

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

N240766759

FACILITY: Forest Lawn Landfill		SRN / ID: N2407
LOCATION: 8230 W Forest Lawn Road, THREE OAKS		DISTRICT: Kalamazoo
CITY: THREE OAKS		COUNTY: BERRIEN
CONTACT: John McEvoy , Closed Site Field Project Manager		ACTIVITY DATE: 03/22/2023
STAFF: Matthew Deskins	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection since the landfill is permanently closed.		
RESOLVED COMPLAINTS:		

On March 22, 2023 AQD staff (Matt Deskins) went to conduct a scheduled inspection of the Forest Lawn Landfill (FLL) (SRN: N2407) located in Three Oaks, Berrien County. Staff had to schedule the inspection since FLL is now closed (they ceased taking in waste in January of 2017) and is now considered in Post-Closure care. When FLL was in operation, it was a licensed Type II Municipal Solid Waste (MSW) landfill and they have a Renewable Operating Permit (ROP No. MI-ROP-N2407-2021b) which was originally issued on February 8, 2023. It has since been re-opened to incorporate new landfill regulations and remove outdated ones and that ROP version was issued on July 19, 2022. It was also later modified to remove outdated conditions related to the Open Flare and that version was issued on January 23, 2023. The ROP at one time contained two sections with section 1 pertaining to the landfill operations and section 2 to a company called APTIM who at one time owned and operated the Leachate Evaporator. Upon Closure of the Landfill, FLL ended their contract with APTIM and took over the ownership of the Leachate Evaporator. However, it is staff's understanding that the evaporator is no longer in use but will remain in the ROP until it is either dismantled/removed or rendered inoperable. The landfill is now subject to the following Federal Regulations:

1. Federal Plan Requirements for MSW Landfills promulgated under 40 CFR Part 62 Subpart OOO. The Federal Plan will apply until a State Plan is Approved or the AQD receives delegation for the Federal Plan. Subpart OOO took effect on June 21, 2021 and replaced the 40 CFR Part 60 Subpart WWW MSW Regulations requirements
2. National Emission Standard for Hazardous Air Pollutants (NESHAP) for MSW Landfills promulgated under 40 CFR Part 63 Subparts A and AAAA. Also referred to as Maximum Achievable Control Technology (MACT). NOTE: This is a revised regulation that had an effective date of September 27, 2021.
3. NESHAP for Asbestos promulgated under 40 CFR Part 61 Subparts A and M.

NOTE: Recently, Republic Services, who owns FLL, entered into an agreement with a company called Archaea Energy to construct Renewable Natural Gas (RNG) Plants at some of their landfills throughout the country. Lightning Renewables, LLC, who is a subsidiary of Archaea Energy, recently was issued an air permit (PTI No. 40-23) on March 9, 2023 to construct an RNG facility adjacent to Forest Lawn Landfill that will utilize the landfill gas produced by FLL. Archaea Energy had submitted a Separate Source Determination letter to the AQD citing their reasons that they should be considered two separate sources. However, following current AQD policy related to these matters, it was determined that they would still be one stationary source with the landfill. Ultimately, if the plant gets constructed, Lightning Renewables, LLC will have to be incorporated into the ROP for FLL as Section 2.

The purpose of the inspection was to determine FLL's compliance with Renewable Operating Permit (ROP No. MI-ROP-N2407-2021b) as well as any state or federal air regulations. Staff had scheduled the inspection with John McEvoy (Closed Site Field Project Manager) for

10:30 a.m. and he also mentioned that the following employees of Republic Services, who owns FLL, would be attending as well:

Sean Culligan – Environmental Specialist

Max Ehert – Environmental Manager

Megan Crowley – Area Environmental Manager

Staff departed the district office at approximately 9:00 a.m. and arrived at the FLL at approximately 10:20 a.m. Staff proceeded into the office area parking lot since the gate was open. Staff proceeded to park their vehicle and once out, Megan Crowley came over to greet staff. After greeting her, John, Max, and Sean came out of the maintenance garage. After introductions were made, staff gave Max, Sean, and Megan their business card. John then mentioned that Max would be replacing him as the Environmental Manager for FLL and that he had been promoted to the Closed Site Field Project Manager. We then proceeded back into the maintenance garage to get out of the cold and wind.

