation of solid waste inside a containment system

Bioreactors – Research Challenges

- Which bioreactor operational techniques most efficiently degrade waste?
- How can operators distribute leachate and collect gas efficiently in a bioreactor setting?
- How can an interim cover be applied to a waste mass that is settling?
- How do operators ensure physical stability?
- How much moisture addition is optimal for degradation?
- What limitations exist for natural degradation ?
- When can the landfill be “switched off” and close?
- How can operators learn to control their bioreactor?

Planned ORD Bioreactor Research Outputs

- Interim field assessment of a bioreactor systems
- Report/fact sheet for guidance on landfill gas evaluation
- Interim bioreactor design manual
- Bioreactor design and monitoring manual

QUESTIONS?

