

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

N598724072

FACILITY: Brent Run Landfill		SRN / ID: N5987
LOCATION: 8247 W. Vienna Rd., MONTROSE		DISTRICT: Lansing
CITY: MONTROSE		COUNTY: GENESEE
CONTACT: Tim Church, Site Manager		ACTIVITY DATE: 01/13/2014
STAFF: Michelle Luplow	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled, unannounced PCE inspection. Includes notes on Stack Test conducted 1/13/14.		
RESOLVED COMPLAINTS:		

Inspected by: Michelle Luplow

Personnel Present (Brent Run Landfill): Tim Church (timc@wasteconnections.com), Assistant District Manager, Brent Run Landfill

Personnel Present (Granger Electric):

Nathan Hude, AQD Technical Programs Unit
Bill Prestin (bprestin@grangernet.com), Operations Technician, Brent Run (Granger)

Generating Station

Mike Schaper, Operations Support Specialist, Granger Generating Station
Mike Brack, Derenzo & Associates (stack/probe tester)
Jason Logan, Derenzo & Associates (analyzer)

Purpose: Conduct an announced, scheduled, partial compliance evaluation (PCE) inspection of the Granger Generating Station (services Brent Run), in addition to the Brent Run Landfill. Compliance was determined using Brent Run/Granger Electric's ROP MI-ROP-N5987-2010a. This activity was done as part of a full compliance evaluation (FCE).

Facility Background/Regulatory Overview: The Brent Run Landfill is a municipal solid waste landfill with an associated gas-to-energy plant that is run by Granger Electric. The primary activity of this source is accepting municipal solid waste, consisting mostly of residential and commercial waste materials. This site also accepts asbestos-containing materials (ACM) and is subject to the NESHAP for asbestos, 40 CFR, Part 61, Subpart M. The landfill itself was installed December 13, 1995, making it subject to 40 CFR Part 60, Subpart WWW, as it has been constructed after May 30, 1991. T. Church said a 1 ppt citrus and water odor misting system is used to control odors.

The Granger gas-to-energy plant's G3516 engines (EUENGINE 1 & 2) are not subject to the (RICE) MACT Standard 40 CFR Part 63, Subparts A and ZZZZ. The 2 G3520 engines (EUENGINE 3 & 4) and cat-in-the-box G3512 (EUENGINE 5) are subject to the RICE MACT ZZZZ and EUENGINE 3 *only* is subject to NSPS 40 CFR 60 Subpart JJJJ. EUENGINES 3 and 4 were permitted on August 14, 2012 and rolled into the current ROP.

Inspection: At approximately 10:00 a.m. on January 13, 2014 I met with Mike Brock & Jason Logan (Derenzo), Nathan Hude (TPU), and Mike Schaper (Granger) outside the Granger Generating Station for the scheduled stack test on EUENGINE3, Bill Prestin was also on site to answer ROP-related questions with respect to the engines. I met with Tim Church (Brent Run) around 2:15 p.m. for the landfill inspection.

Stack Test

Testing was done on the CAT 3520 EUENGINE3 only, for VOC, NOx and CO, as required by MI-ROP-N5987-2010a. B. Prestin was recording process information data throughout all the tests for each run. Data was recorded every 15 minutes. I also recorded the same data at the same time. Table 1 is a snapshot of the readings taken from each run.

