

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Southwest Regional Office
August 4, 2009

SUBJECT: Title V Review Memo
Greenridge Reclamation, LLC
Greenridge Reclamation
East Huntingdon Township
Westmoreland County

RENEWAL

TO: Air Quality File TV-65-00713

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Background:

Greenridge Reclamation, LLC (formerly Republic Services Group of Pennsylvania) operates Greenridge Reclamation (formerly Y&S Sanitary Landfill) as a solid waste management facility located in East Huntingdon Township, Westmoreland County. The site has been in operation since 1970. Approximately 0.73 million tons of waste were deposited between 1970 and 1991. On October 24, 1991 the Bureau of Waste Management (BWM) issued BWM Permit No. 100281 to permit approximately 176 acres of lined disposal area, with a capacity of approximately 5.9 million tons. On October 18, 1995, BWM issued a major modification to Permit No. 100281, allowing them to add an additional 2.6 million tons of disposal capacity. Current design capacity of the landfill is 12.63 million cubic yards or 8.46 million tons of municipal solid waste.

On March 12, 1996, a New Source Performance Standard for certain new landfills (those constructed after May 30, 1991, with a design capacity of more than 2.75 million tons) was published in the Federal Register. The source was subject to the new NSPS, so the

owner/operator submitted a Plan Approval application to retroactively obtain Air Quality approval for the October, 1995 expansion.

This source is defined as a Title V facility and is therefore subject to the Title V permitting requirements adopted in 25 PA Code, Chapter 127, Subchapter G. The initial Title V application was received by the Department on November 22, 1995. A revision on the TV application was submitted on December 17, 1998. The initial Title V Operating Permit was issued on August 30, 2001 with an expiration date of August 31, 2009.

A Title V renewal application was received by the Department on March 1, 2006. A Plan Approval application (PA-65-00713B) was submitted and issued to the facility to service the flare and increase in the allowable LFG throughput for the Evaporation/Flare System from 3,500 cfm, as limited in TV-65-00713, to 5,000 cfm. An amendment was submitted by the company to incorporate the Plan Approval PA-65-00713B in to the Title V renewal.

REGULATORY ANALYSIS

All of the conditions derive from Title 25 of the Pennsylvania Code in the original Title V permit have been included in this renewal. The collection and control system is subject to the Department's Bureau of Air Quality Permit Manual, Section 7.10; Air Quality Permitting Criteria including Best Available Technology (BAT) Criteria for Municipal Waste Landfills New Source Performance Standards (NSPS). The BAT Criteria requires that an enclosed flare will achieve a 98% destruction/removal efficiency or 20 ppmv of landfill gas. This facility currently employs a device meeting these requirements. Section 7.10 also specifies Landfill Fugitive Emission Control Criteria for particulate and the facility employs control to meet BAT requirements.

Title 25 PA Code Section 122.3 adopts in entirety the Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources promulgated in 40 CFR Part 60. Per 40 CFR Part 60, Section 60.750 Municipal Solid Waste Landfills that commence construction or modification after May 30, 1991 are subject to the New Source Performance Standards Subpart WWW. The applicable requirements of Subpart WWW have been exhaustively included in this Title V renewal permit.

Part 63 National Emission Standards for Hazardous Air Pollutants (NESHAP): Title 25 PA Code Section 127.35(b), Part 63 NESHAP for Source Categories are incorporated by reference into the Department's plan approval program.

Per 40 CFR Part 63 Section 63.1935 NESHAP: Municipal Solid Waste Landfills that have accepted waste since November 8, 1987 with a design capacity greater than 2.5 million megagrams (Mg) (~2.75 million tons) and 2.5 million cubic meters and has estimated uncontrolled NMOC emissions equal to or greater than 50 Mg/yr (~55.1 ton/yr) is subject to the NESHAP 40 CFR Part 63 Subpart AAAA. The design capacity of this facility is 8.46 million tons and the potential uncontrolled NMOC emission rate is greater than 55.1 tons per year.

Greenridge Reclamation is not subject to the requirements of the Compliance Assurance Monitoring (CAM) rule because the facility is currently regulated under NSPS/NESHAP regulations.

EQUIPMENT AND EMISSIONS:

Sources and emissions at this facility consist of the landfill itself (consisting of disposal areas being constructed, disposal areas actively accepting waste, and closed disposal areas, roads, and earthmoving equipment; emitting fugitive (uncollected) VOCs and PM₁₀, a landfill gas collection system (wells, manifolds, routed to a flare or gas processing facility; emitting undestroyed VOCs, NO_x, CO, PM₁₀), Leachate Evaporator System (LES), and a soil processing system (fugitive PM₁₀).

Data provided by the applicant for PA-65-00713B from September – October 2007 shows that the measured LFG flow rate to the flare was in the 2,500 to 2,800 scfm range. Utilizing the LandGEM Model, the applicant estimated for 2007 that 2,514 cfm of LFG would be generated by the landfill and for 2008 that 2,805 cfm of LFG would be generated by the landfill. However, the measured LFG flow rate to the flare does not include the fugitive portion not captured by the collection system. The maximum LandGEM Model predicted rate of 3,496 scfm LFG generation is very close to the maximum gas flow currently allowed by the under initial TV-65-00713. As it appears that the LandGEM Model may be underestimating the actual volume of LFG produced this increase to the full flare capacity of 5,000 scfm is necessary to provide a buffer to ensure that LFG is collected and properly combusted. The restriction initial TV-65-00713 on the flare operation at 3,500 cfm will be removed.

