

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
**ACTIVITY REPORT: On-site Inspection**

N599668386

<b>FACILITY:</b> Granger Grand River Avenue Landfill	<b>SRN / ID:</b> N5996
<b>LOCATION:</b> 8550 West Grand River Avenue, GRAND LEDGE	<b>DISTRICT:</b> Lansing
<b>CITY:</b> GRAND LEDGE	<b>COUNTY:</b> CLINTON
<b>CONTACT:</b> Steve Blayer , Environmental Engineer	<b>ACTIVITY DATE:</b> 06/23/2023
<b>STAFF:</b> Michelle Luplow	<b>COMPLIANCE STATUS:</b> Compliance
	<b>SOURCE CLASS:</b> MAJOR
<b>SUBJECT:</b> Onsite inspections of the Granger Grand River Landfill and EDL generating station to determine compliance with MI-ROP-N5996-2018, the MACT Subpart AAAA, and the MACT Subpart ZZZZ.	
<b>RESOLVED COMPLAINTS:</b>	

Inspected by: Michelle Luplow (EGLE AQD) & Tiffany Johnson (EGLE MMD – landfill only)

**Granger Personnel Present Onsite:**

Steve Blayer (sblayer@grangernet.com), Environmental Engineer

**EDL Personnel Present Onsite:**

Elizabeth Park (elizabeth.park@edlenergy.com), Compliance Administrator

Paul Jaworsky, Plant Operator

**Other EDL Personnel:**

Meghan Stackhouse (meghan.stackhouse@edlenergy.com), Senior Environmental Manager

**Purpose**

Conduct an announced, onsite, partial compliance evaluation (PCE) inspection by determining compliance with the sectioned ROP, MI-ROP-N5996-2018, for Granger Grand River Landfill (Section 1) and the EDL Generating Station (Section 2). The ROP is currently undergoing renewal under ROP Central Unit, Matt Karl. This activity was conducted as part of a full compliance evaluation (FCE). The facility was last inspected in November 2020 virtually/offsite. Compliance with the MACT Subpart AAAA was also determined.

**Facility Background/Regulatory Overview**

The Granger Grand River Landfill (GGRL) is a municipal solid waste landfill with an associated gas-to-energy plant owned and operated by EDL, both located in Grand Ledge, Clinton County, ½ mile south of I-96. The primary activity of this source is accepting municipal solid waste, consisting mostly of construction waste materials and contaminated soil (by appointment), and general/household waste, but also accepts asbestos-containing materials (ACM), which may be subject to the NESHAP for asbestos, 40 CFR, Part 61, Subpart M.

The landfill itself was installed November 6, 1981 (it's "construction" date, as this is the date EGLE's Materials Management Division (MMD) issued the construction permit # 0059), which had made it subject to the Federal Plan, 40 CFR Part 62, Subpart GGG, as it had not been reconstructed or modified since before May 30, 1991. The New Source Performance Standards (NSPS) for landfills, NSPS Subpart XXX and NSPS Subpart Cf were promulgated in 2016. NSPS Subpart XXX is for those landfills that have accepted waste after November 8, 1987 and commenced construction, reconstruction, or modification after July 17, 2014; the GGRL site has not constructed, modified or reconstructed **after** July 17, 2014 and therefore became subject to the new Part 60

Subpart Cf Emission Guidelines (commenced construction, reconstruction, or modification on or **before** July 17, 2014). As such, when the NMOC rate reaches 50 Mg/year, a gas collection and control system (GCCS) is required. Per Granger's LandGEM 2021 Tier II NMOC projections (per the May 2021 sampling event), GGRL is currently at 6.79 Mg NMOC/year, indicating the NMOC emission rate is less than the 50 Mg/year NMOC threshold. Gas sampling for Tier II NMOC 5-year projections (calendar years 2026 - 2030) is due in May 2026.

Although GGRL has an uncontrolled emission rate below the 50 Mg NMOC per year threshold, an active landfill gas collection and control system (GCCS) has been installed to collect the landfill gas. The collection system includes a series of gas wells, a network of collection piping and headers, condensate drains. An open 1362 scfm, "candlestick" flare was installed under exemption Rules 278 and 285(2)(aa) (based on the January 26, 2022 exemption demonstration) in the summer of 2022 to replace the 900 scfm candlestick flare, which is used when the gas-to-energy plant is down, or when there is excess landfill gas being sent to the plant. The flare is owned by GGRL.

