

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

N600757590

FACILITY: Tri-City RDF		SRN / ID: N6007
LOCATION: 426 N. Ruth Rd., CARSONVILLE		DISTRICT: Bay City
CITY: CARSONVILLE		COUNTY: SANILAC
CONTACT: John Davis , District Engineer		ACTIVITY DATE: 03/24/2021
STAFF: Nathanael Gentle	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled Inspection to determine compliance with MI-ROP-N6007-2017		
RESOLVED COMPLAINTS:		

On Wednesday, March 24, 2021, AQD staff conducted a scheduled onsite compliance inspection at Tr-City Recycling and Disposal Facility (RDF) located at 426 North Ruth Rd, Carsonville, MI. Staff arrived onsite at 10:15 AM and departed at 11:30 AM. No odors were detected while approaching the facility. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules; Renewable Operating Permit (ROP) No. MI-ROP-N6007-2017. Mr. John Davis assisted with providing the requested records, coordinating the onsite inspection, and answering inspection questions. Mr. Davis was unable to attend the onsite inspection due to unforeseen circumstances. AQD staff were assisted during the onsite portion of the inspection by Waste Management personnel Ben Rodriguez and Rod Nemeth.

Facility Description:

Tri-City RDF is a Type II municipal solid waste landfill which is owned and operated by Waste Management of Michigan, Inc. The landfill accepts municipal and solid waste, construction debris, foundry sand, ash, and contaminated soils. The landfill began accepting waste in 1987. In 2012, it underwent a vertical expansion of 80.2 acres, increasing the capacity of the landfill by 7,871,600 cubic yards. Tri-City RDF is subject to NSPS Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills and NESHAP subpart AAAA- Municipal Solid Waste Landfills. The facility has a Renewable Operating Permit, MI-ROP-N6007-2017. The ROP is up for renewal beginning 2/16/2021.

Tri-City RDF was last inspected by AQD staff on 12/5/2018. The facility was found to be in compliance during the 2018 inspection. There are no complaints associated with the facility and no outstanding violation notices.

EULANDFILL: Compliant

Waste records are maintained by the facility. Yearly waste acceptance records for the years 2019 and 2020 were provided and reviewed. For the year 2019, the facility received 85,117.0 cubic yards of waste based on gate volume and consumed 44,742 cubic yards of airspace. For the year 2020, the facility received 81,347.1 cubic yards of waste based on gate volume and consumed 42,596 cubic yards of airspace. The facility does not utilize a scale. The amount of waste received by the facility is measured using volume. Mr. John Davis described the processes used to measure volumes of waste. When waste arrives at the facility, container sizes and truck sizes are estimated to determine the amount of waste delivered. In addition to estimating container volumes, the facility conducts consumed air space calculations using aerial surveys. The method

allows for more accurate measurements, taking into account waste receipts, daily cover and compaction. In addition, results can be compared on a year-to-year basis and used to estimate how much space is remaining in the landfill.

Methane surface scans are conducted quarterly. Records for the last five quarterly surface methane monitoring were provided and reviewed. Surface scans are conducted by a third party. The most recent scan was completed on February 26, 2021 by Monitoring Control and Compliance Inc. The four surface scans conducted prior to the most recent were conducted by Environmental Information Logistics. For all five quarterly surface scans no exceedances above 500 ppm were detected. Appropriate records documenting the route traversed, meteorological conditions and calibration data are maintained.

The facility conducts monthly monitoring for cover integrity while making repairs as necessary, pursuant to EULANDFILL SC.VI.1. Onsite staff said the cover integrity monitoring is conducted while completing well-head monitoring. Staff look for cracks and leachate outbreaks on the surface of the landfill. If problems are identified, onsite personnel work together to resolve them.

Tri-City RDF is required to submit semi-annual startup, shutdown, and malfunction (SSM) reports to the AQD. The most recent SSM report was received on 3/11/2021 and reviewed as part of this inspection. The report encompassed the reporting period of 7/1/2020 to 12/31/2020. During that time there were 2 startup events, 2 shutdown events, and 0 malfunction events. No revisions were made to the SSM plan.

EUACTIVECOLL: Compliant

An active landfill gas collection system is in place at Tri-City RDF, used to draw and redirect gas produced during waste decomposition to the facility's flare. Facility personnel report that between 2019 and the time of inspection, the only times the collection system would have been inoperable were during times of scheduled maintenance, or if a power outage were to occur. In the event the system was to become inoperable, Tri-City RDF has procedures in place. The facility has electricians on standby that can be contacted to quickly address the matter.

