

M4469
March

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

M446941622

FACILITY: RIVERVIEW LAND PRESERVE		SRN / ID: M4469
LOCATION: 20863 GRANGE RD, RIVERVIEW		DISTRICT: Detroit
CITY: RIVERVIEW		COUNTY: WAYNE
CONTACT: Nick Diedrich, Senior Environmental Engineer - Section 1		ACTIVITY DATE: 08/17/2017
STAFF: Jonathan Lamb	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled inspection, FY 2017		
RESOLVED COMPLAINTS:		

DATE OF INSPECTION: August 16, 2017 (Riverview Land Preserve) and August 17, 2017 (Riverview Energy Systems)

REASON FOR INSPECTION: Scheduled Inspection

INSPECTED BY: Jonathan Lamb, MDEQ-AQD

PERSONNEL PRESENT - RIVERVIEW LAND PRESERVE: Robert Bobek, City of Riverview - Director of Solid Waste; Summer Hitchens, Project Scientist – Cornerstone Environmental

PERSONNEL PRESENT - RIVERVIEW ENERGY SYSTEMS: Nick Diedrich, DTE Energy Resources - Senior Environmental Engineer; Jeff Neumann, DTE Biomass Energy - Facility Manager

FACILITY BACKGROUND:

Riverview Energy Systems and Riverview Land Preserve are considered a single stationary major source subject to the Title V Program. The source was issued Renewable Operating Permit (ROP) No. MI-ROP-M4469-2015 on January 7, 2015. The ROP is divided into two sections: Section 1 covers operations at Riverview Energy Systems and Section 2 covers operations at Riverview Land Preserve. The source is located within a mostly residential area of Riverview, bordering the cities of Trenton, Brownstown, and Woodhaven.

Riverview Land Preserve (RLP), located at 20863 Grange Rd., is a municipal solid waste landfill owned and operated by the City of Riverview. The landfill started accepting waste around 1968 and comprises an area of roughly 300 acres with a design capacity of 39.26 million tons (35.38 million megagrams); current estimates show that the landfill is expected to reach capacity around 2028. Since the design capacity is over 2.5 million megagrams, the facility is subject to 40 CFR Part 60, Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills and 40 CFR Part 63, Subpart AAAA – National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills.

Riverview Energy Systems (RES), located at 20000 Grange Rd., operates a landfill-to-gas energy facility at the Riverview Land Preserve. Gas produced by the degradation of waste in the landfill is treated and then burned as fuel in turbines to product electricity. RES is co-owned by DTE Biomass Energy and Aria Energy, with DTE Biomass responsible for the operations of the facility. DTE Biomass Energy is a wholly-owned subsidiary of DTE Energy. There are four employees; the equipment operates 24 hours a day, 7 days per week, with staff on site 7 AM to 4 PM, Monday through Friday, and on call at all other times in case of equipment malfunction.

COMPLAINT/COMPLIANCE HISTORY:

Riverview Energy Systems

Following a review of emission records during the compliance evaluation performed on April 27, 2015, Riverview Energy Systems was issued a violation on May 11, 2015, for numerous violations, including exceeding 12-month rolling sulfur dioxide (SO₂) emissions from the turbines starting in 2011, failure to obtain a Permit to Install prior to making a modification to the turbines, failure to report deviations and emission exceedances in the annual and semi-annual ROP certifications, and reporting inaccurate SO₂ emissions to the Michigan Air Reporting System (MAERS) from 2010 through 2014. Since Wayne County was in nonattainment with SO₂ at the time of the violation, the facility was also cited for

not complying with the lowest achievable emission rate (LAER) for SO₂ and not providing emission reduction offsets for SO₂. As a result, the facility entered into Consent Order AQD No. 19-2016 on May 24, 2016. The Consent Order required the facility to install a sulfur control system to reduce sulfur in the landfill gas stream below 140 ppm prior to being used as fuel in the turbines. The Consent Order also required the facility to perform weekly sampling of the landfill gas, submit monthly SO₂ emission calculations to AQD, and obtain a Permit to Install to incorporate conditions of the Consent Order.

Riverview Land Preserve

The landfill has a long history of odor complaints from residents of Riverview and Trenton due to fugitive emissions of landfill gas and general garbage odors. This led to a class-action lawsuit against the facility, which was settled in 2014. Periodic complaints have been received since that time, but AQD has not verified off-site odors during recent odor complaint investigations.

Riverview Land Preserve was issued a Violation Notice, dated April 20, 2012, following the catastrophic failure of one turbine, which caused both turbines to become inoperable. The facility was cited for not having sufficient control to handle the landfill gas while the turbines were inoperable. As a result, the landfill installed a second temporary flare, which was replaced by a second permanent flare in 2013.

Riverview Land Preserve was also issued a Violation Notice, dated July 28, 2009, for operating a significant portion of the wellfield under positive pressure due to insufficient vacuum. As part of the compliance plan, the facility implemented procedures to maintain applied vacuum to the wellfield, including in instances in which the control system goes down.

INSPECTION NARRATIVE:

The inspection was performed on August 16 (Riverview Land Preserve) and August 17 (Riverview Energy Systems), 2017.

Riverview Land Preserve, August 16, 2017: I arrived at Riverview Land Preserve and met with Bob Bobeck, Director of Solid Waste, and the facility's consultant, Summer Hitchens of Cornerstone Environmental. We discussed current operations at the facility, including the proposed expansion of the landfill and recent construction and well installation. The facility started filling Cell 7 in July 2017; the cell is expected to take 18 months to fill. Cell 6 is still being used for some demolition waste. The landfill is currently building a shelf on Cell 7 to tie in with the liner of Cells 1, 2, and 3.

Riverview Land Preserve is applying for a proposed expansion of the landfill to allow for an additional 45 horizontal acres of disposal area in what would become Cell 8. I notified the facility that a potential-to-emit demonstration for NMOCs would be required to see if a Permit to Install modification is required. In addition, any increase in currently approved capacity would also make the site subject to 40 CFR Part 60, Subpart XXX – Standards of Performance for Municipal Solid Waste Landfills. The proposed expansion would also require approval through the Wayne County Department of Public Service's Land Resource Management Division for inclusion into the Wayne County Solid Waste Plan and a construction permit through the Michigan Department of Environmental Quality's Waste Management and Radiological Protection Division.

The landfill currently accepts municipal waste (mostly household and commercial waste), in addition to some non-hazardous special wastes. Although permitted to do so, the landfill does not accept asbestos waste. The landfill currently does not accept wastewater sludge, and no composting operations are performed on the property. Wastes are received throughout the day Monday through Friday and on Saturday mornings. The landfill accepts wastes from Wayne County, including 15 "Downriver" communities, but also accepts wastes from outside Wayne County, including Canada. "ConCover" (a mix of polymers and recycled paper fibers) is used for daily cover for erosion control

and appearance. We drove around the landfill, including the active filling areas of Cells 6 and 7, to monitor for odors and cover integrity before concluding the inspection.

Riverview Energy Systems, August 17, 2017: I arrived at DTE Biomass and met with Nick Diedrich, Environmental Engineer, and Jeff Neumann, Facility Manager. Since the sulfur treatment system was not installed and in operation during my previous inspection in 2015, Mr. Neumann gave an overview of the system's operations and said the facility was scheduled to replace the media in the tanks next month. I also visually inspected the turbines and reviewed operating and maintenance records while on site.

