

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

N599725441

FACILITY: Granger Wood Street Landfill		SRN / ID: N5997
LOCATION: 16980 Wood Road, LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: CLINTON
CONTACT: Kimberly Smelker, PE , Operations Manager		ACTIVITY DATE: 06/10/2014
STAFF: Daniel McGeen	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Partial Compliance Evaluation (PCE) activities conducted as part of a Full Compliance Evaluation (FCE): 1.) unannounced, scheduled inspection, and 2.) review of records and operational logs.		
RESOLVED COMPLAINTS:		

On 6/10/2014, the Department of Environmental Quality (DEQ), Air Quality Division (AQD) conducted a scheduled inspection of Granger Wood Street Landfill and the Granger Electric Company Wood Street Landfill Generating Station. This was a Partial Compliance Evaluation (PCE) activity, conducted as part of a Full Compliance Evaluation (FCE). Another PCE activity, review of records, was also conducted.

Regulated emission units*:

Emission unit and flexible group ID from ROP, if applicable	Emission unit description	Applicable federal regulation	Permit to Install No. or exemption from Rule 201	Compl. status
EULANDFILL<50-S1	Landfill with design capacity greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters, NMOC emissions based upon Tier 2 value < 50 Mg. Landfill received volume expansion permit from DEQ since 5/30/1991, to 8.3 million Mg.	40 CFR Part 60, Subparts A and WWW; 40 CFR Part 63, Subpart AAAA	Rule 285(aa)	Compliance
Flare	Flare for combusting excess landfill gas		Rule 285(aa)	Not operating
EUASBESTOS-S1	Any active or inactive asbestos disposal site	40 CFR Part 61, Subpart M		Compliance
EURULE290-S1, FGRULE290-S1	Future emission units exempt under Rule 290 (no existing units at site subject to Rule 290)		Rule 290	NA
EUIECEENGINE1-S1, FGICEENGINES-S1	Engine No. 5; EUIECEENGINE5 in PTI; reciprocating internal combustion engine (Caterpillar G3520C); 2,233 horsepower; 1,600 kW	40 CFR Part 60, Subpart JJJJ; 40 CFR Part 63 Subpart ZZZZ	PTI No. 357-07A	Compliance
EUIECEENGINE2-S1, FGICEENGINES-S1	Engine No. 6; EUIECEENGINE6 in PTI; reciprocating internal combustion engine (Caterpillar G3520C); 2,233 horsepower; 1,600 kW	40 CFR Part 60, Subpart JJJJ; 40 CFR Part 63 Subpart ZZZZ	PTI No. 357-07A	Compliance
EUIECEENGINE3-S1, FGICEENGINES-S1	Engine No. 7; EUIECEENGINE7 in PTI; reciprocating internal combustion engine (Caterpillar G3520C); 2,233 horsepower; 1,600 kW	40 CFR Part 60, Subpart JJJJ; 40 CFR Part 63 Subpart ZZZZ	PTI No. 357-07A	Compliance
EUIECE1-S1, FGICE-S1	Engine No. 1, EUIECEENGINE1 in PTI; reciprocating internal combustion engine (Caterpillar G3516); 1,138 horsepower; 800 kW	40 CFR Part 63 Subpart ZZZZ	PTI No. 357-07A	Compliance
EUIECE2-S1, FGICE-S1	Engine No. 2; EUIECEENGINE2 in PTI; reciprocating internal combustion engine (Caterpillar G3516); 1,138 horsepower; 800 kW	40 CFR Part 63 Subpart ZZZZ	PTI No. 357-07A	Compliance
EUIECE3-S1, FGICE-S1	Engine No. 3; EUIECEENGINE3 in PTI; reciprocating internal combustion	40 CFR Part 63 Subpart	PTI No. 357-07A	Compliance

	engine (Caterpillar G3516); 1,138 horsepower; 800 kW	ZZZZ		
EUICE4-S1, FGICE-S1	Engine No. 4; EUICEENGINE4 in PTI; reciprocating internal combustion engine (Caterpillar G3516); 1,138 horsepower; 800 kW	40 CFR Part 63 Subpart ZZZZ	PTI No. 357-07A	Compliance
EUDIASEL-S2	15,000 gallon diesel fuel storage tank	40 CFR Part 60, Subpart Kb		Compliance
EUPAINTBOOTH-S2, FGPAINTBOOTH-S2	Paint booth for spray painting containers		Rule 287(c)	Not operating
EUNEWCOLDCLEANERS-S2, FGNEWCOLDCLEANERS-S2	Two small cold cleaners/degreasers which are exempt from the requirements of Rule 201 and were installed after 7/1/1979		Rule 281(h), Rule 285(r)(iv)	Compliance
EURULE290-S2, FGRULE290-S2	Future emission units exempt under Rule 290 (no existing units at site subject to Rule 290)		Rule 290	NA
Sandblaster	Sandblaster used for shotblasting containers prior to repainting		Rule 281(d)	Not operating

* Note: a table of emission units exempt from Permit to Install (PTI) and Renewable Operating Permit (ROP) requirements is located at the end of this report.

Environmental contact:

Kimberly Smelker, PE, Operations Manager, Granger Waste Management Company; 517-371-9726; ksmelker@grangernet.com

Location:

The landfill is located in both Clinton and Ingham Counties, in Dewitt Township and Lansing Township, respectively. The offices for this site are located on Wood Street, north of the Lake Lansing Road intersection. A shopping mall has been built to the southeast of the site, in recent years, and additional commercial developments are being built north of the mall. East of the site are a Hot Mix Asphalt plant, a concrete crusher, and an oil recycling business. Further to the northeast are a trailer park and a senior citizen housing development. A trailer park is located at the western perimeter of the landfill. To the immediate north of the site is Granger Meadows, a park made on land which Granger has donated to the community.