The current design capacity is 14,497,900 cubic yards (85.7 acres), 8.68 million Mg which is the maximum agreed-upon capacity of the landfill through their current construction permit (circa 1981) with MMD (see attached map – green boundary). There is also a closed 60-acre hazardous waste landfill at this site (see attached map – magenta boundary). Granger owns the property outside the green and magenta boundaries; however they are not able to utilize these areas at this time because they are currently not contained within the Clinton County plan for this site.

Construction permits delineate the cells that the landfill can construct, but Granger cannot put waste into the cell until they get an operating license from MMD. GGRL's most recent operating license was obtained from MMD in October 2015. These operating licenses are good for 5 years and the facility can apply for a renewal of the license. This is the case for GGRL. Not all cells specified in the 2015 operating license have been used and they have applied for a 5-year renewal. In the event that additional cells not covered in the existing operating license are planned to be used, the company will need to apply for a new operating license, which will cover the new cells and well as the existing cells.

During technical review of the ROP application for the 2023 ROP Renewal, it was determined that GGRL is a major source of an individual HAP, formaldehyde, from combined total potential emissions from the open flare and the landfill gas engines. As such, the landfill is subject to the MACT Subpart AAAAA and the landfill gas engines are subject to the major source MACT Subpart ZZZZ for reciprocating internal combustion engines (RICE).

The EDL gas-to-energy plant operates three CAT G3516 landfill gas engines.

## **Inspection**

On June 23, 2023 Tiffany Johnson (EGLE, MMD) and myself met with Granger engineer, Steve Blayer, to conduct an inspection of the landfill. S. Blayer drove us throughout the landfill to show us around the working face, closed face and interim areas of the landfill. Following the inspection of the landfill, I met with Elizabeth Park and Paul Jaworsky to conduct an inspection of EDL's gas-to-energy engine plant. Neither major source MACT Subpart AAAAA requirements, nor MACT Subpart ZZZZ requirements are present in MI-ROP-N5996-2018; however, compliance with these two standards was determined as well, as GGRL is required to comply with the MACT Subpart AAAAA and Subpart ZZZZ whether it is in an applicable requirement in the ROP or not.

## Section 1 – Granger Grand River Landfill

### **EULANDFILL<50**

For the past several years the Grand River Avenue Landfill (GGRL) had only accepted waste by appointment; it was generally not open for accepting waste, and typically was only open for special projects in the vicinity of the landfill. S. Blayer said during this inspection that they started regularly accepting waste again in November 2022; they are taking Granger waste transfer trucks and some Granger route trucks (waste picked up at homes via curbside pickup), and other, non-Granger trucks are taken by appointment only. He said they are not allowing public waste intake at this time. S. Blayer also said that they receive waste daily, which has generally been 6 – 8 100-yard bins per day.

Landfill leachate is pumped, using solar-powered pumps, to the Southern Clinton County Municipal Utilities Authority (SCUMA) located in DeWitt. GGRL received permission from SCUMA to hook up the leachate system to SCUMA's wastewater treatment plant (WWTP) system in order to dispose of the leachate. S. Blayer said GGRL used to treat their leachate for ammonia in order to meet the WWTP limits, but they haven't had to treat for ammonia in many years because the ammonia levels have been within the limits established by the WWTP. GGRL has the ability and are allowed per their operating licence to recirculate leachate throughout their waste mass (pull leachate from the bottom and dump back through the top of the cell), but said GGRL hasn't done so in approximately 10 years. T. Johnson, MMD, said GGRL would need to submit a new plan to MMD if GGRL wanted to start recirculating their leachate. GGRL does not take any liquids into the landfill.

GGRL is permitted for 6 more cells (Cell # 7 – 12). Cell 9 is currently under construction. Based on LandGEM calculations, it would take over 60 years at their current rate of waste receipt to fill one cell, compared to Wood Street rates of disposal where it takes ~ 2 years to fill one cell.

The 1362 scfm candlestick flare is used to burn off any excess landfill gas that isn't combusted in the landfill gas engines owned by EDL. This flare was not operating during the inspection. For the previous inspection, Kim Smelker (Granger) said the flare ran for 3.5 hours in 2019 and does not believe that the flare had operated at all during calendar year 2020. S. Blayer said that the new flare has not operated since its installation in November 2022.

