

State Registration Number
N6034

Michigan Department of Environmental Quality
Air Quality Division
**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-N6034-2018

Wood Island Waste Management Sanitary Landfill

SRN: N6034

Located at

East 10081 State Highway M-28 East, Wetmore, Alger County, Michigan 49896

Permit Number: MI-ROP-N6034-2018

Staff Report Date: May 7, 2018

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) requires that the Michigan Department of Environmental Quality (MDEQ), 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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MAY 7, 2018 - STAFF REPORT

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 of 1990 and Michigan's Administrative Rules for Air Pollution Control pursuant to 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:	Wood Island Waste Management, Inc. P.O. Box 165 Wetmore, Michigan 49896
Source Registration Number (SRN):	N6034
North American Industry Classification System (NAICS) Code:	562212
Number of Stationary Source Sections:	1
Is Application for a Renewal or Initial Issuance?	Initial Issuance
Application Number:	201700059
Responsible Official:	David J. Brisson, President 906-774-9006
AQD Contact:	Joseph Scanlan, Environmental Quality Analyst 906-250-5123
Date Application Received:	04/14/2017
Date Application Was Administratively Complete:	04/14/2017
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	May 7, 2018
Deadline for Public Comment:	June 6, 2018

Source Description

Wood Island Waste Management Sanitary Landfill (Facility) is owned and operated by Wood Island Waste Management Inc. Mr. David J. Brisson is the designated Responsible Official. The Facility is located at E10081 State Highway M-28, City of Wetmore, Alger County, Michigan. The landfill is approximately 3.2 mile east of the City of Munising and 3.5 mile south of Pictured Rocks National Lakeshore. There is a campground, a hotel, and a handful of small commercial businesses directly to the north on State Highway M-28 and a log home manufacturer directly to the west, sharing a property line with the landfill. The area with the highest number of residential dwellings is located in Wetmore, one mile to the west of the landfill.

A landfill means an area of land or an excavation in which wastes are placed for permanent disposal. Wood Island Waste Management Sanitary Landfill is classified as a Type II sanitary landfill, which is a Municipal Solid Waste (MSW) landfill. A MSW landfill or a Type II landfill according to Part 115, Solid Waste Management, of Act 451, is:

"A landfill which receives household waste, municipal solid waste incinerator ash or sewage sludge and which is not a land application unit, surface impoundment, injection well, or waste pile. A municipal solid waste landfill also may receive other types of solid waste, such as commercial waste, non-hazardous sludge, conditionally exempt small quantity generator waste, and industrial waste. Such a landfill may be publicly or privately owned."

The Facility was initially permitted and began accepting waste in 1992 and was exempt from obtaining a Permit to Install (PTI) under R 336.1285(2)(aa). However, since the Facility has accepted and handled asbestos containing material waste since it opened it has always been subject to 40 CFR Part 61 National Emission Standard for Hazardous Air Pollutants (NESHAP) Subpart M and has been regularly monitored by AQD district staff for compliance.

On January 15, 2016, the Facility was granted a permit by Waste Management & Radiological Protection Division (WMRPD) to expand the landfill with a design capacity that exceeds 2.5 million megagrams (Mg) and 2.5 million cubic meters, making the Facility subject to the 40 CFR Part 60 New Source Performance Standard (NSPS), Subparts A and XXX and the Title V Renewable Operating Permit (ROP) regulations promulgated in R 336.1211(1)(e). Much of this newly-permitted expansion area is referred to as Cell 11 and has already undergone construction, however this cell is not currently actively accepting waste.

The landfill, EU-LANDFILL<34, currently accepts sludge, asbestos containing wastes, fly ash, industrial waste, and miscellaneous solids, along with municipal household waste. Natural biological processes occurring in landfills transform the waste's constituents (above listed wastes) 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 non-methane organic compounds (NMOC). NMOC is the primary regulated air pollutant associated with landfill gas generation. Cells 1-6 are currently closed and cells 7 through 10 are actively accepting waste, however final closure for cells 7 through 10 is expected by the end of 2018.