Table 1. Process information recorded for Runs 1 – 3 on EUENGINE3

	Run 1 (10:15 – 11:15)		Run 2 (11:50 – 12:50)		Run 3
	10:51 a.m.	11:15 a.m.	12:28 p.m.	12:50 p.m.	NA
Kilowatts (kW)	1522	1539	1545	1531	1543
% Load (goal: 90% of max)	90	NA	NA	NA	NA
Fuel flow rate (scfm)	488	493	485	487	488
CH ₄ (%)	NA	52.4	52.4	52.4	52.5
O ₂ (%)	NA	0.36	0.35	0.37	0.34

The numbers for each parameter were consistent throughout all 3 runs. EUENGINE 3 is rated at 1600 kW and all recorded kW show that EUENGINE3 was operating at 95-96% of its maximum capacity. The methane and oxygen content of the gas was also consistent, holding at an average of 52.4% and 0.35%, respectively. Per N. Hude's Stack Testing Report dated 1/14/14 (see attachment 1), the preliminary stack test data show compliance with the ROP VOC, NOx and CO emission limits for EUENGINE3, which also means compliance with FGGINES III. Process/Operational Restrictions condition 4 for meeting emission limits on EUENGINE3. See Table 2.

Table 2. Preliminary emissions stack test data for EUENGINE3 as reported by Nathan Hude

	Run 1		Run 2	
	g/bhp-hr (limit)	pph (limit)	g/bhp-hr (limit)	pph (limit)
CO	2.97 (3.3)	14.0 (16.3)	2.8 (3.3)	13.2 (16.3)
NOx	0.4 (1.0)	1.98 (4.94)	0.4(1.0)	1.91 (4.94)
VOC	0.14 (1.0)	NA	0.13 (1.0)	NA

FGICEENGINES & FGICEENGINES2

B. Prestin provided me with photos of all serial number plates for each of the engines except for engine 5, cat-in-the-box. (see attachment 2). Table 3 provides a list of the engines and associated parameters.

Table 3.

FG	ENGINE #	BUILD DATE	DATE ON LINE	SERIAL #	MODEL
FGENGINES2	#1	3/21/1995	3/1998	4EK00464	G3516
	#2	12/15/1993	11/1998	4EK00128	G3516
	#3	11/27/2011	11/2012	GZJ00550	G3520C
FGENGINES	#4	9/1/2005	11/2012	GZJ00197	G3520C
	#5	10/27/1986	11/2010	4KC00096	G3512

FGICEENGINES

III. Process/Operational Restrictions

Condition 2 requires a malfunction abatement/preventative maintenance plan that contains the ID of the equipment and the personnel responsible for overseeing the inspection, maintenance and repair; a description of the items to be inspected and the frequency of inspection; ID of the equipment monitored to detect a malfunction, normal operating ranges of the parameters, and a description of the method of monitoring/surveillance procedures; ID of major replacement parts in inventory; and a description of corrective procedures in the event of a malfunction. B. Prestin provided me with Granger Electric's "Malfunction Abatement & Preventative Maintenance Plan" which covers EUENGINES1-5 (see attachment 3). The plan addresses each of these items in detail, and satisfies all the requirements of condition 2. Additionally, B. Prestin also explained that he is also one of the personnel that is responsible for visual walkthrough/inspection, maintenance and repair of the engines on a daily basis, and keeps an organized inventory of all maintenance parts. He sent me a photo via email of his routine maintenance schedule board (attachment 4) for all maintenance activities that need to be performed on a routine basis, and that are based on the number of operating hours of each engine. Granger Electric is in compliance with condition 2.

Condition 3 requires air:fuel ratios be adjusted as needed. I asked B. Prestin about the control of the air:fuel, and he explained that EUENGINES 3 and 4 are capable of doing their own air:fuel adjustments in order to maintain a specific output. He said that he manually adjusts the air:fuel on EUENGINES 1, 2 and 5. Granger Electric is in compliance with condition 3.

Condition 5 requires non-certified engines be maintained to minimize emissions. The implementation of the Malfunction Abatement & Preventative Maintenance Plan satisfies this condition.

