

State Registration Number

N3845

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number

MI-ROP-N3845-2022

Eagle Valley Landfill

State Registration Number (SRN): **Error! Reference source not found.**

Located at

600 West Silver Bell Road, Orion, Oakland County, Michigan 48359

Permit Number: MI-ROP-N3845-2022**Error! Reference
source not found.**

Staff Report Date: May 23, 2022

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) of the administrative rules promulgated under Act 451, requires that the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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RENEWABLE OPERATING PERMIT

MAY 23, 2022 - STAFF REPORT

ROP Number

MI-ROP-N3845-2022

Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with an ROP pursuant to Title V of the federal Clean Air Act; and Michigan's Administrative Rules for Air Pollution Control promulgated under Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This Staff Report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft ROP terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft ROP pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

Stationary Source Mailing Address:	James Hamann Waste Management of Michigan, Inc. Eagle Valley Landfill 600 West Silver Bell Road Orion, Michigan 48359
Source Registration Number (SRN):	N3845
North American Industry Classification System (NAICS) Code:	562212
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	202000087
Responsible Official:	James Hamann, Area Manager 330-316-0707
AQD Contact:	Robert Joseph, Environmental Engineer 586-506-9564
Date Application Received:	May 11, 2020
Date Application Was Administratively Complete:	May 11, 2020
Is Application Shield in Effect?	Yes
Date Public Comment Begins:	May 23, 2022
Deadline for Public Comment:	June 22, 2022

Source Description

Eagle Valley Landfill (Eagles Valley Landfill) is a subsidiary of Waste Management, Inc. and is located at 600 West Silver Bell Road, Orion, Oakland County, Michigan. The facility is located in an urban community just west of state route M-24 and north of the former Palace of Auburn Hills site. The hours of operation of the facility are from 6 a.m. to 5 p.m. daily. There are approximately twelve employees at the facility which includes operators, the site manager, and grounds crew. The facility began operations in 1986 and operates roughly 365 days a year.

The facility is a type II sanitary landfill which is a discrete area of land that receives waste for permanent disposal. It receives household waste and non-hazardous waste such as commercial solid waste, non-hazardous sludge, conditionally exempt small quantity generator waste, inert construction and demolition debris, and industrial non-hazardous solid waste. The facility currently accepts approximately 2,000 tons a day. Presently, the facility does not accept friable asbestos wastes but does accept non-friable asbestos material which is mixed-in with other waste as it is landfilled. Eagles Valley RDF is subject to the National Standards of Performance for Municipal Solid Waste Landfills, 40 CFR Part 60 Subpart XXX (due an expansion of the landfill with an effective date of October 28, 2016), and the National Emission Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills, 40 CFR Part 63 Subpart AAAA.

Waste materials arrive in a variety of vehicles that have the potential to generate fugitive dust emissions; this is controlled by frequent wetting and sweeping of the entrance roads. After waste is transported to the facility, it is placed in one of the active working areas, known as cells, and is covered daily with soil or other cover materials. When a cell reaches its design capacity, a liner is installed to cover the waste. Over time, the waste materials decompose producing landfill gas (LFG). 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. The LFG is comprised of methane (CH₄), carbon dioxide (CO₂), carbon monoxide (CO), hydrogen sulfide (H₂S), and volatile organic compounds (VOCs). LFG typically contains a small percentage of non-methane organic compounds (NMOCs), greenhouse gases, and volatile organic compounds (VOCs). NMOC is the primary regulated air pollutant associated with landfill gas generation.

Eagle Valley RDF operates an active landfill gas collection system, which consists of wells, headers, and gas mover equipment. Risers are also installed to tie-in the gas wells. Also, the facility maintains a treatment system which removes particulate matter (PM) to at least 10 microns, compresses the landfill gas, and removes enough moisture to ensure good combustion of landfill gas guaranteeing the destruction of NMOC will be maintained. The site currently has 14 active landfill cells with approximately 192 gas wells in operation. The 14 active landfill cells comprise 129.2 acres. In addition, there are three cells that are unconstructed which will add 18.6 acres. The total landfill area, active and unconstructed, is 147.8 acres. Six acres are used for conservation easement and 32.4 acres are currently under final cover.

The collected LFG can be sent to the facility's two enclosed flares for combustion (4,000 ft³/min and 1,000 ft³/min), sent to the facility's gas-to-energy engine plant consisting of two spark ignition, lean burn, reciprocating internal combustion engines (Caterpillar G3520C, 2,233 bhp at 100% load) which drive an associated generator set to produce electricity (1.6 MW gross electrical output), or sold via pipeline to the nearby General Motors Orion Assembly Plant for combustion in their boilers/engines. Combustion of the LFG by the engines and the flares may emit the following air pollutants into the ambient air: NMOCs, nitrogen oxides (NO_x), sulfur dioxide (SO₂), fine and coarse particulate matter (PM), hydrogen chloride (HCl) and formaldehyde (CH₂O).