Currently landfill gas from EU-LANDFILL<34 is collected through a passive gas collection and control system (GCCS) consisting of seven (7) six inch (6") passive vents in closed cells 1 through 6. Three of these vents are capped to direct gas to four Solar Spark (Model CF-5) continuous sparking solar-powered gas flares which are mounted on the remaining four vents. The vent wells rely on positive pressure created by decomposing waste to move the gas rather than by mechanical equipment. The landfill gas migrates up through the wells and is combusted by the flares. The flares allow for flow ranges from 2-90 cfm of landfill gas containing 25-70% methane. This assumes 98% NMOC destruction efficiency if Btu content of the gas is greater than 200 Btu/SCF with a maximum exit velocity of less than 60 ft/second. Calculations provided by the Facility show their gas flow rates meet these requirements.

Working in conjunction with the Waste Management & Radiological Protection Division to aid in chronic odor management issues, the Facility has proposed to expand their GCCS and add additional collector piping in cells 7 through 10 as well as 13 more gas vents in addition to the existing 7 vents in cells 1 through 6. These additional vents will be installed during the final closure cover construction for cells 1 through 10. While not all the 20 vents will be utilized at once, the additional vents and flares will allow for adaptability and increased capacity in specific areas of the landfill. Should the proposed expanded passive GCCS be inadequate for effective odor control, the system has been designed to be converted to an active GCCS with the addition of a blower unit.

The Facility operates EU-WOOD BOILER, a Central Boiler (Model CL 6048) 1.25 MMBtu/hr biomass fired boiler for seasonal space heating in the shop during the winter months. This emission unit does not utilize air pollution control devices and vents directly to the atmosphere via a single stack.

The Facility also operates EU-USED OIL HEATER, a Clean Burn Inc (Model CB-1750) waste oil heater to provide additional seasonal heat in the shop building during the winter months. EU-USED OIL HEATER has a nominal heat input of 170,000 Btu/hr and uses only waste oil generated on the geographical site.

The Facility maintains EU-DIESEL TANK, a 10,000 gallon capacity diesel fuel above ground storage tank, to provide fuel for use in their equipment and portable engines.

Additionally, the Facility operates EU-MOBILE RICE, two small non-road mobile engines that are used for emergency power generation when needed. This includes a diesel Wacker Neuson model G25 35hp/21.4kW emergency genset and a diesel Caterpillar model XQ60 98hp/72.8kW emergency genset.

For leachate storage, the Facility utilizes a system of storage receptacles, including a 75,000 gallon above-ground storage tank, a 12,000 gallon underground storage tank, and a 660,000 gallon lagoon. The leachate is pumped and hauled daily to wastewater treatment facilities located in Munising, K.I. Sawyer, and Marquette. The Facility has used a Neptune-brand leachate vaporizer in the past in attempts to reduce the amount of leachate, however there was little success with the unit, and in fact, it appeared to oversaturate the cells upon which it was operating and cause the leachate to circulate more rapidly within the landfill. This resulting scenario may have contributed to the chronic odor problems.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System (MAERS) for the year 2016.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	0.34
Lead (Pb)	NA
Nitrogen Oxides (NO _x)	0.28
Particulate Matter (PM)	11.3
Sulfur Oxides (SO _x)	0.03
Volatile Organic Compounds (VOCs)	0.01
NMOC	13.89
Greenhouse Gases	65,962
H ₂ S	0.46

The following table lists Hazardous Air Pollutant emissions as calculated for the year 2016:

Hazardous Air Pollutants (HAPs) **	Tons per Year
Total Hazardous Air Pollutants (HAPs)	0.02

**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 located in Alger County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to the New Source Performance Standards for Municipal Solid Waste Landfills promulgated in Title 40 of the Code of Federal Regulations (CFR), Part 60, Subparts A and XXX. The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR) Part 70, because its design capacity exceeds 2.5 million Megagrams (Mg) and 2.5 million cubic meters; however, no pollution control equipment is required at this time because actual NMOC emissions are less than 34 Mg/year. Assuming the waste-in-place has a density of 1500lb/cubic yard, the total maximum design capacity of the landfill is approximately 2.9 million Mg.

The stationary source is considered to be a minor source of HAP emissions because the potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, is less than 10 tons per year and the potential to emit of all HAPs combined are less than 25 tons per year.