Wellheads in the collection system are monitored monthly. Records of wellhead monitoring for the last 12 months, as well as an up-to-date plot map, were provided and reviewed. A number of wells at the facility have variances in place that allow for higher operating values (HOV). Wells GW-01, GW-02, GW-04, GW-05, GW-13 and GW-17 are listed in the facilities approved GCCS Design Plan as having a HOV of 15% O₂. Additional wells not included in the GCCS Design Plan have Department approved HOV's. TRIC002R has a HOV of 15% O₂. TRIHZ001 has a variance for 20% O₂ and a positive pressure that shall not exceed 5" H₂O.

O₂ levels in excess of 5% were measured at TRIHZ047 beginning on March 17, 2020. The facility submitted a request to decommission the well on March 31, 2020 stating the well was intended to be temporary and was likely watered in. The letter stated sufficient gas collection was in place in the area using vertical gas wells. The department approved the request to decommission HZ-47 on April 6, 2020.

While reviewing wellhead monitoring data provided by the facility, wells TRLCR011 and TRLCR014 appeared to have numerous instances of excess O₂ readings. Mr. Davis provided an explanation for the higher readings, pointing towards the facility's GCCS Plan. He explained wells with a CR in

their name are connected to the leachate collection system. The CR stands for “leachate cleanout riser”. As part of the GCCS Plan, it was requested that wells connected to the leachate collection system not be subject to the nitrogen/oxygen exceedance limits, positive pressure limits and 15-day corrective action timeline. The reasoning being that the leachate collection system is not designed or intended to be airtight and therefore high oxygen and vacuum readings can commonly occur. The AQD approved the GCCS Plan on September 4, 2003 with the following statement regarding gas collection wells being connected to the leachate collection system, “The AQD agrees to the gas extraction system having connections to leachate sumps and risers to control odors and surface emissions.”

While onsite, Mr. Ben Rodriguez walked me through the process he follows while completing the monthly wellhead monitoring and demonstrated by collecting readings with a Landtec GEM on three well heads located near the flare, GW-03, 2R, and GW-1R. Wellheads should have a negative pressure, an interior temperature less 55°C (131°F), and an interior oxygen level less than 5%. GW-03 had a pressure reading of 0.17” H₂O, a temperature reading of 54.2°F, and an oxygen level of 0.1% O₂. Because a positive pressure was measured, the wellhead valve was adjusted until a negative pressure was measured. After adjustments, a pressure of -0.4” H₂O was measured. Wellhead 2R had a pressure reading of -12.75” H₂O, a temperature of 62.5°F, and an oxygen level of 0% O₂. The valve for 2R was wide open. GW-1R had a pressure of -6.6” H₂O, an interior temperature of 67.1°F, and an oxygen level of 0% O₂. The valve for GW-1R was adjusted. A pressure of -6.75” H₂O was measured after adjustments were completed.

EUOPENFLARE: Compliant

All gas collected at Tri-City RDF is routed to a single flare. The current flare was installed in 2015. At the time of onsite inspection, the flare was operating, and a flame was present. The following operating parameters were observed. Gas flow rate to the flare was 221.00 SCFM. The pilot flame temperature was 1041°F and the main flame temperature was 911° F. The overall vacuum on the well field was -16.00” W.C.

The flare is equipped with three thermocouples to detect if the pilot light or flame go out. Facility personnel receive alerts on their phones if the temperature drops. The flare is considered down if the temperature drops below 250°F for 10 minutes. Staff can monitor thermocouple data in real time from their phones. In the event there is a loss of power or gas flow, a valve shuts to halt gas flow to the flare. Maintenance is performed quarterly on the flare. Thermocouples are replaced on an as needed basis. Since the installation of the flare in 2015, facility personnel report a single thermocouple has needed to be replaced once.

Special Condition VI. 3. Requires continuous monitoring of the open flare pilot flame or open flare flame monitoring. Monitoring records were requested and received for the 2020 months January, March, July and October. Temperature measurements of the pilot flame and main flame are recorded every 10 minutes. For each recording, a minimum and maximum temperature are recorded.

For the month of January 2020, the lowest minimum temperature recorded for the pilot flame was 642.00° F and an average minimum temperature 1184.86°F. The highest maximum pilot flame temperature recorded was 1404.00°F and an average maximum temperature of 1204.61°F. The lowest minimum temperature recorded for the main flame was 631.00°F and an average

minimum of 1060.29°F. The highest maximum recorded was 1385.00°F and an average maximum of 1081.31°F.