PROCESS DESCRIPTION/EQUIPMENT:

Riverview Land Preserve (RLP)

Riverview Land Preserve uses a gas collection and control system (GCCS) which is designed to draw landfill gas (LFG) from the active fill areas, interim cover areas, and areas filled to final grade. The GCCS uses a series of interconnected wells, horizontal collectors, surface collectors and other gas extraction devices operating under negative pressure to collect LFG throughout the landfill and move the gas to the control system; two turbines (operated by RES) are the primary control, with two flares used as back-up/secondary control. Currently, there are 167 vertical extraction wells, 21 horizontal collectors, 6 manholes, 18 cleanout risers, and 1 French drain installed in the final grade and active fill areas. The average spacing between vertical wells is 150-200 feet apart to provide adequate coverage for gas extraction. The two flares, EUOPENFLARE1 (2,131 cfm; installed in August 2004) and EUOPENFLARE2 (4,700 cfm; installed in January 2013), are operated by RLP and are used to burn LFG produced in excess of what the turbines can accommodate, or during times when the turbines are down. EUOPENFLARE2 is the main flare and operates almost continuously since the landfill is currently producing more gas than the turbines can accommodate; at present time, all cells are producing methane, and the LFG production rate is around 4,100 cfm. Approximately 3,700 cfm goes to RES to be burned as fuel in the turbines and the rest is burned in the flares. EUOPENFLARE1 is used as a back-up.

RLP also operates a BioGas System (EUBIOGASTREATSYS), which was installed in 2013. The system treats LFG to be used as a fuel for vehicles. Currently, this fuel is used for vehicles used at the facility and for some vehicles used by the City of Wyandotte. The process takes gas from the landfill and runs it through an adsorbent media to remove H₂S and then through a heating and chilling unit to remove moisture. The gas is sent through three charcoal filter vessels to remove VOCs and additional H₂S, then through a particulate filter to remove residual charcoal. At this point, the gas is approximately 95% methane. The gas is then heated and compressed to 4200 psi, at which point it is ready to be dispensed and be used as fuel in vehicles.

Leachate is produced in the landfill and can be a potential source of odors. The facility installed a leachate treatment system in 2015 to process leachate from Cells 1, 2, and 3; previously, leachate from these cells was collected into a 20,000-gallon tank for storage before being taken off-site and disposed of by Usher Oil due to a high PCB content. The leachate treatment system is able to treat up to 2,500 gallons of leachate per day and is located near the flares. After treatment, the leachate is discharged into the city sewer system, with any waste sludge hauled offsite for disposal at another landfill. Leachate produced from Cells 4, 5, and 6 has a low enough PCB content to be discharged directly to the city sewer system. The leachate treatment system is exempt from permitting requirements per Rule 285(2)(m).

Riverview Energy Systems (RES)

LFG collected by the GCCS which is not flared is sent to RES to be used as fuel. The LFG is fed from a common header to a sulfur control system ("H₂S Plus" Hydrogen Sulfide Removal System designed by MV Technologies based on the "iron sponge" concept), which, as the name implies, removes

hydrogen sulfide (H₂S) and mercaptans from the LFG prior to usage as fuel. This sulfur control system was installed in October 2016 and consists of four tanks in parallel under vacuum that are filled with a media (wood chips coated with iron oxide) which react with the sulfur compounds in the gas stream to form a pyrite (FeS₂), which is subsequently oxidized to elemental sulfur. The iron oxide and sulfur are adsorbed onto the surface of the wood chips, which results in the outlet gas to have a lower H₂S concentration when it is sent to the turbines. Since the reaction is exothermic, the tanks are equipped with temperature monitors and alarms; if the temperature hits 125°F, water is pumped into the tanks from a sump well to reduce the temperature. During the inspection, the tanks were between 84.5°F and 86.5°F. A Draeger tube is used to check the H₂S concentration from the tank discharge every two weeks, or weekly if the H₂S discharge measures over 10 ppm. The differential pressure of the tanks is checked daily. The monitoring of the tank discharge and pressure differential is used to determine when the media is spent and needs to be replaced. The facility estimates that the media will need to be replaced about every ten months; the facility has already scheduled the media to be replaced in September 2017. The spent media is considered non-hazardous and can be disposed of in the landfill.

After treatment in the sulfur control system, the lower-sulfur LFG is sent to the landfill gas treatment system (EU-TREATMENTSYS). The treatment system processes the collected landfill gas by removing particulates down to 10 microns, compressing the gas, and removing excess moisture prior to combustion in the turbines. Collected landfill gas is conveyed to a scrubber, which removes the particulate and condensate, before going through two identical compressor skids (Skid 500 and Skid 600), which compresses the gas to 160-185 psi. The skids are set up in parallel; both skids are usually used simultaneously but the treatment system can operate on one skid if the other is down for maintenance. The compression heats the gas up to 230-240°F, so the gas passes through a heat exchanger to remove the excess heat; outlet gas temperature at this point is around 100°F. This causes the formation of condensate in the gas stream, which must be removed by a dewatering system. The dewatered gas is then slightly heated back up to around 140°F before it is sent to the turbines for combustion.

There are two Solar Centaur 40 turbine engines, Turbine #1 (EUTURBINE1) and Turbine #2 (EUTURBINE2), which combust LFG to produce electricity. The turbines are rated at a heat input of 12 MMBtu/hr (3516 kWe) and operate at a maximum flow rate of 3.8 MMscf/day with an average heating value for LFG of 520 Btu/scf. Both turbines are permitted as a flexible group (FGTURBINES) and are subject to 40 CFR Part 60, Subpart GG – Standards of Performance for Stationary Gas Turbines, which applies to stationary gas turbines with a heat input greater than 10 MMBtu/hr that commenced construction, modification, or reconstruction after October 3, 1977.

I noted the following specifications of each turbine at the time of inspection:

Turbine #1

Centaur 40 ver. 4701
Engine ID: EC471C-20GLR0T0
Serial No.: OHK15-C6184
Power: 3516/NA kWe

Turbine #2

Centaur 40 ver. 4701
Engine ID: EC471C-20GLR0T0
Serial No.: OHI15-C3387
Power: 3516/NA kWe

According to maintenance records, Turbine #1 was replaced by a rebuilt unit and put into service on November 15, 2015, and Turbine #2 was replaced with a rebuilt unit on September 23, 2015. In a meeting with AQD on June 11, 2012, DTE argued that this did not constitute a reconstruction or modification because the cost of the rebuilt unit was below 50% of the cost to install a new unit, there

was no emission increase or emissions of any new air contaminant, and that, at the time, RES was not considered a major source under PSD or nonattainment NSR regulations. A cost analysis was provided during the meeting. Based on that discussion and information provided for review at that time, AQD accepted the facility's argument that the turbine replacement did not constitute a reconstruction or modification of an existing emission unit.

Approximately 17-18% of the electricity produced by the turbines is used on site to power the compressor skid system while the remainder of the electricity goes to the grid for use on the open market.