Summary of plant operations:

The Wood Street Landfill is a municipal solid waste (MSW) landfill with an associated gas-to-energy plant. A landfill is defined as an area of land or an excavation in which wastes are placed for permanent disposal. The primary activity of this source is accepting refuse for solid waste disposal. This landfill accepts MSW, consisting mostly of residential and commercial waste materials. The primary Standard Industrial Classification Code (SIC) is 4953, MSW Landfill, and the North American Industry Classification (NAICS) Code is 562212 (Solid Waste Landfill).

The Granger Wood Street Landfill had an installation date of July 16, 1984, which initially made the landfill subject to 40 CFR Part 62, Subpart GGG, as it commenced construction, reconstruction, or modification before 5/30/1991. The landfill also has a design capacity of 8.3 million megagrams (Mg), which exceeds the 2.5 million Mg threshold in Subpart GGG. This landfill has received a volume expansion permit from the Department of Environmental Quality (DEQ) since 5/30/1991, and therefore is now subject to 40 CFR Part 60, Subpart WWW (Standards of performance for Municipal Solid Waste landfills), instead of Subpart GGG. The landfill is required to calculate the NMOC emission rate and submit NMOC emission rate reports if the emission rate is less than 50 Mg per year. Once the NMOC estimated emission rate exceeds 50 Mg/year, the landfill will have 12 months to submit a landfill gas collection and control system (GCCS) design plan.

Although this source has an uncontrolled emission rate below the 50 Mg/year NMOC threshold,

according to the estimate based upon the EPA Tier 2 calculation, an active landfill GCCS has been voluntarily installed by granger, to collect landfill gas. The collection system includes a series of gas wells, a network of collection piping and headers, condensate drains, an open flare, and a gas-to-energy plant, and 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.

At the gas-to-energy plant, seven reciprocating internal combustion engines (RICES) combust the landfill gas, and generate electricity. The gas is first treated to remove moisture, however. There is also an existing flare at the site, in the event that there is more landfill gas fuel produced than the engines can combust.

Regulatory applicability:

This facility is classified as a major source for the criteria pollutant CO. It is also classified as a major source for Hazardous Air pollutants (HAPs), having the Potential to Emit (PTE) more than 25 tons per year (TPY) of formaldehyde, which is a HAP, from the seven reciprocating RICES at the gas-to-energy plant. The AQD Lansing District's PTE calculation for the RICES is 35.6 TPY for formaldehyde, based upon stack test lb/hr values from 9/25-26/2012 testing.

The emission unit EULANDFILL<50-S1 is subject to Title 40 of the Code of Federal Regulations (CFR), Part 60, Subparts A and WWW for Municipal Solid Waste Landfills that commenced construction, reconstruction, or modification on or after 5/30/1991. The regulation requires that a Part 70 ROP be submitted for all new and existing landfills with a design capacity equal to or greater than 2.5 million megagrams (Mg) or 2.5 million cubic meters. The facility has a maximum design capacity of 8.3 million Mg, although this number is 19.7 million Mg, if one includes a closed landfill at the site.

Subpart WWW requires the installation of a gas collection and control system (GCCS) once NMOC emissions are calculated as being equal to or greater than 50 Mg/year. This facility is below 50 Mg/ year, based upon the annual Tier 2 calculation, which will be discussed later in this report. There are various milestones under Subpart WWW, which have been met by the facility. An initial design capacity report was submitted on 9/1/1999, as 4.2 million Mg. A Tier 2 Emission Rate Report was submitted as part of the same document, and each year the facility submits an updated Tier 2 Emission rate Report of estimated NMOC emissions.

Because it is a major source for a single HAP, formaldehyde, EULANDFILL<50-S1 is also subject to the Maximum Achievable Control Technology Standards (MACT) for Municipal Solid Waste Landfills promulgated in 40 CFR Part 63, Subparts A and AAAA. Subpart AAAA requires compliance with 40 CFR Part 60, Subpart WWW.

No emission units at the stationary source are currently subject to the Prevention of Significant Deterioration (PSD) regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of each criteria pollutant was less than 250 tons per year.

At this time, there are no GHG applicable requirements to include in the ROP. The mandatory Greenhouse Gas Reporting Rule under 40 CFR 98 is not an ROP applicable requirement and is not included in the ROP.

The three newest ICE engines, Nos. 5-7 (identified in the ROP as EUICEENGINE1-S1, EUICEENGINE2-S1, and EUICEENGINE3-S1) at the stationary source were not in the previous ROP, which predated them. They are subject to the New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines promulgated in 40 CFR Part 60, Subpart JJJJ.

EUASBESTOS-S1 at the stationary source is subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for asbestos promulgated in 40 CFR, Part 61, Subparts A and M.

All seven ICE engines, Nos. 1-7 (called EUICE1-S1, EUICE2-S1, EUICE3-S1, EUICE4-S1, EUICEENGINE1-S1, EUICEENGINE2-S1, and EUICEENGINE3-S1 in the ROP) at the stationary source are subject to the

Maximum Achievable Control Technology Standards for RICE (also known as the RICE MACT) promulgated in 40 CFR, Part 63, Subparts A and ZZZZ.

The ROP for Granger Wood Street landfill is divided into two sections. The first section pertains to both the landfill itself and to Granger Electric Plant No. 1, the gas-to-energy plant. The second section applies to Granger Container Service, which operates a paint coating process for refuse containers.

Granger Container Service has a diesel storage tank, EUDIESEL-S2. It is subject to 40 CFR Part 60, Subpart Kb, the New Source Performance Standards (NSPS) for Volatile Organic Liquid Storage vessels (including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.

No emission units are subject to the federal Compliance Assurance Monitoring Rule under 40 CFR, Part 64, because all emission units at the stationary source either do not have a control device or those with a control device do not have potential pre-control emissions over the major source thresholds.