The facility is a major source of Hazardous Air Pollutants (HAPs). The facility's engines are subject to the National Emission Standards for Hazardous Air Pollutant (NESHAP) for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63 Subpart ZZZZ, and the National Standards of Performance for Stationary Spark Ignition Internal Combustion Engines, 40 CFR Part 60 Subpart JJJJ.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2020**.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	175.0
Nitrogen Oxides (NO _x)	41.1
Particulate Matter (PM)	41.7
Sulfur Dioxide (SO ₂)	35.3
Volatile Organic Compounds (VOCs)	5.7
Non-Methane Organic Compounds (NMOC)	25.5

See Parts C and D in the ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

This stationary source is an existing minor PSD source and is a Title V and Major HAP source. It is located in Oakland County and is currently designated by the United States Environmental Protection Agency (U.S.EPA) as a non-attainment area with respect to the 2015 primary and secondary ozone National Ambient Air Quality Standards (NAAQS); however, the United States Environmental Protection Agency is proposing to approve the State of Michigan State Implementation Plan (SIP) for maintaining the 2015 ozone NAAQS through 2035 in the Detroit area. The facility is not considered a major source with respect to Prevention of Significant Deterioration (PSD) or Nonattainment New Source Review (NANSR) based on potential to emit for the facility being less than major source thresholds of 250 tons per year (tpy) for PSD pollutants and 100 tpy for nonattainment pollutants. It is considered a major source of hazardous air pollutants (HAPs) based on formaldehyde emission rates from the LFG RICE.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit CO, NO_x, SO₂, PM, and VOC exceeds 100 tons per year, and the potential to emit of any single HAP regulated by Section 112 of the Federal Clean Air Act, is equal to or more than 10 tons per year and/or the potential to emit of all HAPs combined is equal to or more than 25 tons per year. Also, the source is subject to New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills promulgated in 40 CFR Part 60, XXX, and the National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 63, AAAA.

New Source Performance Standards (NSPS), Standards of Performance for Municipal Solid Waste (MSW) Landfills codified as 40 CFR Part 60, Subpart XXX, are applicable to MSW landfills that commenced construction, reconstruction, or modification after July 17, 2014. Subpart XXX requires subject facilities with a calculated NMOC emission rate equal to or greater than 34 megagrams per year to install a gas collection and control system (GCCS) that meets the provisions of 40 CFR 60.762 through 60.769. A GCCS is required to be installed after the NMOC emissions rate report is submitted to the regulatory agency which shows that the MSW Landfill produces 34 megagrams or greater per year NMOC.

Initially, Eagle Valley RDF became subject to 40 CFR Part 60, Subpart WWW when it commenced construction, however, a 2016 expansion of the landfill triggered Subpart XXX applicability. The facility ceased being subject to Subpart WWW on July 1, 2021, when it opted into the Operational Standards (40 CFR 60.763), Compliance Provisions (40 CFR 60.765), and Monitoring of Operations (40 CFR 60.766) of 40 CFR Part 63, of Subpart AAAA.

The stationary source is subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills promulgated in 40 CFR Part 63, Subparts A and AAAA. This is primarily because the landfill meets the criterion of 40 CFR 63.1935. In addition, the source is subject if the MSW landfill is a major source as defined in 40 CFR 63.2 of subpart A, is collocated with a major source as defined in 40 CFR 63.2 of subpart A, or is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³) with an estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to 40 CFR 63.1959. The stationary source is also subject to the National Emission Standard for Hazardous Air Pollutants for Asbestos (NESHAP) promulgated in 40 CFR Part 61, Subparts A and M, because the landfill accepts asbestos waste.

EU-LANDFILL, EU-ACTIVECOLLECTION, EU-TREATMENTSYSYSTEM1, EU-TREATMENTSYSYSTEM2, EU-ENCLOSEDFLARE3, EU-ENCLOSEDFLARE4 at the stationary source are subject to the National Emissions Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills as promulgated in 40 CFR Part 63, Subparts A and AAAA. Beginning no later than September 27, 2021, all landfills described in 40 CFR 63.1935 must meet the requirements of this subpart. A landfill may choose to meet the requirements of this subpart rather than the requirements identified in 40 CFR 63.1930(a) at any time before September 27, 2021. The facility opted-in to this subpart on July 1, 2021, and these requirements are included in the facility's ROP.

The facility's two reciprocating internal combustion engines (FG-ICENGINES 1 and 2) are subject to the New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines promulgated in 40 CFR, Part 60, Subparts A and JJJJ. The facility's ROP contains conditions to address the applicability of the Maximum Achievable Control Technology Standards for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ. These two engines were permitted in 2010 as emission limits were set for CO, SO₂, and VOC.