APPLICABLE RULES/ PERMIT CONDITIONS:

Facility was issued Renewable Operating Permit (ROP) No. MI-ROP-M4469-2015, on January 27, 2015, which was a renewal of its Title V permit. At the time of inspection, a modification to the ROP was in the EPA comment period. This ROP modification will incorporate the conditions of Permit to Install (PTI) No. 250-00B, issued to Riverview Energy Systems on December 20, 2016, which included the installation of the sulfur treatment system, added a limit of 140 ppm sulfur concentration in the LFG, and lowered the allowable SO₂ emissions from the turbines from 17.34 tons SO₂ per year for each turbine to 32 tons SO₂ per year for FGTURBINES. As such, the applicable conditions of PTI No. 250-00B which supersede the conditions in the ROP were evaluated in determining compliance status for RES; specifically, this applies to the conditions associated with flexible group FGTURBINES.

Emission and production records from January 2016 through June 2017 were evaluated to determine compliance during this inspection. These records can be found in the orange facility file.

ROP No. MI-ROP-M4469-2015 and PTI No, 250-00B; applicable permit conditions:

SECTION 1: RIVERVIEW ENERGY SYSTEMS (RES)

B. Source-Wide Conditions

VII. Reporting

1. IN COMPLIANCE. Any deviations are reported promptly. Facility has not reported any deviations associated with applicable source-wide conditions.
2. IN COMPLIANCE. Semi-Annual Deviation Reports are submitted by March 15 and September 15 of each year.
3. IN COMPLIANCE. Annual ROP Certification Reports are submitted by March 15 of each year.

IX. Other Requirements

1. IN COMPLIANCE. Malfunction Abatement Plan is implemented and maintained.

C. Emission Unit Conditions

EU-TREATMENTSYS – Landfill gas treatment system

III. Process/Operational Restrictions

1. IN COMPLIANCE. Treatment system is operated at all times when the gas is routed to FGTURBINES.
2. IN COMPLIANCE. LFG collected in the treatment system are routed to the turbines and/or flares, required by 40 CFR 60.752(b)(2)(iii)(A) or (B).
3. IN COMPLIANCE. LFG collected in the treatment system is sent to either the turbines or flares for control, in accordance with the provisions of 40 CFR 60.753(e) and (f).

IV. Design/Equipment Parameters

1. IN COMPLIANCE. Treatment system is designed, installed, and operated as approved.

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Facility maintains records of any control system exceedances. The facility has not recorded exceedances of the operational standards set in 40 CFR 60.753(e) and (f) for EU-TREATMENTSYS during the compliance evaluation period.
2. IN COMPLIANCE. Records of preventative maintenance performed are maintained.
3. IN COMPLIANCE. Facility submitted information describing the operation of the control device, operating parameters that would indicate proper performance, and appropriate monitoring procedures in a document titled "Treatment System Operation Overview", which was received by AQD on February 3, 2015.

VII. Reporting

1. IN COMPLIANCE. Any deviations are reported promptly.
2. IN COMPLIANCE. Semi-Annual Deviation reports are submitted by March 15 and September 15 of each year.
3. IN COMPLIANCE. Annual ROP Certification Reports are submitted by March 15 of each year.
4. IN COMPLIANCE. Facility provided information describing the operation of the control device, operating parameters that would indicate proper performance, and appropriate monitoring procedures to AQD within 30 days of issuance of this permit. Information was received on February 3, 2015.
5. IN COMPLIANCE. Landfill Gas Treatment System reports are sent to AQD on a semi-annual basis. The reports include a) value and length of time of any exceedances; b) description and duration of all periods when the gas stream is diverted from the treatment system through a bypass line; c) description and duration of all periods when the treatment system was not operating for a period exceeding one hour; and d) description and duration of all periods when the treatment system was not operated in accordance with the operating parameters and monitoring procedures as approved in S.C. VII.4. Since 2011, the facility has reported numerous occurrences of malfunction and shut-down events lasting over 1 hour; most were the result of loss of power from the utility or due to maintenance activities.
6. IN COMPLIANCE. Startup, shutdown, and malfunction (SSM) report is submitted to AQD on a semi-annual basis.

IX. Other Requirements

1. IN COMPLIANCE. EU-TREATMENTSYS is subject to 40 CFR Part 60, Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills. Facility certified that there were no exceedances over 1 hour for EU-TREATMENTSYS.
2. IN COMPLIANCE. Facility maintains and implements a written SSM Plan in accordance with 40 CFR 63.6(e)(3) for EUTREATMENTSYS.
3. IN COMPLIANCE. Facility maintains and implements a Preventative Maintenance Plan for EUTREATMENTSYS.

D. Flexible Group Conditions

FGTURBINES (EUTURBINE1 and EUTURBINE2) - Two 520-BTU/scf Solar gas turbines.

Note: These conditions are from PTI No. 250-00B.

I. Emission Limits:

Pollutant	Limit	Highest Actual	Compliance Status
1. NOx	EUTURBINE1: 0.0194% at 15% oxygen ¹ ; EUTURBINE2: 0.0209% at 15% oxygen ¹	EUTURBINE1: 0.0029% at 15% oxygen ⁴ ; EUTURBINE2: 0.0029% at 15% oxygen ⁴	IN COMPLIANCE
2. NOx	64.6 tons per 12-month rolling; each turbine	EUTURBINE1: 24.96 tons (Dec. 2016) EUTURBINE2: 28.84 tons	IN COMPLIANCE

		(June 2017)	
3. SO ₂	0.015% at 15% oxygen; each turbine	Not Applicable	IN COMPLIANCE ²
4. SO ₂	32.0 tons per 12-month rolling for FGTURBINES	8.83 tons for 12-month rolling time period beginning November 2016 through June 2017 ³	IN COMPLIANCE
5. CO	15.78 pph; each turbine	EUTURBINE1: 2.46 pph ⁴ EUTURBINE2: 2.91 pph ⁴	IN COMPLIANCE
6. HCl	2.05 pph for FGTURBINES	FGTURBINES: 0.39 pph (based on Feb. 2015 sampling)	IN COMPLIANCE
7. HCl	9.0 tons per 12-month rolling for FGTURBINES	FGTURBINES: 2.0 tons (June 2017)	IN COMPLIANCE

¹Required to be calculated once per term of the ROP based on most recent stack test data in accordance with the formula listed in Appendix 7-1(1). Facility provided documentation supporting its calculations.

²Facility demonstrates compliance with the sulfur dioxide standard in Subpart GG by maintaining a total sulfur in fuel content below 0.8 percent by weight, as allowed in 40 CFR 60.333. Compliance with the 0.8% limit is found in FGTURBINES, Special Condition II.3.

³Per PTI No. 250-00B, compliance with the 12-month rolling SO₂ limit begins November 2016.

⁴Based on results of emissions testing performed April 27 and 28, 2015.

II. Material Limits

1. IN COMPLIANCE. Daily records of LFG combustion were reviewed on site during this inspection. Daily LFG throughput is recorded every morning when operators are on site based on total LFG flow from the previous reading; however, since staff is not on site every day (ie, weekends and holidays), some totals are based on multiple days. Due to this, I was unable to determine the highest daily throughput during the compliance period, but based on the turbine operating records for these multiple day periods and the fact that the facility is constantly burning LFG when in operation, the records seem to sufficiently demonstrate that the facility is in compliance with the permit limit of 7.6 MMscf per day of LFG combusted. Based on daily records, the turbines typically burn under 5 MMscf/day when both turbines are in operation.

2. IN COMPLIANCE. The total sulfur in the treated LFG did not exceed the permit limit of 140 ppm by weight. Sulfur content is monitored on a weekly basis; the highest sulfur content reported was 120 ppm in the sample taken on December 24, 2016.