Recent history:

On 5/2/2013, Granger ROP number MI-ROP-N5997-2013 was approved. This was a renewal of the existing ROP, which is done every 5 years. On 8/6/2012, the PTI No. 357-07 for Granger's three newest RICE engines, which are Caterpillar G3520C units, was revised as 357-07A, to raise a limit for Carbon Monoxide (CO), to add an additional limitation on CO, and to allow for increased landfill gas usage for the RICES. Also, this PTI required RICE stack testing, which was done on 9/25-26/2012. These PTI requirements have been incorporated into the draft ROP.

Most recent stack test:

From 4/15-16/2014, stack testing was conducted on the three CAT G3520C engines, for CO, NOx, and NMOC, as required by 40 CFR Part 63, Subpart JJJJ, and by PTI No. 357-07A. The test results were below the permitted limits. My review of the process parameters from the stack test showed that the test was conducted at or above maximum routine operating conditions (please see AQD 4/16/2014 activity report).

MAERS and fee status:

This facility reports to the Michigan Air Emission Reporting System (MAERS) annually. It is classified as a Fee Category I, being a major source. The fees support AQD's ROP program. Emissions from the 2013 calendar year will be discussed later, in this report.

Arrival:

As I drove north on Wood Road, I briefly detected a faint odor that was compost-like, but the wind was out of the northeast, and Granger was to the west of my location. As I drove further north, towards the landfill offices, I detected a distinct and definite asphaltic odor. I was downwind of a nearby asphalt plant, at the time. I arrived at the Granger offices at 9:20 AM. Weather conditions were partly sunny, moderately humid, and 66 degrees F, with winds out of the northeast at 0-5 miles per hour.

I met with Ms. Kimberly Smelker, PE, Operations Manager for the Wood Street Landfill. The DEQ brochure "Environmental Inspections: Rights and Responsibilities" was offered to the Granger environmental contacts, but they have already received a copy from another DEQ division.

The Wood Street Landfill has been very busy, lately, Ms. Smelker explained. Part of that is because the Granger Grand River Avenue Landfill has been mothballed, and more customers are now coming here. Another main reason Wood Street has been so busy is that recent construction activities at Michigan State University have resulted in lots of clean dirt and contaminated dirt being sent here. Additionally, Granger has purchased two transfer stations, and waste dropped at the transfer stations is now coming here.

For trackout of dirt or mud from unpaved roads and vehicle tires onto the paved roadways and the public road, they have on call a street sweeper, who cleans sometimes as often as twice per day. They have their own water truck, Ms. Smelker explained, which is driven constantly, during their open hours. I observed it in use, throughout the course of the inspection.

They are trying an experimental way of reducing trackout. They have rented large metal grates, which are installed above a gravel bed, for trucks leaving the unpaved landfill roadways. The mud on the tires gets dislodged by the grates, and falls into the gravel, below. They are trying to see if this can help reduce the frequency with which the paved streets must be swept, to improve efficiency and reduce costs. However, the gravel bed underlying the grates must periodically be cleaned, too. Along with the cost of the grates, the gravel, and the cleaning of the gravel, they will also evaluate whether the new system is doing a good job of preventing trackout.

They have relocated their composting operation, from south of the office buildings, to north of them. They have also modified their approach to composting. It is managed less intensively, now, in regard to activities like rotating it. The compost is now used onsite, as interim cover, to help grow grass. Interim cover stays in place for months to years, at a time. I could detect faint and then distinct and definite compost odors, when we were close to areas of compost.

Since November of 2012, Granger has installed 11 gas wells, of the caisson style. These involve an inner liner or pipe with perforations, which can be raised up or down in an outer pipe which is not perforated, for interim wells.

There are two clean dirt jobs, and two soil contamination jobs, mentioned previously. The clean dirt is used for daily cover, and for road building. The contaminated soil is inert waste, like fly ash, Ms. Smelker explained, and these materials are kept apart from traditional trash.

Near the north end of the site, clay was being excavated, to be used for capping portions of the landfill. The excavation area will become will become the location of a landfill cell, in the future.

They have odor mister units suspended on a cable at the east perimeter of the landfill. They spray an odor neutralizing liquid as a fine mist, to neutralize objectionable odors. Mistors are utilized next to the new composting location. They also deploy individual barrels of liquid, each equipped with a misting unit. There are still mistors next to the previous composting location, but they can be relocated.

EULANDFILL<50-S1; 40 CFR Part 60 Subparts A and WWW, 40 CFR Part 63, Subpart AAAA; Rule 285 (aa):

The landfill has a license from the DEQ which would allow them to recirculate their leachate within the landfill. However, Granger is not interested in doing this. It would maximize landfill gas production, but would not be as optimal for the long term health of the methane-producing bacteria within the landfill. Their leachate goes to the Lansing Wastewater Treatment Plant.

Tier 2 NMOC Emission Rate Report:

EPA requires that a Tier 2 estimate of NMOC emissions be submitted annually, to determine if emissions are below 50 Mg/year. The latest Tier 2 estimate was 20.66 Mg/year of NMOC, submitted to AQD on 3/10/2014. This shows compliance with 40 CFR Part 60, Subpart WWW. The calculation was done using the EPA Tier 2 equation, along with actual landfill gas sampling results from 2011. If NMOC emissions reach 50 Mg/year, the requirement of 40 CFR Part 60, Subpart WWW to install an approved landfill GCCS will be triggered. Granger has already installed a GCCS, along with RICE engines and a flare to combust the gas, even though they are below the 50 Mg/year threshold. Landfill gas samples for Tier 2 are collected once every 5 years, so the next sampling event will be in 2016.

Flare; Rule 285(aa):

The flare was not in operation at this time. It would be used if there was more landfill gas available than the ICE engines could combust, such as when an ICE were is down for maintenance work. 40

CFR Part 60, Subpart A, General Provisions, and 40 CFR Part 63, Subpart A, General Provisions each contain requirements for the operation of flares, but it appears that these do not apply to landfills whose NMOC emissions are less than 50 Mg/year. A flare would not be required at a landfill whose NMOC emissions are less than 50 Mg/year.

