

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

N599142745

FACILITY: Citizens Disposal, Inc.	SRN / ID: N5991
LOCATION: 2361 W. Grand Blanc Rd., GRAND BLANC	DISTRICT: Lansing
CITY: GRAND BLANC	COUNTY: GENESEE
CONTACT: Robb Moore , Environmental Manager	ACTIVITY DATE: 11/28/2017
STAFF: Julie Brunner	COMPLIANCE STATUS: Compliance
SUBJECT: Performed a scheduled inspection to determine compliance with ROP No. MI-ROP-N5991-2016.	SOURCE CLASS: MAJOR
RESOLVED COMPLAINTS:	

On November 1 and 28, 2017, DEQ-AQD staff conducted a scheduled inspection of Citizens Disposal, Inc. and Energy Developments (former Granger Electric). The facility operates per the conditions of Renewable Operating Permit (ROP) No. MI-ROP-N5991-2016. The ROP has two sections. Section 1 covers processes owned and operated by Citizens Disposal, Inc (Citizens). This includes the landfill operations, two (2) landfill gas flares, and a shop. Section 2 covers two landfill gas-fired engines, five (5) exempt landfill gas-fired engines, and a landfill gas treatment system that is owned and operated by Energy Developments (EGL).

Operations owned and operated by Citizens and EDL comprises a single stationary source. This is a mixed use area site surrounded by farm land, residential, industry, and the highway (I-23) on the west side of the source.

Facility Description:

Citizens is classified as a Type II sanitary landfill, which is a Municipal Solid Waste (MSW) landfill. A "Municipal Solid Waste landfill" or a "Type II landfill" according to Act 451, Part 115, Solid Waste Management states: A landfill which receives household waste, incinerator ash or sewage sludge and which is not a land application unit, surface impoundment, injection well, or waste pile.

A MSW landfill also may receive other types of solid waste, such as commercial waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial waste. Such a landfill may be publicly or privately owned.

Natural biological processes occurring in landfills transform the waste's constituents producing leachate and landfill gas. Initially, decomposition is aerobic until the oxygen supply is exhausted. Anaerobic decomposition of buried refuse creates most of the landfill gas. Landfill gas consists mainly of methane (CH₄), carbon dioxide (CO₂), and nonmethane organic compounds (NMOC).

There are two sides to the landfill. An inactive (closed) landfill owned by Waste Management (WM) dates back to the 1940s. The active landfill is owned and operated by Republic Services since 1989. A landfill gas collection system has been installed to collect the landfill gas for both sides. For the WM side, gas collection wells were installed in 1994. Not much gas is collected from the inactive landfill at about 300 cubic foot (cf) per year. For the active landfill, gas collection wells are installed as appropriate. The system utilizes gas mover equipment to rout the collected gas to the gas-to-electric plant.

Landfill gas produced from the landfill is used to fuel spark ignition (SI) reciprocating internal combustion engines (RICE) in the EGL owned and operated gas-to-electric plant. Each engine turns a crankshaft that spins a rotor in an electromagnetic field creating an electric current used to generate electricity. The engines in the gas-to-electric plant are located in two buildings. (Plant 1 and Plant 2 for reference in this report.) Plant 1 was built in ~1993 and has bays for five engines. All bays are now filled in the Plant 1 building. The cat-in-the-box (CITB) that had been on-site since 2010 has been removed and a Caterpillar (CAT) 3516 has been installed in what was empty bay 5. The engines in Plant 1 are currently operated as exempt under Rule 285(g). Plant 2 has bays for three engines and two CAT 3520C were permitted on PTI 331-08. These two engines were installed in August of 2012.

When the landfill gas is not routed to the engines, such as during engine maintenance, it is burned in one of two open flares. The open flares are used as back-up control devices to combust the landfill gas. One flare, Grof flare, is capable of combusting between 600 – 800 cfm of gas and is located by Plant 1. The other flare, a 3000

cfm Zinc flare is located near the base of the landfill. Landfill gas can be directly routed to the Zinc flare. Although the Grof flare is operated by EDL, both flares are covered under Section 1 of the ROP.

Prior to combustion in the engines, landfill gas is sent to a treatment system. The treatment system has been in place since the landfill was constructed. The treatment system consists of a strainer and knockout scrubber to remove water vapor from the gas. The gas then passes through a compressor and heat exchangers. Finally, particulate is removed from the gas when it passes through a 10 micron particle filter.