3. IN COMPLIANCE. The most recent quarterly monitoring performed on March 30, 2017, showed a sulfur content 0.009% in the LFG burned as fuel in the turbines following treatment in the sulfur treatment system, below the permit limit of 0.8% sulfur.

III. Process/Operational Restrictions

1a. IN COMPLIANCE. All collected LFG not combusted in FGTURBINES is routed to the two open flares, in compliance with 40 CFR 60.752(b)(2)(iii)(A).

2. IN COMPLIANCE. Facility submitted a preventative maintenance plan (PM)/malfunction abatement plan (MAP) for the sulfur control system to AQD on January 20, 2017. The plan was reviewed and approved by AQD staff.

IV. Design/Equipment Parameters

1. IN COMPLIANCE. The sulfur control system has been maintained and operated in a satisfactory manner since installation in October 2016.

V. Testing/Sampling

1. IN COMPLIANCE. Samples of LFG are analyzed to determine the total chlorine concentration of the LFG once every 5 years, as allowed per this condition since HCl emissions are below 75% of permit limits. Sampling is performed by Derenzo and Associates with lab analysis performed by Eurofins Air

Toxics. The most recent sample was obtained on February 10, 2015, and results were sent to DTE Energy Resources in a report dated March 30, 2015. Results of this sample show an HCl emission factor of 1.71 lb/MMscf and an actual HCl emission rate of 0.39 lb/hr, with a potential HCl emission rate of 0.54 lb/hr at maximum permitted operating conditions.

2. IN COMPLIANCE. Facility determines the sulfur concentrations in fuel in accordance with the EPA approved custom fuel monitoring plan included as Appendix 9-1. Sampling is conducted twice per year during the first and third quarters of each year, per Appendix 9-1, Sulfur Monitoring 2c. According to the approved fuel monitoring plan, RES does not have to sample for nitrogen since past testing showed no fuel-bound nitrogen in the landfill gas.

3. IN COMPLIANCE. Facility is required to test for NO_x and CO emission rates within 36 months of the last performance test. Testing to determine NO_x and CO emission rates from FGTURBINES was most recently performed on April 27 and 28, 2015; therefore, testing is not required to be performed until April 27, 2018.

4. IN COMPLIANCE. Facility monitors the total sulfur content of the LFG on a weekly basis, as required. Facility has not reported a sulfur content over 140 ppm, so more frequent monitoring has not been required.

5. IN COMPLIANCE. Facility performs the weekly sulfur monitoring required in S.C. V.4 using Draeger tubes to perform the monitoring, as approved by AQD in the facility's Gas Sampling Plan.

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Consumption of LFG and hours of operation of FGTURBINES is recorded on a daily basis. Daily LFG throughput is recorded every morning when operators are on site based on total LFG flow from the previous reading; however, since staff is not on site every day (ie, weekends and holidays), some totals are based on multiple days but this appears sufficient to demonstrate compliance.

2. IN COMPLIANCE. Facility calculates and records the following information:

a. NO_x emission rate per Appendix 7-1, based on stack test results, once per term of the ROP.

b. Monthly and 12-month rolling total NO_x emissions for each turbine on a monthly basis.

c. Monthly record of hourly CO emissions for each turbine based on most recent stack test result.

e. HCl hourly emission rate for FGTURBINES, based on testing data.

f. Monthly and 12-month rolling total HCl emissions, calculated per Appendix 7-1(2) based on testing data.

3. IN COMPLIANCE. All records of sampling data to determine the sulfur concentration of the LFG is recorded and maintained.

4. IN COMPLIANCE. Facility calculates and records SO₂ emissions from FGTURBINES on a monthly and 12-month rolling basis beginning November 2016, per Appendix 7-1(3), based on actual gas usage, actual hours of operation, and most recent gas sampling data.

VII. Reporting (per PTI No. 250-00B)

1. IN COMPLIANCE. Facility submits LFG sampling data and SO₂ emission calculations to AQD within seven days after the end of each calendar month.

VII. Reporting (per ROP No. MI-ROP-N4469-2015)

1. IN COMPLIANCE. Deviations are reported pursuant to General Conditions 21 and 22 of Part A. The facility reported one deviation in the 2016 Annual and both Semi-Annual Deviation Reports and the 2017 Semi-Annual Deviation Report covering January through June 2017 for exceeding the 12-month rolling SO₂ limit in ROP No. MI-ROP-N4469-2017. This violation was resolved through the Consent Order with the installation of the sulfur treatment system and issuance of PTI No. 250-00B, but the facility is required to report this exceedance as a deviation until the ROP is modified.

2. IN COMPLIANCE. Semi-Annual Deviation reports are submitted by March 15 and September 15 of each year.

3. IN COMPLIANCE. Annual ROP Certification Reports are submitted by March 15 of each year.

VIII. Stack/Vent Restrictions

1 and 2. IN COMPLIANCE. Turbine stack dimensions appear to meet permit specifications.

IX. Other Requirements

- 1. IN COMPLIANCE. Facility was in compliance with the applicable provisions of Subpart A and Subpart GG of the New Source Performance Standards.
- 2. IN COMPLIANCE. Vacuum sweeper is used to sweep paved roads and parking lots, as necessary.
- 3. IN COMPLIANCE. Unpaved roads and lots are treated with dust suppressant, as needed.

FGCOLDCLEANERS-S1

NOT APPLICABLE. There are no cold cleaners at Riverview Energy Systems, so conditions associated with this flexible group were not evaluated.

SECTION 2: RIVERVIEW LAND PRESERVE (RLP)

B. Source-Wide Conditions

VII. Reporting

- 1. IN COMPLIANCE. Deviations are reported promptly.
- 2. IN COMPLIANCE. Semi-Annual Deviation Reports are submitted by March 15 and September 15 of each year.
- 3. IN COMPLIANCE. Annual ROP Certifications are submitted by March 15 of each year.

IX. Other Requirements

- 1. IN COMPLIANCE. Facility maintains and implements a Malfunction Abatement Plan (MAP), which includes actions taken to correct and prevent recurrence of an abnormal condition or malfunction, including odors.

C. Emission Unit Conditions

EULANDFILL – Municipal Solid Waste (MSW) Landfill

I. Emission Limits

- 1. IN COMPLIANCE. Facility performs quarterly surface monitoring of the landfill to determine if methane concentrations exceed 500 ppm over background levels, as required in SC V.2. The following quarterly monitoring results were reported to AQD in the semi-annual reports:

Quarter	Number of Readings >500 ppm over background	10-day	1 month	Notes
1 st , 2016	1	OK	OK	Corrective actions performed; no exceedances noted during follow up monitoring.
2 nd , 2016	None	NA	NA	Corrective actions performed; no exceedances noted during follow up monitoring.
3 rd , 2016	3	OK	OK	Corrective actions performed; no exceedances noted during follow up monitoring.
4 th , 2016	7	OK	OK	Corrective actions performed; no exceedances noted during follow up monitoring.
1 st , 2017	2	OK	OK	Corrective actions performed; no exceedances noted during follow up monitoring.
2 nd , 2017	8	OK	NO	Exceedances noted during 1-month follow-up due to damaged wells. Well were

				repaired; subsequent 10-day and 1-month readings showed no exceedances.
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A review of the quarterly monitoring reports during the compliance evaluation period shows some readings of methane levels above 500 ppm over background levels, but 10-day and 1-month re-monitoring have shown no exceedances following corrective actions, with one exception: 1-month re-monitoring in 2nd quarter, 2017, showed some exceedances, but the facility took additional corrective measures and subsequent 10-day and 1-month re-monitoring did not show any exceedances. Per 40 CFR 60.755, if appropriate corrective actions are taken after an exceedance to bring the surface methane levels below 500 ppm of background, then the exceedance is not considered a violation of operational requirements. Therefore, this condition is determined to be in compliance.