EUASBESTOS-S1; 40 CFR Part 61, Subpart M:

They periodically receive asbestos containing materials (ACM). They place ACM and medical waste in trenches which are not to be disturbed. They track the location and depth of the trenches, and the amount of ACM placed in them. The trenches are fenced on three sides with orange fencing materials. The trenches are excluded from gas collection, which is allowed by Section 60.759(a)(i) of Subpart WWW, for segregated areas of asbestos or nondegradable material. This is because collecting gas from, or too close to, the trenches could disturb the ACM and/or other nondegradable waste. When a trench is being filled, at the end of the day, they cover the materials in the trench with daily cover. This complies with the asbestos NESHAP. They also place alternate daily cover on the sides of the trench, to prevent odors of landfill gas from seeping out.

Lately, they have been digging more asbestos trenches, because they have been receiving a lot of demolition waste. They dug 18 trenches last year, of various sizes. Since they track location of trenches, they typically stack them directly above one another.

On 6/20, pursuant to a 6/19 request I made, Ms. Smelker provided a current printout showing the location of their most recent asbestos trench (attached for reference). Location, elevation, depth, area, and volume of ACM are all detailed in this diagram. This complies with the requirement of 40 CFR 61.154(f), that they "shall maintain, until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area storage." This review of records was a PCE activity.

EURULE290-S1:

They currently do not have any emission units which are exempt pursuant to Rule 290. This fairly standard emission unit and flexible group are part of the ROP, to allow for future installation of such equipment. This avoids potential reopening of the ROP.

FGICEENGINES-S1:

This flexible group in the ROP includes RICE, aka ICE, engines Nos. 5-7, which are identified in PTI No. 357-07A as EUICEENGINE5-7. They are CAT G3520C engines, each rated at 2,233 horsepower (hp) and 1,600 kilowatts (kW). All three were running, at the time of the inspection. The stack heights were raised to 60 feet, around November, to the height specified in their recently revised PTI No. 357-07A. The ICEs burn landfill gas, which is first treated, to remove moisture. These are the newest ICEs at the site, and are located in the expanded gas-to-energy plant.

When collected landfill gas enters the expanded electric plant, it passes through a knockout tower, which removes the largest droplets of liquid. This would be enough to meet a federal definition of treatment, but Granger does further treatment. Compressors heat the gas up, and then aftercoolers cool it down. The cooling knocks out further moisture, but adds some oils. A filter is used to remove the oils, and a chiller removes additional moisture. The gas is then analyzed, prior to being injected into the ICES.

Data on the landfill gas and the G3520C ICE engines was collected, as follows:

Landfill fuel flow to expanded electric plant: 1394.0 scfm

Landfill fuel methane content: 53.3%

Landfill fuel oxygen content: 0.15%

Expanded plant power output: 4210.0 kW

Power produced by individual ICEs:

G3520C ICE engines in expanded electric plant	Set point in kW	Actual power production in kW
No. 5	1500	1486
No. 6	1500	1571
No. 7	1500	1487

Emission limits:

The 4/15-16/2014 stack testing found the G3520C ICEs to be in compliance with their permitted CO, NOx, and VOC limits. Formaldehyde was last tested in 2012, and the ICEs were in compliance with their limit.

The G3520C ICEs are limited by Rule 301 to 20% opacity. Stack opacity was 0%, during the inspection.

Material/fuel limits:

The three G3520C ICEs are limited by Permit to Install (PTI) No. 357-07A to burn a total of 848.82 million standard cubic feet per year (MMscf/year). The Michigan Air Emissions Reporting System (MAERS) report which Granger submitted for the operating year 2013 indicates that total yearly throughput for these units was 634.78 MMscf, within the permitted limit.

FGICE-S1:

This flexible group in the ROP includes ICE engines Nos. 1-4, which are identified in PTI No. 357-07A as EUICEENGINE1-4. These are CAT 3516 engines, each rated at 1,138 hp, and 800 kW. The stack heights were raised to 60 feet in November, 2012, to comply with PTI No. 357-07A. The ICEs burn landfill gas, which is first treated, to reduce the moisture content. These are the oldest engines at this site, and are located in the original gas-to-energy plant. They are some of the earliest ICEs which were built to burn "bio-gas", as opposed to retrofitted diesel engines.

Data was collected at 10:15-10:20 AM, as follows:

ICE 1: 820 kW

ICE 2: 780-800 kW

ICE 3: not running, at this time

ICE 4: 815 kW

Generator power from all 3516 ICEs: 2336 kW

Landfill gas fuel methane content: 53.9%

Landfill gas fuel oxygen content: 0.14%

Landfill gas fuel flow to original electric plant: 897 scfm

Landfill gas fuel flow total pulse: 225 scf

Landfill gas fuel temperature: 80.5 degrees F

The pressure drop on the landfill gas collection header that goes to the original electric plant was 36.9 inches; Granger prefers the term vacuum. When collected landfill gas enters the original electric plant, it is treated in the same way as described above, for the expanded electric plant. Methane content of the gas typically ranges from 54 to 57%.

Emission limits:

The 9/25-26/2012 stack testing of a representative CAT G3516 ICE, No. 4, to be in compliance with the permitted formaldehyde emission limit.

For the four G3516 ICEs, opacity is limited to 20% by Rule 301. Opacity was 0%, during today's inspection.

Material/fuel limits:

The ROP and the PTI contain no fuel limits for the G3516 ICEs.

EUDIESEL-S2; 40 CFR Part 60, Subpart Kb:

This is a 15,000 gallon diesel fuel storage tank. The NSPS and the ROP require the operator to keep records readily accessible showing the dimensions, and an analysis showing the capacity of the vessel.

EUPAINTBOOTH-S2:

The paint booth was not running, at the time of the inspection. They use it to repaint metal bins or gondolas that are being refurbished. Typically they wait to operate it until they have a group of about a dozen in need of repainting. They do not paint brand new bins, as those are painted by the manufacturer, before Granger receives them.