VOC emissions which are collected but undestroyed, and emissions of other pollutants (products of combustion) resulting from the operation of the flare are attributed to the landfill gas collection system. The applicant measures and records the LFG flow rate to the flare, measures and records the operating temperature of the flare, monitors wellhead parameters, and monitors surface methane concentrations. The applicant has assumed, based on AP-42 average assumed collection efficiency, that 75% of VOC/HAP generated by the landfill is captured by the collection system and ducted to the flare, and 25% VOC/HAP is emitted as a fugitive to demonstrate the worst case potential emissions from the Facility. A candle flare is available to be used for a backup control device.

On December 18, 2008, personnel from Avogadro Environmental Corporation performed three simultaneous nitrogen oxides (NO_x as NO₂ using EPA Method 7E), carbon monoxide (CO using EPA Method 10), and total gaseous non-methane organic compound (TGNMOC or VOC using EPA Methods 18 and 25A) emission testing in enclosed landfill gas flare and gas extraction system outlet stack. All of the emissions tests were performed to demonstrate compliance according to the applicable conditions of Plan Approval No. Plan Approval No. 65-00713B and 40 CFR, Part 60; Subpart WWW. The calculations are correct and the results appear to be valid. The NO_x (as NO₂), CO, and TGNMOC emission test results are acceptable to the Department for the purpose of determining compliance.

Tables below show the summery of the landfill emissions:

Table 1: Enclosed Flare

Pollutant	Emission Limitation	
	lb/hr	tons/yr
NO _x	9.00	39.42
CO	30.00	131.40
VOC	0.60	2.63
PM ₁₀	0.43	1.88
SO ₂	5.73	25.09
HCl	0.02	0.10
Total HAPs	0.08	0.35

The enclosed ground flare has a rated destruction efficiency of 98%. The capture efficiency of the system is estimated to be 75%. The assumption is that the remaining 25% of the VOC is fugitive from the landfill. A candle flare is available to be used for a backup control device. Emissions from the Leachate Evaporator System (LES) are accounted for in the emissions from the enclosed flare. At approximate 3,500 scfm methane emissions from the LES are as follows: VOC - 5.46 tpy, NO_x - 3.02 tpy, CO - 21.54 tpy, SO_x - 3.92 tpy, PM₁₀ - 10.41 tpy. The exhaust from the LES is directed to the enclosed flare control device

Table 2 identifies pre-control, post-control, and potential fugitive landfill VOC emissions. The controlled VOC emission rate is based on a 98% destruction efficiency rate and the fugitive emission rate is based on a 75% collection efficiency of the Gas Collection and Control System.

Table 2: Fugitive VOC Emissions

Pollutant	Pre-Control	Controlled Flare Potential to Emit	Fugitive Potential to Emit
	tons/yr	tons/yr	tons/yr
VOC	131.4	2.63	32.81

Table 3 identifies potential emissions for the Mobile Rock Crusher/Screen based on a maximum of 500 tph and 2,016 hours per year.

Table 3: Mobile Rock Crusher/Screen

Pollutant	tons/yr
PM	36.5
PM ₁₀	14.5
NO _x	10.9
CO	2.4
SO _x	0.7

ALTERNATE OPERATING SCENARIOS:

The backup utility flare shall be used in the event that the enclosed flare is not operational.

PREVIOUS OPERATING PERMITS AND PLAN APPROVALS:

65-322-003: The Operating Permit for the Landfill gas extraction system was re-issued on January 21, 1999 for the operation of an enclosed ground flare for the destruction of landfill gas. Applicable conditions are included in the Title V permit.

65-322-003A: A Plan Approval application was submitted in 1996 for the Landfill gas collection system that was currently in operation and amended the design capacity to 12.63 million cubic yards or 8.46 million tons of MSW. This Plan Approval shall be issued simultaneously with the Title V permit and supersedes PA# 65-322-003.

65-310-014-A: Plan Approval was issued for the crushing and screening operation on May 6, 1993. The subsequent Operating Permit was re-issued on January 21, 1999. Applicable conditions are included in the Title V permit.

PA-65-713A: This Plan Approval is for the Leachate Evaporation System (LES). This Plan Approval was issued September 18, 1998 for the installation and operation of the LES system and the modification of the enclosed flare to handle the LES emissions as well as place flow restrictions on this existing flare and to upgrade the size of the back up utility flare. The conditions of this Plan Approval are included in the Title V permit. The condition prohibiting the use of flares simultaneously has been change to be consistent with language used at other landfill sites.

65-000-713- A: RACT proposal was submitted on March 27, 1996 for NOx and VOC sources at this facility. The major VOC and NOx sources are reduced through permit conditions and emissions after controls are below the major source thresholds. The control used at the facility (flare) is the Best Available Control technology as determined by the Department and meets the RACT requirements. A NOx emission limit was established through a Plan Approval Condition. The RACT plan was not reviewed and a separate RACT Operating Permit was not issued because the controls in place and the associated permit conditions were RACT.

TV-65-00713: Initial Title V Operating Permit for this facility was issued on August 30, 2001. On January 28, 2003 the Department received an application from Greenridge Reclamation for a minor permit modification to the Title V permit. The minor permit modification was to incorporate the conditions of the Consent order and Agreement which required additional specific procedures for the disposal of asbestos containing waste.

65-00713B: A Plan Approval application (PA-65-00713B) was submitted on June 21, 2006 to allow a modification to the existing Leachate Evaporation and Enclosed Flare System to control additional landfill gas (LFG) production and issued on May 7, 2008. Company did not

propose any increase in landfill capacity or waste acceptance rates. The suggested change in the Plan Approval requirements has been made in this Title V renewal.

CONCLUSIONS AND RECOMMENDATIONS:

Greenridge Reclamation has met the regulatory requirements associated with this application submittal. The attached permit reflects the applicable regulatory requirements associated with this facility. I recommend that the proposed Title V Renewal Operating Permit be issued for this site.