III. Process/Operational Restrictions

1. IN COMPLIANCE. Facility complies with the requirements in 40 CFR 63.1955(b) and 40 CFR 63.1960 through 63.1980. Compliance is demonstrated through testing and monitoring of the LFG collection system, continuous monitoring of the control device, recordkeeping, and reporting.

IV. Design/Equipment Parameters

1. IN COMPLIANCE. LFG collection and control system is installed and maintained.

2a. and c. IN COMPLIANCE. Collected LFG is routed to either a.) open flares or to c.) a landfill gas treatment system which processes the collected gas for use as fuel in turbines.

V. Testing/Sampling

1. IN COMPLIANCE. Surface emission monitoring is conducted quarterly along the perimeter and 30-meter intervals traversing the landfill to determine if methane concentrations exceed 500 ppm above background.

2a. through c. IN COMPLIANCE. Surface emission monitoring for methane is conducted in accordance with the monitoring procedures outlined in 40 CFR 60.753(d).

2d.i. through v. IN COMPLIANCE. Readings over 500 ppm above background are marked as exceedances and, after corrective actions are taken, the area is re-monitored within 10 days. If the area exceeds 500 ppm during re-monitoring, additional corrective actions are taken and the area is re-monitored again within 10 days. If no exceedances are noted during the 10-day re-monitoring, the area is monitored again after 1 month. If no exceedances are noted at that time, then no further action is required. If any exceedances are noted during the 10-day or 1-month re-monitoring, then the facility must take additional corrective actions and follow up with additional 10-day and 1-month re-monitoring. During the compliance period, the landfill did not have any areas which exceeded 500 ppm during 10-day re-monitoring after the initial exceedance. There was one area which had an exceedance during the 1-month re-monitoring due to damaged wells; the wells were repaired and subsequent 10-day and 1-month re-monitoring showed surface methane levels below 500 ppm, so no additional actions were required. No areas showed three exceedances within one calendar quarter, so no wells were required to be installed based on surface monitoring exceedances.

3a through d. IN COMPLIANCE. Surface emission monitoring for methane is done with the instrumentation and procedures required by 40 CFR 60.755(c). Facility uses a portable FID to monitor for surface emissions.

4a. through c. IN COMPLIANCE. Records of quarterly surface monitoring area maintained, as required. These records include: the route traversed during monitoring; areas not monitored and the reason why they were not monitored; visual observations indicating elevated levels of LFG; location and concentrations of any reading above 500 ppm above background; and meteorological conditions at time monitoring was performed.

5. IN COMPLIANCE. Facility performs surface methane monitoring according to the instrument specifications and procedures specified in 40 CFR 60.755(d).

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Facility implements a program to monitor cover integrity on a monthly basis and make repairs as needed. Cover integrity records are maintained and were reviewed during the inspection.

2. IN COMPLIANCE. Facility maintains up-to-date records of design capacity, amount of solid waste in-place, and yearly waste acceptance rate. These records are maintained on site and were provided for review during the inspection. The landfill has a design capacity of 39.26 million tons (35.38 million Mg). Based on monthly waste acceptance records, the landfill accepted 709,426 tons of waste in 2016 and had 716,050 cubic yards of waste in-place as of July 31, 2017.
3. NOT APPLICABLE. This condition applies to landfills trying to demonstrate a capacity less than 2.5 million megagrams or 2.5 million cubic meters. Riverview Land Preserve's design capacity is greater than 2.5 million megagrams/2.5 million cubic meters.
4. IN COMPLIANCE. NMOC emission rate is calculated and recorded on an annual basis and reported to MAERS. In the MAERS reports submitted for 2015 and 2016, the facility reported controlled mass emissions of NMOC to be 41.8 tons in 2015 and 42.3 tons in 2016, which is consistent with recent years. Uncontrolled NMOC emissions for 2015 and 2016 were estimated at 157.8 tons and 160.0 tons, respectively.
5. NOT APPLICABLE. No liquids other than leachate were added to the waste during the compliance period.

VII. Reporting

1. IN COMPLIANCE. Any deviations are reported promptly.
2. IN COMPLIANCE. Semi-Annual Deviation Reports are submitted by March 15 and September 15 of each year.
3. IN COMPLIANCE. Annual ROP Certification Reports are submitted by March 15 of each year.
4. NOT APPLICABLE. Facility has not removed or ceased operation of any control equipment.
5. NOT APPLICABLE. This condition applies to landfills which are closing. Riverview Land Preserve is an active landfill.
6. IN COMPLIANCE. Semi-Annual methane exceedance reports are submitted by March 15 and September 15 of each year.
7. IN COMPLIANCE. Semi-Annual SSM Reports are submitted by March 15 and September 15 of each year.

IX. Other Requirements

1. NOT APPLICABLE. No capping or removal of the collection and control system was required during the compliance period.
2. IN COMPLIANCE. If surface monitoring shows methane exceedances, corrective actions are taken and the area is re-monitored within 10 days and 1 month. Corrective actions include adding surface cover and fine-tuning wells. During the compliance period, the landfill had one area which exceeded 500 ppm during re-monitoring after the initial exceedance; corrective actions were taken and subsequent re-monitoring showed no exceedances. If corrective actions are taken, the monitored exceedance is not a violation of the operational requirements, per 40 CFR 60.755.
3. IN COMPLIANCE. Alternatives to the operational standards requested by the facility were approved by AQD in accordance with 40 CFR 60.752(b)(2). These requests and AQD's approvals can be found in the orange facility file.
4. IN COMPLIANCE. Facility conducted operations, monitoring, testing, reporting, and recordkeeping in accordance with the requirements of 40 CFR Part 60, Subpart WWW.
5. IN COMPLIANCE. Facility conducted operations, monitoring, testing, reporting, and recordkeeping in accordance with the requirements of 40 CFR Part 63, Subpart AAAA.
6. NOT APPLICABLE. Facility is required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of Subpart WWW; therefore, the facility remains subject to 40 CFR Part 63, Subpart AAAA.

EU-ASBESTOS – The landfill is licensed to accept asbestos waste

NOT APPLICABLE. Riverview Land Preserve has not accepted and does not currently accept asbestos waste, so these conditions were not evaluated during this inspection. These conditions were added to the permit to allow the landfill the flexibility to accept asbestos waste, if it decides to do so in the future.