Regulatory Overview:

Citizens and EDL are currently a major Prevention of Significant Deterioration (PSD) source due to the potential to emit of greater than 250 tons per year (tpy) of any regulated air contaminant. Actual emissions of CO at this facility are greater than 250 tpy. The facility is also major for hazardous air pollutants (HAPs) with the potential to emit in equal or greater quantities of 10 tpy of any single HAP and 25 tpy of aggregate HAPs. The potential to emit of greenhouse gases (GHGs) in carbon dioxide equivalents (CO2e) are greater than 100,000 tpy. CO2e is a calculation of the combined global warming potentials of six GHGs: CO₂, CH₄, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The facility is subject to the Title V - Renewable Operating Permit Program, and also the following federal regulations for air pollutants as discussed below.

40 CFR 60, Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills - The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991, and the landfill has a design capacity greater than or equal to 2.5 million megagrams (Mg) and 2.5 million cubic meters. The landfill gas collection and control system are subject to the requirements of Subpart WWW.

40 CFR 60, Subpart JJJJ, Standards of Performance for Spark Ignition Internal Combustion Engines (SI ICE) - The provisions of this subpart apply to SI ICE that commence construction (ordered) after June 12, 2006. Two of the engines, EU-ENGINE6 and EU-ENGINE7, are subject to Subpart JJJJ.

40 CFR 61, Subpart M, Standards of Performance for Asbestos – The facility occasionally receives asbestos containing material for proper disposal.

40 CFR 63, Subpart AAAA, National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills - This subpart requires all subject landfills to meet the requirements of 40 CFR 60, Subpart Cc or WWW. This subpart also requires such landfills to meet the startup, shutdown, and malfunction (SSM) requirements of 40 CFR 63, Subpart A, General Provisions and provides that compliance with the operating conditions shall be demonstrated by parameter monitoring results that are within the specified ranges. It also includes additional reporting requirements.

40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) – This subpart establishes national emission limitations and operating limitations for HAPs emitted from stationary RICE located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with emission and operating limitations. The five (5) exempt engines, EU-ENGINE6 and EU-ENGINE7 are affected sources subject to 40 CFR 63, Subpart ZZZZ. The exempt engines are existing stationary RICE. EU-ENGINE6 and EU-ENGINE7 are new stationary RICE. The following is a list of emission units/flexible groups that are on the ROP No. MI-ROP-N5991-2016:

Emission Unit ID	Emission Unit Description	Install/Modify Date	App. Req.
SECTION 1			
EULANDFILL (TREAT)	This emission unit represents the general Municipal Solid Waste (MSW) Landfill	12/13/95	40 CFR 60: Subparts WWW, 40 CFR 63: Subpart AAAA

Emission Unit ID	Emission Unit Description	Install/Modify Date	App. Req.
EU ACTIVECOLL	Active landfill gas collection system at the landfill that uses gas mover equipment to draw landfill gas from the wells and moves the gas to the control equipment	12/13/95	40 CFR 60: Subparts WWW, 40 CFR 63: Subpart AAAA
EU GROFFLARE	Open flare combustor without enclosure or shroud	4/1/00	40 CFR 60: Subparts WWW, 40 CFR 63: Subpart AAAA
EU ZINKFLARE	Open flare combustor without enclosure or shroud	2/3/09	40 CFR 60: Subparts WWW, 40 CFR 63: Subpart AAAA
EU ASBESTOS	Any active or inactive asbestos disposal site.	1/1/81	40 CFR 61: Subpart M
FGCOLDCLEANER	Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 281(h) or Rule 285(r) (iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.	NA	Rule 281(2)(h) or Rule 285(2) (r)(iv)
FGRULE290	Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 290.	NA	Rule 290
SECTION 2			
EU TREATSYS	Processing equipment that treats collected landfill gas for subsequent sale or use.	12/13/95	40 CFR 60: Subparts WWW, 40 CFR 63: Subpart AAAA
EU-ENGINE6 (GZJ549)	CAT 3520 (2,233 hp) landfill gas-fired reciprocating engine, 1.6 MW, 14.67 MMBtu/hr	8/1/12	40 CFR 60: Subpart JJJJ, 40 CFR 63: Subpart ZZZZ
EU-ENGINE7 (GZJ551)	CAT 3520 (2,233 hp) landfill gas-fired reciprocating engine, 1.6 MW, 14.67 MMBtu/hr	8/1/12	40 CFR 60: Subpart JJJJ, 40 CFR 63: Subpart ZZZZ
Exempt Engines			
EUENGINE1 (3R274)	Caterpillar 3516 landfill gas-fired reciprocating engine located in Plant 1.	07-27-1994	Rule 285(2)(g), 40 CFR 63: Subpart ZZZZ
EUENGINE2 (4E124)	Caterpillar 3516 landfill gas-fired reciprocating engine in Plant 1.	07-27-1994	Rule 285(2)(g), 40 CFR 63: Subpart ZZZZ