EUNEWCOLDCLEANERS-S2; Rule 281(h); Rule 285(r)(iv):

There are two small cold cleaners at Granger Container Service. They are small, and qualify for the Rule 281(h) exemption for cold cleaners which have an air/vapor interface of not more than 10 square feet, and also with the Rule 285(r)(iv) exemption metal treatment processes for cleaning whose emissions are released only into the general in-plant environment. The solution for the cleaners is ecologically safe enough that it can be used for washing one's hands.

EURULE290-S2:

They currently do not have any emission units which are exempt pursuant to Rule 290. This fairly standard emission unit and flexible group are part of the ROP, to allow for future installation of such equipment. This avoids potential reopening of the ROP.

Sand blaster; Rule 281(d):

The sandblast operation was not running, at this time. It would typically be used in conjunction with the paint booth, to sand blast metal containers immediately prior to doing touch up painting on them. Overnight, a few refuse containers may be temporarily placed there, with covers in place, and then the containers are dumped the next morning. We observed three such gondolas temporarily stored in the sandblast bay, at the time of the inspection.

EPA landfill inspection checklist:

The EPA Landfill Inspection checklist is copied below. The answers are unchanged from the previous

inspection report. The checklist requirements apply to landfills where the emissions of NMOC equal or exceed 50 Mg/yr. Such landfills would be required to install a landfill gas collection and control system pursuant to 40 CFR 60.752(b)(2)(ii)(A) or (B) and 40 CFR 60.752(b)(2)(iii). The Wood Street Landfill, being below 50 Mg/year NMOC, is not required to install a gas collection and control system, therefore most of this checklist is not applicable. However, the facility has voluntarily installed an active landfill gas collection and control system, so I recorded measures on the checklist that are being done, even though they are not required.

EPA ON-SITE INSPECTION CHECKLIST

I. MONITORING EQUIPMENT CHECKLIST

A. Active Gas Collection Systems [Section 60.756(a)]:

(Note: Granger Wood Street Landfill does have an active landfill gas collection system, but it is not required by federal regulations at this time, as their NMOC emissions are currently less than 50 Mg/yr.)

- 1.) Is a sampling port installed at each wellhead? Yes, unless the wellhead is buried.
- 2.) Is there a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead? This is not applicable, as their NMOC emissions are < 50 Mg/yr. They measure temperature of the gas at the gas plant.
- 3.) Are the following parameters being monitored?
 - a.) gauge pressure in the gas collection header on a monthly basis? When they go to a wellhead, they check vacuum (pressure), even though this is NA because NMOC < 50 Mg/yr. They refer to positive numbers as pressure, and negative numbers as vacuum.
 - b.) nitrogen concentration in the landfill gas as provided in Method 3C or oxygen concentration as provided in Method 3A? Yes. They monitor nitrogen and oxygen even though not required, as NMOC < 50 Mg/yr. They also measure methane and balanced gases.
 - c.) Temperature of the landfill gas on a monthly basis? They continually monitor this, even though it is not required, as NMOC < 50 Mg/yr.
- 4.) If an alternative method is used to monitor for infiltration, is this method documented and maintained with the landfill records? It was not clear if this question in the checklist was in regard to oxygen infiltration, but it is NA, as NMOC < 50 Mg/yr.

B. Enclosed Combustion Devices [Section 60.756(b)]:

- 1.) Is the following required equipment being calibrated, maintained, and operated according to the manufacturer's specifications?
 - a.) a temperature monitoring device equipped with a continuous recorder and having an accuracy of + or - 1 percent of the temperature being measured, expressed in degrees Celsius or + or - 0.5 degrees C, whichever is greater (except when the control device is a boiler or process heater > 44 megawatts)? NA at this time, as NMOC < 50 Mg/yr, but they continually monitor temperature and record it electronically.
 - b.) a gas flow measuring device that records the gas flow to the control device or bypass lines are sealed shut and seals are inspected monthly? NA, as NMOC < 50 Mg/yr, but they measure the gas flow, and record it via strip chart.
- 2.) Are the temperature and the gas flow (if applicable) being recorded at least every 15 minutes? NA (see above), but they do monitor and record total gas flow to the Internal Combustion Engines (ICEs).

C. Open flares [Section 60.756(c)]:

- 1.) Is the following required equipment being calibrated, maintained, and operated according to the manufacturer's specifications?
 - a.) a heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot or at the flare flame to indicate the continuous presence of a flame? NA, as NMOC < 50 Mg/yr. The flare is operable, though not running on the day of the inspection.
 - b.) a device that records the gas flow to or bypass of the flare or bypass lines are sealed shut and seals are inspected monthly? NA, as NMOC < 50 Mg/yr.
- 2.) Are the presence of the pilot light and the gas flow (if applicable) being recorded at least every 15 minutes? NA, as NMOC < 50 Mg/yr.

D. Other Control Devices [Sections 60.756(d) and 60.756(e)]:

- 1.) Other control devices:
 - a.) If a control device other than a flare or enclosed combustion device is used, does the landfill have documentation demonstrating that the alternative device was approved by the Administrator? NA, as they do not have a control device other than an enclosed combustor or a flare, and also NMOC < 50 Mg/yr.
 - b.) If the Administrator specified additional monitoring procedures, does the landfill have appropriate records demonstrating compliance with these procedures? NA, as they do not have a control device other than an enclosed combustor or flare, and also NMOC < 50 Mg/yr.
- 2.) Collection systems not conforming to Section 60.759:
 - a.) If a collection system not conforming to Section 60.759 is used, does the landfill have documentation demonstrating that the alternative design was approved by the Administrator? NA, as NMOC < 50 Mg/yr.
 - b.) If the Administrator specified additional monitoring procedures, does the landfill have appropriate records demonstrating compliance with these procedures? NA, as NMOC < 50 Mg/yr.

