DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N620730883

FACILITY: SMITHS CREEK LANDFILL		**SRN / ID:** N6207
LOCATION: 6779 SMITHS CREEK ROAD, SMITHS CREEK		**DISTRICT:** Southeast Michigan
CITY: SMITHS CREEK		**COUNTY:** SAINT CLAIR
CONTACT: Matt Williams , Landfill Manager		**ACTIVITY DATE:** 08/18/2015
STAFF: Rebecca Loftus	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT:		
RESOLVED COMPLAINTS:		

On August 18 , 2015, I, Rebecca Loftus, from the Department of Environmental Quality's (DEQ), Air Quality Division (AQD) Smiths Creek Landfill, State Registration Number (SRN): N6207, located at 6779 Smiths Creek Road, in Smiths Creek, St. Clair County, Michigan. The purpose of this inspection was to determine Smith Creek's compliance with the Federal Clean Air Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, Michigan's Air Pollution Control Rules, and Renewable Operating Permit (ROP) number MI-ROP-N6207-2012.

Below is a summary of my findings during my inspection and file review.

Contacts

I arrived on-site and met with the following staff:
Matt Williams, Site Manager, 810-989-6979, mwilliams@stclaircounty.org
Travis Heslop, Wellfield Operator
Erin Berish, CTI Project Engineer, 2484865100, eberish@cticompanies.com
Xianda Zhao, Bio-reactor, xzhao@cticompanies.com

Facility Overview

Smiths Creek Landfill (SRN: N6207) is a Type II Sanitary Landfill, owned and operated by St. Clair County. Blue Water Renewables (operated by DTE Biomass, SRN: P0262) owns an electric generating facility located at the landfill that utilizes the landfill gas as fuel. Previously, an agreement was made between AQD management, St. Clair County, and Blue Water Renewables, which allowed the two entities to have separate ROPs and SRNs; together these entities comprise one single stationary source.

The landfill opened in 1967 and has a design capacity of 12.6 million cubic yards (9.7 million Mg). Since the landfill has a design capacity of greater than 2.5 million Mg and has estimated its Non-Methane Organic Compound (NMOC) emissions to be greater than 50 Mg per year, Smiths Creek is subject to the National Standards of Performance for Municipal Solid Waste Landfills, 40 CFR Part 60 Subpart WWW, and the National Emission Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills, 40 CFR Part 63 Subpart AAAA, and is permitted under ROP No. MI-ROP-N6207-2012.

The original 56 acre landfill was located on the north side of the property. This portion of the landfill is closed and does not have synthetic liner, or an active gas collection system.

In the newer portion of the landfill (post 1989), municipal solid waste, construction debris, asbestos-containing wastes, and ash are deposited in one of the cells; at the time of my

inspection waste was being placed in Cells #6 and #7. Smith's Creek also operates a bioreactor as part of a Research Development and Design Project.

Currently, Smiths Creek owns approximately 265 acres (160 acres permitted for solid waste), has 98 extraction wells, and is collecting LFG at flow rates of approximately 1000 scfm. The collected LFG goes to the on-site blower building and can be routed to one of two flares or to the Blue Water Renewable Engine Plant.

The ROP for Smiths Creek has enforceable limits/conditions for the following: EULANDFILL, EUALGCS, EUOPENFLARE, EUVENTFLARE, EUBIOREACTOR, EUASBESTOS, and FGEMERGEN.

Landfill/Gas Collection System

Smiths Creek ROP has two sections covering the landfill and gas collection system, EULANDFILL and EUALGCS. During my inspection, Smiths Creek provided me with copies of the surface methane monitoring reports, monthly integrity checks, waste acceptance rates/design capacity, and the LFG NSPS parameters reports (see attached documents). The records provided are needed to demonstrate compliance with the ROP and federal landfill regulations. Summaries of the reviewed reports have been provided below.

Ms. Berish provided me a copy of the 2014 3rd quarterly methane surface scan conducted on September 25, 2014 (see attached report). Similar to previous reports, the following areas were traversed: the Interim Cover, Cell B, Cell2, Cell2B, Cell 3A, Cell 3B, Cell 5, and Cell 6. For this quarter, there were no locations at Smiths Creek had an initial measured surface concentration of methane greater than 500 part per million.

According to the records, integrity checks of the landfill cover are conducted on a monthly basis. These records indicated where corrective actions are needed. All records are kept on-site and were made available during my inspection; a copy of the July 2015 was provided to me (see attached).

For 2013, Smiths Creek had the following acceptance rates: 196,459 Mg/year and 216,105 tons/year; this is an increase from last year. . The current permitted design capacity approved by staff in DEQ's Waste Division is 24,503,574 mega grams.

Smith Creek's wellfield currently consists of 98 extraction points (111 including the header at fuel skids and other sampling points used for bio-reactor research); the 98 wells are subject to the NSPS. On a monthly basis, Smiths Creek monitors temperature, oxygen, and pressure for each well. This data was available on-site during my inspection and I was provided a copy of a few of the wells' data (see the attached).

According to these records and Smiths Creek's semi-annual reports, they are properly documents instances in which wells have temperature, oxygen, and/or pressure exceedances. In the instances in which an exceedance cannot be corrected within 15 days, Ms. Berish has requested higher operating variance, alternative timelines, and/or to decommission wells (see file for individual request). During my inspection, no wells were currently operating under a NSPS variance, but Ms. Berish may be requesting to decommission two lateral wells in Cell #3.

