

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

N821044398

FACILITY: Generate Fremont Digester, LLC		SRN / ID: N8210
LOCATION: LOT 19, 20, 31 LOCUST ST, FREMONT		DISTRICT: Grand Rapids
CITY: FREMONT		COUNTY: NEWAYGO
CONTACT: Daniel Meccariello, COO		ACTIVITY DATE: 05/16/2018
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced compliance inspection		
RESOLVED COMPLAINTS:		

**FACILITY DESCRIPTION**

Fremont Regional Digester (aka Generate Fremont Digester) (formerly Fremont Community Digester) is a complete mix anaerobic digester facility located in the city of Fremont. The facility utilizes a variety of food and manure feed stocks in the digesters to generate gas. Gas generated by the digesters is combusted in two reciprocating internal combustion engines and one small boiler. The facility was previously owned and operated by Novi Energy. Novi Energy constructed and operated the facility from late 2012 until 2015. The facility remained idle until Generate Capital purchased the facility in 2016 and partnered with Dynamic Systems Management to manage the facility.

**REGULATORY ANALYSIS**

The facility is a minor source that has been issued two Permits to Install (PTI). PTI No. 378-08 addresses the digester from the stand point of preventative maintenance and startup, shutdown, malfunction, focusing on the prevention of emissions, especially odorous emissions. PTI No. 378-08A addresses the installation and operation of two reciprocating internal combustion engines. The engines are subject to NSPS Subpart JJJJ and the RICE MACT.

**COMPLIANCE EVALUATION**

Prior to entering the facility a survey of the surrounding area was made as part of an odor complaint investigation. The odor complaint investigation is documented under a separate report. In summary, an intermittent manure-like odor with a slight to moderate intensity was detected adjacent to the facility. The odor was determined to not be a violation of Rule 901.

At the facility staff met with Leon Scott, Facility Manager and Karl Crave, Operations Manager.

Mr. Scott and Mr. Crave provided a summary of the status of the facility operations as well as a tour. The facility is currently operating a 40% capacity in regard to product input. The facility is currently primarily receiving pureed foods, produce wash water and fruit and vegetable solids. They are also operating one of the two engines at a time. The facility restarted Engine No. 1 in December 2017 and Engine No. 2 in January 2018. During the process of restarting the facility, the flare was used to burn off produced gas. Since the start of operating the engines, the facility stated that the flare has only been used 1-2 times.

The facility receives bulk truck/tanker materials that are unloaded in a closed transfer station from which emissions are vented to a biofilter system. As part of bringing the facility back on line, the biofilter system was rebuilt. The existing media was replaced in half of the system with a finer shredded sawdust to achieve pressure drop across the unit. The second half of the system will be redone at a later date. A second enclosed bay is used to process packaged materials through a shredder/separator unit to remove the container from the waste product. The waste product is stored in a receiving tank prior to being transferred to one of the three 1 million-gallon digesters. Additionally, waste can be directly introduced to the digesters. The day prior to the inspection, six loads of dairy manure was pumped into the digesters. Gas generated by the digesters is processed through a H<sub>2</sub>S removal unit prior to the gas being used in the engines to generate electricity or is burned in the boiler. Gas can be stored in a gas dome located onsite, which is adjacent to a flare that is only used in the event of malfunction or unscheduled maintenance. Mr. Crave stated that the gas has about 500-1,000 ppm H<sub>2</sub>S prior to the removal unit. The resulting digestate is stored in the digestate tank from which it is pumped into a tanker and transported off-site by Slater Farms. The digestate is not dewatered, as was the practice of Novi Energy. On a tour of the plant, Mr. Scott pointed out that they sealed off the digestate tank to reduce odors.

#### Permit to Install No. 378-08

#### EUDIGESTER

Anaerobic digester system

#### Process/Operational Restrictions –

Requires the facility to maintain and operate EUDIGESTER according to the preventative maintenance plan, operate according to an acceptable plan addressing emission minimization during startup, shutdowns and malfunctions. Also requires maintenance according to the preventative maintenance plan and requires the development of a plan to address potentially odorous emissions.

Status: A preventative maintenance plan was previously submitted by Novi Energy. Dynamic Systems Management is currently in the process of developing updated plans. The facility submitted an updated Potentially Odorous Emission Management Plan.

#### Monitoring/Recordkeeping –

Requires the facility to maintain a log of all significant maintenance activities.

Status: The facility provided records of work orders and inspections from the start of Dynamic's management of the facility.

#### EUWASTE TRANSFER

Waste transfer operations with biofilter control.

#### Process/Operational Restrictions –

Requires the facility to maintain and operate EUWASTE TRANSFER according to the preventative maintenance plan, operate according to an acceptable plan addressing emission minimization during

startup, shutdowns and malfunctions. Also require maintenance according to the preventative maintenance plan.

