Michigan Department of Environment, Great Lakes, and Energy
Air Quality Division

State Registration Number		ROP Number
N2369	**RENEWABLE OPERATING PERMIT STAFF REPORT**	MI-ROP-N2369-2020

Adrian Landfill, Inc
and
Adrian Energy Associates, LLC

State Registration Number (SRN): N2369

Located at

1970 and 1900 North Ogden Highway, Adrian, Lenawee County, Michigan 49221

Permit Number: MI-ROP-N2369-2020

Staff Report Date: November 25, 2019

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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N2369

RENEWABLE OPERATING PERMIT

NOVEMBER 25, 2019 - STAFF REPORT

ROP Number

MI-ROP-N2369-2020

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:	Adrian Landfill, Inc. 5011 South Lilley Rd Canton, Michigan 48188 Adrian Energy Associates, LLC 1900 North Ogden Highway Adrian, Michigan 49221
Source Registration Number (SRN):	N2369
North American Industry Classification System (NAICS) Code:	562212
Number of Stationary Source Sections:	2
Is Application for a Renewal or Initial Issuance:	Renewal
Application Number:	201800153
Responsible Official Section 1:	Brent Goodsell, Area President Adrian Landfill, Inc. 317-917-7358
Responsible Official Section 2:	Dennis Plaster, Vice President of Operations - Adrian Energy Associates, LLC 585-948-8580
AQD Contact:	Diane Kavanaugh Vetort Senior Environmental Quality Analyst 517-416-3537 Stephanie Weems Environmental Quality Analyst 517-416-3351
Date Application Received:	November 29 and December 24, 2018
Date Application Was Administratively Complete:	December 24, 2018
Is Application Shield in Effect?	Yes

Date Public Comment Begins:	November 25, 2019
Deadline for Public Comment:	December 26, 2019

Source Description

The Adrian Landfill facility is owned by Republic Services, Inc. Adrian Landfill is an active Type II sanitary landfill of approximately 495 acres, located in Palmyra Township of Lenawee County. The landfill consists of a 58-acre, pre-Subtitle D area (called the closed area) which has been closed and capped since 1990. The remaining active "Northwest Expansion" area also has a portion that has been closed and capped. The last waste that was accepted at Adrian Landfill was in 2013.

The landfill is subject to 40 CFR Part 63 Subpart AAAA and 40 CFR Part 60, Subpart WWW because the landfill was modified after May 30, 1991, its design capacity exceeds 2.5 million cubic meters, and it has estimated uncontrolled, non-methane organic compound (NMOC) emissions equal to or greater than 50 megagrams per year (Mg/yr). The landfill is a municipal solid waste (MSW) landfill with an active landfill gas collection system. Gas is collected from vertical gas extraction wells, horizontal collectors, connections to leachate sumps, and cleanout risers. The primary standard industrial code is 4953 (Municipal Solid Waste Landfill).

Historically, the landfill served as the final disposal point for general and household waste, and inert wastes, such as construction and demolition debris, foundry sand, ash, and low-level contaminated soils. The facility also accepted asbestos waste. The solid waste was transported to the facility to an area (cell) where it was deposited on the working surface. The deposited waste was covered with soil or other EGLE alternate daily cover materials (ADCM) on a daily basis. When a cell reached its design capacity, a liner was installed, covering the waste. Natural biological processes occurring in landfills decompose the waste, 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, carbon dioxide, and a small percentage of non-methane organic compounds (NMOC). The NMOC faction consists of various organic hazardous air pollutants (HAP), greenhouse gases (GHG), and volatile organic compounds (VOC).

Collected landfill gas is sent to a landfill gas treatment system where it is filtered, dewatered, compressed, and cooled. It is then sent to three reciprocating internal combustion engines (RICE) owned and operated by Adrian Energy Associates, LLC (Adrian Energy). The RICE use the conditioned landfill gas as fuel for the generation of electricity for the power grid. There are no atmospheric vents or emissions from the landfill gas treatment system; any gas not conditioned in the system is burned in the open flare owned by Adrian Landfill, Inc. The open flare is a non-assisted open combustor without an enclosure or shroud. Both the open flare and the treatment system are subject to 40 CFR Part 63, Subpart AAAA and 40 CFR Part 60, Subparts A and WWW because the equipment provides the air pollution control of the NMOC emissions from the NSPS affected source.

After the LFG is combusted by the engines and the flare, the following pollutants may be emitted into the ambient air: NMOCs, VOCs, nitrogen oxides (NOx), sulfur dioxide (SO2), particulate matter (PM), Hydrogen Chloride (HCl), and Formaldehyde (CH2O).

EUAIRSTRIPPER-1 at the stationary source is a purge water treatment system using an air stripper. The air stripper treats groundwater extracted at the closed portion of the landfill to remove volatile organic compounds. The aeration "spray" chamber consists of an 8-foot diameter and 30-foot-long fractionation tank, ten spray nozzles and fan. Air flow is about 186 cubic feet per minute. EUAIRSTRIPPER-1 was initially covered by Permit to Install No. 105-91.