Emission Unit ID	Emission Unit Description	Install/Modify Date	App. Req.
EUENGINE3 (4E468)	Caterpillar 3516 landfill gas-fired reciprocating engine in Plant 1.	07-27-1994	Rule 285(2)(g), 40 CFR 63: Subpart ZZZZ
EUENGINE4 (3R889)	Caterpillar 3516 landfill gas-fired reciprocating engine in Plant 1.	04-01-2000	Rule 285(2)(g), 40 CFR 63: Subpart ZZZZ
EUENGINECITB(16) (REMOVED)	Caterpillar 3516 landfill gas-fired reciprocating engine on a flatbed skid beside Plant 1.	08-04-2010	Rule 285(2)(g), 40 CFR 63: Subpart ZZZZ
EUENGINE5 (3R273) Replaced the CITB and subject to the same requirements	Caterpillar 3516 landfill gas-fired reciprocating engine in Plant 1. (9.5 MMBtu per hour, 0.8 MW each, manf. Date- 1995)	01-31-2017	Rule 285(2)(g), 40 CFR 63: Subpart ZZZZ (Rule 215(3) – Off-Permit Change)

Michigan Air Emissions Reporting System (MAERS):

The facility reports to MAERS as an Major, Category I fee subject.

Inspection:

On November 1st, I conducted an inspection of the landfill and on November 28th an inspection of the gas-to-electric plant while observing a stack test.

Section 1 - Citizens Disposal, Inc (Citizens)

Arrived: 9:00 AM on 11/01/17

Departed: 11:20 PM on 11/01/17

Weather: 35°F, wind S @ 6 MPH, UV 0 Low

No visible emissions (VEs) were observed from any of the facility operations. No odors were identified surrounding the facility.

AQD staff on this inspection included myself, Jeremy Brown (TPU – Asbestos Inspector), and Chukuemeka Oje (Permits – Permit Engineer). Jeremy was doing an Asbestos NESHAP Landfill Inspection and the report is in MACES for the November 1, 2017 Landfill Inspection. A pre-inspection meeting was conducted with Mr. Robb Moore (Environmental Manager) and Mr. Bob Thornton (Operations Manager) both of Republic Services at the landfill office. We discussed the operations at the landfill and the requirements of the ROP. The landfill has around 17 years of capacity left at last check and as of 2/16/17 there was 10,762,027 cubic yards of waste in-place. For the last 5 years, the acceptance rate has been between 1,200 to 1,400 tons per day of waste. They are getting ready to start construction in the Spring of 2018 of Cell B. This is Phase 3 (new cell expansion) that was permitted in 2000. No composting is done at the facility and there have been no odor complaints in the last year.

Hours of operation for the landfill are currently Monday to Friday with some Saturdays. The scale operates from 6:00 am to 4:00 pm.

A program to monitor monthly cover integrity and implement cover repairs is required in EULANDFILL, Special Condition (SC) VI.1 and is in place. A copy of the NSPS Cover Integrity Inspection Log for August 3, 2017 showed "No cover issues".

Surface CH₄ concentration scans of the landfill are done quarterly as required by NSPS, MACT, and in EULANDFILL. The NSPS limit for CH₄ is 500 part per million (ppm). An exceedance of NSPS limits could indicate the need to draw additional gas from the area for better capture and to prevent gas migration off-site. The company that does the surface monitor is AEG and the next scan will be done sometime in November. Records are kept as required by EULANDFILL, SC VI.5.

