SWANA
APPLIED RESEARCH FOUNDATION

Executive Summary
Prepared for:
SWANA Applied Research Foundation
Disposal Group Subscribers

THE LONG-TERM MANAGEMENT OF CLOSED MSW LANDFILLS FOLLOWING THE POST-CLOSURE CARE PERIOD

A new report developed by the SWANA Applied Research Foundation (ARF) addresses two important questions associated with the disposal of municipal solid waste (MSW) at landfills. First, what tasks will be required to manage closed landfills following the post-closure care period to ensure continued protection of public health and the environment, and second, how will those associated costs be paid for?

In 1991, the United States Environmental Protection Agency (EPA) promulgated new regulations for landfills used for the disposal of MSW. As the regulations were issued under Subtitle D of the Resource Conservation and Recovery Act (RCRA), these MSW landfills are commonly referred to as "Subtitle D" landfills.

Subtitle D regulations require that the post-closure care (PCC) period—the time period during which the closed landfill site is maintained and the environmental protection systems are managed and monitored—should be 30 years in length, unless otherwise lengthened or shortened by the state regulatory agency that issued the landfill permit. Once the PCC period is over, the closed landfill enters into a new status, which SWANA has defined as the "Long-Term Management", or LTM period. Importantly, the EPA Subtitle D regulations do not address the type of

monitoring and maintenance activities that should be required during the LTM period, how long these activities should be conducted, or how they should be financed.

Based on the ARF's research, the following conclusions are offered regarding the long-term management of MSW landfills following the end of the PCC period:

- **Regulators are embracing the goal of functional stability** – Most states that are addressing the end of PCC issue are focusing on the goal of functional stability as defined in the "End of Post-Closure Care" Methodology developed by Geosyntec Consultants and endorsed by the Interstate Technology and Regulatory Council.
- **Importance of gathering performance data during the PCC period** – Making the case for functional stability will require landfill managers to gather and report meaningful and defensible performance data collected during the PCC period.
- **The primary goal of LTM is to ensure the functionality and integrity of the final cover system** – The goal of LTM is to ensure the functionality and integrity of the final cover system, and to prevent increased leachate or landfill gas (LFG) generation in the future, along with associated human health and environmental impacts. In a modern landfill with no supplemental moisture addition, leachate and LFG generation would eventually and effectively cease and, thus, the need for ongoing maintenance of systems other than the final cover system would, in the long term, not be necessary.
- **No need to replace the final cover geomembrane** – Based on the data and discussion presented in this report, it is unlikely that the geomembrane in the final cover system would need to be replaced for 2,000 years following the start of the LTM period.
- **LTM costs can be financed by PCC fund investments** – LTM costs can be financed (in perpetuity if needed) by the investment of PCC fund balances during the PCC period.
- **A new perspective is needed** – Closed MSW landfills can and should be viewed and managed as long-term waste resource storage systems that may be mined at some point in the future when economic conditions support this activity.