No emissions 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 (NSR) permitting the potential to emit of carbon monoxide was less than 100 tons per year.

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 (CAM) rule under 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 Facility is subject to 40 CFR Part 98 (Greenhouse Gas Reporting), Subparts A and HH, because the Facility is expected to emit greater than 25,000 metric tons/year of carbon dioxide equivalents and the Facility is a Type II MSW landfill that accepted waste on or after January 1, 1980.

The Facility currently operates a passive landfill gas collection and control system (GCCS). The existing GCCS is allowed to be operated by the Facility until 30 months after the Facility's actual NMOC emissions reach 34 Mg/year. If the NMOC emission rate is calculated to be equal to or greater than 34 Mg/year or the methane concentration from the surface of the landfill is 500 ppm or greater, the permittee shall ensure the existing GCCS is in compliance with 40 CFR 60.762(b)(2). Additionally, within 90 days the permittee shall apply for a revision of the current ROP.

NMOC mass emission rate testing shall be performed using procedures and calculations, as described in Appendices 5 and 7 of the ROP. Upon completion of each Tier test, the permittee shall compare the results to the NMOC mass emission rate standard of 34 Mg/year. Tier 1 and Tier 2 shall be recalculated annually if the NMOC mass emission rate is less than the standard.

If the results are equal to or greater than 34 Mg, then the permittee shall move to the next higher testing Tier in accordance with the following:

When Tier 1 calculations show NMOC emissions > 34 Mg/year, the Facility has the option of either installing a GCCS within 30 months (60.764(a)(2)) or conducting Tier 2 (60.764(a)(3)) and/or Tier 3 (60.764(a)(4)) testing within 6 and 12 months, respectively. Tier 2 testing determines a site-specific NMOC concentration and Tier 3 testing determines a site-specific methane generation rate. Tier 4 testing determines if surface methane emissions are below the standard of 500 ppm, as described in Appendix 5, and may be used if Tiers 1 through 3 testing demonstrate NMOC mass emissions equal to or greater than 34 Mg per year (60.764(a)(6)).

If Tier 2 and/or Tier 3 NMOC emissions are < 34 Mg/year, the Facility resumes annual submittal of NMOC emission rate reports (using Tier 2 or 3 data) until either: calculations show NMOC > 34 Mg/year, triggering installation of a GCCS, or the Facility permanently closes. Based on the base Tier 2 testing that was completed in 2017 using Method 25C as presented in the Facility's Initial NMOC Emission Rate Report, analysis of samples collected from the passive GCCS show base Facility NMOC emissions of 3.5 Mg with a projected 5-year annual increase to 3.8 Mg by 2022.

If and when the Facility's NMOC emissions are equal to or greater than 34 Mg/year, the Facility has 12 months to submit an approvable GCCS design plan that satisfies the requirements of NSPS, Subpart XXX. Some of the requirements of NSPS, Subpart XXX require the design plan to specify equipment that can fulfill specific capture and destruction efficiencies which include reduction of NMOC from a control system by 98 weight percent or from a combustion device to less than 20 parts per million by volume. The existing solar-powered landfill gas flares appear to already meet this requirement, however this design plan may include an active GCCS that will be routed to a landfill gas combustion device. An active system mechanically pulls the landfill gas from the Facility, instead of allowing it to freely migrate to the collection points as in a passive system. Within 18 months after the design plan has been submitted, the equipment specified by the approved design plan shall be installed and operating properly.

EU-ASBESTOS at the stationary source is subject to the National Emission Standard for Hazardous Air Pollutants for asbestos containing waste promulgated in 40 CFR Part 61, Subpart M. Specific asbestos requirements are found in the ROP in Table EU-ASBESTOS.

EU-WOOD BOILER at the stationary source is regulated as an existing small seasonal biomass boiler and may only be fueled by biomass as defined under 40 CFR Part 63, Subpart JJJJJJ. This emission unit is not subject to Subpart DDDDD (Major Source Boiler MACT) because the Facility is not a major source of HAPs. The specific requirements for Subpart JJJJJJ are found in the ROP in Table EU-WOOD FIRED BOILER. Due to the rated heat input capacity of 1.25 MMBtu this emission unit meets the PTI exemption requirements of R 336.1282(2)(b)(iii).