According to Ms. Berish, the last updated GCCS Plan was reviewed by the DEQ in 2012/2013.

Open Flares

The landfill is currently producing approximately 1000 scfm of LFG. Each of the RICE engines operated by Blue Water Renewables has the capacity of combusting 500 scfm of LFG. Therefore, unless either of the RICE engines are malfunctioning or shut down for scheduled maintenance, all of the LFG produced by the landfill is combusted by the engines.

Smiths Creek does have two open flares: a 10" diameter flare with a 2000 scfm capacity, a 3" diameter flare with a 30-200 scfm capacity. When in operation the flow and temperature are recorded every 15 minutes as required by the ROP. Blue Water Renewables keeps electronic copies of the data for the flares; Smiths Creek still maintains the flow/temp data chart at the flares.

For 2013, the 10" flare consumed 0.6 MMscf and the 3" flare consumed 0.2 MMscf; this is much less than last year. The open flares were not operating during my inspection.

Vent Flares

In addition to the two open flares, Smiths Creek has six self-igniting solar flares on the closed section of the landfill. Due to the age of the waste, no active gas collection system was required to be installed in this area. In lieu of an active gas collection system, Smiths Creek installed the solar powered flares; approved by the EPA on July 16, 2002. These flares serve as conduits to release gas pressure and are equipped with a spark plug which ignites the LFG in the combustion zone of the flare. A thermocouple and data logger monitors the operation of each flare.

Most of these flares run intermittently, or not at all; at the time of my inspection I did not observe any of the solar flares operating. The weekly solar flare inspections are maintained on-site and were made available to me at the time of my inspection; the logs appear to be properly completed on a weekly basis. The weekly inspections and data recorders are needed to show compliance with permit conditions.

Bio-reactor

The bioreactor is being operated as a Research Development and Design Project. Leachate and septage is being added to the waste to accelerate the degradation process and to increase the production of LFG. Initially the bioreactor was divided into two cells: Cell 3B for leachate recirculation and Cell 3A for septage addition. Two large bladder tanks are located near cell #3 and the material is gravity fed into a pump system located within the cells.

Recently, Smith's Creek was permitted by DEQ's Waste division to expand the bio-reactor into co-mingled waste in cells #4, #6 and #7. At the time of my inspection, Mr. Zhao explained the injection line for cells #6 and #7 should be completed in the next week.

Based on the well data and moisture content provided, the Bio-reactor appears to be meeting the conditions established in the ROP.

Asbestos
Smiths Creek does accept asbestos containing waste. These activities are permitted in the ROP under EUASBESTOS. When asbestos waste is accepted, the coordinates are recorded on the site map and when a well is needed, they avoid the area containing the asbestos waste. During the inspection, a copy of the asbestos tracking map was provided to me (see attached). At this time, Smiths Creek appears to be in compliance with the conditions listed in EUASBESTOS.

Emergency Generators
Smiths Creek has two emergency generators located on-site. I was able to obtain additional information on the generators since my last inspection:

Septage (Muffin Monster) Generator
Installed on 3/22/15 (replacing old generator)
22KW - Natural Gas - 28 HP
Gen Mfg.: Generac
Gen Model: 0065510
Serial #: 9169036
Engine Mfg.: OHVI Engines
Engine Model: OJ9333
Engine Hours: 2.6

Scale House Generator
Installed June 2013
14KW - Liquid Propane - 18 HP
Gen Mfg.: Kohler
Gen Model: 14RESAL
Serial #: SGM324GJP
Engine Hours have not changed since last inspections as the generator is not hooked up to a fuel source (LP was converted to natural gas)

The emergency generators were subject to 40 CFR, Part 63, Subpart ZZZZ, the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The Septage Generator appears to now be subject to 40 CFR, Part 60, Subpart JJJJ, the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (See attached Summary).

Ms. Berish has established maintenance records for each emergency generator and logs for emergency vs. testing hours (that I recommended at my last inspection). Both generators are exempt from obtaining a Permit to Install pursuant to Rule 285(g). The ROP renewal is due between December 2015 and December 2016; the flexible group for the emergency generators will be updated to reflect current conditions at the time of renewal.

MAERS
For 2014, Smiths Creek reported the following emissions:

Pollutant	Tons
CO	14.69
NOx	0.79
PM10	0.34
PM2.5	0.34
SO2	1.04
VOC	0.11

The reported emissions appear to be consistent with the records reviewed.

Other Equipment

The leachate is sent to the pre-treatment building located next to the engine plant. This is operated by DWSD and appears to be exempt from obtaining a permit to install pursuant to Rule 285(m). This building also has some natural gas space heaters; these appear to be exempt from obtaining a permit to install pursuant to Rule 282(b)(i).

Conclusion

Based on information gathered during the inspection and records reviewed, Smiths Creek appears to be in compliance with the Federal Clean Air Act, Michigan's Air Pollution Control Rules, and the conditions of ROP No. MI-ROP-N6207-2012.

NAME Rebecca Griffith DATE 9/25/15 SUPERVISOR CJE