The facility monitors each wellhead for temperature, pressure and oxygen (O₂) levels monthly as required by NSPS, MACT, and per the requirements in EUACTIVECOLL. The NSPS requires that wellheads on collection systems operate at below required temperatures, pressure and oxygen (O₂) levels. An exceedance of NSPS limits could indicate the need to draw additional gas from the area to prevent gas migration, the surface liner may have a leak allowing air infiltration, or in the case of rising temperatures, a possible fire. Requests for variances from operating parameters for specific wells can be made if tuning the wellheads does not address the exceedances in operating parameters. Wellfield Monitoring Data (12-months) from 10/12/16 to 10/4/17 was obtained and the information matches up with the requests for variances.

A plot plan of the collection system (as required by EUACTIVECOLL, SC VI.5) was viewed and the areas where alternative timeline variance requests have been made were discussed. A number of alternative timeline variance requests have been made in the last year. Robb indicated requests for variances will probably continue as waste is being placed in the top of landfill that could cause issues with the gas collection systems.

EUGROFFLARE handles excess gas that the engine plant cannot take. The landfill is producing gas in excess of the capacity of the plant and a couple hundred scfm of gas goes to the flare. The Glof flare had nitrogen tanks beside it which is the gas used to ignite the pilot light on the flare. No VEs were observed from the flare. EUZINKFLARE is for backup. If two (2) engines are down in the engine plant, then the flare is operated. It is run once a month to check operation at a minimum.

The facility accepts both friable and non-friable asbestos. Friable asbestos is buried as soon as possible. The location of the friable asbestos is plotted using GPS, and gas collection systems are not installed in areas where asbestos has been buried. Non-friable asbestos can be put into the working face of the landfill. Asbestos comes in with a manifest (waste shipment record) and the requirements of 40 CFR 61, Subpart M are followed. The requirements in EUASBESTOS were checked by Jeremy. The notification of excavation/disturbance as required by SC VII.6 is submitted for the year. A copy of the last notice dated February 1, 2017 is attached.

There is a parts washer located in the shop. It is included as FGCOLDCLEANER in the ROP. The parts washer was closed when viewed. The Safety Data Sheet (SDS) for the solvent used shows the material is a petroleum distillate. There are some exempt Rule 282 heaters at the facility including one propane heater for the office and a Salamander portable heater in the shop. There are 2 – 1000 gallon, and 1 – 500 gallon diesel fuel tanks for equipment refueling on site. These are occasionally moved around the landfill operations for refueling of off-road vehicles. There are also 2 – 335 gallon hydraulic oil tanks in the shop that were identified. The oil tanks at the facility are exempt under Rule 284(2)(i).

The drive around the operations of the landfill including the working face was done with Robb Moore. We drove first by the inactive (closed) landfill owned by Waste Management, the Groff Flare, and the Zink Flare which was not operating. While driving around the circumference of the landfill, risers for the leachate collection system and the electric powered leachate pumps were noted. Trash pickers were observed around the landfill operations. Little odor was noted around the base of the working face. At the working face of the landfill, the odor was not too bad. Wind speed was light and offsite potential for odors was observed to be low. At night, the working face is covered with tarps. Approximately 100 to 200 trash trucks per day make their way to the working face of the landfill and the scales close at 4:00 PM.

Section 2 - EDL

Arrived: 10:00 AM on 11/28/17

Departed: 1:30 PM on 11/28/17

Weather: 53°F, wind SSW @ 17 MPH, UV 1 Low

No visible emissions (VEs) were observed from any of the facility exhaust stacks upon arrival. No odors were identified surrounding the facility. Derenzo staff were on-site, and the engine testing had started.

The business operation between the landfill and the gas plant is that Republic gets a percentage of the profit from the gas plant. The gas wells produce ~100 scfm to a low of 5-10 scfm each. Republic maintains the gas wells. The gas is drawn to the engine plant using compressors.

In the EDL operated gas-to-electric plant, I meet with Mr. Doug Hine and Mr. Tony Saintmarie both EDL operations technicians for the plant. The facility has a new operations manager, Mr. Todd Daviln. There were also a couple other EDL staff on-site for the engine test.

All seven (7) engines run all the time plus excess gas goes to Groff flare. The plant has two (2) full-time personnel that are on-site 5 days per week from 8:00 am to 4:00 pm. One person is on-call 7 days per week and this switches from week to week.