EUALGCS – Active landfill gas collection system at the landfill

III. Process/Operational Restrictions

1. IN COMPLIANCE. Gas collection system is automatically shut off within one hour if the control device is shutdown. Records are maintained in the event this occurs.
2. IN COMPLIANCE. Gas collection and control system operates in all active cells with waste in place for 5 or more years and closed cells with waste in place for 2 or more years. Details are maintained in the GCCS Design Plan.
3. IN COMPLIANCE. Wellheads are monitored monthly to verify that the gas control and collection system is operating under negative pressure. If wells demonstrate positive pressure, the wells are reported to AQD and corrective actions are taken and re-monitored to verify the wells are operating under negative pressure. During the compliance evaluation period, the facility reported one occurrence in which a well demonstrated neutral pressure on December 8, 2016, but corrective actions were not taken within 5 days; corrective actions were taken on January 12, 2017, and the well then demonstrated compliance. AQD was notified of this on January 24, 2017, and the occurrence was reported as a deviation in the Semi-Annual Deviation report. Based on this information, AQD considers the facility to be substantially in compliance with this condition.
4. IN COMPLIANCE. Interior wellheads are monitored monthly to verify they are operating at a LFG temperature less than 55°C (131°F) and an oxygen level less than 5%. If a well exceeds either of these parameters, the facility records and reports the date, duration, and suspected cause of the exceedance. The facility is required to take corrective actions within 5 days to get the wells into compliance and performs re-monitoring to verify the wells are operating in compliance. If initial corrective actions do not return the well to compliance, the facility may then make a request to AQD for an extended timeline to get the well into compliance or request to allow the well to operate at a higher temperature or oxygen level, if the facility is able to demonstrate that the elevated parameter does not cause fires or inhibit anaerobic decomposition. During the compliance period, all monitored wells which exhibited noncompliance with either temperature or oxygen requirements were brought into compliance within 5 days or were granted alternative timelines or higher operating values with AQD approval. All requests for alternative timelines and higher operating values, along with supporting documentation for the requests and AQD's conditions for approval, can be found in the facility file.
5. IN COMPLIANCE. Gas collection and control system is operated in accordance with the provisions of 40 CFR 60.753, 40 CFR 60.755, 40 CFR 60.756, and the AQD approved gas collection and control system approved on May 30, 2006.

IV. Design/Equipment Parameters

- 1a. through d. IN COMPLIANCE. The gas collection and control system appears to be installed in accordance with the approved design plan and sufficient to extract the gas produced by the landfill and minimize off-site migration of subsurface gas.
2. IN COMPLIANCE. LFG is routed to a control system (EU-TREATMENTSYS/FGTURBINES, with EUOPENFLARE1 and EUOPENFLARE2 as back-up control).
3. IN COMPLIANCE. The gas collection and control system is routinely modified with the installation, re-drilling, and decommissioning of wells, horizontal collectors, and other collection devices, to assure sufficient gas collection as the production of landfill gas evolves over time. Prior to making any modifications, RLP requests approval from AQD, stating what the modification will be and the reason for the modification. Copies of these requests and AQD's approvals can be found in the orange facility file.
4. IN COMPLIANCE. Wellheads are equipped with a sampling port and temperature measuring device to monitor operating parameters.
- 5a. through c. IN COMPLIANCE. GCCS Design Plan is approved by an engineer in DEQ's Solid Waste Program and an as-built site map is maintained showing the location of the wells. Wells are generally installed approximately 200-250 feet apart. Quarterly surface monitoring is performed assure LFG is being collected by the gas collection system and not escaping through the surface.
- 6a. through c. IN COMPLIANCE. Gas collection devices are constructed of approved materials; lateral and header pipes are made of high-density polyethylene (HDPE). Vertical wells are installed as to not damage underlying liners. Construction documentation records are maintained on site.

7a. IN COMPLIANCE. Facility uses an existing gas collection system which appears sufficiently designed to handle the maximum LFG flow rate to the control system. Flow rate of LFG is recorded.

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Wells are monitored monthly to verify they are operating under negative pressure. If positive pressure exists, the facility is required to take corrective actions within 5 days. If negative pressure cannot be obtained within 15 days of the initial measurement, the facility must either expand the gas collection system or obtain approval for an alternate corrective measure from AQD. If appropriate corrective actions are taken, the monitored exceedance is not considered a violation per 40 CFR 60.755. All positive pressure measurements or missed readings are reported to AQD. During the compliance evaluation period, the facility reported one occurrence in which a well demonstrated neutral pressure on December 8, 2016, but corrective actions were not taken within 5 days; corrective actions were taken on January 12, 2017, and the well then demonstrated compliance. AQD was notified of this on January 24, 2017, and the occurrence was reported as a deviation in the Semi-Annual Deviation report. The facility reported that monthly monitoring was not performed on two wells in January 2016 because the wells were not accessible at that time; the wellheads had been raised 30 feet above grade to accommodate waste placement patterns. The wells were monitored the following month and demonstrated compliance. The missed readings were reported as deviations in the Semi-Annual Deviation Report. Based on this information, AQD considers the facility to be substantially in compliance with this condition.

2. NOT APPLICABLE. The gas collection and control system was installed in 1988.

3. IN COMPLIANCE. Wells are monitored monthly to verify temperature and oxygen concentration. If a well exceeds either parameter, the facility must take corrective action within 5 days. If correction of the exceedance cannot be achieved within 15 days after the first measurement, the facility must either expand the gas collection system or obtain approval for an alternate corrective measure from AQD. If appropriate corrective actions are taken, the monitored exceedance is not considered a violation per 40 CFR 60.755. The facility reported that monthly monitoring was not performed on two wells in January 2016 because the wells were not accessible at that time; the wellheads had been raised 30 feet above grade to accommodate waste placement patterns. The wells were monitored the following month and demonstrated compliance. The missed readings were reported as deviations in the Semi-Annual Deviation Report. Based on this information, AQD considers the facility to be substantially in compliance with this condition.

4a. and b. IN COMPLIANCE. Facility maintains records of the control system, including gas generation flow rate and density of wells, horizontal collectors, surface collectors, and other extraction devices.

5. IN COMPLIANCE. Facility maintains records of the gas collection system, including a plot map showing each existing and planned collector in the system, and the installation date and location of each newly installed collector. A copy of this map was provided during the inspection and can be found in the facility file.

6. IN COMPLIANCE. Facility maintains records of all gas collection and control system exceedances, including results of re-monitoring and location of exceedances. Records were reviewed during this compliance evaluation.

7a. through g. IN COMPLIANCE. Facility maintains the initial and updated GCCS Plan, including the following information: a) map of the collection system showing all wells and collectors; b) density of wells, collectors, and other gas extraction devices; c) documentation of any asbestos or nondegradable waste; d) sum of gas generation flow rates from excluded areas; e) provisions for increasing gas mover equipment capacity, if necessary; f) provisions for the control of off-site migration; and g) dates of well installations, age of the waste in which the wells were installed, and date of initial waste placement in each portion of the landfill.

VII. Reporting

1. IN COMPLIANCE. Any deviations are reported promptly.

2. IN COMPLIANCE. Semi-Annual Deviation reports are submitted by the March 15 and September 15 of each year.

3. IN COMPLIANCE. Annual ROP Certification Reports are submitted by March 15 of each year.

4. IN COMPLIANCE. Semi-Annual gas collection and control system reports are submitted by March 15 and September 15 of each year.
5. IN COMPLIANCE. Semi-Annual SSM reports are submitted by March 15 and September 15 of each year.