GGRL currently owns and operates 2 diesel fuel tanks, each with a capacity of 250 – 275 gallons. One is located at the entrance and the other is located near the working face of the landfill. These containers appear to be exempt per Rule 284(2)(g)(ii).

The landfill has 2 entrances, one for the waste hauling trucks, and the other for non-waste hauling traffic. The road for waste hauling trucks is unpaved and S. Blayer said dust from this road is controlled by application of water (using calcium chloride as a dust suppressant may impact their groundwater monitoring wells). S. Blayer said a street sweeper truck is used to maintain all paved roadways for the site.

During the inspection, S. Blayer drove T. Johnson and I throughout the landfill. T. Johnson pointed out that MMD surveys the landfills to determine whether the landfill's surface is being maintained properly: MMD requires that any erosion rills present on the landfill's surface be filled prior to pre-seeding the cover. MMD also requires that interim cover occur within 90 days of waste in place. We noted some dead vegetation, an indicator of a possibly

gas leak. These types of issues are currently addressed via MMD, as GGRL is not yet subject to the federal requirement to conduct surface emission monitoring and cover integrity checks via the AQD.

Within the past year, GGRL had applied unpure coal from the Lansing Board of Water and Light to the surface of their landfill as a cover. MMD required that this unpure coal cover be covered up with an approved cover, as they had not approved the use of unpure coal as a cover. While onsite we confirmed that an MMD-approved cover had been applied across the landfill's surface where the unpure coal had been.

GGRL currently does not have odor control systems in place. As of the date of the inspection, AQD is not aware of any odor complaints for this facility.

*There are no Emission Limits, Material Limits, Design/Equipment Parameters, or Stack Vent Restrictions for EULANDFILL<50 at this time.*

#### Process/Operational Restrictions, Testing/Sampling, & Reporting Requirements

GGRL is required to calculate their annual NMOC emission rates using the methods established in Appendix 7-1 of the ROP, or using the most recent version of the EPA's Landfill Gas Emissions Model (LandGEM), and compare the calculated rate to the standard of 50 Mg/year (NSPS Subpart Cf Emission Guidelines).

GGRL conducted their most recent Tier 2 testing in May 2021. The data generated from this test was used to calculate 5-year's worth of NMOC projections. GGRL has opted to provide a 5-year estimate in one report in lieu of submitting annual NMOC reports. This is allowed under 63.1981(c)(1)(ii)(A). This estimate must be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate must be submitted. The revised estimate must cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate. All projections are below the 50 Mg/year threshold. The 2021 5-year estimates, based on an estimated waste acceptance rate of 30,000 Mg/year, submitted in June 2021 are as follows:

- 2021: 7.21 Mg/year
- 2022: 7.00 Mg/year
- 2023: 6.79 Mg/year
- 2024: 6.60 Mg/year
- 2025: 6.41 Mg/year

GGRL is required to conduct their next NMOC mass emission rate testing by May 2026 and are required to submit a complete test plan no less than 30 days prior to testing.

#### Monitoring/Recordkeeping Requirements

GGRL must keep records of the current amount of solid waste in place and the year-by-year waste acceptance rate and make them available upon request. Ash/Contaminated soil within the open landfill is considered inert and not part of the combined landfill totals. The total amount of waste in place for the open section of the landfill through December 2022 is 6,353,360 Mg (see attached "Waste Acceptance Rate" document). The EGLE Granger

Grand River Landfill Annual Landfill Reports, which show how much waste is accepted on an annual basis in yd<sup>3</sup> (from October 1 through September 30), can be found at the following address, a portion of which is found in Table 1: <https://www.eGLE.state.mi.us/wdspi/SolidWaste/AnnualLandfillReports.aspx?w=397449>

**Table 1.** Year-by-Year Waste Acceptance Rates

<b>Year</b>	<b>Waste Accepted (yd<sup>3</sup>)<sup>1</sup></b>	<b>Waste Accepted (Mg)</b>	<b>Ash/Contam. Soil (Mg)</b>
2012	370,451	51,774	119,574
2013	111,699	12,304	10,842
2014	19,574	923	9,390
2015	25,062	5,823	7,609
2016	21,959	3,750	7,623
2017	8,217	1,744	253
2018	6,327	1,738	0
2019	3,876	713	0
2020	0	0	0
2021	243	66	0
2022	832	16,445	5,940

<sup>1</sup> Cubic yards waste accepted generated from the EGLE “Granger Grand River Landfill Annual Report”

Note that GGRL does not have a scale at the landfill. GGRL has stated that they received approval from EPA to use periodic weights from different classes of materials to estimate the actual weight of incoming waste. These site-specific conversion factors per type of waste are contained in Table 2, provided by Serenity Skillman (Granger).