Initially, EU-ENCLOSEDFLARES 3 and 4 were installed in 2015 pursuant to the exemption R 336.1285(2)(aa) of the Michigan Air Pollution Control Rules. EGLE-AQD requested in 2019 that that facility file for a Permit to Install (PTI) to evaluate SO₂ emissions based on the 2019 sample data at the LFG engines and flares. Additionally, EGLE requested that that facility address emissions of formaldehyde from the LFG engines based upon updated Caterpillar emissions data. There have not been changes to equipment or operation of the engines or flares; however, since the flares had not previously been permitted, they were subject to a complete NSR review because this change is considered a change in the method of operation and triggers Rule 201. PTI 91-20 was issued in April 2019. During required TRS (total reduced sulfur) sampling in 2021, Eagle Valley RDF found the TRS concentration was higher than they were allowed by their permit (91-20). Per the permit conditions more sampling and recording of TRS concentrations was performed. As a result of the sampling showing a higher concentration of TRS than the permit allows, the facility submitted another permit application to request a higher TRS concentration and the corresponding SO₂ emission limits. PTI 91-20A was issued in February 2021.

No emission units at the stationary source are currently subject to the Prevention of Significant Deterioration regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of carbon monoxide was less than 250 tons per year.

At this time, there are no GHG applicable requirements to include in the ROP. The mandatory Greenhouse Gas Reporting Rule under 40 CFR Part 98 is not an ROP applicable requirement and is not included in the ROP.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

No emission units have emission limitations or standards that are subject to the Federal Compliance Assurance Monitoring rule pursuant to 40 CFR Part 64, because all emission units at the stationary source either do not have a control device or those with a control device do not have potential pre-control emissions over the major source thresholds.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

Source-Wide Permit to Install (PTI)

Rule 214a requires the issuance of a Source-Wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-N3845-2015 are identified in Appendix 6 of the ROP. PTI 116-10 issued in 2010 addressed the FG-ICEENGINE’S emission limits for CO, NO_x, and VOC.

PTI Number		
116-10		

Streamlined/Subsumed Requirements

This ROP does not include any streamlined/subsumed requirements pursuant to Rules 213(2) and 213(6).

Non-applicable Requirements

Part E of the ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the ROP Application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the ROP pursuant to Rule 213(6)(a)(ii).

Processes in Application Not Identified in Draft ROP

The following table lists processes that were included in the ROP Application as exempt devices under Rule 212(4). These processes are not -subject to any process-specific emission limits or standards in any applicable requirement.

PTI Exempt Emission Unit ID	Description of PTI Exempt Emission Unit	Rule 212(4) Citation	PTI Exemption Rule Citation
EU-Propane	150-gallon propane tank	R 336.1212(4)(d)	R 336.1284(2)(b)
EU-Hydraulic	275-gallon hydraulic oil tank	R 336.1212(3)(e)	R 336.1284(2)(c)
EU-Transmission	275-gallon transmission oil tank	R 336.1212(3)(e)	R 336.1284(2)(c)
EU-EngineOil	275-gallon engine oil tank	R 336.1212(3)(e)	R 336.1284(2)(c)
EU-UsedOil	275-gallon used oil tank	R 336.1212(3)(e)	R 336.1284(2)(c)
EU-Condensate	250-gallon used oil tank	R 336.1212(3)(e)	R 336.1284(2)(c)
EU-Diesel	500-gallon diesel fuel tank	R 336.1212(4)(d)	R 336.1284(2)(i)
EU-Gasoline	500-gallon gasoline tank	R 336.1212(4)(d)	R 336.1284(2)(i)
EU-Diesel2	4000-gallon engine oil tank	R 336.1212(4)(d)	R 336.1284(2)(i)
EU-Condensate500	500-gallon leachate/condensate tank	R 336.1212(3)(f)	R 336.1285(2)(aa)

Draft ROP Terms/Conditions Not Agreed to by Applicant

This draft ROP does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to Rule 214(2).

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

Action taken by EGLE, AQD

The AQD proposes to approve this ROP. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft ROP and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Joyce Zhu, Warren District Supervisor District. The final determination for ROP approval/disapproval will be based on the contents of the ROP Application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.

State Registration Number
N3845

RENEWABLE OPERATING PERMIT
JULY 11, 2022 - STAFF REPORT ADDENDUM

ROP Number
MI-ROP-N3845-2022

Purpose

A Staff Report dated May 23, 2022, was developed to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by Rule 214(1) of the administrative rules promulgated under Act 451. The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP during the 30-day public comment period as described in Rule 214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	James Hamann, Area Manager 330-316-0707
AQD Contact:	Robert Joseph, Environmental Engineer 586-506-9564

Summary of Pertinent Comments

No pertinent comments were received during the 30-day public comment period.

Changes to the May 23, 2022 Draft ROP

No changes were made to the draft ROP.