IX. Other Requirements

1. IN COMPLIANCE. Facility failed to take corrective actions within 5 days after one well did not demonstrate negative pressure following monitoring on December 8, 2016, as required. However, based on the compliance evaluation of SC VI.1, AQD considers the facility to be substantially in compliance with this condition.
2. IN COMPLIANCE. The provisions of 40 CFR Part 60, Subpart WWW apply at all times, except during periods of start-up, shutdown, or malfunction, provided the duration of the start-up, shutdown, or malfunction does not exceed 5 days. The facility reported no start-up, shutdown, or malfunctions exceeding 5 days during the compliance evaluation period.
3. NOT APPLICABLE. The control system, as installed, meets the requirements of S.C. IV.5, IV.6, and IV.7, so the facility has not requested an alternate control system design.
4. IN COMPLIANCE. Facility maintains and implements an SSM Plan for EUALGCS.

EUBIOGASTREATSYS – This unit treats LFG before it is used in the biogas conditioning system (BioCNG) to produce biogas-based fuel to power compressed natural gas (CNG) vehicles.

III. Process/Operational Restrictions

1. IN COMPLIANCE. Facility operates the treatment system at all times when the collected gas is routed to the BioCNG system.
2. IN COMPLIANCE. Emissions from the treatment system are routed to the control system, as required by 40 CFR 60.752(b)(2)(iii)(A) or (B).
3. IN COMPLIANCE. Emissions from the treatment system are sent to either the turbines or flares for control, in accordance with the provisions of 40 CFR 60.753(e) and (f).

IV. Design/Equipment Parameters

1. IN COMPLIANCE. Treatment system is designed, installed, and operated as approved by AQD.

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Facility maintains records of all control system exceedances of the operational standards in 40 CFR 60.753(e) and (f).
2. IN COMPLIANCE. Facility maintains records of all preventative maintenance performed in accordance with the Preventative Maintenance Plan pursuant to S.C. IX.3.

VII. Reporting

1. IN COMPLIANCE. Any deviations are reported promptly. Facility has not reported any deviations associated with this process.
2. IN COMPLIANCE. Semi-Annual Deviation Reports are submitted by March 15 and September 15 of each year.
3. IN COMPLIANCE. Annual ROP Certification Reports are submitted by March 15 of each year.
4. IN COMPLIANCE. Semi-Annual reports for the landfill gas treatment system are submitted by March 15 and September 15 of each year.

IX. Other Requirements

1. IN COMPLIANCE. The provisions of 40 CFR Part 60.755 apply at all times, except during periods of start-up, shutdown, or malfunction, provided the duration of the start-up, shutdown, or malfunction does not exceed 1 hour. The facility reported no start-up, shutdown, or malfunctions exceeding 1 hour for this process during the compliance evaluation period.
2. IN COMPLIANCE. Facility maintains and implements an SSM Plan.
3. IN COMPLIANCE. Facility maintains and implements a Preventative Maintenance Plan (PMP) for EUBIOGASTREATSYS, dated May 2013.

EUOPENFLARE1 – 2,131 CFM non-assisted open flare for the control of LFG

I. Emission Limits

1. IN COMPLIANCE. Visible emissions testing using USEPA Method 22 was performed on September 21, 2004, showed no visible emissions for the flare. No visible emissions were observed during the inspection.

II. Material Limits

1. IN COMPLIANCE. Net heating value of LFG is greater than 200 BTU/scf. Performance testing on September 21, 2004, showed a heating value of 452.5 BTU/scf (16.86 MJ/scm).

III. Process/Operational Restrictions

1. IN COMPLIANCE. EUOPENFLARE1 is operated in accordance with 40 CFR 60.18. Records are maintained to demonstrated compliance and were reviewed during the inspection.

2. IN COMPLIANCE. EUOPENFLARE1 is operated at all times when collected LFG is routed to it.

3. IN COMPLIANCE. EUOPENFLARE1 is designed for and operated with no visible emissions. No visible emissions were observed from the flare during my inspection.

4. IN COMPLIANCE. EUOPENFLARE1 is operated with the flame present at all times.

5. IN COMPLIANCE. Net heating value of LFG is greater than 200 BTU/scf (7.45 MJ/scm).

Performance testing on September 21, 2004, showed a heating value of 452.5 BTU/scf (16.86 MJ/scm).

6. IN COMPLIANCE. Exit velocity of the flare is less than 60 ft/sec. Performance testing on September 21, 2004, demonstrated an exit velocity of 57.42 ft/sec.

7. NOT APPLICABLE. EUOPENFLARE1 is not air-assisted.

8. IN COMPLIANCE. EUOPENFLARE1 is operated whenever LFG is routed to it.

9. IN COMPLIANCE. Control system meets requirements of 40 CFR 60.752(b)(2)(iii). Gas collection system automatically shuts down if the control system is inoperable.

V. Testing/Sampling

1. IN COMPLIANCE. Net heating value of LFG was determined using USEPA Method 3C during performance testing on September 21, 2004.

2. IN COMPLIANCE. Visible emissions observations using USEPA Method 22 was performed on September 21, 2004.

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. EUOPENFLARE1 is equipped with a heat sensing device to indicate the continuous presence of a flame.

2 and 3. IN COMPLIANCE. Information and records relating to the design and operation of EUOPENFLARE1 are maintained as required. These records include flare type, VE readings, heat content determination, flow rate measurements, exit velocity determinations made during the performance test, and monitoring of pilot flame.

4a. through e. IN COMPLIANCE. The following records are maintained for EUOPENFLARE1: a) records indicating presence of flare pilot flame; b) net heating value of gas being combusted; c) actual exit velocity of the flare; d) maximum permitted velocity; and e) maximum permitted velocity for air-assisted flares.

VII. Reporting

1. IN COMPLIANCE. Any deviations are reported promptly. Facility has not reported any deviations associated with this process.

2. IN COMPLIANCE. Semi-Annual Deviation Reports are submitted by March 15 and September 15 of each year.

3. IN COMPLIANCE. Annual ROP Certification Reports are submitted by March 15 of each year.

4. IN COMPLIANCE. Semi-annual reports for the landfill gas treatment system are submitted by March 15 and September 15 of each year.

5. IN COMPLIANCE. Semi-annual SSM Reports are submitted by March 15 and September 15 of each year.
6. NOT APPLICABLE. Facility has not removed EUOPENFLARE1.

XI. Other Requirements

1. IN COMPLIANCE. EUFLARE1 did not have any start-up, shutdown, or malfunctions exceeding 1 hour during the compliance evaluation period.
2. IN COMPLIANCE. Facility demonstrates compliance with 40 CFR Part 63 Subpart AAAA and 40 CFR Part 60 Subpart WWW through testing, monitoring of the collection system, continuous parameter monitoring. Facility maintains and implements a written SSM Plan for EUOPENFLARE1.

EUOPENFLARE2 – 4,700 CFM non-assisted open flare for control of LFG

I. Emission Limits

1. IN COMPLIANCE. Visible emissions testing using USEPA Method 22 was performed on June 24, 2013, showed no visible emissions for the flare. No visible emissions were observed during my inspection.

II. Material Limits

1. IN COMPLIANCE. Net heating value of LFG is greater than 200 BTU/scf. Performance testing on June 24, 2013, showed a heating value of 463.8 BTU/scf (17.28 MJ/scm).