VI. Monitoring/Recordkeeping

Condition 1 requires that landfill gas usage be continuously monitored and condition 5 requires that these data be kept on a monthly and 12-month rolling time period for EUENGINES3-5. Condition 2 requires that kW output from EUENGINES3-5 be continuously monitored and recorded. Condition 3 requires that hours of operation for EUENGINES3 & 4 be monitored continuously and condition 7 requires that this data be recorded monthly and on a 12-month rolling period. B. Prestin also records the total hours of operation for each engine daily on the "Granger Electric Brent Run Power Plant" record sheet. Dan Zimmerman, Granger's Director of Operations, provided me with a spreadsheet (see attachment 5) via email containing all of the information required by these conditions. The information in this spreadsheet satisfies conditions 1-3, 5, and 7.

Condition 4 requires records of all maintenance activities conducted be kept. B. Prestin provided me with a "Plant Maintenance Log" (attachment 6) where staff record the date, description and which engine maintenance activities were conducted. This log, in addition to the aforementioned maintenance board B. Prestin keeps, satisfies condition 4.

Condition 6 requires that the kW output of each engine be recorded on a daily basis. B. Prestin gave me a record sheet from 12-2-13 where the kW and kWh for each engine is recorded (see "Granger Electric Brent Run Power Plant" attachment 7). B. Prestin said he records these parameters every day. Granger Electric is in compliance with condition 6.

FGRICEMACT – EUENGINES 3-5

IV. Design/Equipment Parameters

B. Prestin records the volumetric flow rate daily, as flow through the plant. The volumetric flow rate is also recorded continuously. Granger Electric is in compliance with this condition.

FGICEENGINES2

V. Testing/Sampling

A stack test for formaldehyde was performed on 1/22/13 on EUENGINE1 to verify formaldehyde emission rates. According to the stack test report by Derenzo & Associates, formaldehyde emissions during the test were below the emission limit of 0.75 lb/hr. Granger Electric is in compliance with this condition for stack testing for formaldehyde emission rates.

EULANDFILL

I met with Tim Church and provided him with a "DEQ Environmental Inspections: Rights and Responsibilities" brochure.

V. Testing/Sampling

Condition 1 requires that surface monitoring be conducted and that the monitoring route be included on a topographical map of the landfill. T. Church provided me with this map. Brent Run is in compliance with this requirement (see "First Quarter Surface emissions scan path 2013" for an example of the monitoring route)

Condition 2 for EULANDFILL requires that all requirements specified in condition 2 (surface monitoring) be met to satisfy condition 1. T. Church explained that quarterly monitoring, as required by condition 2(a), is conducted the second month of every quarter by Monitoring Control and Compliance, Inc (MCC), and he provided me with the 4th quarter report that MCC supplies Brent Run on the surface monitoring that they conduct (see attachment "Calibration Precision Record"). T. Church said a wellfield technician from MCC performs the surface monitoring. According to MCC's report, a Thermo TVA 1000 analyzer (a flame ionization/photo ionization detector (FID/PID)) was used to portably monitor the surface of the landfill for methane. Brent Run is in compliance with condition 2a.

Condition 2b requires background concentrations be determined by sampling upwind and downwind. Page 3 of the "Calibration Precision Record" shows the procedure and results of the background concentration at the

surface of the landfill. The reported background concentration was reported at 1.86 ppm methane. Brent Run is in compliance with condition 2b.

According to page 4 of "Calibration Precision Record" there were no exceedances of the 500 ppm or more above background requirement established in *condition 2d*. Brent Run is in compliance with condition 2d.

A compliance determination with condition 2c and 3a-d cannot be made at this time, as the citations to each section of Method 21 do not refer to any instrument specifications, performance evaluation requirements, or calibration procedures for Method 21, as outlined in the condition. EPA's Nathan Frank said the landfill NSPS is currently up for revision. EPA's Hillary Ward says they are not currently conducting open requests for comments on the landfill NSPS, but said they are currently planning to address a number of technical corrections as part of a proposal package.

