DEALING WITH RESIDUAL WASTES AT THE
LANCASTER COUNTY RESOURCE RECOVERY FACILITY

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ABSTRACT

The Lancaster County Resource Recovery Facility (RRF) is a 1,200 ton per day mass burn waste-to-energy plant that has been in operation since 1991. The plant is owned by the Lancaster County Solid Waste Management Authority (LCSWMA), but is operated for the Authority by Covanta Lancaster. During the initial years of operation, only municipal solid wastes (MSW) were combusted. The picture has changed dramatically, however, since those early days.

The RRF has successfully processed hundreds of different residual waste streams since 1994. The list of residuals processed at the RRF is impressive: over-the-counter and bulk pharmaceuticals; off-spec toothpaste in cubic-yard totes; virgin oily debris; ink waste in fiber and steel drums; industrial waste waters; and confidential documents and controlled substances from local law enforcement agencies, pharmaceutical manufacturers, and the Drug Enforcement Administration.

This paper describes how residual wastes are managed at the facility, including a discussion of waste inspection activities on the tipping floor, and a description of the various methods by which these materials are fed to the boilers.

BACKGROUND

In 1986, Lancaster County was faced with a tough decision - should it continue to landfill the waste generated in the county, or should it try something new? The easy road would have been to continue to landfill the waste; after all, LCSWMA, the county's waste disposal agency, had just received permission to expand its existing landfill onto an adjacent property.

But Lancaster County decided to take the road less traveled, and embarked on the creation of an integrated waste management system. The system was designed to have three components: recycling; resource recovery; and landfilling. All wastes that could be recycled would be; other wastes not suited for recycling would be processed at the proposed resource recovery facility; and those materials either not suited for recycling or resource recovery would be landfilled.

Considerable planning and citizen input resulted in the decision to build a plant capable of processing up to 1,200 tons of waste per day and generating 36 megawatts of electricity per hour. The real value of the plant, however, lay in the fact that it could reduce the volume of the waste it processed by 90%. This would not only considerably extend the life of the county's landfill, but also save valuable farmland in the process. There were other advantages as well: the energy produced by the RRF could supply all of the power required to run the facility, while also providing energy to 10,000 - 15,000 homes. An additional benefit, and one that saved even more landfill space, was that roughly 600 tons of ferrous metal could be removed from the processed waste each month and recycled.

In September 1987, the Authority entered into a 20-year contract with Ogden Martin Systems of Lancaster (now known as Covanta Lancaster) for the design, construction, and operation of the RRF. Construction began in March 1989, and was completed approximately twenty months later. Start-up testing was conducted in early 1991, and on May 10, 1991, the LCSWMA officially accepted the facility, and full-scale operations got underway.

WASTE STREAM APPROVAL PROCESS

Generally speaking, Pennsylvania's Department of Environmental Protection (PaDEP) considers "residual waste" to be garbage, refuse, or other wastes that result from industrial, mining, and agricultural operations [1]. The RRF processes non-hazardous residual wastes that are generated both in-county as well as out-of-county. Procurement of out-of-county residual wastes for processing at the RRF are done for the Authority by a company called Lancaster Enviroservices Corporation (LESCO).

The multi-tiered waste stream approval process begins once LCSWMA or LESCO identifies a potentially processible waste stream. One should not underestimate the