

STATUS OF LANDFILL RECLAMATION AND ITS APPLICABILITY TO SOLID WASTE MANAGEMENT

Joanne R. Guerriero
Malcolm Pirnie, Inc.

ABSTRACT

With many landfills scheduled to close and decreasing land area available for waste disposal, some municipalities are considering landfill reclamation, an innovative approach for maximizing utilization of landfill space. The feasibility of landfill reclamation depends upon site-specific factors as well as the project goals. Implementation of this technology will require cost-effective integration of the process with other available and appropriate solid waste management technologies in an environmentally sound manner.

INTRODUCTION

With many landfills scheduled to close and decreasing land area available for waste disposal, municipalities and industries are developing a multi-phase approach to solid waste management, including waste minimization, recycling, composting, resource recovery and landfilling. Additionally, some are considering landfill reclamation, an innovative approach for maximizing utilization of landfill space. Landfill reclamation is the excavation of a landfill using conventional mining technology to recover and reuse resources. Landfill reclamation, may have many beneficial results. It may:

- extend the life of existing landfill sites and reduce the need for siting new landfills
- decrease the area requiring closure
- remediate an environmental concern by removing a contaminant source
- reclaim marketable recyclables
- capture energy through waste combustion

However, there are numerous issues and concerns to be addressed in planning such a project including equipment; operations; health and safety; environmental impacts; materials management; contingency plans for hazardous waste; economics; local, state and/or federal regulations; and legal and administrative issues.

In order to facilitate the utilization of this technology where applicable, the Solid Waste Association of America (SWANA) has developed a Landfill Reclamation Task Group to gather and disseminate information regarding this technology. The Task Group is currently developing technical guidance and procedures from existing case studies on health and safety, materials handling, equipment, economics and other aspects of the process. The overall goal is to encourage the use of landfill reclamation at landfills where its benefits can be realized.

EXISTING PROJECTS

The feasibility of landfill reclamation depends upon site-specific factors as well as project goals. Feasibility studies and full-scale projects have been conducted in numerous states including Florida, New York, Pennsylvania, Massachusetts, New Hampshire and Delaware, as well as in Ontario, Canada and Europe. Each project was undertaken to obtain a specific benefit(s). Several projects implemented to-date are discussed below.

The Collier County, FL, project was the first publicized effort to reclaim soil and recyclable materials from an existing sanitary landfill. Beginning in 1988, two cells of the Naples Landfill, encompassing 26 acres (10.5 hectares) of an old portion of the landfill, were reclaimed by a front-end loader as a demonstration project. Based on success of the demonstration project, Collier County decided to continue landfill reclamation activities. (3)