

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

P041538262

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|--|-------------------------------|---------------------------|
| FACILITY: North American Natural Resources (NANR) | | SRN / ID: P0415 |
| LOCATION: 4143 E. Rathburn Road, BIRCH RUN | | DISTRICT: Saginaw Bay |
| CITY: BIRCH RUN | | COUNTY: SAGINAW |
| CONTACT: Nate Gokey , | | ACTIVITY DATE: 01/11/2017 |
| STAFF: Gina McCann | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: Scheduled inspection for MI-ROP-P0415-2014. | | |
| RESOLVED COMPLAINTS: | | |

I (glm) visited the NANR-People's Generating Station, landfill gas-to-energy facility, owned and operated by North American Natural Resources (NANR)-. I met with Ben Petz (Plant Operator) and Nate Gokey (Venice Park Plant Operator).

North American Natural Resources – People's Generating Station (NANR – People's Generating Station), is a landfill gas-to-energy facility. NANR and Waste Management (WM) have a contractual agreement in which People's Landfill sells landfill gas (LFG) to NANR and NANR is dependent upon People's Landfill to provide landfill gas which is combusted in its five internal combustion engines. The contractual and spatial relationship of the two facilities establishes People's Landfill and NANR-People's Generating Station as a single stationary source based on the definition in Michigan's Rule 336.1119(r). However, based on an agreement between the AQD and management of People's Landfill and NANR-People's Generating Station, the two facilities were issued separate State Registration Numbers (SRNs) and ROPs in 2013 and 2014 respectively.

This stationary source takes raw landfill gas from Waste Management of Michigan, Inc. – People's Landfill (N5397) and treats the gas for use as fuel in five reciprocating internal combustion engines (4-Caterpillar G3516 and 1-Caterpillar G3520C).

The landfill gas is collected at the People's Landfill facility by an active gas collection system (owned and operated by WM) through a series of vertical extraction wells that are installed into the depths of the landfill refuse, which remove landfill gas by vacuum applied to the well from a blower. The LFG is then routed to North American Natural Resources (NANR)–People's generating facility for treatment and generation of electricity. Any excess LFG, or when the NANR facility is down, is routed to the open flare (owned and operated by WM). The collection system (owned and operated by WM) is periodically modified by adding a gas well and/or collection piping as needed when sections of the landfill begin to produce significant gas quantities. It is noted that the open flare is sized to burn all collected gas generated by the landfill.

I reviewed on site records of the engines and treatment systems. The facility does not maintain monthly emissions records on site for engines #1-4. An email request was sent on 1/11/017 to Mr. Rich Spranger, responsible official, for April 2015 through December 2016 records.

EUTREATMENTSYS:

The collected landfill gas is filtered, dewatered, compressed, & cooled prior to use as fuel in one of four generators owned and operated by NANR. On March 25, 2004 the AQD provided a site specific NSPS applicability determination that system treating landfill gas from the People's GCCS meets the requirements of a 40 CFR 60.752(b)(2)(iii)C for a treatment system. During the site visit the treatment system was operating and all required monitoring was performed.

FGENGINES#1-4:

This flexible group contains four 1145 horsepower reciprocating internal combustion engines that use treated landfill gas to generate electricity that is fed to the power grid. PTI#437-94 was previously rolled into the ROP. The four engines have emission limits for NOx, CO, VOCs, and HCL. The facility must also monitor and record the electrical output, hours of operation, and landfill gas flow to the engines. The information is recorded electronically and is not always transferred to paper, but can be retrieved as needed. At the time of the inspection engine # 1 was not operating. There was 891 scfm of landfill gas being supplied to the engines #1-4 and -32 "W.C. vacuum applied.

| Engine | KW Output | Hours | Right Bank/Left Bank Dif. Pressure | Last Overhauled |
|-----------|---------------|---------|---------------------------------------|-----------------|
| Engine #1 | Not Operating | 141,113 | Not Operating | 85,246 |
| Engine #2 | 693 KW | 134,331 | 2.0 " W.C./ 3.0 " W.C. | 97,820 |
| Engine #3 | 693 KW | 145,298 | 6.0 " W.C./ 6.0 " W.C. | 85,750 |
| Engine #4 | 661 KW | 151,288 | 5.2 " W.C./ 3.0 " W.C. | 99,414 |

I viewed hourly and monthly emissions of NOx, CO, and VOC from each of the ICE for 2016. All emission calculations were below the permit limits for each of the engines in FGENGINES#1-4.

The most recent tests of the engines were conducted in 2015. NOx, CO, HCl or VOC emission rates from all engines in FGENGINES#1-4 were below permit limits and NSPS JJJJ limits. The Department will again request NOx, CO, and VOC emissions testing from all engines in FGENGINES#1-4 within 5 years of the last test date.

EUENGINE#5

PTI#321-06 was issued for two 2250 horsepower reciprocating internal combustion engines that run on landfill gas. This PTI was rolled into the current ROP and engine #6 was removed during the 2014 ROP renewal since installation of the equipment had not commenced within 18 months of the original PTI issuance date (R 336.1201(4)).

Engine #5 has a separate treatment system and gas supply with a low pressure blower and 3 micron filter. The facility states that engine #5 was ordered on 9-18-06 and manufactured on 10-11-2006, thereby not subject to NSPS JJJJ.

We viewed the operating hours, kilowatts generated, and landfill gas flow meters for all engines. The meters are the source of readings taken for required reporting parameters. The most current records are maintained in the generator building by the onsite operator. All required records requested were maintained and available to view. There was 285 scfm of landfill gas being supplied to the engine and a KW output of 1200. The engine had 73,249 hours on it and was due for an overhaul.

Engine #5 was tested in 2015. NOx, CO and HCl emissions were reported below permit and NSPS JJJJ limits.

FGRICEMACT

On August 30, 2014 the facility submitted formaldehyde emissions calculations based on a recently updated emission factor. With the change in emission factors the facility became a major source of HAPs.

On October 8, 2013 an initial notification was submitted to the Department in compliance with 40 CFR 63.6645, for new or reconstructed four-stroke lean-burn stationary engines with a site rating of greater than or equal to 25 HP located at a major source of HAP emissions.

Compliance with the RICE MACT is three years after an area source becomes a major source, 40 CFR Part 63.6595(b)(2). The ROP has a mistake of stating that the compliance date is upon start-up.

SSM:

The latest SSM plan submitted to the AQD by Waste Management Incorporated included the gas treatment system. Since the issuance of separate SRNs and ROPs, NANR should revise the SSM plan to make it their own. Reporting of SSM instances are limited to periods when the entire plant is shutdown, not an individual engine. NANR submits SSM annual & semi annual reports to the AQD. Review of the 2014 SSM reports found that NANR had 7 malfunction events occurred due to loss of power at a substation, transmission line breakage, or, a thunderstorm. All actions taken during Startup and Shutdown events followed the SSM plan.

For the first semi-annual report, reporting period from January 1, 2016 thru June 30, 2016, there were 21 GCCS startup events, 11 shutdown events and 10 GCCS malfunction events. Reports stated that there were no revisions made to plan and that all occurrences were consistent with the SSM Plan.

For the second semi-annual report, reporting period from July 1, 2015 thru December 31, 2016, there were 2 instances when all control devices were down for more than one hour. Reports stated that there were no revisions made to plan and that all occurrences were consistent with the SSM Plan.

The facility was in compliance at the time of the inspection.

NAME  DATE 1/18/17 SUPERVISOR 