The Granger Grand River waste acceptance rates (Mg) through 2022 demonstrate that the actual waste received in Mg does not exceed the estimated waste received (30,000 Mg) for the Tier II testing and therefore the 2021 Tier II testing is not required to be revised at this time.

**Table 2.** Site-specific conversion factors per waste type (Cubic yards to Mg Conversion)

<b>Waste Type</b>	<b>MEGAGRAMS/ YARD</b>
General Refuse	0.29
Construction and Non-Compactable Material	0.15
Demolition Material	0.29
Furniture	0.29
Sludge	0.66
Non-Hazardous Contaminated Materials	1.11
Asbestos/Medical Waste	0.29
Flyash	1.00

Attached is a document that GGRL uses to convert their permitted design capacity in cubic yards to the design capacity of 8,682,690 Mg that is reported in their LandGEM calculations.

### **EUASBESTOS**

Granger staff, during the previous inspection, said that the asbestos trenches are created with dimensions of 20' x 100', depth varies. All asbestos trenches are stacked, one on top of the other, in column-like form within the waste mass. She said that they only open pits when they know that an asbestos load is scheduled to be unloaded for that day. Typically, Granger knows by 2:00 or 3:00 p.m. on any given day whether they will be receiving any additional asbestos loads. GGRL has not received asbestos waste since April 2019. Because they have not received asbestos waste since 2019, they did not have an active/open asbestos trench for me to view during the inspection. During a previous inspection when an asbestos pit was open, I noted that GGRL posts asbestos warning signs at their asbestos trenches.

*There are no Emission Limits, Material Limits, or Testing/Sampling requirements for EUASBESTOS at this time.*

### **Process/Operational Restrictions**

Rather than comply with the requirement to ensure that there be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, and rather than comply with the requirement to install warning signs around the perimeter where asbestos-containing waste material is deposited, GGRL has chosen to comply by covering the asbestos-containing material with at least 6 inches of non-asbestos-containing material at the end of each operating day. GGRL is currently covering the waste with at least 6 inches of an "alternative daily cover" approved by MMD or clean soil. The alternative daily cover is used when there is no rain in the forecast. It is a tacky substance that allows GGRL to cover the sides of the trench as well. Soil is used during rainy days.

#### Design/Equipment Parameters & Monitoring/Recordkeeping

GGRL is required to maintain readily accessible records showing the location, depth and area, and quantity in cubic meters or cubic yards of the asbestos-containing material within the disposal site on a map or diagram, the records of which will also allow the landfill to keep segregated areas of asbestos excluded from gas collection. GGRL is also required to keep documentation of the nature, date of deposition, amount and location for all ACM waste deposited.

S. Blayer provided me with an electronic copy of the "2-19" asbestos trench diagram (see attached), which is the last trench dug for asbestos disposal, and which contains the location (GPS coordinates for each corner of the trench), depth, area and quantity (cubic yards) of ACM contained in the trench. The label "2-19" indicates that it is the 2<sup>nd</sup> trench built in 2019.

GGRL is required to maintain waste shipment records that include waste generator and transporter name, address, and phone numbers, the quantity of ACM in cubic yards or cubic meters, and the date of receipt. Any improperly enclosed or uncovered waste, or any ACM not sealed in leak-tight containers needs to be reported to the EGLE AQD asbestos unit by the following working day.

Waste shipment records are kept at the Granger Wood Street Landfill office. S. Blayer sent me an electronic copy (attached) of one of the last loads of ACM received. The Granger forms provide space for the waste generator and transporter name, address, and phone number, the destination and date received, and the quantity in cubic yards. Any load with asbestos that enters the facility has to have a manifest and that companies call to make an appointment to bring in the asbestos loads and an onsite employee is responsible for ensuring the asbestos is contained properly. The trucks will then dump directly into the asbestos trench.