E. Monitoring Methane Concentrations at the Landfill Surface Section 60.756(f):

- 1.) Are surface concentrations of methane being monitored on a quarterly basis to determine compliance (unless the skip period method described in #3 below is used)? They have begun doing some surface monitoring, to prepare for the time when this landfill will equal or exceed NMOC emissions of 50 Mg/yr. They still do quarterly visual inspections. They walk the landfill site, and look for dead vegetation, as well as the presence of a certain kind of moss, and check for odors. If they find gas emissions, they will put in a vertical well to collect the gas.

- 2.) Does the monitoring device comply with the following instrumentation specifications and procedures for surface emission monitoring devices [Section 60.755(d)]:
 - a.) Does the portable analyzer meet the instrument specifications in Section 3 of Method 21, except that "methane" replaces all references to VOC? NA, as NMOC < 50 Mg/yr.
 - b.) Is the calibration gas methane, diluted to a nominal concentration of 500 ppm in air? NA; see above.
 - c.) To meet the performance evaluation requirements in Section 3.1.3 of Method 21, are the instrument evaluation procedures of Section 4.4 of the method used? NA; see above.
 - d.) Are the calibration procedures provided in Section 4.2 of Method 21 followed immediately before commencing a surface monitoring? NA; see above.
- 3.) Are the following procedures, provided in Section 60.756(f), followed if skip period monitoring is used:
 - a.) If no exceedances are detected for three successive quarterly monitoring periods, is the surface monitored annually until an exceedance is detected? NA, as NMOC < 50 Mg/yr.
 - b.) If an exceedance is detected and corrected as provided in Section 60.755(a)(5), is the surface monitored quarterly until a concentration > 500 ppm is not detected for three successive quarters? NA, as NMOC < 50 Mg/yr.

II. RECORDKEEPING CHECKLIST

A. General Retention Requirements [Section 60.758(a)]:

- 1.) Are all records:
 - a.) Available for at least the past 5 years? Yes, although it is not currently required, as NMOC < 50 Mg/yr.
 - b.) Up-to-date? Yes, although not required, as NMOC < 50 Mg/yr.
 - c.) Readily accessible? Yes, although not required, as NMOC < 50 Mg/yr.
 - d.) onsite or, if offsite, retrievable in 4 hrs? Onsite.
 - e.) in hardcopy or electronic format? Hardcopy.
- 2.) Are records of the following information available:
 - a.) maximum design capacity? Yes, although not currently required, as NMOC < 50 Mg/yr. The maximum design capacity is 19.6 million (MM) Mg.
 - b.) current amount of MSW in place? Yes, although not currently required, as NMOC < 50 Mg/yr.
 - c.) year-by-year waste acceptance rate? Yes, although not currently required, as NMOC < 50 Mg/yr.

B. Initial Performance Test or Compliance Determination for Control Equipment [Section 60.758(b)]:

- 1.) Are records that document the initial performance test or compliance determination kept for the life of the control equipment? NA, as NMOC < 50 Mg/yr.
- 2.) Are records of any subsequent compliance tests or compliance determinations maintained for at least 5 years? NA, as NMOC < 50 Mg/yr.
- 3.) Do the records include the following information:
 - a.) the density of wells is sufficient as calculated by procedures in Section 60.759(a) (1)? NA, as NMOC < 50 Mg/yr.
 - b.) the maximum expected gas generation flow rate as calculated by the procedure in Section 60.755(a) (1)? NA, as NMOC < 50 Mg/yr.
 - c.) the maximum expected gas generation flow rate as calculated by another approved method.
- 4.) For owners or operators using enclosed combustion devices other than boilers and process heaters, do the records include the following:
 - a.) average combustion temperature measured at least every 15 minutes and averaged over the same time period as the performance? NA, as NMOC < 50 Mg/yr.
 - b.) a percent reduction of 98 percent or greater, or an NMOC concentration less than 20 ppm by volume, dry basis as hexane at 3 % oxygen? NA, as NMOC < 50 Mg/yr.
- 5a.) For owners or operators using any size boiler or process heater, do the records include the following:
 - 1.) description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing? NA, as NMOC < 50 Mg/yr.
- 5b.) For owners or operators using boilers or process heaters with a design heat input capacity of less than 44 megawatts, do the records include the following:
 - 1.) the average combustion temperature of the boiler or process heater measured at least every 15 minutes and averaged over the same time period of the performance testing. NA, as NMOC < 50 Mg/yr.
 - 2.) a percent reduction of 98 percent or greater or an NMOC concentration less than 20 ppm by volume, dry basis as hexane at 3 percent oxygen? NA, as NMOC < 50 Mg/yr.
- 6.) For owners or operators using an open flare, do the records include the following:
 - a.) flare type (i.e., steam assisted, air-assisted, or nonassisted)? This requirement is NA, as NMOC < 50 Mg/yr. However, they have a nonassisted flare. It is operable, but was not being used, on the day of the inspection.
 - b.) all visible emissions readings? NA, see above.
 - c.) heat content determinations? NA, see above.
 - d.) flow or bypass flow records. NA, see above.
 - e.) exit velocity determinations? NA, see above.
 - f.) continuous records of the flare flame or pilot flame monitoring? NA, see above.
 - g.) records of all periods of operation during which the pilot flame or flare flame was absent? NA, see above.
- 7.) For owners or operators using a flare, do the visible emission, heat content, flow rate, and exit velocity data show that specifications in Section 60.18 are met? (The specifications vary by flare type.) NA, as NMOC < 50 Mg/yr. They have a flare, as previously mentioned, but it was not operating on the date of the inspection.

