Deck Watering as Means of Adding Moisture.
Monitoring Philosophy & Key Parameters

Reference USEPA/WM QAPP

- Leachate
- Settlement & Mass
- Gas Production
- Air Emissions
What is the Minimum, for Leachate at New Research Sites

- Chemical oxygen demand
- Biochemical oxygen demand
- Temperature
- pH (field)
- Volatile organic acids
What is the Minimum, for the Waste Mass at New Research Sites

- Waste temperature
- Waste settlement (GPS)
- Organic solids*
- Moisture content (calculated)*
- pH*
- Biochemical methane potential (BMP)*

*low frequency, based on mass collection during placement and drilling.
What is the Minimum, for Gas at New Research Sites

- Methane, field, lab (Summa)
- Carbon dioxide, field, lab (Summa)
- Oxygen, field, lab (Summa)
- Gas volume
- Perhaps, more frequent Surface emission monitoring
Frequency of Sampling

- Leachate: monthly – quarterly*
- Mass (GPS): quarterly – 24 months
- Gas: monthly
- Surface Emissions – quarterly
Operational Expertise

- Review Bibliography for Industry.
- Review recent Conference Literature.
- Visit Web Sites.
- Call Operating Facilities and ask for Tour of the Facility.
Publications

- SWANA
- NSWMA
- LMOP
- Sardinia Proceedings
- USEPA/WM Interim CRADA Document
Web Sites

http://www.bioreactor.org/

http://www.epa.gov/projectxl/yolo/index

http://www.epa.gov/epaoswer/non-hw/muncpl/landfill/bioreactors.htm

http://www.wm.com/bio.asp
Areas of Permit Applicant & Permitting Focus:

- Collection of an Operating Record that helps the industry.
- Set up Key Areas of Concerns for Interaction, surface application of liquids, outside liquids, leachate breakout-repair, odors, alternate covers.