A current list of the engines and equipment numbers at the facility was provided. Granger had maintained a fleet of engines for "like-kind" engine replacement or engine swapping, and EDL has acquired all the resources. For "like-kind" engine replacement or engine swapping, all supporting documentation for this type of action should be maintained per the requirements in FG3615ENGINES and FGRICEMACT. No "like-kind" engine replacements have been performed for engines #1, #2, #3, and #4 since the last inspection. Engine bay #5 that was empty in Plant 1 at the time of the last inspection now has an engine. The temporary engine (CITB(16)) has been removed and all documentation to remove the engine and place an engine in bay #5 was completed properly. EUENGINE6 and EUENGINE7, which were permitted on PTI 331-08, are installed and operating, but Plant 2 has room for three total engines. Installation of a third engine in Plant 2 will require a PTI, and possible PSD review of the project.

An electronic preventative maintenance (PM) program is in place. Work orders for the equipment are generated by the system. A copy of plant maintenance logs and downtime for January to October 2017 were supplied by the operations technicians. The logs include the date, time, event description or reason, equipment number, equipment operating time in hours, and length of event. Events logged included electrical and mechanical work, CIB(16) shutdown on 1/12/17, plugs, oil and filter changes; generator replacement, belt replacements; and cleaning and washing. In other words, routine maintenance and repairs were documented properly in compliance with EUTREATMENTSYS (SC VI.2), FG3615ENGINES (SC VI.2), FGENGINE (SC VI.4), and FGRICEMACT (SC VI.3). Notes on PM completed on EUTREATMENTSYS may be a little light on documentation. (PM on the chillers is done once a year and filters are changed annually or as needed when the pressure gauge indicates it is needed.)

All engines were operating in the two plants at the time of the inspection. A snap shot of the PLC computer screen with the engine operations was obtained (attached). All operating data is sent electronically to "headquarters" and AQS (consultant). The operating data includes kilowatt-hours (kW-hr), pressure, landfill gas flow to each plant, and production data. Daily Logs are kept of the data for equipment in Plants 1 and 2, and maintained on-site. Daily Logs for 11/1 – 3/2017 were obtained. Compilation of the data is done at "headquarters" and this information was requested from Mr. Dan Zimmerman (EDL Director of Operations). Compliance with a number of monitoring/recordkeeping conditions in EUTREATMENTSYS, FG3615ENGINES, FGENGINE, and FGRICEMACT was demonstrated.

The following data from the digital display in the control room were recorded at 11:15 am during the time of inspection:

ENGINE #1 = 747 kW
ENGINE #2 = 820 kW
ENGINE #3 = 830 kW
ENGINE #4 = 798 kW
ENGINE #5 = 838 kW
EUENGINE6 = 1615 kW
EUENGINE7 = 1634 kW

Stack Testing Observation:

EU-ENGINE6 and EU-ENGINE7 were being tested on November 28, 2017. The test plan was approved on November 9, 2017. Both engines were being tested for NOx, CO, and VOC in grams per brake horsepower-hour (g/hp-hr) to demonstrate compliance with the conditions on ROP No. MI-ROP-N5991-2016 and 40 CFR 60, Subpart JJJJ. Testing to demonstrate compliance with the SOx permit limit was not requested for this event. Testing was discussed with EDL, and additional sampling of the sulfur content of the gas is being investigated.

EGL staff were monitoring the engine operational parameters and providing this information to the testing crew, Derenzo. Derenzo testing staff on-site were Jason Logan (project manager) and a technician. AQD staff on-site were Julie Brunner (Lansing District) and no Technical Programs Unit were available to observe the test.

All engines in Plants 1 and 2 were operating during the test.

The following specs were recorded for the engines:

EU-ENGINE6 - CAT G3520C landfill gas-fired RICE rated at 1600 kW (2,233 hp), Serial no. CAT GZJ00549 and 9WZ01055

EU-ENGINE7 - CAT G3520C landfill gas-fired RICE rated at 1600 kW (2,233 hp), Serial no. CAT GZJ00551 and 9WZ01057

The emission limits for each engine in FGENGINES are:

NOx (g/hp-hr)	1.0
CO (g/hp-hr)	3.0
VOC (g/hp-hr)	1.0

During the test, the kW output, fuel flow (scfm), air-to-fuel ratio, and methane content of the gas was measured at a minimum per the test plan. A computer in the engine room was continuously recording engine operating parameters. Readings were also being recorded manually. Methane content of the gas was 52.3%.