Once in the maintenance garage, staff asked if Archaea had started construction on the RNG facility yet. John mentioned they haven't but they did recently cut down a lot of trees on the property where it's going to be built. John mentioned that FLL still owns the property where it will be constructed and that Archaea will be leasing it from them. Staff then asked if they had plans to add another open flare since staff had recently had a phone conversation with Summer Hitchens of Impact Compliance and Testing (a consultant for FLL) about it. John and Megan mentioned that they are actually looking to add two new smaller flares that would replace the existing one. John said that due to the high temperature landfill gas well issue that encompasses part of landfill (discussed later under the landfill emission unit), they are looking to segregate the collection system into a northern and southern half. The northern half, which would include all the high temperature wells, would be controlled by an open flare and the southern half would go to the RNG facility. The 2nd proposed open flare would be located on the SE corner of the landfill directly across from the RNG plant. It would be used as a back-up control device should the RNG plant not be operating. Because the RNG facility would require a certain quality of landfill gas, the gas from the higher temperature area may create issues which staff had brought up during phone conversations about the project. John said that the current open flare is rated for approximately 4,000 scfm and the proposed new ones would be about 2,500 scfm each. We then discussed the AQD permit exemption for landfill flares but staff ultimately said that it would probably require a permit. Staff originally thought they were just looking to add one flare after their conversation with Summer. Staff left it that they could request to have a pre-application meeting to discuss what they want to do and figure out what their options might be. Staff also mentioned that they may want to follow up with MMD about what they want to do since they are considered in final closure with them. Staff lastly reminded them that they will probably have to update their Gas Collection and Control System (GCCS) Design Plan if they want to make these changes to the gas system. John said he understood and would relay that information to Summer.

Staff then turned to items regarding the inspection and mentioned that they might not be there that long since Summer had or would be sending staff all the records that they would have normally reviewed on site when it was open. Staff mentioned that they would like to take a tour of the landfill to verify that the various emission units contained in the ROP were still there and nothing has been added. John said wouldn't be a problem and the four of us (Megan stayed behind to make phone calls) went for a ride around the landfill to check things out.

Staff then asked John about the Enhanced Monitoring Plan (EMP) and the wells with higher temperatures associated with it. NOTE: As mentioned in previous inspection reports,

starting back in 2010 there have been concerns regarding numerous wells that have exhibited elevated temperatures well above NSPS requirements. After initial internal discussions between AQD, the Materials Management Division of EGLE (MMD), and the EPA, followed by a meeting with landfill personnel and their consultant, we approved them to operate the wells at the higher temperatures but they had to develop an EMP for them for which they did. According to John, the wellfield area covered by the EMP has stayed stable and the most recent revision to the EMP, submitted in August of 2019, still reflects current conditions. Staff and John then discussed the new federal landfill regulations and staff mentioned that moving forward, any wells that exceed the temperature requirement of the new regulations and that aren't covered by the current EMP, will have to follow the new procedures outlined by the new regulations. John mentioned that he understood that and will make sure to relay that information to their consultant as well. Staff then went on a tour of landfill and asked John some additional questions about current operations. The responses to those questions will be included under the various emission units of this inspection report.

The following is a summary of the ROP emission units for the landfill, the things staff noted while on-site, and the landfill's compliance status with them whether through observation or records review.

EULANDFILL (Covered under Flexible Groups FGLANDFILL-OOO AND FGLANDFILL-AAA): Appears to be in COMPLIANCE.

The facility has an approved active gas collection and control system (GCCS) as well as associated control system (Open Flare). The facility was conducting quarterly surface emissions monitoring (SEMS) as required, but they had switched to doing it semi-annually (Started this in January of 2021) as was allowed under the NSPS WWW. However, they had monitored exceedences and have since gone back to quarterly monitoring. The new landfill regulations actually allow for annual SEMS monitoring at closed sites to go from quarterly to annually if three consecutive quarterly evens indicate no monitor exceedences. They will have to return to quarterly if there is any reading above 500 ppm. It appears that they are keeping the appropriate records as required. FLL contracts with SCS Consultants (SCS) to do their SEMS and they use a Inficon IRwin monitor to do so. Staff had reviewed the previous 4 reports of the SEMS monitoring that Summer Hitchens had e-mailed him. The records reviewed included instrument calibration data, a map showing the route traversed while doing the monitoring, weather conditions, etc. Staff did not note any issues with their monitoring nor follow up to any exceedences detected. The facility and or their consultant monitors cover integrity on a monthly basis and takes care of any issues if necessary. The facility has a record of the amount of waste in place but they don't need to track the year by year acceptance rate anymore since it is now closed. The facility has been submitting the required Annual and/or Semi-Annual ROP Reports. Staff will assume they are submitting electronic reports to the EPA as required. A Closure Report for FLL was submitted as well back on September 19, 2018 (Date Received by MMD).

EUACTIVECOLL (Covered under Flexible Groups FACTIVECOLL-OOO AND FACTIVECOLL-AAA): Appears to be in COMPLIANCE.

The facility has an approved GCCS that is constructed out of appropriate materials (either Carbon Steel, Stainless Steel, HDPE, or PVC). Prior to closure, the high temperature wells mentioned earlier were re-drilled and had Carbon Steel well casings and some had Stainless Steel wellheads installed on them. As part of the landfill's closure, they submitted a Closure Report that included drawings showing the locations of all piping and wells in the GCCS system. They have 174 gas wells that are monitored. The wells in the collection system are equipped with sampling ports and temperature gauges as required. FLL also contracts with SCS to conduct their monthly well head monitoring and they use a Inficon IRwin that records various parameters. Under the new regulations, only temperature and pressure have to be