VI. Monitoring/Recordkeeping

Condition 1 requires that a program be implemented to monitor cover integrity and implement cover repairs on a monthly basis. T. Church provided me with MCC's "LFG System Operations and Maintenance December 2013" document which covers various aspects of the landfill's maintenance activities performed by MCC consultants. "Monthly Cover Integrity Inspection Surface Monitoring Design Plan" is included in this document and contains notes on the cover integrity of the landfill from January through December 2013. I did not verify with T. Church that cover repairs are also documented; however, there were no indications that Brent Run has not been meeting this requirement. Brent Run appears to be in compliance with condition 1.

Condition 2 requires that records of the current amount of solid waste in place and the year-by-year waste acceptance rate be kept. T. Church provided me with Brent Run's "PCF Fund Balance Worksheet" which contains year-by-year acceptance rate from 1996 – 2012. The landfill opened in December 1995, so it is appropriate that the waste acceptance log started in 1996. T. Church said that by adding up each year's waste volume in cubic yards you can get a total of the current amount of solid waste in place. The total number of cubic yards of solid waste in place is 27,220,768 yd³. I did not verify that an up-to-date, readily accessible design capacity report, as required by this condition, was being kept; however, there were no indications that Brent Run has not been meeting this requirement. Brent Run appears to be in compliance with condition 2.

Condition 4 is for permittees who add liquids other than leachate into the waste mass. T. Church said that Brent Run does not accept liquid waste and that the leachate from the waste mass is not recycled back into the waste mass but pumped into the sewer instead. Brent Run is in compliance with condition 4.

Condition 5 requires that records for surface monitoring be kept for the following: topographical maps of route traversed, locations and concentrations of any readings exceeding 500 ppm above background, and the weather conditions on the day of testing. As addressed in Conditions 1 & 2 in Section V: Testing/Sampling for EULANDFILL, a topographical map of the surface monitoring route traversed was provided, there were no emissions in excess of 500 ppm from background for the 4th quarter. The "Calibration Precision Record" also includes on page 4 the weather conditions during the surface monitoring: 4 mph wind speed at a NNE direction, 41 degrees Fahrenheit, and overcast. Brent Run is in compliance with Condition 5 a-c.

EUACTIVECOLL

This unit encompasses the landfill gas collection system with its associated "control equipment": EUENCLOSEDFLARE and EUTREATMENTSYS.

VI. Monitoring/Recordkeeping

Condition 1 requires that the gauge pressure in the gas collection header at each well be monitored monthly. Additionally, Condition 3 of the Process/Operational Restrictions requires that well head pressures be negative unless there is a fire or increased well temperatures, a geo-membrane or synthetic cover is used, or the well is decommissioned. MCC's "LFG System Operations and Maintenance December 2013" document contains monitoring data for the month of December: well ID, date/time of monitoring, %CH₄/CO₂/O₂, well head pressure (Init. Pw ("w.c.)), and temperature. The wells are monitored more than once per month by MCC. Review of the data shows positive pressure readings for GHG1, GHGT, and OTLT throughout the month; however, these are not actual wellheads. GHG1 and OTLT, according to T. Church, are the outlet/pressure side of the compressors inside the electric plant. GHGT is the sampling port for the utility flare, between the blower and the flare stack. All other well head readings are reported as being negative. Brent Run is in compliance with condition 1.

Condition 3 requires monthly monitoring of the wells for temperature and oxygen. Condition 4 of the Process/Operational Restrictions specifies that landfill gas temperatures at the wellhead be less than 55°C (131° F) and oxygen levels be less than 5%. For the month of December, there were no temperature exceedances at the wellheads. There were, however, exceedances of oxygen levels at wellheads HC03 (12/6, 12/20) and 7A (12/6). Per email correspondence between Brent Run consultants and Brad Myott (AQD), a determination was made that 21.9% would be the established higher oxygen value for well 7A. The monitoring data shows 19.9% oxygen. Well HC03 is currently under an alternative timeline to correct the exceedances for this well. Brent Run has asked for an operating parameter of 21.9% oxygen for well HC03 until February 28, 2015. The highest oxygen percentage was 21% during December. Brent Run is in compliance with condition 3 for temperature and oxygen levels at the wellhead. I did not verify what method was used to collect the oxygen data. The method used should be performed according to Condition 3b.