For the month of March 2020, the lowest minimum temperature recorded for the pilot flame was 696.00°F and an average minimum of 1196.72°F. The highest maximum pilot flame temperature recorded was 1423.00°F and an average maximum temperature of 1216.57°F. The lowest minimum temperature recorded for the main flame was 126.00°F and an average minimum of 1064.76°F. The highest maximum main flame temperature recorded was 1625.00°F and an average of 1087.15°F. The low main flame minimum temperature reading of 126.00°F occurred for one 10-minute data point on 3/2/2020 at 06:01:00. The maximum temperature reading during the same interval was 897.00°F. Only periods in which the control device is not operating for more than one hour are reportable, S.C. VII. 4(c). This instance is therefore not reportable.

For the month of July 2020, the lowest minimum temperature recorded for the pilot flame was 153.00°F and an average minimum of 1220.97°F. The highest maximum pilot flame temperature recorded was 1539.00°F and an average maximum temperature of 1238.70°F. The lowest minimum temperature recorded for the main flame was 122.00°F and an average minimum of 1129.73°F. The highest maximum main flame temperature recorded was 2022.00°F and an average of 1152.51°F. The low pilot and main flame minimum temperature readings occurred on 7/10/2020 beginning at 12:31:00. The lower temperature readings occurred for three consecutive ten-minute intervals. After which the recorded temperatures increased back to a level consistent with average readings. As previously discussed, downtimes less than 1 hour do not need to be reported. Facility personnel described the likely cause for the disruption of flare operation to not be uncommon and likely resulted from a slug of liquids that accumulated in the sump, also known as the knock-out pot, just ahead of the flare. The knock-out pot is used to remove liquids from the gas stream before it arrives to the flare. When vacuum levels increase, liquid levels in the sump raise above a critical level. This results in a disruption in gas flow to flare. Once liquid levels decrease and vacuum returns to normal the gas flow to the flare returns to normal.

For the month of October 2020, the lowest minimum temperature recorded for the pilot flame was 126.00°F and an average minimum of 1176.69°F. The highest maximum pilot flame temperature recorded was 1383.00°F and an average maximum temperature of 1197.06°F. The lowest minimum temperature recorded for the main flame was 126.00°F and an average minimum of 1068.05°F. The highest maximum main flame temperature recorded was 1319.00°F and an average of 1089.52°F. The low pilot and main flame minimum temperature readings occurred on 10/4/2020 beginning at 10:11:00. The lower temperature readings occurred for two consecutive ten-minute intervals. After which the recorded temperatures increased back to a level consistent with average readings. The period was less than 1 hour and therefore does not need to be reported.

One period of downtime greater than 1 hour for the calendar year 2020 was reported by the facility in their annual report. The facility reports the flare was down for 6.1 hours on 4/13/2020. The cause of the downtime was a power outage.

EUASBESTOS: Compliant

Asbestos containing material (ACM) is received by Tri-City RDF. Mr. John Davis described the facility's process for receiving the asbestos containing material. The facility requires a 24-hour

notice for receiving friable ACM. This allows time to plan where the waste will be placed. When the ACM arrives at the facility, it is taken directly to a designated pit for the load. The facility will cover the load right away unless more ACM is scheduled to arrive on the same day. If more ACM arrives throughout the day, the material is covered at the end of the day. Pits in which ACM is to be placed are dug deeper than pits used to dispose of material that does not contain asbestos. The ACM is covered with either sand or clay. When gas wells are installed, the facility tries to avoid asbestos containing areas, but some wells are likely nearby. If a facility needs to commence construction that has the potential to disturb ACM, Mr. Davis says proper notification and plans are provided to the AQD and precautions are taken during the excavation.

Asbestos records for the last three received asbestos loads were requested and reviewed. The last three shipments were as follows, 40 cubic yards on 11/25/2019, 6 cubic yards on 10/24/2019 and 5 cubic yards on 10/24/2019. Waste shipment records are maintained documenting the facility generator and delivery information for each asbestos shipment. A map is maintained displaying the location of all asbestos material on the landfill. In addition to a map, an asbestos disposal log is maintained. The log contains information such as the date, location, elevation at which the waste is placed, a profile number, volume of ACM and an initialed box ensuring the waste was covered with compacted material within 24 hours.

EUCOLDCLEANER: N/A

The facility no longer has any cold cleaners associated with EUCOLDCLEANER on-site.



NAME _____

DATE 4/9/2021



SUPERVISOR _____