C. Equipment Operating Parameters and Parameter Boundary Exceedances [Section 60.758(c)]:

- 1.) Are records available of all equipment operating parameters and parameter boundary exceedances? NA, as NMOC < 50 Mg/yr.
- 2.) Are the records retained for at least 5 years? NA, as NMOC < 50 Mg/yr.
- 3.) Are the records continuous (i.e., a value recorded at least every 15 minutes)? NA, as NMOC < 50 Mg/yr.
- 4.) For enclosed combustion devices (except for boilers and process heaters with design heat input capacity of 44 megawatts or greater and open flares), were all 3-hour periods of operation during which the average combustion

- temperature was more than 28 degrees C below the average combustion temperature during the most recent performance test recorded and reported? They document this, although it is NA, as NMOC < 50 Mg/yr.
- 5.) For all boilers and process heaters, were any changes in location at which the vent stream was introduced into the flame zone recorded and reported? NA, as NMOC < 50 Mg/yr.
 - 6.) For all control devices:
 - a.) were continuous records of LFG (landfill gas) flow to the control device or bypass flow maintained or, if bypass lines were sealed closed, were monthly seal inspection results recorded? NA, as NMOC < 50 Mg/yr. They electronically record LFG flow, however, which I observed, during the inspection.
 - b.) Were all periods when the gas stream was diverted from the control device or had no flow rate recorded and reported? NA, as NMOC < 50 Mg/yr.
 - 7.) For owners or operators using a boiler or process heater with a design input capacity of 44 megawatts or greater, are records of all periods of operation of the boiler or process heater available? NA, as NMOC < 50 Mg/yr, and they do not have boilers.
 - 8.) For owners or operators using an open flare:
 - a.) were continuous records maintained of pilot flame or flare flame monitoring? NA, as NMOC < 50 Mg/yr.
 - b.) were all periods of operation in which the flare or pilot flame was absent recorded and reported? NA, as NMOC < 50 Mg/yr.
- D. Collection System Information [Section 60.758(d)]:
- 1.) Is an up-to-date, readily accessible collection system plot map available? Yes, although it is not required, as NMOC is currently < 50 Mg/yr.
 - 2.) Does the plot map include the following:
 - a.) the location of each existing and planned collector in the system? Yes on the existing, but not necessarily on the planned collectors. This is not required, though, because NMOC < 50 Mg/yr.
 - b.) a unique identification label for each collector? Work is in progress on this, even though it is NA, as NMOC < 50 Mg/yr.
 - 3.) Did the well records include the following information related to newly installed collectors:
 - a.) installation date of each collector? The year and sometimes the month of installation can be identified. This is currently NA, because NMOC < 50 Mg/yr.
 - b.) location of each collector? Yes, in the form of "as-built" drawings. This requirement is NA, however, because NMOC < 50 Mg/yr. Note: settling can cause vertical and lateral movement.
- E. Waste Excluded From Collection – Areas Included In The 1 Percent that do not warrant control [Section 60.758(d)]:
- 1.) Do the records pertaining to asbestos-containing or nondegradable waste excluded from collection and/or any area included in the 1 percent that does not warrant control include the following:
 - a.) nature of the waste? They keep records on asbestos-containing material (ACM), medical waste, and flyash, such as where it is placed. This currently is not required, as NMOC < 50 Mg/yr. They have found that flyash prevents landfill gas from traveling, so they are using it as a kind of barrier.
 - b.) date of deposition of the waste? They have manifests on the arriving ACM. This is not currently required, as NMOC < 50 Mg/yr.
 - c.) amount of the waste? They keep track of how much comes in. This is not currently required, as NMOC < 50 Mg/yr.
 - d.) location of waste on the landfill site? They keep drawings of ACM trenches, and also of where medical waste and flyash is placed. Currently not required (see above). They do not run lines or wells through ACM trenches.
- F. Collection and Control Exceedance [Section 60.758(e)]:
- 1.) Are records of the following available:
 - a.) all collection and control system exceedances of the operational standards in Section 60.753? These include: readings of positive pressure at any wellhead (except as allowed in Section 60.753(b)); wellhead temperature > 55 degrees C or other approved temperature; nitrogen level > or equal to 20%, or oxygen level > or equal to 5 %; and surface methane concentration > or equal to 500 ppm? Answer: this is NA, because NMOC < 50 Mg/yr. The only exceedances monitored are the monitoring wells. They follow solid waste regulations. If there is positive pressure, they address it. Also, if there is positive pressure, they would smell it.
 - b.) A reading in the month following an exceedance? NA, because NMOC < 50 Mg/yr.
 - c.) Location of each exceedance? NA, because NMOC < 50 Mg/yr.
- G. Design Capacity Calculation [Section 60.758(f)]:
- 1.) For landfill owners or operators who convert design capacity from volume to mass or from mass to volume to demonstrate that landfill design capacity is less than the design capacity size limit, do the records include the annual recalculation of site-specific density, design capacity, and all supporting documentation? Yes. This is currently not required, however, as NMOC < 50 Mg/yr.

III. COLLECTION AND CONTROL EQUIPMENT CHECKLIST

A. Siting Active Collection Systems [Section 60.759(a)]:

- 1.) Are the active collection wells sited throughout all gas producing areas of the landfill (that are at least 5 years old for active areas or 2 years old for areas that are closed or at final grade)? Yes; they put in the collection system much sooner than 5 years. They did this although it is not currently required, as NMOC < 50 Mg/yr.
- 2.) Is sufficient density of collectors demonstrated? (Sufficient density means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance.) Answer: They are working on this, although it is not currently required, as NMOC < 50 Mg/yr.
- 3.) If gas is not collected from any areas because they contain asbestos or nondegradable material, is the nature, date of deposition, location, and amount of asbestos or nondegradable material documented? Yes.
- 4.) If gas is not collected from nonproductive areas, has it been demonstrated that total emissions from the excluded areas are < 1 % of total NMOC emissions from the landfill? They don't have any nonproductive areas. For collecting gas from areas where ACM has been placed in trenches, they have wells on either side of the trenches, but do not actually disturb the ACM.
- 5.) If gas is not collected from nonproductive areas, has the amount, location, and age of the material been documented? There are no nonproductive areas (see above for details). They keep records showing where the