#### Reporting

Granger is required to notify the AQD Technical Programs Unit at least 45 days prior to excavating or disturbing any asbestos-containing waste material. Granger's policy is that all manifested ACM is located within a trench or specified area, which is surveyed and recorded electronically and that these trenches are never drilled through. The asbestos areas are strategically placed to limit the areas of the landfill that are off-limits to gas collection. Jeremy Brown, AQD asbestos inspector, explained that GGRL does not need to submit asbestos notifications through AQD's ANS for landfill drilling activities because they keep all asbestos trenches logged and in one location and do not drill through these locations. J. Brown did say, however, that if Granger is drilling and they happen to drill through asbestos waste (unknowingly or knowingly), and AQD finds asbestos cuttings, Granger runs the risk of violating the requirement to notify 45 days before drilling.

**Compliance Statement:** Granger Grand River Landfill is currently in compliance with MI-ROP-N5996-2018 and the MACT Subpart AAAAA.

## Section 2 – EDL Generating Station

### FGICE (EUICE1, EUICE3, EUICE5)

The current ROP contains 3 CAT G3516 RICEs: all are 4-stroke lean burn, greater than 500 hp, non-emergency, spark ignition engines at a major source of HAPs, and were constructed on or before December 19, 2002. Each is rated at 800 kW. A total of 5 engines had historically been operating at this site, but due to the decrease in landfill gas generation, 2 of the engines were removed. EUICE1 was not operating during the inspection.

During a previous inspection, K. Smelker said engines need at least 300 scfm, or at least 65% of their rated capacity; otherwise, unnecessary wear and tear is being put on the engine, and the O<sub>2</sub> content of the gas must be kept at a bare minimum: the engines bring in their own oxygen, and additional oxygen could cause the engines to shut down. The same goes for a sudden drastic increase (10%) in methane content. C. Lehnert, previous plant operator, said that if the O<sub>2</sub>% reaches 4%, the plant will shut down.

Table 1 lists all engines, which are specifically designed for biogas combustion at the Grand River facility. The serial numbers were verified onsite, in the engine room, with P. Jaworsky's assistance. Other data collected during the inspection is also tabulated in Table 1.

**Table 1. Engine Summary**

Engine	Serial No.	Manufacture Date	Date Online	Operating kW	Total Operating Hours (as of 6/23/23)	Comments
1	3RC00275	10/15/1990	8/2/2013	Not operating during inspection	69,593.9	The engine with serial no. 3RC00274 that was online 4/10/1991 and manufactured 11/15/1990 was swapped out for engine serial no. 3RC00275 on 6/1/2013.
3	4EK00132	12/16/1993	3/01/1994	554	73,288.1	NA
5	4EK00479	4/18/1995	9/23/1997	670	62,294.6	NA



***There are no Emission Limits, Material Limits, Design/Equipment Parameters, Testing Sampling, or Stack/Vent Restriction requirements at this time for FGICE.***

**Process/Operational Restrictions & Monitoring/Recordkeeping**

A Malfunction Abatement/Preventative Maintenance Plan (MAP/PMP) for FGICE that identifies the equipment and supervisory personnel responsible for overseeing the inspection, maintenance, and repair; a description of the items to be inspected and frequency of inspection; identification of the equipment's operating parameters and a description of the method of monitoring/surveillance procedures; and identification of the major replacement parts is required to be maintained and implemented. During technical review for the renewal of this ROP, Matt Karl, AQD RCU, obtained a revised copy of the MAP on November 30, 2022 (attached).

As requested, Elizabeth Park, EDL, provided me with electronic copies of the maintenance logs for calendar year 2022 to demonstrate that the engines have been maintained according to the MAP. Based on these records it appears that EDL is regularly maintaining EUICE1, EUICE3, and EUICE5 according to the MAP, including spark plug changes and oil changes for each engine.

I observed the meters/controller displaying the % methane, % O<sub>2</sub>, and the scfm of the landfill gas being delivered to the engines. The following table is a historical comparison of these parameters, including the snapshot taken during this inspection:

**Table 2.** Incoming landfill gas parameters

Date	Mainline fuel temperature (° F)	Mainline fuel pressure (psi)	Mainline fuel flow (scfm)	Mainline fuel methane (%)	Mainline fuel oxygen (%)
6/23/23	NA	NA	448	53.21	1.26
11/10/20	NA	NA	453	51.1	0.88
2/19/19	77	6.5	593	47	1.15
12/1/2016	75	6.7	730	52.4	0.47
7/27/15	NA	NA	NA	54.3	0.44
1/17/2013	87	6.5	923	55.9	0.33
12/6/2011	91	6.5	1138	55.7	0.13

<b>11/30/2010</b>	<b>86</b>	<b>6.3</b>	<b>1205</b>	<b>52.6</b>	<b>0.21</b>
<b>11/24/2009</b>	<b>84</b>	<b>6.3</b>	<b>937</b>	<b>52.9</b>	<b>0.22</b>

The variability that is seen in the methane and oxygen contents is common because of fluctuations and variations in the landfill gas production itself.