I did not verify the terms provided in condition 4 at this time.

Condition 5 requires that a plot map be maintained to include existing and planned collectors in the system and providing a unique ID location label for each. T. Church showed me the large plot map that they keep in their office. It contains identification numbers with all associated horizontal and vertical collectors. Brent Run is in compliance with condition 5.

I did not verify the terms provided in condition 7 at this time.

EUENCLOSEDFLARE

T. Church said that this flare has not operated since July 2013. The last performance test, according to AQD records, was conducted on October 1, 2007 for 2 solar flares.

VI. Monitoring/Recordkeeping

Condition 1 requires that a temperature monitoring device with continuous recorder be maintained and operated; condition 3 requires readily accessible continuous records of indication of flow to the control device. In the MCC report, "Enclosed flare December 2013" shows that Brent Run has kept records of both the flare flow and the flare temperature on a continuous basis.

EUASBESTOS

The following is a check of compliance with the EUASBESTOS conditions:

III. Process/Operational Restrictions

Condition 1a&b requires that asbestos-containing material must be covered in at least 15 cm of compacted material at the end of each operating day or once every 24-hour period if the use of warning signs or natural barriers are not used to deter public access. T. Church said that the asbestos-containing material is covered every day around 4 pm (when the landfill closes business for the day) along with the rest of the waste with a minimum cover of 18". Brent Run is in compliance with condition 1.

VI. Monitoring/Recordkeeping

Condition 1a requires waste shipment records be kept containing the name, address, and phone number of the waste generator, transporter(s) and the quantity of asbestos-containing waste material in cubic yards. T. Church provided me with documents that encompass these 3 requirements: "Asbestos Disposal Documentation Form," net tonnage disposed of by the waste generator, and "RACM Load Inspection Report Form" (see attached). Brent Run is in compliance with condition 1.

Condition 2 requires that a record kept as a diagram or map must include the location, depth and area, and quantity in cubic yards of the asbestos-containing waste material within the disposal site. T. Church submitted a map (March 6, 2014) of all points in the landfill where RACM was deposited (using the northing/easting coordinates), a ticket number associated with that point (which refers to the quantity of RACM deposited at that point), and the elevation (depth) of the landfill it is in. I will remind Brent Run that the area of the deposits must also be included. This map satisfies condition 2 (see attachment for diagram).

FGCOLDCLEANERS

Brent Run Landfill has one cold cleaner present onsite in their maintenance building. The cold cleaner is considered "new" under Part 7 rules because it was installed after July 1, 1979. (T. Church said it was installed in 1994).

Design/Equipment Parameters

Condition 1 requires the cleaner to have an air/vapor interface no more than 10 square feet. T. Church measured the dimensions of the cold cleaner to be 36"x26", approximately 6 square feet. Brent Run is in compliance with condition 1.

Condition 4 requires mechanical assistance of the cover if the Reid Vapor Pressure (RVP) of the solvent is more than 0.3 psia. Brent Run uses mineral spirits as their solvent and according to Cameo Chemical's SDS, has a RVP of 0.13 psia. This cold cleaner is not subject to this requirement at this time.

Condition 5 has requirements for those new cold cleaners using solvents with a RVP greater than 0.6 psia. Brent Run's cold cleaner is not subject to this condition at this time.

Monitoring/Recordkeeping

Condition 3 requires that written operating procedures be maintained for each cold cleaner and located conspicuously near the cleaner. Brent Run is in compliance with this condition.

Brent Run is currently in compliance with all state and federal regulations at this time.

NAME Michelle M. Lepton

DATE 3-10-14

SUPERVISOR Michael McLeod