The testing of EU-ENGINE7 was underway when I arrived. During test run #2 at 10:20 AM, the computer readout in the control room was:

Output: 1611 – 1625 kW (greater than 90% of maximum output or at full load)

Fuel flow: monitored continuously

Air-to-fuel ratio: 8.2

Fuel pressure: 18 psi

Fuel BTU content: 478

Operating hours on engine clock: 44,800

The preliminary (uncorrected) results for Run #1 which went from 8:20 AM to 9:20 AM:

NOx	84 ppm	0.55 g/hp-hr
CO	645 ppm	2.58 g/hp-hr
VOC	19.7 ppm	0.14 g/hp-hr
Exhaust Flow	4542 dscfm	5087 scfm

Flow measurements were taken with each run and the instruments were calibrated for each run.

The preliminary (uncorrected) results for Run #2 which went from 9:38 AM to 10:38 AM:

NOx	81 ppm	0.54 g/hp-hr
CO	651 ppm	2.63 g/hp-hr
VOC	19.2 ppm	0.14 g/hp-hr
Exhaust Flow	4586 dscfm	5234 scfm

The preliminary (uncorrected) results for Run #3 which went from 10:55 AM to 11:55 AM:

NOx	82.5 ppm	0.57 g/hp-hr
CO	651 ppm	2.74 g/hp-hr
VOC	19.7 ppm	0.15 g/hp-hr
Exhaust Flow	4772 dscfm	5428 scfm

Once testing was completed for EU-ENGINE7, the equipment was moved to the stack for testing EU-ENGINE6. During test run #1 for EU-ENGINE6 at 1:17 PM, the digital reading on the Plant 2 wall was:

EU-ENGINE6: 1600 – 1613 kW

EU-ENGINE7: 1610 – 1622 kW

EU-ENGINE6 was operating at the maximum routine operating conditions for the test.

The preliminary (uncorrected) results for Run #1 which went from 12:10 PM to 1:10 PM:

NOx	90.3 ppm	0.59 g/hp-hr
CO	657 ppm	2.62 g/hp-hr
VOC	19.7 ppm	0.14 g/hp-hr
Exhaust Flow	4519 dscfm	5107 scfm

Run #2 started at 1:26 PM.

Based on the preliminary results, EU-ENGINE6 and EU-ENGINE7 are projected to be in compliance with permitted emission limits at maximum routine operating conditions.

I left while testing EU-ENGINE6 was still on-going.

Departure:

No violations or concerns were identified at the time of inspection. Records not obtained during the inspection were emailed.

Records Review:

The following records were requested and/or obtained during the inspection:

1. The Historical Wellfield Monitoring Data (12-months) from 10/12/16 to 10/4/17.
2. Gas flow records and flare operation for EUGROFFLARE.
3. The 12-month rolling gas flow, heat input (MMBtu), and CO and SOx emissions data for EUZINKFLARE.
4. The landfill gas usage and kilowatt output for the last 12-months (November 2016 to October 2017) for EU-ENGINE6 and EU-ENGINE7 (FGENGINES).

For EUZINKFLARE, the 12-month rolling landfill gas usage in September 2017 was 22.89 MMcf and the permit limit is 1,570 MMcf per 12-month rolling time period. CO emissions based on a 12-month rolling time period up to September 2017 were 2.18 tpy, and SOx emissions based on a 12-month rolling time period up to September 2017 were 1.04 tpy. The CO emission limit is 146 tpy and SOx emission limit is 48 tpy. EUZINKFLARE is estimated to be operated below permit limits.

For FGENGINES, the 12-month rolling kW-hr output in October 2017 for EU-ENGINE6 was 12.3 MM kW-hr and for EU-ENGINE7 was 12.8 MM kW-hr. The output limit is 14 MM kW-hr/12-month rolling per engine.

All records obtained in the course of this compliance inspection are attached to the file copy of the report.

Annual and semi-annual certifications and deviation reports are being received. Deviations have been reported since the last inspection which include alternative timeline requests to some malfunctions of the flares due to empty nitrogen tanks.

Summary:

No instances of noncompliance with the conditions of ROP No. MI-ROP-N5991-2016 were identified with this scheduled inspection.

When the testing results for the sulfur content of the landfill gas are complete, the results need to be provided to the landfill operator. Preliminary sampling using Drager tubes estimate greater than 1000 ppm hydrogen sulfide (H₂S) content in the gas. This will affect the emissions of sulfur oxides from the engines and the flares. EU-ENGINE6, EU-ENGINE7, and EUZINKFLARE all have permit limits that may need to be re-evaluated. The testing results will also be needed for MAERS reporting.