- ACM trenches are.
- B. Construction of Active Collection Systems [Section 60.759(b)]:
- 1.) Does the connector assembly used to connect the wellhead to the collection header pipes include the following:
 - a.) positive closing throttle valve? Yes, although this requirement is NA because NMOC emissions < 50 Mg/yr.
 - b.) any necessary seals and couplings? Yes, although this is NA because NMOC < 50 Mg/yr.
 - c.) access coupling? Yes, although this is NA because NMOC < 50 Mg/yr.
 - d.) at least one sampling port? Yes, although this is NA because NMOC < 50 Mg/yr.
 - 2.) Are the landfill gas extraction components constructed of one of the following:
 - a.) polyvinyl chloride (PVC)? Yes, for all valves.
 - b.) high density polyethylene (HDPE) pipe? Yes, for the collection system.
 - c.) fiberglass? No.
 - d.) stainless steel? Some.
 - e.) other nonporous, corrosion-resistant material _____? No.
 - 3.) Is the collection device constructed of one of the following:
 - a.) PVC? Yes; valves. Some wells are PVC, but not many, as they seemed to be brittle.
 - b.) HDPE? Yes. Most of the wells are HDPE.
 - c.) fiberglass? No.
 - d.) stainless steel? Some; sampling ports, though not the wells.
 - e.) other nonporous material of suitable thickness _____? No.
 - 4.) Does the construction and location of wells and other collection system components match the approved collection and control system design plan? This is NA, as NMOC < 50 Mg/yr.
- C. Gas Mover Equipment [Section 60.759(c)]:
- 1.) Is the gas mover equipment operating? Yes, although this is not required, as NMOC < 50 Mg/yr currently.
 - 2.) Is the gas mover equipment sized to handle the maximum gas generation flow rate expected over the intended use period? Yes, although this is currently NA (NMOC < 50 Mg/yr).
 - 3.) Has the gas mover equipment exceeded its intended use period? (The intended use period of the equipment should be specified in the approved collection and control system design plan.) NA, as NMOC < 50 Mg/yr. They rebuild/overhaul the rotary vane compressors to extend the operating life.

(End of checklist.)

Summary:

I did not identify any instances of noncompliance during the inspection of the Granger Wood Street Landfill and the Granger Wood Street Landfill Generating Station. I left the site at approximately 11:08 AM. Granger staff were very knowledgeable and professional.

Granger Wood Street Landfill exempt emission units*

Emission Unit ID	Emission Unit Description	Rule 201 Exemption	Rule 214 Exemption
EULIGHTPLANT-S1	Two (2) diesel-fired light plants with generator	285(g)	212(4)(d)
EUSPACEHEATER-S1	One (1) electric space heater for gate house	282(a)	
EUELECFURNACE-S1	One (1) electric furnace for field trailer	282(a)	
EUPORTCOMP-S1	One (1) electric portable air compressor, 10 gallon, 150 psi, 3.7 CFM	285(g)	212(4)(d)
EUCOMPRESSOR-S1	One (1) Campbell Hausfield 5HP, 80 gallon, 175 psi, 16.6 cfm	285(g)	212(4)(d)
EUOILWATER-S1	One 550 gallon oil/water separator above-ground storage tank (AST)	284(c)	
EUGENERATOR-S1	Five (5) diesel generators 10 KW or less	285(g)	212(4)(d)
EUUSED OIL-S1	Two 500 gallon used oil AST	284(c)	212(3)(e)
EUHYDRAULIC-S1	Two 250 gallon hydraulic oil AST	284(c)	212(3)(e)
EULUBEOIL-S1	Two 500 gallon lube oil AST	284(c)	212(3)(e)
EUTUBEHEATER-S2	Twenty (20) Re-Vaber-Ray Tube Heaters all 200,000 Btu/hr or less	282(b)(l)	212(4)(b)
EUSPACEHEATER-S2	Six (6) natural gas-fired heaters all 150,000 Btu/hr or less	282(b)(l)	212(4)(b)

EUVENTILATION-S2	Six (6) natural gas make-up air heating ventilation units all 1,570,000 Btu/hr or less	282(b)(i)	212(4)(b)
EUCOMPRESSOR-S2	Two (2) Gardner Denver INT-20 EFC Air compressor 80 CFM 100 psi	285(g)	212(4)(d)
EUCOMPRESSOR-S2	Two Gardner Denver INT-20 EFC Air Compressor 80 CFM 100 psi	285(g)	212(4)(d)
EUHYDRAULIC-S2	One 1,000 gallon hydraulic oil AST	284(c)	212(3)(e)
EUENGINEOIL-S2	One 1,000 gallon engine oil AST	284(c)	212(3)(e)
EUANTIFREEZE-S2	One 250 gallon ethylene glycol AST	284(c)	212(3)(e)
EUTRANSMISSION-S2	One 1,000 gallon transmission oil AST	284(c)	212(3)(e)
EUWASTEOIL-S2	One 1,000 gallon waste oil AST	284(c)	212(3)(e)
EUOILS-S2	Eight 55 gallon various oil ASTs	284(c)	212(3)(e)
EUSANDBLAST-S2	One (1) Gardner Denver air compressor 150 CFM 200 psi	285(g)	212(4)(d)
EUTUBEHEATER	Ten (10) natural gas tube heaters all 360,000 Btu/hr or less	282(b)(i)	212(4)(b)
EUSPACEHEATER	Three (3) electric office furnaces	282(b)(i)	212(4)(b)
EUHYDRAULIC	One 850 gallon hydraulic oil AST	284(c)	
EUCOMPRESSOR	One (1) Saylor-Beall Air Compressor 80 gallon 200 psi	285(g)	212(4)(d)
EUHEATER	One (1) natural gas furnace 688,500 Btu/hr	282(b)(i)	212(4)(b)

*Note: diesel-fueled vehicles were listed under exempt emission units in the ROP application additional information letter from Granger. These are not listed in the above table, nor in the Staff Activity Report for the working draft ROP, as AQD does not regulate mobile sources.

NAME 

DATE 6/19/2014

SUPERVISOR 