EU-USED OIL HEATER meets the PTI exemption requirements of R 336.1282(2)(b)(iv) because it has a heat input capacity of less than 500,000 Btu/hr (CB 1750 produces a nominal heat input of 170,000 Btu/hr) and is operated using only waste oil generated from the geographical site.

EU-DIESEL TANK is not subject to 40 CFR Part 60 NSPS Subpart Kb because the size of the storage tank has a capacity of less than 19,800 gallons (the Facility's tank has a capacity of 10,000 gallons).

EU-MOBILE RICE is not subject to 40 CFR Part 63, Subpart ZZZZ (RICE MACT) because the emission units are small non-road mobile emergency generators.

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 are subject to the federal Compliance Assurance Monitoring rule under 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 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.

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-USED OIL HEATER	Clean Burn CB 1750 oil heater fueled with waste oil generated on-site	R 336.1212	R 336.1282(2)(b)(iv)
EU-DIESEL TANK	10,000 gallon above-ground diesel fuel storage tank	R 336.1212	R 336.1284(2)(g)(i)
EU-MOBILE RICE	Two small, mobile, non-road diesel reciprocating internal combustion engines <100 hp	R 336.1212(4)	R 336.1285(2)(g)

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 the MDEQ, 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 Ed Lancaster, Upper Peninsula 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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JULY 16, 2018 - STAFF REPORT ADDENDUM

Purpose

A Staff Report dated May 7, 2018, was developed in order to set forth the applicable requirements and factual basis for the draft Renewable Operating Permit (ROP) terms and conditions as required by R 336.1214(1). 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 R 336.1214(3). In addition, this addendum describes any changes to the draft ROP resulting from these pertinent comments.

General Information

Responsible Official:	David J. Brisson, President 906-774-9006
AQD Contact:	Joseph Scanlan, Environmental Quality Analyst 906-250-5123

Summary of Pertinent Comments/Changes Made to ROP

No comments were received from the public. Comments were received from USEPA and changes were made to the May 7, 2018, draft ROP as follows:

EPA Comment 1: Because this source has not received any Permits to Install (PTIs), the draft initial ROP correspondingly does not include a source-wide PTI (see Michigan Rule 214a). However, the draft ROP includes several references to a source-wide PTI. Please review the following and revise the permit and Staff Report as necessary to clarify that the ROP does not include a source-wide PTI:

- PTI identification number on the header of each page
- PTI general conditions on page 10
- Rule 201 footnote references on pages 10, 16, 20, and 27
- Standard source-wide PTI language on page 8 of the Staff Report

AQD Response: As recommended by USEPA all references to a source-wide Permit to Install (PTI) have been removed from the ROP.

EPA Comment 2: Please verify whether this source is subject to 40 CFR Part 63, Subpart AAAA, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Municipal Solid Waste Landfills, and include the applicable NESHAP requirements in the permit as necessary.

AQD Response: Under EU-LANDFILL<34, a high-level citation to 40 CFR Part 63, Subpart AAAA, was added in section IX.2.

EPA Comment 3: The emission table for EU-WOOD BOILER includes requirements pursuant to 40 CFR Part 63, Subpart JJJJJJ, NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources, for both biennial tune-ups and 5-year tune-ups. To clarify that the seasonal boiler is subject to the 5-year requirements, please review Section III.5 and Section III.6 and consider including only the 5-year tune-up provisions. For example, one approach could be to 1) delete Section III.5 and 2) include the specific applicable provisions of 40 CFR 63.11223(b)(1) through (7) under Section III.6 of the permit.

AQD Response: Under EU-WOOD BOILER, the original section III.5 was deleted and the original section III.6 was re-numbered to existing III.5.

EPA Comment 4: Section E, Non-Applicable Requirements, includes a table that generally refers to the Flexible Group representing the general landfill. In order to meet the requirements of 40 CFR 70.6(f)(1)(ii), a non-applicability permit shield should specify the non-applicable requirements and also include a determination regarding why the requirements are not applicable. Please provide additional documentation as necessary in Section E. for any non-applicability permit shield determinations.

AQD Response: The contents of the table in Section E, Non-Applicable Requirements, were inserted in error and have been deleted.