

Landfill Expected to Last 62 Years

Solid waste authority builds a new landfill.

Those who design, build, and operate sanitary landfills would generally agree that patience—lots of it—is the necessary cornerstone on which to build a new facility. It can take a decade or more to acquire the suitable property and local, state, and federal approvals before turning the first spade of dirt. Along the way, opponents often try to block or stall this essential infrastructure on the grounds of truck traffic, environmental impacts, cost, and even possible concentrations of unwanted birds. NIMBY roadblocks have led most landfill operators in the Northeast to follow a path of less resistance—expansions rather than totally new facilities.

An exception is the new facility completed recently in New York State by the Oneida-Herkimer Solid Waste Authority. Established in 1988 at the request of both counties, this public benefit corporation has developed a comprehensive, integrated solid waste management system of programs and facilities.

The accomplishments are impressive:

- A 200-tpd material recovery facility that operates as a co-mingled recycling center.
- An aerobic green waste composting facility.
- A permanent household hazardous waste collection facility that includes recycling of electronics and fluorescent lighting.
- Solid waste transfer facilities and facilities that accept land-cleared debris.
- A municipal energy recovery facility and double-lined ash landfill.

In all, the authority oversees disposal



One of the ITT Flygt pumps that transfer collected leachate to the 1.3-MG tanks in the background is being prepared. Tanker trucks will off-load and haul the leachate to a wastewater treatment plant.

of about 300,000 tons of solid waste per year generated by 110,000 households. Before developing the new landfill, the authority served the population of 298,000 residents and businesses with a number of smaller facilities. These included a private landfill in Frankfort, NY, that closed in December, 1991; the authority-owned and operated energy recovery facility in Rome, NY, that closed in 1995; and the ash landfill that closed two years later.

The authority overcame the most frequent objections by the inevitable opponents before winning the case to build the new landfill near the rural community of Ava, in upstate New York. The project presents a successful effort to produce a totally new facility designed

to meet current environmental and operating standards.

When the last landfill closed in 1991, solid waste was exported to a facility near Scranton, PA, and then to Rochester, NY, under interim contracts. The new Oneida-Herkimer landfill will accept only locally generated solid waste to maximize the service life from the \$30-million investment. The new landfill will save \$4.0 to \$4.5 million a year in extra charges that had been incurred for transportation and tipping costs at the other facilities—charges that would likely increase with recent fuel costs.

An aggressive recycling program was in place upon closing the former landfill. The authority's material recovery facility came on line in early 1991 fol-



Aerial view designating various locations within the new landfill that will accept 300,000 tons of solid waste per year at the present rate. An average of 50 trucks per day will unload their collections at the facility.

lowing pilot programs from 1989 to 1990. The program has since collected 221,842 tons of newsprint, or the equivalent of 4.5 million trees. Also diverted to reuse were more than 108,000 tons of corrugated cardboard, 33,000 tons of glass, 28,600 tons of metal cans, 9,900 tons of office documents, and 17.6 million tons of plastic—equal to 8.8 MG of oil. Plans are for the recycling program to continue and possibly expand in the foreseeable future.

Well Designed Facility

The new facility was designed for an expected 1,000 tpd. The initial construction consists of three, seven- to nine-acre cells with dual-composite liners, a closely-monitored leachate collection system, efficient roads, associated buildings, and operating equipment. The first 23 1/2 acre of lined cells should serve four to five years, but the authority's permit allows a total of 150 lined acres. This should meet the two-county needs for the next 62 years, according to Chad Hutton, project engineer with Barton & Loguidice, P.C. (B&L, www.bartonandloguidice.com), the Syracuse engineering firm that designed it.

"This location was selected from the best of ten sites among the 79 locations evaluated by the authority," Hutton said. "The rolling topography worked in its favor and simplified making cuts into embankments to create the first cells.

The geology itself was an even more significant factor. The dense soils at the site present five to ten feet of brown glacial till over ten to more than 100 feet of gray glacial till. These are rated in an ideal density range of 140 to 150 pounds per cubic feet with very slow permeabilities."

In complying with federal clean water and other environmental mandates, the project had to address federally regulated wetlands and a mitigation project. All of the authority's proposals developed

by B&L received favorable reviews by the U. S. Army Corps of Engineers. Factors included replacing 46.6 acres of wetlands absorbed by the project that the Corps rated as the "lowest quality and least diverse" within the boundaries. The development plan also avoided any impact on about 123 acres of higher quality, more diverse wetlands, the Corps noted.

Compensatory mitigation will involve restoring 32.6 acres of wetlands off site, thereby eliminating any net loss of the habitat. The two-county authority also pledged to acquire and place under permanent protective easements another 56 acres of the ecologically rare and significant sand plains in Oneida County.

Multiple Contracts

Following approval by the New York State Department of Environmental Conservation, the authority awarded the first construction contracts in July 2004. The early work produced a 3,300-ft long entry road, a stream crossing, and a turn lane off NY State Route 294 for the 50 or so trucks anticipated daily at the facility. With these in place, construction could proceed on the heart of the landfill.



One of the ITT Flygt leachate transfer pumps being prepped for installation. The volume of flow is metered to ensure compliance.