Status: A preventative maintenance plan was previously submitted by Novi Energy. Dynamic Systems Management is currently in the process of developing updated plans.

#### Design/Equipment Parameters -

Requires the biofilter to be installed, maintained and operated in a satisfactory manner.

Status: The biofilter is installed and based on the information and observations made during the inspection, is maintained and operating in a satisfactory manner. Dynamic provided documentation associated with an evaluation of the biofilter and has undertaken efforts to improve the effectiveness of the system.

#### Monitoring/Recordkeeping –

Requires the facility to maintain a log of all significant maintenance activities.

Status: The facility provided records of work orders and inspections from the start of Dynamic's management of the facility.

#### Permit to Install No. 378-08A

#### FGICENGINES

#### Emission Limits (Testing/Sampling) –

Establishes emission limits for CO, NOx, and VOC from each engine.

Compliance with the emission limits can be determined by emission tested if requested or as required by Subpart JJJJ.

A determination was made in 2014 that the installed engines were not manufacture certified EPA compliant. Therefore, the facility should have tested to demonstrate compliance under Subpart JJJJ. A VN was issued and the facility conducted compliance testing in April 2014. Testing demonstrated compliance with Subpart JJJJ and the PTI limits.

CO limit: 2.60 g/bhp-hr  
Test result: 2.55 g/bhp-hr EUENGINE1  
2.44 g/bhp-hr EUENGINE2

NOx limit: 0.6 g/bhp-hr  
Test result: 0.46 g/bhp-hr EUENGINE1  
0.45 g/bhp-hr EUENGINE2

VOC limit: 1.0 g/bhp-hr  
Test result: 0.12 g/bhp-hr EUENGINE1

**0.13 g/bhp-hr EUENGINE2****Testing/Sampling –**

Testing was conducted in 2014 to demonstrate compliance with Subpart JJJJ and permit limits. Under Subpart JJJJ, testing is required every 8760 hours of operation or every three years, whichever occurs first. The engines were shut down from 2015 until 2017/2018 and would appear to have been non-operational since there was no biogas being generated for the engines to burn. Based on the below testing requirements from Subpart JJJJ, the facility needs to retest the engines immediately upon startup, when as soon as they are producing enough gas to run the engines within 10% of 100% peak.

§ 60.4244 *What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?*

***Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of this section.***

***(a) Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in § 60.8 and under the specific conditions that are specified by Table 2 to this subpart.***

***(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in § 60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.***

***(c) You must conduct three separate test runs for each performance test required in this section, as specified in § 60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.***

***(d) To determine compliance with the NOX mass per unit output emission limitation, convert the concentration of NOX in the engine exhaust using Equation 1 of this section:***

**Process/Operational Restrictions –**

Requires a malfunction abatement/preventative maintenance plan to be submitted and approved.

Status: A preventative maintenance plan was previously submitted by Novi Energy. Dynamic Systems Management is currently in the process of developing updated plans.

**Design/Equipment Parameters -**

Requires the engines to be equipped with an air/fuel controller.

**Status:** Previous inspection documented that the engines are equipped with an air/fuel controller.

Requires the engines to be equipped with device to monitor and record monthly hours of operation.

**Status:** The hours of operation are continuously recorded. The facility provided records of hours of operation.

#### Monitoring/Recordkeeping –

Requires the facility to maintain a log of all significant maintenance activities.

**Status:** The facility provided records of work orders and inspections from the start of Dynamic's management of the facility.

**NSPS Subpart JJJJ – Stationary Spark Ignition Internal -** The two engines are subject to Subpart JJJJ. Compliance requirements have been incorporated into the PTI. Since the facility has certified engines, in summary compliance entails maintenance in accordance with the manufacture and maintaining records of maintenance activities, and monitoring/ recording monthly hours of operation.

**NESHAP Subpart ZZZZ – RICE MACT – MDEQ-AQD** has not taken delegation of regulatory authority of the RICE MACT at area sources. Assistance in complying with the RICE MACT should be obtained from Region V EPA or the MDEQ Clean Air Assistance Program.

#### Observations

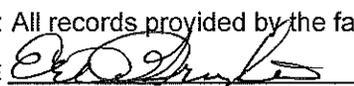
During the plant walk through, a small amount of manure was observed on the ground next to each of the digesters. The manure was spilled on the ground during load-out the previous day. The facility was going to clean up the manure. A truck from Slater Farms was loading out from the digestate tank. An intermittent slight to moderate manure-like odor was observed. The semi-tanker was overfilled and blow digestate on the tanker and ground. The workers washed the spilled material into the drain that returns to the receiving tank.

#### CONCLUSION

Based on the information and observations made during this inspection, the facility is in compliance with applicable air quality rules and regulations.

Note: All records provided by the facility are attached on CD.

NAME



DATE

6/21/2018

SUPERVISOR

