

Moretown Landfill Gas to Energy Plant

Over the past several months, Pennsylvania Power and Light (PPL) has been constructing a landfill gas to energy (LGE) plant located at the Moretown landfill. The landfill owners, in conjunction with PPL have been working to bring the plant on line and as of mid January of this year, the plant has been running at nearly full capacity, using the gas generated by decomposing trash to produce electricity. Prior to this year that gas had been burned off using two flares, one at each end of the landfill.

The plant generates approximately 3.2 MW of electricity at full capacity, which is sufficient to power approximately 2500 homes. It currently operates two Caterpillar engines (G3520) designed for landfill gas at a flow rate of 550 scfm to each of the 2233 hp engine (pictured below). These are the same engines used at the NEWSVT landfill in Coventry, Vermont.



Any excess gas not able to be burned in the engines is burned off in a flare. The plant may be able to add a third engine in the coming year if landfill gas quality remains high.

You may have noticed odors as you drove by the landfill on Route 2 or on the Interstate over the past few months. The landfill and plant have had their share of troubles during start up. The Solid Waste Program has been working with the Air Pollution Control Division on the odor problems. Now that the LGE plant seems to be operating smoothly and consistently, the process of balancing the landfill gas extraction wells and collection system has begun. This is an ongoing process of balancing individual wells, horizontal collection pipes and upgrading and adding collection pipes to effectively extract the amount of gas being produced within the landfill and efficiently moving that gas to the power plant.

The Solid Waste Program is in the process of developing a website that will provide more information on the landfill, the LGE plant along with water quality monitoring and certification information. Visit the site at:

<http://www.anr.state.vt.us/dec/wastediv/solid/VermontSolidWasteFacilities.htm>



Photo 1. Landfill gas is extracted from the landfill and directed to either the engines or the flare (in the center of photo above). The flare flame is generally only visible at night, with only heat waves visible during the daylight. Photo 2. Large blowers serve to pull landfill gas out of the landfill keeping a vacuum on each of the extraction wells. Balancing the vacuum at each extraction well ensures sufficient vacuum is maintained to pull all the gas from the landfill without allowing any excess to escape where it may result in odor problems but not so much vacuum that air (and oxygen) are pulled into the landfill which increases the potential for a fire inside the landfill. Photo 3. The Caterpillar engines are housed inside their own enclosure to protect them from the weather and minimize noise.