III. Process/Operational Restrictions

1. IN COMPLIANCE. EUOPENFLARE2 is operated in accordance with 40 CFR 60.18. Records are maintained to demonstrate compliance.
2. IN COMPLIANCE. EUOPENFLARE2 is operated at all times when collected LFG is routed to it. Operation records are maintained to demonstrate compliance.
3. IN COMPLIANCE. EUOPENFLARE2 is designed for and operated with no visible emissions. No visible emissions were observed from the flare during my inspection.
4. IN COMPLIANCE. EUOPENFLARE2 is operated with the flame present at all times.
5. IN COMPLIANCE. Net heating value of LFG is greater than 200 BTU/scf (7.45 MJ/scfm). Performance testing on June 24, 2013, showed a heating value of 463.8 BTU/scf (17.28 MJ/scm).
6. IN COMPLIANCE. Exit velocity of the flare is less than 60 ft/sec. Performance testing on June 24, 2013, demonstrated an exit velocity of 24.8 ft/sec.
7. NOT APPLICABLE. EUOPENFLARE2 is not air-assisted.
8. IN COMPLIANCE. EUOPENFLARE2 is operated at all times when LFG is routed to it to comply with the provisions of 40 CFR 60 Subpart A.
9. IN COMPLIANCE. Control system meets requirements of 40 CFR 60.752(b)(2)(iii). Gas collection system automatically shuts down if the control system is inoperable.

V. Testing/Sampling

1. IN COMPLIANCE. Net heating value of LFG was determined using USEPA Method 3C, Alternate 42 during performance testing on June 24, 2013. Alternate 42 allows for one 30-minute sample supplemented by two methane readings from a hand-held combustible gas meter. Request to use Alternate 42 was approved by AQD.
- 2 and 3. IN COMPLIANCE. Visible emissions observations using USEPA Method 22, Alternate 42 was performed on June 24, 2013. Alternate 42 allows for a 30-minute visible emission reading for LFG. Request to use Alternate 42 was approved by AQD.

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. EUOPENFLARE2 is equipped with a heat sensing device to indicate the continuous presence of a flame.
- 2 and 3. IN COMPLIANCE. Information and records relating to the design and operation of EUOPENFLARE2 are maintained as required. These records include flare type, VE readings, heat content determination, flow rate measurements, exit velocity determinations made during the

performance test, and monitoring of pilot flame.

4a. through e. IN COMPLIANCE. The following records are maintained for EUOPENFLARE2: a) records indicating presence of flare pilot flame; b) net heating value of gas being combusted; c) actual exit velocity of the flare; d) maximum permitted velocity; and e) maximum permitted velocity for air-assisted flares.

VII. Reporting

1. IN COMPLIANCE. Any deviations are reported promptly. Facility has not reported any deviations associated with this process.
2. IN COMPLIANCE. Semi-Annual Deviation reports are submitted by March 15 and September 15 of each year.
3. IN COMPLIANCE. Annual ROP Certification Reports are submitted by March 15 of each year.
4. IN COMPLIANCE. Semi-Annual reports for the landfill gas treatment system are submitted by March 15 and September 15 of each year.
5. IN COMPLIANCE. Semi-Annual SSM Reports are submitted by March 15 and September 15 of each year.

XI. Other Requirements

1. IN COMPLIANCE. EUOPENFLARE2 did not have any start-up, shutdown, or malfunctions exceeding 1 hour during the compliance evaluation period.
2. IN COMPLIANCE. Facility demonstrates compliance with 40 CFR Part 63 Subpart AAAA and 40 CFR Part 60 Subpart WWW through testing, monitoring of the collection system, continuous parameter monitoring. Facility maintains and implements a written SSM Plan for EUOPENFLARE2.
3. IN COMPLIANCE. Facility maintains compliance with 40 CFR Part 60 Subpart A and WWW ("Standard of Performance for Municipal Solid Waste Landfills"). Records are maintained to demonstrate compliance.
4. IN COMPLIANCE. Facility maintains compliance with 40 CFR Part 63 Subpart A and AAAA ("National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills"). Records are maintained to demonstrate compliance.

D. Flexible Group Conditions

FGCOLDCLEANERS-S2 – Any cold cleaner that is grandfathered or exempt from Rule 201.

II. Material Limits

1. IN COMPLIANCE. Facility uses a product called "Safety-Kleen Premium Solvent (Virgin and Recycled)" in EUCOLDCLEANER-S2. According to the MSDS, this contains 100% petroleum distillates and no halogenated compounds. The permit does not allow more than 5% (by weight) of several halogenated compounds, so this condition is in compliance.

III. Process/Operational Restrictions

1. IN COMPLIANCE. According to the facility, proper cleaning procedures are followed.
2. IN COMPLIANCE. According to the facility, routine maintenance is performed in accordance with manufacturer recommendations.

IV. Design/Equipment Parameters

1. IN COMPLIANCE. Cold cleaner is used to clean metal parts and emissions are released to the general in-plant environment.
2. IN COMPLIANCE. Cold cleaner is equipped with an area to drain parts.
3. IN COMPLIANCE. Cold cleaner is equipped with a lid and the lid was closed during the inspection.
4. IN COMPLIANCE. Lid is mechanically assisted.
5. IN COMPLIANCE. Facility maintains records to demonstrate compliance with this condition.

VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Facility states that temperatures are monitored and recorded when solvent is

heated.

- 2. IN COMPLIANCE. Appropriate records are maintained.
- 3. IN COMPLIANCE. Written operating procedures are maintained and posted.
- 4. IN COMPLIANCE. Waste solvent disposed of in a proper manner.

VII. Reporting

- 1. IN COMPLIANCE. Any deviations are reported promptly. Facility has not reported any deviations associated with this process.
- 2. IN COMPLIANCE. Semi-Annual Deviation reports are submitted by March 15 and September 15 of each year.
- 3. IN COMPLIANCE. Annual ROP Certification Reports are submitted by March 15 of each year.

FINAL COMPLIANCE DETERMINATION:

Based on this inspection, Riverview Land Preserve was determined to be in substantial compliance with ROP No. MI-ROP-M4469-2015 and applicable State and federal air rules.

Section 1: Riverview Energy Systems (RES)

At the time of inspection, Riverview Land Preserve was determined to be in substantial compliance with the conditions of ROP No. MI-ROP-M4469-2015, PTI No. 200-00B, Consent Order AQD No. 19-2016, and applicable State and federal air rules.

Section 2: Riverview Land Preserve (RLP)

Based on this inspection, Riverview Land Preserve was determined to be in substantial compliance with ROP No. MI-ROP-M4469-2015 and applicable State and federal air rules, except for the special conditions of ROP No. MI-ROP-M4469-2015 as listed below:

- EUALGCS, SC III.3, VI.1, and XI.1: RLP did not take corrective actions within 5 days after a well failed to demonstrate negative pressure during monitoring. The well was measured as neutral (neither positive nor negative pressure). The facility notified AQD as soon as they were made aware of the oversight and took corrective actions, at which time the well demonstrated compliance. This was reported as a deviation in the semi-annual ROP certification.
- EUALGCS, SC VI.1 and VI.3: RLP failed to monitor two wells in January 2016. The wellheads had been raised 30 feet above grade to accommodate waste placement patterns. The wells were monitored the following month and demonstrated compliance. The missed readings were reported as deviations in the semi-annual ROP certification.

In both cases, the deviations were considered to be minor isolated incidents in which the facility took timely and appropriate corrective actions and reported the deviations to AQD. A Violation Notice will be not issued for either deviation.

NAME 

DATE 9-29-17

SUPERVISOR JK