While onsite, I did not observe any visible emission from any of the engines' exhaust stacks. EUENGINE3 and EUENGINE5 were operating during the inspection.

#### **Exempt Emission Units (per ROP Staff Report)**

The table below is from the most recent ROP Staff Report. EDL staff at a prior stated that EUPROPHEAT, EUCOMPRESSOR, and EUPROPTANKS are no longer at the site. The 275-gallon gasoline tank is located out on the landfill for refueling equipment.

<b>EU</b>	<b>Description</b>	<b>Exemption</b>
EUUNLEADGAS	One 275-gallon unleaded gasoline tank	Rule 284(2)(g)
EUPROPHEAT	Two propane space heaters (125,000 BTU and 75,000 BTU)	Rule 282(2)(b)(i)
EUCOMPRESSOR	51,000 BTU Portable compressor	Rule 285(2)(g)
EUPROPTANKS	Three 500-gallon propane storage tanks	Rule 284(2)(b)

**Compliance Statement:** EDL is in compliance with MI-ROP-N5996-2018 and the MACT Subpart ZZZZ at this time.



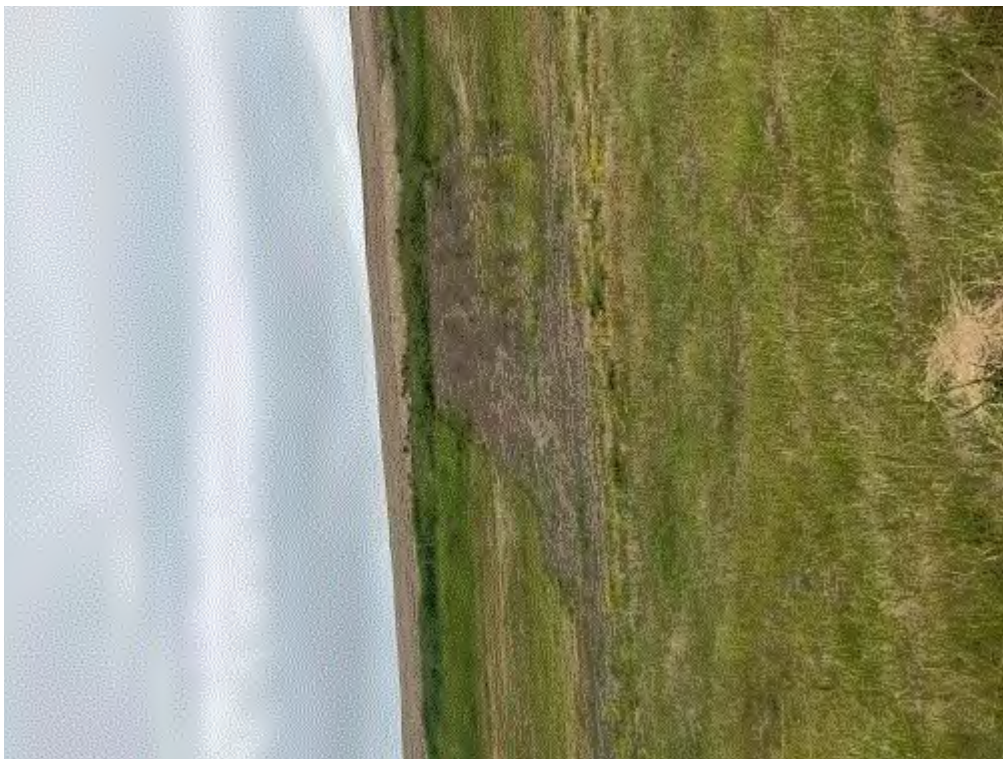
**Image 1(900 scfm flare)** : Disconnected "old" 900 scfm flare



**Image 2(1362 scfm flare)** : "New" 1362 scfm flare, connected



**Image 3(Cover Integrity)** : Possible cover integrity issues to be addressed by MMD.



**Image 4(New Cover)** : New, MMD-approved cover to cover the impure coal on the landfill's surface.

NAME Michelle Luplow

DATE 9/12/23

SUPERVISOR RB