Although Adrian Energy is a separately owned company located at the same location as Adrian Landfill, together they are considered one stationary source.

Adrian Energy receives its fuel, landfill gas (LFG), for the three RICE from Adrian Landfill. The two companies have a contractual agreement in which Adrian Landfill, Inc. sells LFG to Adrian Energy Associates, LLC. The contractual and spatial relationship of the two facilities establishes Adrian Landfill

Inc. as the controlling entity of the partnership. On March 21, 2013, an agreement was made between Michigan's Air Quality Division, the management of Adrian Landfill, Inc. and Adrian Energy Associates, LLC which allowed the two entities to have separate Renewable Operating Permits. However, pursuant to Michigan's Air Pollution Control Rules, specifically Rule 336.1119(s), together these entities comprise one single stationary source. Upon issuing the separate permits a new State Registration Number (SRN) was issued to Adrian Energy Associates P0426; the SRN for Adrian Landfill, Inc. is N2369. Subsequently, the two entities are again combining their Renewable Operating Permits under one SRN, N2369.

Since the issuance of the last ROP, this stationary source has changed from a minor source of HAPs to a major source based upon it's potential to emit of Formaldehyde. Based upon test results submitted in 2015, the stationary source now reports having the potential to emit over 10 tons per year of a single HAP.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year **2018**.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	65.49
Lead (Pb)	0
Nitrogen Oxides (NO_x)	10.84
Particulate Matter (PM)	2.13
Sulfur Dioxide (SO_2)	1.66
Volatile Organic Compounds (VOCs)	15.05
Non-Methane Organic Compounds (NMOC)	8.45

The following table lists Hazardous Air Pollutant potential to emit calculations based on stack test data and engine operating data:

Individual Hazardous Air Pollutants (HAPs) **	Tons per Year
Formaldehyde (HCOH)	**11.9**
Total Hazardous Air Pollutants (HAPs)	**11.9**

**As listed pursuant to Section 112(b) of the federal Clean Air Act.

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.

The stationary source is in Lenawee County, which is currently designated by the United States Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because the potential to emit of CO exceeds 100 tons per year, 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, and the source is subject to 40 CFR Part 60, Subpart WWW for Municipal Solid Waste Landfills that commenced construction, reconstruction or modification on or after May 30, 1990, which requires that a Part 70 Renewable Operating Permit (ROP)

be submitted for all new and existing landfills with a design capacity equal to or exceeding 2.5 million MG and 2.5 million cubic meters.

EULANDFILL-1, EUACTIVECOLL-1, EUOPENFLARE-1, and EUTREATMENTSYS-2 at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Municipal Solid Waste Landfills, which was promulgated in 40 CFR, Part 63, Subparts A and AAAA and the Standards of Performance for Municipal Solid Waste Landfills promulgated in 40 CFR Part 60, Subparts A and WWW.

EUICENGINE#1-2, EUICENGINE#2-2, and EUICENGINE#3-2 at the stationary source are subject to the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ as existing, non-emergency, spark ignition RICE with site ratings greater than 500 hp, that combust landfill gas equivalent to 10 percent or more of the gross heat input on an annual basis.

EUASBESTOS-1 at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants for Asbestos promulgated in 40 CFR Part 61, Subparts A and M.

EUOPENFLARE-1 was installed in 2006 as Rule 201 exempt per Rules 278 and 285(2)(aa). Although EUOPENFLARE-1 was installed after August 15, 1967, this equipment was exempt from New Source Review (NSR) permitting requirements at the time it was installed. However, future modifications of this equipment may be subject to NSR.

2019 Emission testing for SO2 from EUICENGINE#1-2, EUICENGINE#2-2, and EUICENGINE#3-2 at the stationary source found no exceedances of any applicable SO2 limits. Therefore, SO2 emission requirements are 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.

The stationary source is not subject to the federal Compliance Assurance Monitoring (CAM) rule (40 CFR Part 64) because the emission limitations or standards for MSW landfills are covered by 40 CFR Part 63, Subpart AAAA. Thus, MSW landfills are exempt from CAM requirements.

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-N2369-2014 and MI-ROP-P0426-2014 are identified in Appendix 6 of the ROP.

PTI Number			
145-09	10-96	105-91	

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
EUHEATERS-OFFICE	127,000 BTU Natural Gas Furnace	R 336.1212(4)(c)	R 336.1282(2)(b)(i)

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 Mr. Scott Miller, Jackson District Supervisor. 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.

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JANUARY 7, 2020 - STAFF REPORT ADDENDUM

Purpose

A Staff Report dated November 25, 2019, 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 Section 1::	Brent Goodsell, Area President Adrian Landfill, Inc. 317-917-7358
Responsible Official Section 2:	Dennis Plaster, Vice President of Operations - Adrian Energy Associates, LLC 585-948-8580
AQD Contact:	Diane Kavanaugh Vetort Senior Environmental Quality Analyst 517-416-3537 Stephanie Weems Environmental Quality Analyst 517-416-3351

Summary of Pertinent Comments

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

Changes to the November 25, 2019 Draft ROP

No changes were made to the draft ROP.