recorded. Oxygen and/or nitrogen is required to be monitored still, but no limits on concentration are included anymore. As mentioned earlier, the landfill has some high temperature wells that exceeded the previous NSPS WWW standard of 131 degrees F. Because of that, an Enhanced Monitoring Plan (EMP) was developed back in 2010 with guidance/assistance from EPA and MMD for wells with these elevated temperatures and the EMP reports are submitted quarterly to us. The new landfill regulations have increased the allowable well temperature to 145 degrees F and they have specific requirements now regarding EMP plans developed for wells that exceed this. However, they also state that if an EMP had already been established under the previous regulation(s), another one wouldn't have to be developed unless a well not covered under the existing plan exceeds 145 degrees F. Also, the new regulations required that annual down well temperature monitoring be done for any well that exhibits a temperature greater than 165 degrees F. Records reviewed by staff show they have been doing this. The new regulations also require root cause analysis for any monitored exceedence that can't be resolved within certain timeframes. However, since the current wells that would exceed either pressure or temperature already have approved higher operating values or operating scenarios, this hasn't been necessary to date. Also, positive pressure is allowed for wells where an increased chance of fire might occur. Staff ended up reviewing the last 6 months of wellfield data that Summer had e-mailed previously. All collected landfill gas is being routed to a control system which is currently just an open flare. A site map and spreadsheet are being maintained indicating the location and depths of asbestos as required. The required Annual and/or Semi-Annual Reports are being submitted on time.

EUAIRSTRIPPER: Appears to be in COMPLIANCE.

The Air Stripper was shut down in April 2021 and they have now entered into a 3-year monitoring period which was allowed by MMD and they have 1 year of monitoring to go. Prior to it being shut down, the facility was conducting monthly visible emissions monitoring as required. The facility was also monitoring and recording influent and effluent water flow rates into and from the air stripper on a weekly basis. The facility was also sampling the influent and effluent in the timeframes required and keeping track of yearly VOC emissions. The facility was monitoring and recording the hours of operation on the air stripper. Most of the information staff reviewed in the past was also required by the DEQ's Water Resources Division for their Discharge Monitoring Reports (DMR). Historically, SCS would monitor the system and Golder and Associates would do the sampling that is required on the system. John had said that Vinyl Chloride was the main contaminant present and only in a very minute quantity.

EUOPENFLARE (Covered under Flexible Groups FGOPENFLARE-OOO AND FGOPENFLARE-AAA): Appears to be in NON-COMPLIANCE.

The facility appears to be operating the flare properly and any time collected gas is routed to it. The flare was manufactured by LFG Specialties and it is equipped with a ultra-violet flame sensor along with various alarms that shut down the flare depending on the conditions. If the flare does shut down, a pneumatic valve closes that prevents landfill gas from being discharged directly out the flare. The flare is equipped with a circular chart recorder that records the flow and temperature of the flare. The flare is also equipped with a digital recorder as a back-up which can record up to six months of data. Staff noted during the inspection that the flow to the open flare was approximately 1,900 scfm and the combustion temperature was 1153 degrees Fahrenheit. The blower system was pulling approximately -45.08 inches of vacuum on the wellfield. Previously John said that they still have John Zink come out on a semi-annual basis to service the flare. John had also said that they still use a company called Dreisilker Electric Motor who come out on a quarterly basis to do vibration tests on the blowers and their motors to make sure everything is alright. The flare will still be in use for years to come so no equipment removal report has needed to be submitted to date. However, when the ROP Re-Opening was re-issued in July of 2023, it included a

condition that the flare had to be tested with 180 days (~6 months) of when it was re-issued for visible emissions, the net heating value of the landfill gas, and the exit velocity. This testing hasn't been done yet and it's been approximately 8 months since the permit was re-issued. Federal regulations only required an initial test, which the landfill did, but the AQD is now requiring it every 5 years since the previous test date.

EUASBESTOS: Appears to be in COMPLIANCE

The facility has warning signs, fencing, and/or natural features surrounding the property which should adequately deter access by the general public. Prior to closure, FLL had maintained all the required records which included: shipping records (manifests) of the generator, transporter, and quantity of asbestos accepted. The facility has a map along that indicates the depth and location of all the buried asbestos. The facility submitted a copy of a map showing asbestos locations and depths in their closure report to MMD.

EUEVPASYS (Leachate Evaporator): Appears to be in COMPLIANCE.

The leachate evaporator, as mentioned previously, is now owned by Forest Lawn Landfill but is not used. John said it was officially shutdown/mothballed back on December 31, 2019 and it hasn't been used since. John said that all leachate is trucked off site now and they average 3 to 5 trucks a day 3 to 5 days per week. Each load is about 5,600 gallons and it is hauled to a wastewater treatment plant down in Lafayette, Indiana.

INSPECTION CONCLUSION:

Overall, FLL appears to be in NON-COMPLIANCE with ROP No. MI-ROP-N2407-2021b at the present time for not re-testing the Open Flare within the timeframes specified in it. Staff will have to send a Violation Notice related to this. Staff thanked John, Megan, Sean, and Max for their time and departed the facility at approximately 12:45 p.m.

NAME Matt Dak

DATE 3-23-23

SUPERVISOR Cody Yuzzi 3/23/23
Acting D.S. for
Ret Lane