Image 1(2) : Parts washer



Image 2(1) : Parts washer



Image 3(3) : Grof flare

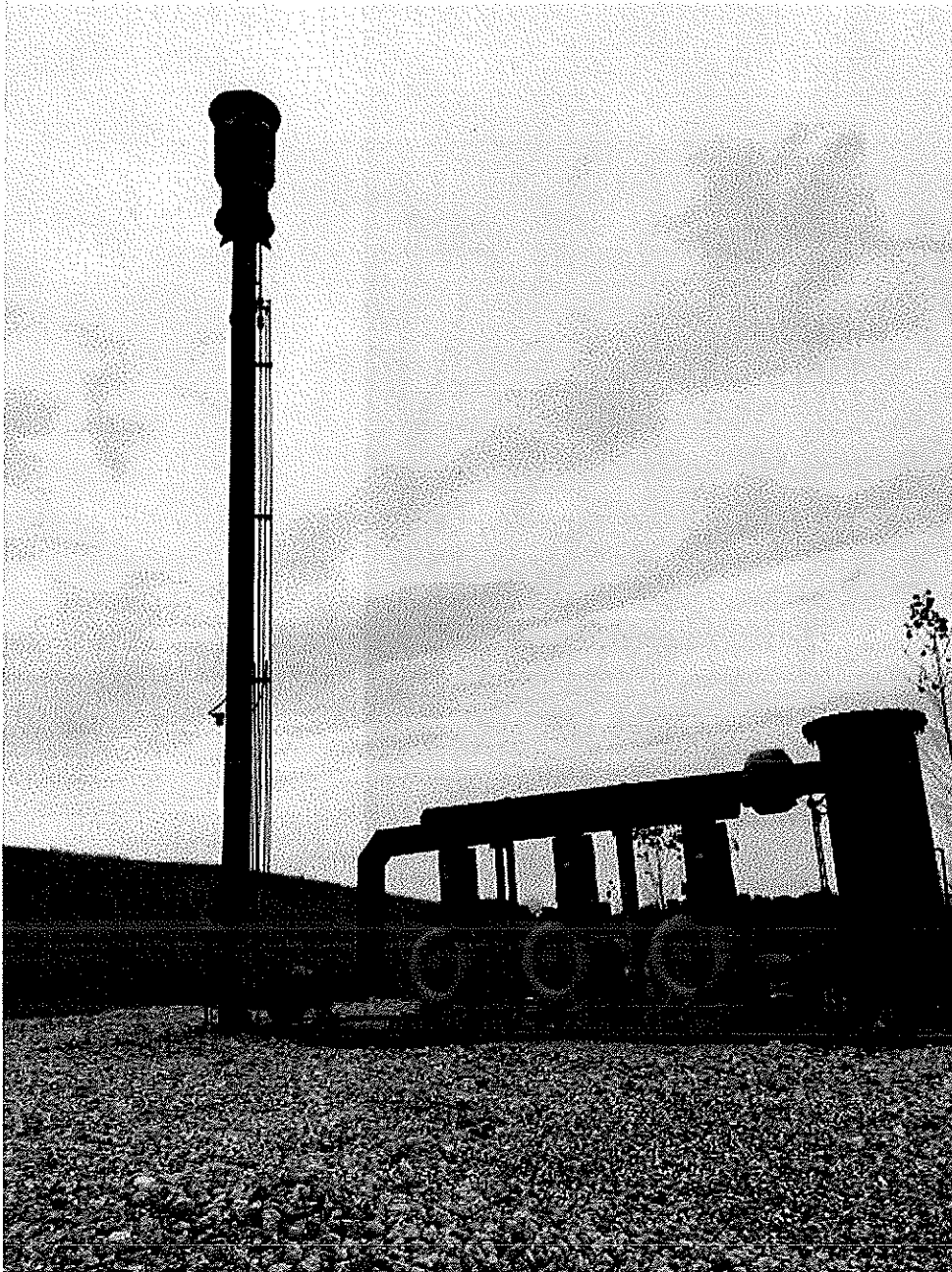


Image 4(8) : Zinc flare



Image 5(9) : Landfill gas well riser

NAME Julie L. Bunn DATE 12/21/17 SUPERVISOR D. M.

